

BAMBOO AND MIZO SOCIETY: A HISTORICAL STUDY

BY

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Submitted

**in partial fulfillment of the requirement of the Degree of Master of Philosophy in
Department of History & Ethnography of Mizoram University, Aizawl.**



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DECLARATION

I, PC. LALRINDIKA, hereby declared that the subject matter of this thesis is the record of work done by me, that the contents of this thesis did not form basis of the award of any previous degree to me or to do the best of my knowledge to anybody else, and that the thesis has not been submitted by me for any research degree in any other University/Institute.

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This is to certify that the dissertation entitled “ Bamboo and Mizo Society: A Historical Study”submitted by PC. Lalrindika for the award of the degree of **MASTER OF PHILOSOPHY**, is a research work, done under my supervision and guidance. The dissertation, submitted by him has not formed the basis for the award to the scholar for any degree or any other similar title and it has not yet been submitted as a dissertation or thesis in any University. I also certify that the dissertation represents objective study and independent work of the scholar.

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LIST OF ABBREVIATIONS

AD	:	Anno Domini
BC	:	Before Christ
BCE	:	Before Common Era
CE	:	Common Era
Capt.	:	Captain
Col	:	Colonel
Cm	:	Centimetre
Dbh	:	Diameter at breast height
Etc	:	Et cetera
FSI	:	Forest Survey of India
Ft	:	Feet
Govt.	:	Government
Ha	:	Hectare
i.e.	:	That is
Kg	:	Kilogram
Km	:	Kilometre
Lbs	:	Libra pondo or Pound
Lt	:	Lieutenant
M	:	Metre
MIRSAC	:	Mizoram Remote Sensing Application Centre
Mmt	:	Million Metric Tonnes

m.baccifera	:	Melocanna Baccifera
Mha	:	Million hectares
Mm	:	Milimetre
Roxb.	:	Roxburgh
Sq	:	Square
Trin.	:	Trading INdex
Vols	:	Volumes

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Glossary

<i>Aiawt</i>	a bamboo trap used for catching crabs
<i>Arbawm</i>	a bamboo caged for keeping domestic fowls
<i>Bahzar</i>	a kind of verandah in traditional Mizos house prerogative of chiefs and <i>Thangchhuah</i>
<i>Beai</i>	a trap for birds
<i>Buhlei</i>	a ladle for stirring cooked rice
<i>Chalte</i> polymorphmum)	Bamboo species (Schizostachyum
<i>Chhemthei</i>	a hollow bamboo pipe or tube for kindling fire
<i>Dawrawn</i>	a bamboo basket in a truncated cone shape
<i>Fathang</i>	a tax in the form of paddy entitled by chief
<i>Hnahthial</i>	a plant species Phrynium Capitatum
<i>Kal-chhet</i>	Stilts made of bamboo
<i>Khuangchawi</i>	important occasion whereas one serves community with feast
<i>Khumai</i>	a place of sleeping/ bed
<i>Khumpui</i>	a bed for parents
<i>Kulhbing</i>	a fort or fortress
<i>Lal</i>	a chief
<i>Mautam</i>	famine resulted by the flowering of Mau (M.baccifera) species of bamboo
<i>Meichher</i>	a torch

<i>Phur</i>	Mizo quantity measurement from bamboo basket, one <i>phur</i> equals around 4 kg.
<i>Phulrua</i>	bamboo species <i>Dendrocalamus hamiltonii</i>
<i>Rap</i>	a place above the hearth where certain things are kept to dry
<i>Sisep</i>	Filtering tray for grains
<i>Sumhmun</i>	Verandah or where sum (mortar) usually is placed
<i>Thangchhuahpa</i>	Mizo man who had completed social norms and entitled to attain <i>pialral</i> or heaven after dead
<i>Thlangra</i>	Mizo winnowing tray
<i>Thingtam</i>	famine resulted by the flowering of <i>Rawthing</i> (<i>Bambusa tulda</i>) species of bamboo
<i>Thuk</i>	Hearth
<i>Thul</i>	Traditional Mizo bamboo basket with cover
<i>Tlawmngaihna</i>	philosophy of community before self
<i>Tuibur</i>	Mizo nicotine water
<i>Tungchaw</i>	Mizo traditional bedpost
<i>Vaibel</i>	a smoking pipe made of bamboo
<i>Zawlbuk</i>	Male dormitory or bachelors' barrack
<i>Zu</i>	Mizo rice beer

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CHAPTER 1.

