AREA, PHYSIOGRAPHY AND CLIMATE.

Assam is situated in the North-Eastern corner of India, in between the Latitudes of 22°N to 28°N and Longitudes of 90°E to 96°E. The state is bounded by hills on all sides except for the west where she has a common boundary with the Cooch-Bihar district of West Bengal and a short stretch of International boundary with Bangladesh on the south.

Assam comprises of eight (8) plain districts Viz. Goalpara, Kamrup, Darrang, Nowgong, Lakhimpur, Dibrugarh, Sibsagar and Cachar and two hill districts Viz. Karbi Anglong (Mikir Hills) and North Cachar Hills. The first named seven (7) districts belong to Assam Valley or Brahmaputra Valley and the Cachar district belongs to Barak Valley.

The united Khasi & Jaintia Hills districts and the Garo Hills district were taken out of Assam to form a fullfledged state of Meghalaya; while Mizo district or Lushai Hill district and the former North Eastern Frontier Agency (N.E.F.A.) formed two union territories Viz. Mizoram and Arunachal Pradesh respectively. The Naga Hills District was taken out of Assam in 1956 and formed a new state Nagaland.

Geographically, the Northern Frontier of Assam, from the river
Sankosh on the west to the point of entry of the Brahmaputra in Assam on the East, is guarded by the sub Himalayan ranges of Bhutan and Arunachal Pradesh; in the South it has a common boundary with the states of Meghalaya, Mizoram and Nagaland; and for a small portion, it coincides with the International boundary with Bangladesh along Western border of Cachar district. The state is bounded by the Hills of Arunachal Pradesh in the East.

The total area of present day Assam are about 78,757 Sq. Kms. excluding the other North Eastern parts, out of which about 57,032 Sq. Kms. are the Brahmaputra Valley - a region of 7 (seven) plain districts. The so-called red river - Lohit or the Brahmaputra originates from the Manas Sorobor of the Great Himalayan Ranges passes through the plain Districts of Assam Valley enundating a great part of the districts during rainy season every year. The population in this valley is thicker than in the Hills areas.

Topographically, the State of Assam can be classified into two main regions: (a) The seven plain districts comprising the Brahmaputra Valley or the Assam Valley and the Farak Valley in which only Cachar District belongs and, (b) The Hill areas consisting of two Hill districts.
The most dominating feature in the topography of Assam is the course of the river Brahmaputra. The Brahmaputra has curved its own valley between the two ranges of hills, the Assam Himalayan in the North and Shillong plateau on the south. After flowing 1600 Km. in an easterly direction in Tibet with the name Tsangpo, the river takes a sharp bend and crosses the Himalayas with the name Dihang and meets with the Dibong another stream, coming from the north. Lohit, the third stream, from the east joins the two rivers at Brahmakunda and the combined water takes the name of Brahmaputra; it then runs directly west wards for nearly 720 Km. touching every district in the valley until it crosses the Goalpara district (the last western district) and enters into Bangladesh and turns to the south.

**The Brahmaputra Valley (Map No. 2)**

The plain areas of Assam Valley or the Brahmaputra valley has total area of 57,032 Sq. Kms. The whole valley can be divided again in two parts; the upper Brahmaputra Valley consisting of the districts of Lakhimpur, Dibrugarh and Sibsagar, comprising of unbroken plains, which lies from the Himalayas on the north to the Naga Hills on the south and the lower Brahmaputra Valley comprising of the districts of Nowgong, Darrang, Kamrup and Goalpara. The lower Brahmaputra Valley is broken by isolated groups of low hillocks.
The entire valley is flat with gradual slope, is traversed in all directions by numerous streams and rivulets from the neighbouring hills flowing down to the main river.

The notable tributaries are the Subansiri in Lakhimpur; Bharali, and Barnadi in Darrang district; Pagaldia, Beki Manas Digaru and Kuleshi in Kamrup district; Champamati, Soralbhanga, Semkosh and Krishnai in Goalpara district; Buridihing in Dibrugarh district; Disang, Dikhow, Jhanji, Bhogdoi and Dhansiri in Sibsagar district; Kapili in Nowgong district.

