

A GEOLOGICAL FIELD WORK IN AND AROUND PASIGHAT EAST SIANG, ARUNACHAL PRADESH.

A FIELD REPORT SUBMITTED AS A PARTIAL FULFILLMENT OF THE B.SC 6TH SEMESTER(MAJOR) SYLLABUS OF
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1.INTRODUCTION

Arunachal Pradesh- the land of dawn lit mountains, is the northeastern most State of India lying between latitudes 26°40' and 29°25'N and longitudes 91°35' and 97°25' E, and occupies an area of 83,580 km² of India territory. Formerly, it formed the mountainous part of the Assam State known as the North Eastern Frontire Agency (NEFA). It attained statehood on February 20, 1987. The Himalayan Kingdom- Bhutan, lies to west, the Tibetan Plateau and the Yamuna Province of China from its northern and northeastern limits and Southeastern boundary with Myanmar (Burma). The international boundary with Tibet(China), known as the MacMahan Line, was marked on a map in convention- the Simla Convention, 1914, between the concerned countries. The upper part of the Brahmaputra Plain of Assam separates the northern part of the State forming Himalayan range from the southern part in Arakan ranges.

1.1 Topography

The topography in Arunachal Pradesh is characterized by an undulating hilly terrain. Nestled amid the foothills of the Shivalik ranges, the topography of Arunachal Pradesh is marked by lofty hill slopes, enchanting river valleys and majestic peaks. Arunachal Pradesh shows a wide variation in the topography of the land. The

2. GEOLOGY OF THE STUDY AREA

Pasighat is located at 28.07°N 95.33°E. It has an average elevation of 153 metres or 502 feet. Pasighat has a typical lowland Northeast India humid subtropical climate (Koppen Cwa) a little too cool to qualify as a tropical monsoon climate (Am).

The unique trough-like features surrounded by high hills on three sides make Pasighat ideal for attracting rain-bearing clouds which come in from the Assam plain. The rain-bearing wind gets obstructed by the hills and brings exceptionally heavy rainfall from June to September when the average monthly rainfall is 796 millimetres or 31.34 inches – equivalent to over 1 inch or 25.4 millimetres per day. Winter is marked by strong, cool, dry northeasterly winds from the Siberian High, which make Pasighat fog-free even in winter. Days during the “cool” season from November to February are generally warm and clear, whilst the “hot” spring season from March to May sees an increasing frequency of heavy thunder downpours and very warm to hot, humid weather with even mornings warm.

The Brahmaputra River emerges from the foothills under the name of Dihang or Siang in Pasighat. It enters the plains from here, in the west of Sadiya town in Arunachal Pradesh. Flowing south-west, it receives its main left-bank tributaries, viz. Dibang and Lohit; thereafter, it is known as the Brahmaputra in the plains. Then it crosses the Pasighat area heading for the Assam plains.

3.CONCLUSION

The geology of the studied area is conducted through traversing method, where the distance measured by tape and bearing with the help of Brunton Compass. We encountered an intense deformation of the rock in this area; this deformation is due to folding and thrusting in the area. Here a wide range of rock types were encountered. Due to thrusting and folding we observed anomaly in the sequence of formation of the area. Different geological structures were observed in the field such as Himalayan Frontal Thrust, Main Boundary Thrust, Tipi Thrust etc. Other than thrust this area is intruded in the form of Volcanic Dykes.

By this information we conclude that this area has experienced a great tectonic deformation due to which the lithology varies over a range of rocks as well as many prominent geological structure were also observed which increases the geological importance of the area.