1.1 INTRODUCTION:

The art of History writing changes with the coming of time. The study of history engrossed on diverse subjects and most of the influential historiography of the twentieth century originated in Europe. Italians launched *microhistory*. Britons developed an anthropological social history. Most influential of all, French historians invented the famous Annales approach, drawing on all the social sciences to create what they sometimes called a total history. Environmental history, the offshoot of Annales approach, however, first took shape in the United States. It grew out of the history of conservation as an ideal and as a social movement. US scholars in the 1970s and 1980s, writing about US environmental history, especially the American West, achieved prodigious influence and prominence. Environmental history since 1980 has come to flourish in many corners of the world, and scholars everywhere have found models, approaches, and perspectives rather different from those developed for the US context.¹

Like every other subset of history, environmental history connotes different things to different people. It might be defined as the history of the relationship between human societies and the rest of nature. Historical geographers since the 1870s chartered landscape change. Among historians, awareness of geographical constraints and influences has long been a hallmark, although not a universal one. Fernand Braudel, in what was probably the twentieth century's most influential book among professional historians, devoted a large chunk of *La mediterranee* (3 vols.,1949) to geography and environment. But environmental history as a self-conscious undertaking dates only to about 1970 and, like so much in intellectual life, drew its energy from society at large. Around the world, the 1960s and 1970s witnessed the

¹ Axel Schneider and Daniel Woolf, *The Oxford History of Historical Writing : Volume 5*, Oxford New York, Oxford University Press, 2011, p.159

coalescence of popular environmentalism as a cultural and political force. It was stronger in some places than in others, and took different shapes in different contexts.

The study of environmental history has now become important as a natural and inevitable result of a perceived 'environmental crisis' in today's world. This perception has resulted in the development of a broad area called Environmental Studies. Environmental history has stemmed from the recent concern for environmental or ecological changes. Nature may be seen as a parallel category with race, class, gender, ethnicity or nationalism- that is, as categories deployed to reveal power relationships in societies. The concern for nature did exist in the past. Historians or philosophers of the past were aware that the natural environment plays an important role in how humans behave, relate to one another or organize themselves. Historians since Herodotus and Thucydides have understood the value of geography and environment in the understanding of human societies.²

History contains many instances of false starts and collapses of development that were environmentally related. The earliest known experiment with agriculture, which began between 15,000 and 12,000 B.C.E in Egypt, ceased around 9,500 B.C.E., when agriculture was reintroduced from Mesopotamia. The hiatus is hard to explain, but climatic changes seem a possible reason; this early attempt at agriculture may have failed because it was unable to adapt to environmental change. Similarly, the first development of metallurgy in Europe, the copper industry of the Danube Valley in the fourth millennium B.C.E, flourished and then disappeared. Ruth Tringham believes that the smelters used immense amounts of wood, deforesting the landscape and destroying the fuel supply, and paleobotanical studies support her conclusion.³

The urban revolution had its reverses, too. The early cities of the Indus Valley disappeared, and conquest does not appear to have been the cause. There is evidence of flooding. In the later levels at Mohenjo-Daro, brick is of poorer and poorer quality. The firing of millions of bricks over decades implies continuous

² Ranjan Chakrabarti, *Random notes on Modern Indian History*, Kolkata, Tandrita Chandra Readers service, 2005, pp.403-404.

³ J. Donald Hughes, *The Face of the Earth, Environment and world history*, USA, Routledge, New York, 2015, p.5

consumption of major vegetation, and there was overgrazing as well. The land was bared, allowing runoff to swell rivers and cause flooding. There is an assumption that Mohenjo-Daro was steadily wearing out its landscape, and being worn out in return. This attests that development without environmental conservation could not be sustained. The problem may be that authors absorbed in the narrative of development have failed to grasp the pertinence of the expanding literature of environmental history.⁴

Environmental history in Asia and Africa initially derived its strength from the upsurge of the history from below, pioneered by Peter Burke and Thomson and from the increasing interest in material culture so vividly portrayed in the work of Braudel. In fact the Annales school has been nurturing the seeds of environmental history since the 1970s though in a different way. They inherited from Durkheim the notion that the individual could only be comprehended within his social context. This total history was therefore a history that sought a synthesis of all the material, physical and mental forces that had shaped the life of men in the past. Thus, to the scholars of Annale School, the natural environment too, among other things, appeared to be an important consideration in the understanding of the structures of the past. The Annales historians however, did not consider themselves as environmental historians and they did not use the phrase until 1974. However, they served as a great source of inspiration to the environmental historians.

