FIG-1 POLITICAL DIVISIONS OF THE HIMALAYA
FIG. 3 - LOCATION MAP OF THE STUDY AREA OF SUBANSIRI DISTRICT, ARUNACHAL PRADESH (HIMALAYA)
CHAPTER 1

1-1. INTRODUCTION :

The name 'Himalaya' means the abode of snow and has powerfully impressed the mind of India the thrones of Gods in Kailasa, the mystic legends of Lord Shiva and Parvati and the eternal snows have remained through generations the symbols of supreme serenity. The Himalaya has always exercised a spell over poets, painters, sages and saints. It has been the cradle of everything precious to India's heritage. The Himalaya lured the pioneering spirit of man in quest of the unknown, be it philosophical, geographical, geological or others. This vast mountain range, sweeping over 2,400 K.m and rising over 8,000 metres in 92 peaks with a gravity deficit of 300 milligals still to balance, stands as sentinels on the northern frontier of India protecting the country from both natural and human enemies. The Aryans realised its importance and worshipped it as these mountain ranges protected the inhabitants of the Indian Sub-continent from vagaries of climate. These ranges of the Himalaya have not only protected the country from the cold waves of the north but also arrested the Monsoon winds which precipitated the clouds and made the country green instead of desert. The whole of the Himalayan range is bestowed with scenic beauties and also it has been described as "Garden of Heaven".

The mighty Himalayan range extends right from Kashmir in the west to Arunachal Pradesh in the east. Geomorphologically, the Himalaya is divided into Sub-Himalaya, Lesser Himalaya
(Lower Himalaya), Central Himalaya (Higher Himalaya) and Tethyan (Tibetan) Himalaya. Geographically, the whole range is divided into Kashmir Himalaya, Siwalik Himalaya, Garhwal Himalaya, Kumaun Himalaya, Nepal-Sikkim Himalaya, Darjeeling Himalaya, Naxal Himalaya and Arunachal Himalaya (Fig. - I).

The Himalaya is considered to be not only a granary of mineral wealth, but also a granary of water, thermal power and hydel power. But it has not been fully explored until now.

Arunachal Himalaya is the eastern most part of the Himalaya and lies within the newly formed Arunachal Pradesh which is formerly known as North-East Frontier Agency (NEFA).

1 - 2. LOCATION OF THE STUDY AREA:

The area under investigation lies within Subansiri district of Arunachal Pradesh which is regarded geologically as a part of Himalayan region of India. Arunachal Pradesh is one of the important parts of North-East region of India (Fig. - 2 a).

Arunachal Pradesh, Union territory of India, comprises of five districts namely Kameng, Subansiri, Siang, Lohit and Tirap (Fig. - 2 b). These districts are named after the rivers which are flowing through those respective districts. The Arunachal Himalaya comprises of several mountain ranges like Akh, Dafila, Aher, Miri and Mishmi. These names are derived from the tribes who live in these respective hills. The capital of Arunachal Pradesh is Itanagar which lies in Subansiri district and is about 30 K.M. away from Kimin.
The study area of this type of work is located in and around Kimin of Subansiri district and lies between latitudes 27°15' N and 27°25' N and longitudes 93°52' E and 94°01' E and is covered by survey of India toposheet No.632/15 (1:50,000). Kimin is situated at the foothill region of Subansiri district (Fig.-3). Kimin is the border place in between Assam and Arunachal Pradesh and inner line is demarked at Kimin for political as well as defense purposes. (Plate-I a,b,c)

1 - 3. COMMUNICATION OF THE AREA:

The Kimin-Ziro road is the only line of communication. It is running from southern side of the area upto Ziro. The southern margin is about 10 Km from Assam-Truck Road.

Kimin is at a distance of about 530 Km from Gauhati and about 70 Km from Sibsagar. But as the mighty Brahmaputra is running through the Assam, communication between Sibsagar and Kimin is not good. The nearest town of Assan from Kimin is North Lakhimpur. Kimin is connected only by Bus service mainly from North Lakhimpur. There is no any Railway line in this district. All the villages are connected with small foot-paths and tracks and the village people cross the rivers by hanging bridge which is made mainly by the local people. (Plate - I d).

1 - 4. AIMS AND METHODS:

The author has done preliminary scheme work from this area as Junior Research Fellow of the Madia Institute of Himalayan Geology at Gauhati University during 1969-70. After
joining Lecturer in the Sibsagar College, Assam, this type of work for doctoral degree was carried out and financial grant was also offered from the Wadia Institute of Himalayan Geology.

For this purpose, detail field and laboratory work of Tertiary formations, present in the area, were carried out. Mapping, lithology, geomorphology, structure, rock types etc. were studied mainly in the field. After that, samples were collected for laboratory investigations. Shape and size of grains, packing properties, tertiary coals, clays, pebbles, plant fossils, petrography of minerals, heavy minerals etc. were studied in the laboratory with limited facilities. From these studies, petrogenesis, evolutionary trends, configuration of basin and depositional environment, provenance, stratigraphy, correlation and age of the rocks of the formations were determined.

About 100 days of field work was carried out in four field trips during 1969-70. The field study was carried out in and around Kimin upto 25 Kms of Kimin-Ziro road. For this purpose, several traverses were made along the Ranganadi river-cuttings, Panyor-river cuttings, Kimin-Ziro road-cuttings, nallas and foot paths and tracks of the local people.

A geological map was prepared by enlarging the Survey of India map and about 100 sq. Kms of the study area were mapped. (Map No.-1). The scale of the map is 5'40 Cms to 1 Km.
The area is almost a virgin one and no this type of work has done from this area until now. Only some passing reports regarding the different rock formations of the area available from Laskar (1953) and Gansser (1964). Political barrier, uncivilised tribal people, thick jungles with wild animals, uneven nature of communication are the causes of this virginity. Moreover, the remoteness, inaccessible terrain and difficult working conditions in Arunachal Pradesh have restricted the geological work. In spite these, some geologists like Coggin Brown 1912; Maalaren, 1904; Ghosh, 1939; Godwin Austin, 1875 had done some preliminary work (Gansser, 1964). Afterwards their works were reviewed by Wadia (1957) and other workers.

But recently attention is given for exploring this virgin area. For this purpose, after giving the status of Union territory as Arunachal Pradesh, several geologists are engaged by the Geological Survey of India till from 1968. Moreover some workers like Karuna Karen and Ranga Rao (1976), Ranga Rao and Babu (1974) of Oil & Natural Gas Commission are engaged for geological exploration in the light of hydro-carbon potentiality. In addition, the Wadia Institute of Himalayan Geology which was established in 1969 was engaged new comers in this domain of study and for this purpose, A.K. Jain, S.K. Tandon, V. C. Thakur, P.K. Verma and others were engaged for studying the different geological aspects of Arunachal Himalaya. Moreover, the Institute has also engaged some Research
Fellows and Teachers' Grantees who are attached in some universities and colleges.
PLATE - 1

Field photographs (General views)

a) Approaching road to the hills (Kimin Ziro Road).

b. A part of residential area of Kimin in the bank of Ranga River.

c. View of Kimin showing rivers, road, houses etc.
PLATE 1

Plate 1.1: Field photograph of a hanging bamboo bridge on the river made by the local people.