

PROJECT REPORTS

TRIBAL TECHNOLOGY OF NORTHEAST INDIA: ARUNACHAL PRADESH*

Amrendra Kumar Thakur**

The research is based on the major tribes of Arunachal Pradesh namely *Adi, Tangsa, Mishmi*. The objective of the study is to document and interpret the technology of these tribes in their socio-cultural context. In the first part the analysis of sources and the nature and scope of the study of technology have been dealt with and other describes the land and the people. The study is carried under the following chapters:

- I. Introduction
- II. Hunting, Fishing and Foraging
- III. Agriculture
- IV. Communication Network
- V. Musical and other Instruments of Social Use
- VI. Salt, Beverage and other Items of Domestic Use
- VII. Metallurgy and Handmade Paper
- VIII. Village Defence, Forts and Temples
- IX. Conclusion

Technological inquiries in India have virtually remained confined to the macro level of inquiries. The studies have been mostly on the mainland of India and its dominant issues. The inquiries into the aspects of rural and agrarian technologies, technologies of the periphery and of the marginal and tribal areas are not very popular. To the European mind, tribal people were nothing but queer and exotic. The necessity of colonial administration nevertheless made the bureaucrats undertake intensive study of the life and culture of such people. However, to the

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**Assoc. Prof., Dept of History, North-Eastern Hill University, Shillong-793022. email: akthakurnehu@yahoo.co.in

colonial rulers the alien subject population, particularly those under colonial subjugation appeared only as savages. Lacking the experiences of the heterogeneous realities, the very approach to the study of the 'alien' tribes became an exercise in dealing with cultural isolates. Even after Independence the researches on tribal technology and its social implications were never seriously on the agenda of the social science researchers. This was because they had inherited not only concepts, techniques, theories and methods of study but also topics of study from the early ethnographers. Hence, the study of tribal technology did not receive the deserved attention of the scholars. So far as the history of Arunachal Pradesh is concerned the progress of historical researches was very slow till the 1980s. It was only during the last twenty years or so that it started gaining momentum due to the developments in the fields of higher education and researches at the University level. Nonetheless, the influence and impact of their approaches, trends and findings are quite useful for the study of tribal technology. This current study has been completed on the bases of archival, library and field researches.

Unlike in India, the inquiries into the technological past of the people in Europe and America started about more than a century and half back. Archaeologists, anthropologists, cultural historians and many social scientists, however, have been studying the technological progress of the past from their own perspectives; most of the time these were unidimensional. Nonetheless, all of them have contributed to the importance of technology in making sense of the past. Consequently, at least three theoretically different perspectives (functional/materialist, symbolic/structural, and social agency/phenomenological) have emerged so far. "While for the most part of these perspectives have ontological foundations that make them theoretically and epistemologically incompatible, it may be possible in the future to forge common ground. While most historians of archaeology have focused on the major conceptual differences between nineteenth century evolutionists and early twentieth century culture historians, oddly enough both paradigms shared a similar (implicit) definition of technology. Whether one believed that: (1) culture was best defined by the evolutionary stage of its technology; (2) technology was but one of many normative traits comprising a cohesive individual culture; or (3) technological innovation and the diffusion of inventions were core indicators of culture change-what defined technology was the same; hardware. Prehistoric tools, techniques, and even the ability to make them were 'detached constructs' and treated as separate from the prehistoric body politic. It never occurred to either nineteenth century evolutionists or early twentieth century culture

historians that division of labour, cultural attitudes and values about making and using material culture, or the interests and agendas of technical agents might also explain tool morphology or changes in practice across space and through time. Such symbolic and humanistic notions have only emerged in archaeological studies of technology since the mid 1970s.”

As an analytic methodology, knowing the step-by-step physical actions, gestures, and material procedures by which earlier technicians procured, prepared, modified, altered, shaped, used, repaired, reworked, recycled, and ultimately discarded their material culture provides an enormous amount of information towards the reconstruction of the technological past of the people under study.