In South Asia, a basis for environmental history was laid and it began to emerge from the late 1980s. This trend was also followed up in India when scholars like Madhav Gadgil, Ramachandra Guha and others have come up to meet the situation. Richard Tucker aimed at drawing up a link between nationalist protest and the colonial forest policy in western India. From 1980s environmental history and forest history of India, in particular, became intensely politicized. The process of politicization had begun with the rise of the Chipko movement in northern India. Ramachandra Guha in his articles and subsequently in his books asserted that in the pre-British period there was little or no interference with the customary use of forest

⁴ J. Donald Hughes, *The Face of the Earth, Environment and world history*, pp.5-6.

and forest produce. Thus, Guha views colonial forest policy and conservation as primarily driven by materialistic considerations that of serving the strategic and revenue interest of the British Empire⁵.

Bamboo is a plant with a special kind of structure that makes it different to any other plant in nature. Its special structure is the result of million years of natural evolution and proved a very effective and efficient organism on the one hand; on the other hand it also makes bamboo a very useful material for humans. From a plant to material, man has to re-structure the bamboo's own natural structure into numerous objects to meet his needs in everyday life. This kind of re-structuring has changed the structure of bamboo, but from another point of view it has changed the people's own daily life to an even deeper degree; bamboo becomes one of the most important things in their history, their tradition and their culture. The different roles which bamboo plays in the relationships to nature and human beings represent on the one hand how bamboo's inner structure adapts itself to the outer environments and on the other hand how humans form bamboo's inner structure for their own needs.⁶

Just like history associated with human beings, bamboo also has developed into diverse forms of culture based on its numerous political or symbolic utilizations in people's daily life. This is not only bamboo itself as the plant which has its own botanic life cycle before it is used as material by human beings, but refers more to the use of bamboo in the daily life of human beings and the bamboo as symbol in art, music and literature. This phenomenon of bamboo culture has been defined in countries like China, Japan or Korea as the "Bamboo Culture".⁷ Likewise even the Mizos ancestors have defined themselves with this 'magic plant' or bamboo. Their lifestyle, society, culture, tradition and livelihood had so much to do with this 'Golden timber'.

⁵Ranjan Chakrabarti, pp. 404-405.

⁶ Xiaobing Yu, *Bamboo: Structure and Culture*, Eidesstattliche Erklärung, Essen, Germany, 2007, p.9

⁷ Xiaobing Yu, *Bamboo: Structure and Culture*, p.72

1.2 FOREST IN MIZORAM

Forests have been playing a very important role in the socio- economic development of Mizos. From earliest times, the entire land has been under the ownership of the village communities. Everyone in the village has the right to utilize the land and produce thereon according to his needs. The recorded forest area of the State is 16,717sq.kms. Reserved Forests constitute 47.31%, Protected Forests 21.34% and Un-classed Forests 31.35% of the total forest area. About 80% of the State's geographical area is under recorded forests. The State has 2 National Parks and 8 Wildlife Sanctuaries covering an area of 1,241 sq.km which constitutes 5.89% of the State's geographical area⁸.

The forest cover in the State, based on interpretation of satellite data of November 2006 - January 2007, is 19,240 sq.km , which is 91.27% of the State's geographical area. In terms of forest canopy density classes, the State has 134 sq. km of very dense forest, 6,251 sq. km of moderately dense forest and 12,855 sq.km of open forest.⁹

1.3 BAMBOO DISTRIBUTION

Bamboo has developed a survival strategy in nature with its efficient structure through million years of evolution. It has been used by man as a useful material worldwide since the beginning of human civilizations. In many countries bamboo has played an important role not only in everyday life culture but also in art, literature and philosophy due to its elegant shape, practical utilizations and symbolic meaning. Bamboo is widely used as a material in Asia, South America and Africa, where abundant different species of bamboo grow. For Europeans, bamboo is an exotic plant, as a material it was even unfamiliar to them before the sixteenth century when it was first introduced in Europe. But in other continents like Asia, Africa and

⁸ Environment and Forest Dept.Govt.of Mizoram, *Bamboos of Mizoram*, Aizawl, 2010, p.9

⁹ Environment and Forest Dept.Govt.of Mizoram, *Bamboos of Mizoram*, p.10.

