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VEGETATION OF NATIONAL PARK AND SANCTUARIES OF ASSAM

By

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Abstract

The largest plain in North-east India is the Brahmaputra valley. This riverine area is not only of great significance for agriculture and industry of this region, but also for its rich vegetation preserved in the National Park and the wild life sanctuaries. There are six sanctuaries viz. Manas, Orang, Garampani, Sonai-Rupa, Pava and Laokhowa, and one National Park i.e. Kaziranga National Park. The author has studied the flora and vegetation of all the sanctuaries and the National Park of the Brahmaputra valley. The accounts of plants are under preparation. The paper describes the location, area, vegetation types, important constituents of forest vegetation and conservation aspects.

I. Introduction

The largest plains in North-east India is the Brahmaputra valley. This riverine area is not only of great significance for agriculture and industry of this region, but also for its rich vegetation preserved in the National Park and the Wild life sanctuaries. There is one National Park i.e. Kaziranga National Park and six sanctuaries, viz. Manas, Orang, Sonai-Rupa, Garam Pani, Pava and Laokhowa.

Several paper have been published on the importance of Wild Life in India, but they deal primarily with animal life. Almost nothing has been written about the plant cover that constitutes the natural environment in which the animal exists. It is most urgent to pay our attention to the nature of plant life in the National Parks and Sanctuaries of the country.

Lately, however several papers have emphasised the need to study the flora and vegetation of such areas, as well as the significance of conserving the rare and endangered species (Maheshwari, 1963, 1971; Naithani, 1966; Qureshi & Kaul, 1971; Sahni; 1971, Santapau, 1969, 1971; Subramaniyam and Jain, 1972; Vartak, 1975).

The current research projects of Botanical Survey of India, Eastern Circle include a survey of the existing plant resources of National Park and Sanctuaries of North East India. The author has studied the flora and vegetation of all the sanctuaries and National Park of the Brahmaputra Valley and the accounts of plants are under preparation. The present

paper describes the location, area, vegetation types, important constituents of forests vegetation and conservation aspects.

II. Kaziranga National Park

The Kaziranga National Park is in the Nowgang and Sibsagar districts of Assam. It is bounded in the north and west by the Brahmaputra river, in the south by Mora Diphalu river, Mikir Hills and different villages of Nowgang and Sibsagar districts, in the east and west by Nowgang and Sibsagar districts. The terrain is flat with an area of about 450 sq. km. It is reached by road, from Gauhati (217 km.).

Kaziranga was constituted as Wild Life Reserve in 1916 and it has been administered as Wild Life Sanctuary. This Wild Life Sanctuary has been converted into National Park in 1974.

Vegetation:—The vegetation of Kaziranga National Park can be broadly classified into (i) Eastern alluvial grasslands (Inundated Type of Rajkhowa, 1961), (ii) Northern tropical wet evergreen forests, (iii) Northern tropical semi-evergreen forests.

(i) *Eastern alluvial grasslands* :—

There are extensive patches of grasslands in Kaziranga and the dominant grasses are *Saccharum procerum*, *Saccharum spontaneum*, *Vetiveria zizanioides*, *Themeda villosa*, *Apluda mutica*, *Arundinella bengalensis*, *Digiteria setigera*, *Hygroryza aristata*, *Narenga porphyrocoma*, *Phragmites karka*, *Sclerosstachya fusca* etc. Almost two-third of the park is covered by grasslands. Amidst grasses there are number of herbaceous plants and some scattered trees of *Salmalia malabarica*, *Dillenia indica*, *Careya arborea*, *Emblica officinalis* etc.

(ii) *Northern tropical wet evergreen forests* :—

Besides grassland there are patches of evergreen forests near Kanchanjhuri, Panbari and Tamulipathar block. The common trees in these forests are *Aphanamixis polystachya*, *Diltenia indica*, *Syzygium balsamifera*, *Talauma hodgsonii*, *Garcinia tinctoria*, *Ficus numpii*, *Cinnamomum bejolghota* etc.

(iii) *Northern tropical semi-evergreen forests* :—

(Assam Valley semi-evergreen forests of Rajkhowa, 1961)

This type occurs in the Baguri, Bimali and Haldibari surrounding. Here the common trees are *Albizia procera*, *Duabanga grandiflora*, *Lagerstroemia speciosa*, *Crataeva unilocularis*, *Sterculia urens*, *Grewia serrulata*, *Mallotus philippensis*, *Bridelia retusa* etc.

III. Manas Wild Life Sanctuary

The Sanctuary falls under the Tiger Project area of Assam and is bounded in the north by the International boundary between India and Bhutan, in the south by the thickly populated regions of north Kamrup district of Assam but in the east and west the different reserved forests of the sanctuary either extend into other forests or are separated by cultivated fields and gardens. Of the total area of 2837 sq. km. under the Tiger Project Manas has about 580 sq. km. It was established in 1928. The terrain is a flat land gently sloping to the south with a number of rivers draining from north to south.

