AN ENUMERATION TO THE ORCHIDS AND THEIR CONSERVATION STATUS IN GREATER SYLHET, BANGLADESH

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Abstract

The present investigation deals with enumeration including diversity, ecology and conservation of the family Orchidaceae of greater Sylhet region of Bangladesh. Extensive field trips were made at 11 different sites of this region during early monsoon, late monsoon and winter seasons. Relevant literature and different herbaria were consulted to gather information about the orchids of this region. Orchidaceae is represented in greater Sylhet by 75 species under 49 genera. Out of these, 25 species are terrestrial, 48 are epiphytic, one is saprophytic and one is hemiepiphytic. Presence of 37 monotypic genera indicates a narrow diversity in Orchidaceae of this area. The present investigation revealed that 26 orchid species are restricted and distributed only in Sylhet region in Bangladesh. The currently accepted taxonomic nomenclature, synonyms, habit, flowering time, present conservation status and geographical distribution are provided under each taxon.

Introduction

Orchidaceae is one of the largest flowering plant families, represented by about 1000 genera and 20,000 species with cosmopolitan distribution, primarily in the tropics and rarely in arctic regions (Chowdhery, 1998). A preliminary checklist of family Orchidaceae for Bangladesh was made by Huda et al. (1999) with an enumeration of 160 species and 2 varieties under 63 genera for Bangladesh. Of them, 106 taxa were epiphytic and remaining 56 were terrestrial. Huda et al. (2001) added some new records for the family of Orchidaceae from Bangladesh. The distribution of terrestrial orchids in Bangladesh was compiled as a check list mainly on the basis of previous records, literature survey and herbarium collections (Khanam et al., 2001).

Diversity and ecology of the orchids in the south-eastern part of Bangladesh have also been studied by Huda (2000). Earlier reports indicate that Sylhet region was rich in orchid diversity (Hooker 1890a, b; Prain, 1903). Some research works on orchids from Bangladesh were done sporadically, viz. Huda et al. (1999), Huda (2000, 2008, 2008a), Ahmed and Pasha (1993, 1993a, 1994, 1998, 1998a, 1998b, 1999) as part of their floral exploration but focus has not been given to the diversity and ecology of orchids of Sylhet region. Valuable herbarium specimens of orchids from the greater Sylhet regions, collected by many taxonomists of Bangladesh are housed at the different herbaria of Bangladesh, viz. Bangladesh National Herbarium (DACB), Dhaka University Salar Khan Herbarium (DUSH), Herbarium of Chittagong University (HCU), Herbarium of Bangladesh Forest Research Institute (HBFRI) and Herbarium of BCSIR laboratory (HBCSIR). The present study was, therefore, undertaken with a view to examine the previous specimens and relevant literatures, and also to conduct field investigation for collecting specimens of the family occurring in the area, particularly in the greater Sylhet region mainly in the forest areas of Sylhet,

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Moulavi Bazar, Sunamganj and Habiganj of Bangladesh for a taxonomic treatment of the family Orchidaceae.

Materials and Methods

Study area

The floristic study of the family Orchidaceae was conducted from July 2006 to January 2010 in Lawachara National Park, Madhabkunda Eco-Park, Bangladesh Tea Research Institute (BTRI) Campus in Moulvi Bazar; Rema-Kalenga Wildlife Sanctuary and Satchari National Park in Habiganj; Jaflong, Tamabil, Sripur, Jaintapur, Tilagarh forest beat in Sylhet district and Sadar of Sunamganj district. Eleven different sites in four districts of greater Sylhet region were visited to study the diversity and ecology of orchids.

Collection of specimens

Orchid specimens with detailed information were collected both in the flowering and non-flowering stage from the study area through eight field trips each consisting of 4 to 5 days in early monsoon (March to May), monsoon (June to July), late monsoon (August to October) and winter (November to February).