South America people have used bamboo for more than thousands of years. In fact, bamboo is not only a useful material for their everyday life, but also has already been developed into a so called 'bamboo culture' through the long-time of cohabitation with people.¹⁰

Bamboos are versatile group of plants of multiple utility and usually form rich belt of vegetation in moist deciduous, semi-evergreen, tropical, subtropical and temperate forests. Being cheap they can meet hundreds of needs of common man from the cradle to the pyre. India is the home of several principal genera of bamboos out of a total of roughly about 91 in the world. India has, perhaps the World's largest-reserves of bamboos. There are 22 genera distributed in India, of which 19 are indigenous and 3 exotic¹¹. About 14 million hectares of the earth surface is covered by bamboo forests with 80% in Asia. Asia is rich in bamboos with approximately 65 genera of which 14 are endemic to the region. India is one of the leading countries of the world, second only to China in bamboo production. Bamboos in India are widely distributed and this constitutes around 12.8% of the total area of forest cover in the country. They form an important constituent of the deciduous and evergreen forests and spread from tropical to temperate regions. Bamboos are found as an understorey in the forests of almost all the states except in Kashmir Valley. The distribution of bamboos also differs from one region to another with certain bamboo taxa characteristics of a particular zone¹².

Forest covers 31 percent of the world's land surface, just over 4 billion hectares. In India, forest covers 21.54 percent of its total area. Of this, the extent of bamboo-bearing area in the country has been estimated at 13.96 Million hectare area with 136 species¹³. Bamboos are a group of woody perennial evergreen plants in the true grass family Poaceae. There are 91 genera and about 1,000 species of bamboo. They are found in diverse climates, from cold mountains to hot tropical regions. The stems, or

¹⁰ Xiaobing Yu, *Bamboo: Structure and Culture*, Germany, Universitat Duisburg-Essen, 2007, pp. 2-3

¹¹SS. Neigi and HB.Naithani, *Handbook of Indian Bamboos*, Dehradun, Oriental Enterprise, 1994. p.1.

¹² DN. Tewari, *A Monograph on Bamboo*, India, Valley Offset Printer, Dehra Dun, 1996, p.15

¹³National Bamboo Mission (Website) <https://nbm.nic.in>. Accessed on 23.06.2019.

‘culms’, can range in height from a few centimetres to 40 metres, with stem diameters ranging from 1mm to 30 cm.¹⁴

1.4 BAMBOO RESOURCES IN MIZORAM

The North Eastern Hill regions of India possess the largest species of bamboos in India. Among seven states of North Eastern India, Mizoram has the largest bamboo-covered forest area. The bamboo forest area of Mizoram constitutes 14% of the total of India’s bamboo area i.e., 8.96 Million ha.¹⁵ Around 57% of the geographical area of Mizoram is under Bamboo cover found at heights ranging from 400m-1500m above mean sea level. The state possesses the maximum percentage of its geographical area under bamboo forests as compared to other States of the country. Bamboo forests are most abundant in the five northern districts but are rare in the eastern and south eastern parts of the State, particularly in Champhai, due to high altitude. Most of the bamboo species in the State are found between 400m-1,500m altitude and their distribution is somewhat restricted to above 1,550m¹⁶. There are 35 different species of bamboos in Mizoram¹⁷. Among all these species of bamboos ‘Mautak’ (*Melocanabaccifera*) is the dominant forest resource of the state¹⁸. This ‘Mautak’ is a versatile species; it is a spreading species forming no clumps. The culms grow up to 8-10m. Some species in Mizoram are viz: *Rawte* (*Schizostachyum manni*), *Chalte* (*Schizostachyum polymorphum*), *Rawnal* (*Schizostachyum fuchsianum*), *Mautak* (*Melocana baccifera*), *Rawlak*, *Rawthing* (*Bambusa tulda*), *Rawthla* (*Schizostachyum dullooa*), *Talan* (*Bambusa mizoramiana*), *Tursing* (*Dendrocalamus strictus*), *Rawngal* (*Dendrocalamus hookeri*), *Raw-mi*

¹⁴ Sciencedaily (Website) <https://www.sciencedaily.com> Accessed on 23.06.2019..