Vegetation:—The vegetation of Manas Wild Life Sanctuary is basically (i) Eastern Wet alluvial grasslands but there are patches of (ii) Eastern *Dillenia* swamp forests (High savanah *Salmalia-Albizia* type of Rajkhowa, 1961), (iii) Assam alluvial plains semi-evergreen forests and (iv) Tropical Riparian fringing forests.

(i) *Eastern Wet Alluvial grasslands* :—

There are extensive patches of grasslands and the common grasses are *Apluda mutica*, *Brachiaria*, *Chrysopogon aciculatus*, *Cynodon dactylon*, *Cyrtococcum accrescens*, *Digitaria ciliaris*, *D. longiflora*, *Echinochloa colonum*, *Eleusine indica*, *Erianthus longisetosus*, *Hemerthria protensa*, *Imperata cylindrica*, *Neyraudia reynaudiana*, *Saccharum procerum*, *Saccharum spontaneum* etc. In the grasslands several tree species occasionally grow, these are *Dillenia pentagyna*, *Emblica officinalis*, *Bombax ceiba*. The common shrubs and herbs are species of *Clerodendrum*, *Grewia*, *Premna* and *Mussaenda*.

(ii) *Eastern Dillenia Swamp forests* :—

A fairly dense forest of medium height with many evergreen and semi-evergreen species and this type occurs on flat topography which is flooded during the wet seasons but drying out between. This type of vegetation is met with near Mothanguri and Uchilla Beat of Manas Sanctuary.

The outstanding species in this area are *Dillenia indica*, *Bischofia avanica*, *Albizia procera*, *Lagerstroemia speciosa*, *Terminalia chebula*, *Bombax ceiba*, *Duabanga grandiflora* etc.

(iii) *Assam alluvial plains semi-evergreen forests* :—

In this type of vegetation common trees are *Aphanamixis polystachya*, *Anthocephalus chinensis*, *Syzygium cumini*, *S. formosum*, *S. oblatum*, *Bauhinia purpurea*, *Mallotus philippensis*, *Cinnamomum bejolghota*, *Actinodaphne obovata* etc.

The undergrowth consists mainly of *Leea aequata*, *Coffea bengalensis*, *Pjhlogacanthus thyrsiflorus*, *Adhatoda vasica*, *Piper diffusum* etc. This kind of

vegetation is met chiefly along the International boundary of India and Bhutan.

(iv) *Tropical Riparian fringing forests* :—

This type of vegetation is met with along the banks of Manas, Mora Manas, Jongrong, Gyati and Rabang rivers inside the Sanctuary. A few species of large trees forming a narrow fringe along the water courses. They stand widely spaced with smaller trees and shrubs between and often much coarse grass mainly *Saccharum* spp. The common trees are *Bischofia javanica*, *Polyalthia simiarum*, *Aesculus assamica*, *Lagerstroemia speciosa*, *Bridelia* sp., *Macaranga denticulata*, *Litsaea salicifolia*, *Trema orientalis* etc.

IV. Orang Wild Life Sanctuary

Orang Wild Life Reserve was constituted in 1915. It is proposed to upgrade it as a Sanctuary which is under the consideration of Government. The Reserve is in the Darrang District of Assam and the area is about 24 sq. km. It is 260 km from Gauhati by road on the Gauhati-Tezpur road. The area is surrounded by different villages of Darrang District, Dhansiri river and Brahmaputra river.

Vegetation :—The vegetation of Orang is basically (i) Eastern wet alluvial grasslands. In the grasslands several tree species are occasionally found. The common grasses are *Saccharum spontaneum*, *Saccharum procerum*, *Imperata cylindrica*, *Themeda villosa*, *Apluda mutica*, *Arundinella decempedalis*, *Erianthus longisetosus* etc.

V. Sonai-Rupa Wild Life Sanctuary

The Sanctuary is in the Darrang District of Assam. It is bounded in the north by the boundary of Kameng district of Arunachal Pradesh and in the south, east and west by different villages of Darrang district. The total area is about 195 sq km and was established in 1934 (approved by Government but formally not notified as such).

The forest is very much disturbed and as the Michamari Army establishment is very near to the Sanctuary most of the wild animals are not seen near the boundary.

Vegetation :—The vegetation of Sonai-Rupa Sanctuary can be broadly classified into (i) Tropical moist and dry deciduous forests, (ii) Tropical semi-evergreen forests and (iii) Alluvial grasslands.

(i) *Tropical moist and dry deciduous forests* :—The dominant species are *Bombax ceiba*, *Stenoclea villosa*, *Dillenia pentagyna*, *Emblica officinalis*, *Gmelina arborea* etc.

