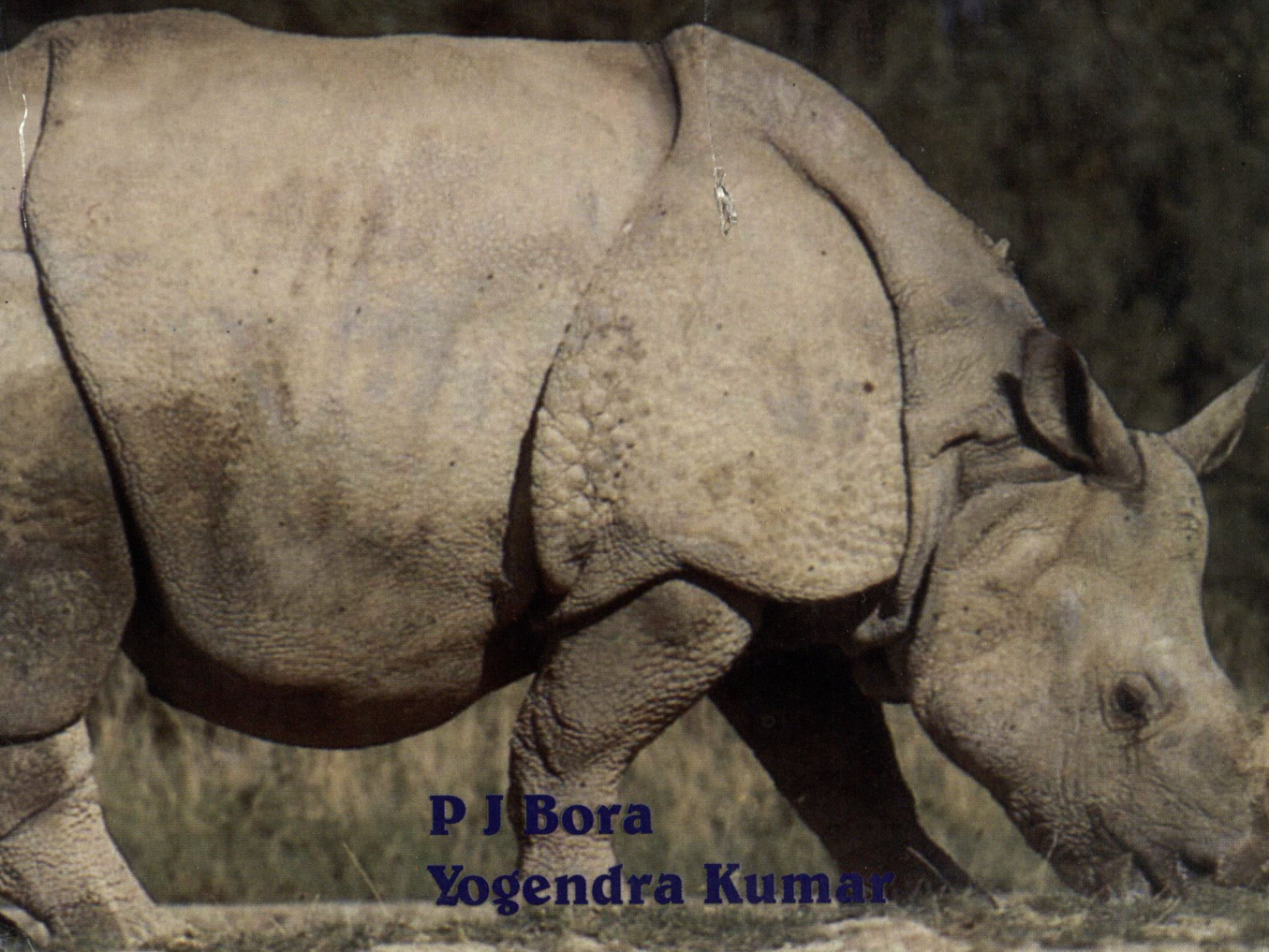


FLORISTIC DIVERSITY OF ASSAM



**P J Bora
Yogendra Kumar**

The botanical account of the protected areas is important for the conservation and management of biodiversity and ecosystem. The Pabitora Wildlife Sanctuary is one of such protected area in Assam in North-Eastern India. The area is famous for the highest density of the Indian one-horned Rhinoceros in the world. The sanctuary is also well known for its wetland habitat which provides the suitable site for migratory birds and fish fauna. The present study highlights the floristic wealth of the sanctuary which is the outcome of the intensive botanical collection and observation for the period of four years from 1995 to 1998.

The present book presents the botanical accounts, phytogeography, vegetation and ecosystem of the sanctuary. It covers 724 species under 492 genera 142 families of vascular plants. The work also focus the pattern of floristic diversity, phenology of some common plants with a brief account of fodder plants, medicinal, economically important plants, rare and endemic plants etc. of the area. The study based on the revised taxonomic monographic work and recent taxonomic nomenclature.

Dr. P.J. Bora (b. 1968) completed M.Sc. degree with first class with Plant Taxonomy as his specialization from Cotton College under Gauhati University. Ph.D. degree in 2000 from North Eastern Hill University, Shillong. He worked as senior research fellow in Botanical Survey of India, Eastern Circle, Shillong under the All India Co-ordinated Research Project on Ethnobiology, sponsored by the Ministry of Environment and Forests, Government of India. Presently he is working as Research Associate in Botanical Survey of India, Arunachal Field Station, Itanagar under the project entitled "Study and Conservation of Plant Biodiversity of Dibru-Saikhowa Biosphere Reserve in Dibrugarh and Tinsukia Districts, Assam". He has published research papers on the Ethnobotany and Plant Taxonomy in the reputed Journals.