Herbarium and literature survey

Both living and herbarium specimens were examined and studied carefully at the Herbarium of Chittagong University (HCU). Herbarium specimens of orchids collected in the present study were studied and matched with herbarium specimens available at DACB, DUSH, HBFR, HBCSIR, and HCU. Local orchid experts were consulted to identify some specimens and to confirm some critical specimens. In order to compare the description, nomenclature and geographical distribution and uses, Roxburgh (1814, 1832) Hooker (1890a, b), Prain (1903), Heinig (1925), Bruhl (1926), Sinclair (1956), Abraham and Vatsala (1981), Joseph (1987) and Huda (2000) were consulted.

Abundance status was measured based on observation, availability of the species in the field, herbarium specimen preserved at DACB, DUSH, HCU and HBFR and literature survey following Misra (2000) and Rao (1998). Categories for Abundance status based on their availability are mentioned as Specimen deficient (no collection or herbarium specimen is available in any herbarium of Bangladesh), Rare (only one herbarium specimen found but no further collection made after record), Scarce (one or two herbarium specimens available and collected once or twice after record), Occasional (few herbarium specimens available and collected from one or few localities from other parts of Bangladesh also), and Common (usually occur in the different areas of greater Sylhet and other parts of Bangladesh).

Taxonomic enumeration to the species

The present study identified 75 species belonging to 49 genera of Orchidaceae in the greater Sylhet region. Enumeration is presented below alphabetically. An asterisk (*) at the beginning of the species name indicates its occurrence from the greater Sylhet region only, on the other hand, another asterisk (*) used at the end of synonym in the enumeration to indicate that it is the first recorded name, if applicable. Flowering time (Fl.) of the species is presented numerically from 1 to 12 for January to December, respectively. Categories of Abundance status follows the flowering time.

and Bangladesh (Chittagong, Cox’s Bazar, Bandarban, Rangamati, Khagrachari and greater Sylhet). Specimen examined: Habiganj: Rema-Kalenga; 25.02.2007, M. Islam 01 (HCU).


33. *Gastrochilus calceolaris* (Buch-Ham. ex J. E. Smith) D. Don, Prodr. Fl. Nepal.: 32 (1852). *Aerides calceolaris* Buch.-Ham. ex J. E. Smith (1819); *Epidendrum calceolare* Buch.-Ham. (1825); *Sarcochilus nepalensis* Spreng. (1826); *Saccolabium calceolare* (Buch.-Ham. ex J. E. Smith) Lindl. (1833); *Aerides leopardum* Wall. ex Lindl. (1838); *A. leopardorum* Wall. (1890). Reported by its synonym from Sylhet by Hooker (1890b). Epiphytic. FL: 3–5. Specimen deficient. Distribution: Bhutan, China, India, Nepal and Bangladesh (Sylhet).


**Discussion**

A total of 75 orchid species were recorded from greater Sylhet, out of which 48 species are epiphytic, 25 species are terrestrial, one is saprophytic (*Didymoplexis pallens* Griff.) and another one is hemiepiphytic (*Vanilla parishii* Rchb. f.). Based on literature and the present field work, 26 species were found to occur in Sylhet region only. Thirty-seven out of 49 genera are monotypic indicating a narrower diversity of the family in the studied region. Herbarium specimens of 53 orchid species are available in different herbaria of Bangladesh, namely DACB, DUSH, HCU, HBFR, and HBCSIR. Only 17 orchid species were found in the present survey and are housed at HCU. 22 orchid species were not found in the last 50 years from greater Sylhet region or other parts of Bangladesh.

![Fig. 1. Abundance status of the orchid species distributed in Sylhet.](image)

Orchids are under great threats to their existence in the natural habitats due to biotic pressures, like illegal felling of large host trees, clearing off forest floor, forest fire and collection of horticultural valuable orchid species. Abundance status based on the availability of different orchid species in the natural habitat of the studied area and previous reports is presented in Fig. 1. It indicates that 30% orchid species in the Sylhet region have no data of their present occurrence and probably locally extinct from this area or critically threatened. So, both *in-situ* and *ex-situ* conservation measures along with public awareness programmes need to be undertaken.
References


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