(ii) *Tropical semi-evergreen forests* :—The dominants are *Dillenia indica*, *Saracca indica*, *Polyalthia simiarum*, *Aphanamixis polystachya*, *Duabanga grandiflora*, *Ficus* spp., *Elaeocarpus* sp., *Aesculus assamica*, *Canarium* sp. etc.

(iii) *Alluvial grasslands* :—In the grasslands common grasses are species of *Cymbopogon* (lemon grass), *Saccharum* etc. *Calanthe angusta* a very rare ground orchid is very common in this area.

VI. Garampani Wild Life Sanctuary

The Garampani Wild Life Sanctuary is a small area of less than 3 sq km was constituted as a Sanctuary in 1952 in the Nambor Reserve of Sibsagar district and Karbi Anglong and is famous for wild elephants.

Vegetation :—The vegetation is basically Uppar Assam Valley Tropical Evergreen Forests. The dominants are *Dillenia indica*, *Talauma hodgsoni*, *Garcinia ovalifolius*, *Garcinia tinctoria*, *Camellia caudata*, *Camellia drupifera*, *Vatica lanceaefolia*, *Mansonia dipikae*, *Pterospermum lanceaefolium*, *Sterculia roxburghii*, *Elaeocarpus granitus*, *Aglaia spectabilis*, *Aphanamixis polystachya*, *Canarium benghalensis*, *Caralia brachiata*, *Syzygium bracteata*, *Syzygium formosum*, *Duabanga grandiflora*, *Castanopsis kurzii*, *Knema angustifolia*, *Saraca indica* etc.

VII. Pava Game Reserve

It was notified as a Reserve in 1941 and since then it is known as Milroy's Buffalo Sanctuary although no formal notification has been issued by Government.

Vegetation :—The vegetation is basically of (i) Tropical semi-evergreen forests and (ii) Alluvial grasslands. In the semi-evergreen forests common plants are *Dillenia indica*, *Aphanamixis polystachya*, *Bischofia javanica*, *Crataeva religiosa*, *Trewia nudiflora*, *Salmalia malabarica*, *Schumannianthus dichotomus* etc.

VIII. Laokhowa Wild Life Reserve

It has been notified in the year 1905 as Laokhowa Game Sanctuary for the purpose of closing the area to hunting of animals.

Vegetation :—The vegetation can be broadly classified into (i) Eastern Wet alluvial grasslands and (ii) Eastern *Dillenia* Swamp forest. The dominants are *Bombax ceiba*, *Albizia procera*, *Lagerstroemia speciosa*, *Dalbergia sissoo*, *Grewia serrulata*, *Saccharum spontaneum*, *Saccharum procerum* etc.

IX. Utilitarian aspects of the Flora

The vegetation and flora of the Sanctuaries and National Parks have considerable utilitarian value. The wild animals in the National Park

and Sanctuaries depend on the plants for their food. The following plants are eaten by wild animals. The local names of plants eaten by wild animals are given against each species, such as *Alpinia alughas* (Tora), *Musa ornata* (Kal-Goss), *Saccharum procerum* (Kush-Bon or Ikara), *Saccharum spontaneus* (Kush-Bon), *Eichhornia crassipes* (Pani-Meteca), *Albizia odoratissima* (Sirish), *Albizia procera* (Koroi), *Bombax ceiba* (Simolu), *Dillenia indica* (Ou-Tenga), *Calamus floribundus* (Bet), *Ficus scandens* (Dimoru), *Lippia geminata* (Bon-Tulshi), *Alternanthera sessilis* (Matikaduri), *Oenanthe stolonifera* (Bon-Joni), *Hygroryza aristata* (Dal-Ghah) etc.

The flora of the sanctuaries includes also some well-known medicinal and economic plants such as : *Phyllanthus emblica*, *Terminalia bellirica*, *Terminalia chebula*, *Rauvolfia serpentina*, *Hodgsonia macrocarpa*, *Stephania hernandifolia*, *Dillenia indica*, *Gmelina arborea*, *Toona ciliata*, *Calamus floribundus*, *Dioscorea bulbifera* and *Dioscorea pentaphylla*.

X. Endangered Plants

It is of common knowledge and now matter of concern that many plants are becoming scarce in nature and unless early and planned steps are taken for their conservation many of them may become rare in their original homes or may ultimately become extinct. The National Park and Sanctuaries provide good habitat for conservation of endangered plants as of other flora and fauna. The author has collected many endangered species from the National Park and Sanctuaries of Assam, such as, *Gnetum gnemon*, *Gnetum scandens*, *Rauvolfia serpentina*, *Helminthostachys zeylanica*, *Dischidia rafflesiana*, *Anoectochilus sikkimensis*, *Acanthephippium sylhetense*, *Eulophia mannii* etc.

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