Bills and Lakes: There are also important bills in this region amongst them such as Maribil, Kachadhara and Pakaria in Nowgong; Dipar, Satdala, Kapla, Bowomari in Kamrup; Tamranga, Dipul, Dhir and Dhalari in Goalpara; Dighali, Rowmari and Borkar in Darrang; Dighali, Bongalmari in Lakhimpur district deserve mention.

Depending upon the topography, physiography, various climatic conditions and the cropping pattern, the Brahmaputra Valley itself can be divided into 4 zones. viz. upper Brahmaputra Valley, Central Brahmaputra Valley, North Bank Plain region and lower Brahmaputra Valley region.

**Upper Brahmaputra Valley**

This region consists of two districts on the south bank of the
river Brahmaputra, viz. Dibrugarh and Sibsagar, excluding Majuli
the riverine island of the Brahmaputra. The area slopes down, gradu­
ally from the hills of Arunachal Pradesh, Nagaland and Karbi Anglong
districts. The upper slopes are ideal for the tea cultivation.

Central Brahmaputra Valley region.

On the west of the upper Brahmaputra Valley region and along the
south bank of Brahmaputra, there lies the district of Nowgong, which
alone stands out as a distinct region. The district is encircled by
hills of Shillong plateau on the east, west and the south; and on the
north is the mighty Brahmaputra. Even along the Brahmaputra bank,
there are out lines of the Shillong plateau as isolated hillocks.
Thus the northern boundary of the district is also for greater part
higher than the central plains of the region which has the appearance
of being encircled by hills on all sides. Because of this physiogra­
phic peculiarity, this district is usually inundated by floods during
the rainy season. The northern part of the Nowgong district especia­
ly the north - eastern part, abound in tall grasses along the bank
of Brahmaputra. This part of the district together with the north -
east part of the Sibsagar district of the upper region forms the
Kaziranga Wild Life Sanctuary.

North Bank plain region

On the north bank of the river Brahmaputra, there lies an elon-
gated area extending from the extreme east to the Barnadi river
(Eastern boundary of Kamrup district) and form a distinct region.
This region comprises of the district of Lakhimpur and Darrang and
the riverine island of Majuli of Sibsagar district. Physiographically,
the entire region can be divided into 3 small parallel belts.

The foothills proper, with alluvial soil structure, is under
deep forest. On the south of this belt there are small tea estates
extending from the Subansiri river to the Barnadi. The narrow central
belt is alluvial and is mainly used for rice cultivation. The lowlying belt which includes the area on the edge of the Brahmaputra, the
area between the river Subansiri district is inundated by floods al-
most every year.

**Lower Brahmaputra Valley Region.**

The two districts of Kamrup and Goalpara form the lower Assam
plains. On the north of this region, lies the folded ranges of the
Himalayas and on the south, the Shillong plateau. The entire area of
this region, on the south of the Brahmaputra, is belted with spurs of
the plateau. As a matter of fact, some of the out lines are found
even on the north bank of Brahmaputra. The northern foothills are
covered by dense forests and tall grasses. Cultivation is done inten-
sively in the Central portion. On the foot hills of the southern part,
valuable timber like 'Sal' and 'Teak' are grown abundantly.
4 distinct climatic zones may be mentioned in the Brahmaputra Valley, or in the plains of Assam.

(a) The rainy season commences from the month of April and continues up to the middle of October; (b) The intervening period from November to March every year is almost dry except occasional showers now and then; (c) The pre-monsoon showers start from the end of March or beginning of April when the leafless deciduous trees become green with new leaves with the onset of pleasant spring season; (d) The prickling heat of the summer season and the air borne clouds of the sky gradually disappear in October when the enjoyable pleasant winter begins.

The months of December and January form the coldest part of the year with lot of mists appearing at night and in the morning hours of almost every day. The maximum temperature in the plain districts varies from 30°C to 37°C and the minimum varies from 7°C to 11°C. The driest part of the state is Laming within Nowgong District, situated at the border of Karbi Anglong and North Cachar Hills Districts. The annual rainfall in Laming is about 1000 mm. The annual rainfall in other parts of the varies from 2000 mm to 3000 mm.

Temperature (maximum and minimum) and average monthly rainfall of three selected places of Brahmaputra Valley, Assam are presented in Graphs I - III.
(a) GAUHATI (Graph I)
(b) TEZPUR (Graph II)
(c) DIBRUGARH (Graph III)

(1975 - 77)

Sources: Indian Meteorological Department, Borjhar, Assam.