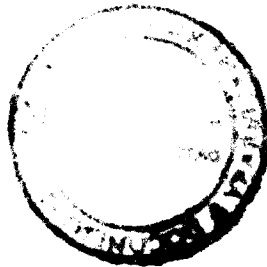
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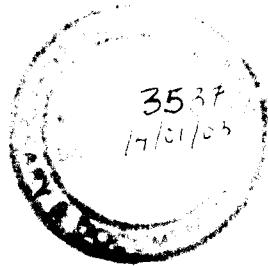
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STUDY OF PABITORA WILDLIFE
SANCTUARY**



P J Bora
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Yogendra Kumar

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Chapter - 1

GENERAL INTRODUCTION

Biodiversity is the variety of life and its processes in a given area. It is described in terms of genetic variation within species, the variety of species within a habitat or ecosystem and variety of habitats. It is commonly used to describe the number, variety and variabilities of living organisms. Management of biodiversity require measurement. It is wide spread practice to define and measure biodiversity in terms of genes, species and ecosystem corresponding to three hierarchically related level of Biodiversity. Species diversity is generally regarded as the most natural one around which to consider whole diversity. Species are commonly used as a synonym of species richness which is the number of species in a given site or habitat. Species are also primary focus of evolutionary mechanism and the origin and extinction of species are the principal agent in governing biological diversity. It represents the basic sources of our economic development by providing all essential bioresources.

The recent years have witnessed the destruction of our natural vegetation and resources and environment which would be disastrous of our existence. Therefore, it is essential to protect and conserve the biological species and resources. The protected areas like Biosphere Reserves, National Parks, Wildlife Sanctuaries and various Reserve forests can play a vital role in the Conservation of Biodiversity and maintaining natural ecosystems. Biological diversity is so complex that its conservation can not be measured without scientific analysis on specific elements and processes. The documentation and proper assessment of the diversity is needed in the respective areas and habitat. The study of plant genetic resources in the smaller area is more valuable in biodiversity conservation strategies.

The North-Eastern region is considered as one of the richest Biodiversity centres of the Indian sub-continent. According to Armen L. Takhtajan, it is the primary centre of origin of Angiosperms. i.e. the cradle of flowering plants and moreover, the N.E. region is considered as the home of many wild relatives of cultivated plants. Hence, the taxonomic research in the natural protected areas like Wildlife Sanctuary can be considered as the local flora in this region is more essential. In this regards the publication of "Flora of British India" by J.D. Hooker (1872-1897) and the regional flora, i.e. "Flora of Assam" by Kanjilal *et al.*, (1934-1940) has initiated the taxonomic study in our country as well as in North-East Region.

Assam with its 78,523 sq. km geographical area is the second largest north-eastern states of India and situated between 24°2' -27°6' N latitudes and 89°8' -96° E longitudes. Topographically the state can be divided into three parts viz. *Brahmaputra valley, Surma valley and Assam range* of which the first two parts are plain areas and the last one is a mountainous region. Out of the total geographical area 30.20% (23,688 sq. km) constitute the forest cover of which 14,517 sq. km is Dense forest and 9,171 sq. km is Open forest in the state (Source: State of Forest Report 1999, FSI, Dehra Dun). The state government has taking initiative for the effective conservation of the Biodiversity by declaring 13 wildlife sanctuaries and 5 National Parks of which 2 are declared as Biosphere Reserves and some other Reserve Forests in the state. The type and status of the flora and fauna play a significant role in defining the management and conservation of biodiversity in a particular area.

Taxonomic study on smaller areas has more important value. In comparison with the larger areas smaller areas can be explored thoroughly with critical spot observations to find the additional and exotic species which has been left out from the earlier biggest floras for various reasons. The growing fragmentation of habitats, ecosystems etc. due to various factors many earlier reported taxa become extinct, endemic, rare and endangered in nature. The necessities to focus the present existence, size, structures and localities of such taxa give more importance to study the local flora.

The taxonomic works of the smaller areas in light of revised taxonomic monographic work and recent taxonomic nomenclature is the establishment of local herbaria which will be the mirror of the vegetation of the respective areas. Moreover, the local herbaria will be the centre of the sources of the information for the local educational, allied research institutions and finally helpful for the revisionary work of state, regional and national flora of our country.

Keeping the above views as theme in objective the Pabitora Wildlife Sanctuary in Assam is selected to evaluate its diversity from taxonomic point of view. The sanctuary has the immense importance in the international level for having the highest density of Indian one horned Rhinoceros in the world. The vegetation of sanctuary has provided an ideal habitat for these herbivores including other wild lives. The wetlands of the sanctuary has drawn the international attraction by its suitable sits for the migratory birds and other fish fauna. As the wild lives are entirely depend on the vegetation and floristic compositions of the sanctuary, the present studies will be helpful for the management and conservation programmes including the other related benefits.

Floristically this recently declared Wildlife Sanctuary is totally unexplored. The regional flora of Assam (Kanjilal *et al.*, 1934-40) deal with the flora of this area and it has strong bias towards woody species. Thus, herbaceous monocot flora are almost excluded in this except Gramineae. Though the Eastern Circle of Botanical Survey of India has given much emphasis on the flora of North-Eastern region as a whole, no collection appear to have been made from Pabitora Wildlife Sanctuary.