In regard to the study of technology of India three major shades of opinion can be identified. To the first category belong the majority of contemporary European travellers and several subsequent British officials and scholars who found everything in India “black and bleak”. In sharp contrast, another set of opinion is quite enthusiastic about India’s scientific credentials and potentialities in the pre-colonial period, some of them even ‘finding’ all successes during the ancient/Hindu period only. A third set of opinion treads cautiously and offers guarded comments. One thing that has to be made clear is that our study of the technological past of the people of Arunachal Pradesh has nothing to do with contributing to the so called “nationalistic research programmes”.

No single model, formula or explanation can cover all these aspects. Human needs are constantly changing; a particular technology or a set of technologies appropriate to one time and culture may not necessarily be appropriate to another. However, much of today’s academia is still confined to compartmentalization (with their given jargons and demarcated areas) which only helps to safeguard individual interest at the cost of real improvement in the understanding of human society. Technology should not be the exclusive domain of study of any given so-called school or any branch of social science or compartmentalization into ancient, medieval and modern period and very recently some researches have been made on the line.

Arunachal Pradesh lies between ‘28°26’’ and ‘30°29’’ north latitude and ‘30°91’’ east and ‘30°97’’ east longitude along the north-east frontier of the Indian Union. Comprising an area of 83,743 sq. kilometers in the region of the eastern Himalayas, the State is full of dense forests, high mountain ridges and deep valleys with torrential rivers and streams separating the inhabitants from one another. The province is very sparsely populated. The population is 13, 82,611

according to the Census of India 2011, the density being 16 or 17 persons per square kilometer.

A series of ridges and spurs rise from the plains of the Brahmaputra valley in the south through outer Siwalik type hills to join the Himalayan ranges forming the boundary in the north while the Patkai hills represent the dividing line with Burma in the south-east. The entire territory thus represents an undulating terrain with the highest peaks in the west and north having an elevation of about 7000 metres, whereas the maximum altitude in the south-western side of the Tirap district is about 2000 metres.

The state of Arunachal Pradesh is the home of 110 tribes and sub-tribes, and there are said to be about 29 major tribes in the state. The tribes of Arunachal Pradesh are affiliated to the so called Tibeto- Burmese group of languages, and with regard to their racial affiliations, they have been described as Indo-Mongoloid, Proto-Mongoloid, Paleo-Mongoloid and so on. It is contoured by Bhutan in the west, Tibet in the north and beyond it, China in the north and north-east, Burma in the east and south-east and the Brahmaputra valley of Assam in the south. The State of Arunachal Pradesh has a total length of 1628 kms. of international boundaries separating it from Bhutan, Tibet, China and Burma. Its topography, flora and fauna offer wide variety. We come across damp rain-forests at the foothills, belonging to the tropical and sub-tropical zone up to about 2134 meters with luxuriant vegetation and various orchids. Arunachal Pradesh is situated in a highly seismic zone of India and tremors of moderate nature to violent upheavals are experienced by the residents from time to time. Many of such serious earthquakes have been recorded in the *Ahom Buranjis*, the *Fathiya-i-Ibbriyya* and the British records. On 15th August, 1950 one such tremor of great magnitude substantially altered the appearance of several areas as well as caused damage to the old monuments.

The tribes of Arunachal for the purpose of study of technology can be put under three broad categories, as follows: (i) those who form part Central Arunachal and follow Buddhist cultural traditions, such as the *Adi*, *Monpas*, the *Sherdukpens*, the *Khambas*, the *Membas*, the *Khamptis*, the *Singphos*, etc.; (ii) the communities of the southern and the southeastern parts of the State, such as the *Noctes*, *Wanchos* and the *Tangsas*; and (iii) all north-eastern tribes of the central part of Arunachal Pradesh (*Mishmi*), who have close cultural and linguistic affinities among themselves. The origin and development of various technologies among the tribes

of Arunachal Pradesh was influenced by the ecology and environment of the area, cultural contact with the neighbours, mode of production as well as mode of resource utilization.

The hunting, fishing, foraging, etc. along with various types of traps and weapons were the part and parcel of their profession. Their main objective was to procure the necessary protein in their diet and source salt from the brines as well as red meat. The communal fishing and hunting of these tribes' were considered very important which shaped their manner of collecting food and social life.

The practice of agriculture includes the method and management of artificial irrigation and dependent upon slash-and-burn method using simple tools. However, tribes such as the *Apatanis*, *Monpas*, *Sherdukpens*, *Khamptis* and the *Singphos* had developed wet-rice cultivation. The agrarian tools and techniques employed are not similar. The use of the plough is popular among the other above mentioned tribes except the *Apatanis*. The *Apatanis* use the unique method of cultivation by the use of spade and mixing the same with fish farming in the paddy field. An interesting aspect of study is the use of the iron ploughshare yoked to bulls, in some cases, even to an elephant. The use of animal traction power, as believed, facilitated in deep tilling of the soil, and, consequently, high yield. In this chapter the Marxian method of studying the relationship between the nature of labour employed and the tools and techniques used has also been tested.

The aspects of communication network was limited to the traditional method of bridge-making, path making and other identification marks as to make the network easily identifiable (cultural and natural signs and symbols) for traders and strangers. The whole discussion serves to dispel the myth of 'splendid isolation of tribes' so prevalent in the colonial writings.

The social system is related to the various rituals and festivals. Matters relating to the origin, techniques of, and beliefs associated with, the musical instruments, mask- dances (in the form of animals, birds, etc.) have been examined. The influence of the Buddhist cultural traditions and traditions of other neighbours on the objects of entertainment and rituals are discussed in detail.

Salt is always a basic food component. Salt also facilitated the domestication of the wild bison (*mithun*) in Arunachal Pradesh and the resultant counting of wealth in terms of this animal even in the contemporary period. Some tribes of Arunachal Pradesh had their own salt springs, manufactured their own salt, traded

the surplus and accumulated wealth accruing from such activities. The weaving techniques did not develop much among the women of the tribes who monopolized the manufacture and trade of salt; salt was exchanged for cloth in Assam. The struggle between the *Ahom* rulers of Assam and the *Nocte* chiefs of Arunachal Pradesh for control over salt springs of the *Noctes* during the pre-colonial period is very important in this regard. In this struggle the use of fire power and indigenous guns was first seen among the *Noctes*. However, many tribes of Arunachal Pradesh were obliged to procure salt from others at very high rates. The tribes employed high techniques of weaving of cloth, pot making and fashioning a variety of implements and other articles for domestic use. Equally important was the manufacture of beverages from rice and other food-grains, which had great social significance.

The tribes of Arunachal Pradesh used iron tools and weapons. Iron greatly replaced the use of stone tools during the pre-colonial period. Needless to say, the nature of life would have been profoundly different had they not had iron. Some tribes used silver too. These metals were locally available. But among the *Adis* and some other tribes, pig iron was imported from Assam and Tibet; the tool making was done locally. Some members of the tribes had mastered the art of metallurgy and some imported people from elsewhere for the same. While some tools and weapons were the products of indigenous technology others had to be obtained from the neighbouring areas of Tibet/China and Burma. Such developments are important not only in the study of the technology in use in Arunachal Pradesh but also towards understanding its social significance. Notably, some tribes developed the technology related to the production of handmade paper. Though there is no evidence of indigenous development of writing skill among the tribes of Arunachal Pradesh, the *Monpas* adopted writing and developed art of paper making; the product had ready markets in the neighbouring areas of Assam, Bhutan and Tibet/China. All in all the technological advancements had much significance in the socio-cultural milieu.

The socio-economic and polity formation of the societies of Arunachal Pradesh had a gradual development of defence mechanism of the village based on the use of local material, labour and indigenous creativity. It has also been shown that the development was more rapid on account of the challenges faced by the tribes from the British. In some areas the building of forts, Buddhist monasteries and Hindu temples with imported technology and labour provides

fascinating material for the Study. It also indicates evidence of fusion of technology and of ideas in Arunachal Pradesh with that of India, Burma and Tibet/China. Further significant addition to the existing knowledge through the Study is the analysis of the policies of the neighbouring powers: (a) the British policy towards the destruction of the defence technology of the villages in Arunachal Pradesh during the Colonial period and (b) the construction of the Buddhist monasteries as the deliberate policy of the Monastic Order during the pre-colonial period.

The final chapter gives an overview of all that has been presented in the previous chapters. It also highlights the manifestations of the innate driving force of the societies and how they are expressed within and without. It has examined also the level of independence from or dependence on other cultures based on illustrations from the given technology they used and to what extent they were able to adjust to those requirements.

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