¹⁵ H. Lalhrualtuanga and MNV. Prasad, *Traditional uses, Economic importance and Ecological services of M.baccifera in Mizoram, India*. Global Science Books, 2009.

¹⁶ Bamboo Development Agency (Website), <https://mizobamboo.nic.in> (Accessed on 19th March 2019)

¹⁷ According to the report published by E&F Dept.Govt.of Mizoram, Aizawl, <https://mizobamboo.nic.in>

¹⁸ Bamboo resources in Mizoram (Website) 2017, <https://forest.mizoram.gov.in> (Accessed on 21 November 2018).

¹⁸ Bamboo Development Agency (Website), <https://mizobamboo.nic.in> (Accessed on 19th March 2019)

(*Dendrocalamus sikkimensis*), *Phulrua* (*Dendrocalamus hamiltonii*), *Phar* (*Sinarundinaria falcate*), *Sairil* (*Melocalamus compactiflorus*), etc.,¹⁹

The bamboo resources of the State have been assessed by the Mizoram Remote Sensing Application Centre (MIRSAC) in 2008 with the help of satellite imageries and ground survey through a project sponsored by the State Environment and Forest Department. MIRSAC adopted the selective systematic sampling method for selecting the sample locations in different districts/ forest divisions of the State. A total of 7,200 sampling units covering an area of 72 ha were enumerated for counting of culms and prediction of growing stock. For enumeration purpose, a culm is defined as a bamboo which has a diameter at breast height (dbh) of 2 cm and above and a height of 2 m and above. Therefore, bamboo culms measuring less than these measurements, if occurring in the sample area, were ignored from the analysis. Normally, areas having 1 to 2 year old bamboo vegetation were selected for collection of data as they complied with FSI standard for their eligibility to be sampled and analyzed for the estimation of growing stock.

As a whole, the total growing stock of the State was estimated to be 24.014 million metric tonnes out of a total bamboo area of 7,091.66 km, which constituted 33.63% of the total geographical area of the State. The average growing stock was assessed to be around 3,386.25 metric tonnes per square kilometer. The total number of culms for the entire State was estimated to be 6,123.86 million.²⁰

1.5 Area statistics

Out of the total bamboo area of the State (7091.66 sq.km), Lunglei has the maximum area of 1,956.592 km followed by Mamit, Aizawl, Lawngtlai, Kolasib and Serchhip, respectively having 1,598, 927.69, 730.79, 661.80 and 439.082 km area under bamboo forest. Champhai has the lowest area under bamboos (345.68 sq.km), followed closely by Siaha district (432.04 sq.km). If we look at the

¹⁹Darkunga, *Mautam leh Sazu*, Mizoram Publication Board, Aizawl. 2006.p.4

²⁰ *Bamboo Resources of Mizoram*, Environment and Forest Department, Govt. of Mizoram, Aizawl, 2010, p.130

percentage area of the districts covered by bamboos, Mamit has the maximum percentage of its geographical area under bamboos (52.81%), followed by Kolasib, Lunglei, Serchhip, Saiha, Lawngtlai and Aizawl, respectively having 47.87%, 43.12%, 30.89%, 28.58% and 25.94% area under bamboos.²¹

Various colonial administrators and officers had attempted to write books on plants found in Mizoram. However, they did not include bamboo in their studies. J.S. Gamble (1896) in his work *The Bambuseae of British India* did not mention the occurrence of any species of bamboo from the Lushai Hills. Col. A.T. Gage (1901) published the first work on the botanical exploration i.e. *A botanical tour in South Lushai Hills*. He also did not include any bamboo species. Later J.E. Leslie also made some valuable collection from the State in 1902. In 1924 to 1928, Mrs. N.E. Parry enthusiastically embraced the opportunity offered to her while her husband was in the administrative in-charge of the Lushai Hill District to make a collection of the plants of the region. Rev. W.G.L. Wenger of the Baptist Mission at Lungleh, from 1926 to 1932, Rev. R.A. Lorrain of the pioneer mission of the Lakhers at Serkawr and his daughter Lorrain Foxall also made collection from Lungleh and Serkawr. Cecil E.C. Fischer on the basis of collection made by Col. Gage, Mrs. Perry, Rev. Wenger and Rev. Lorrain and Ms Lorrain Foxall published *The Flora of the Lushai Hills* in 1938. In this publication, Fischer included 9 species of bamboos from the present Mizoram viz., *Arundinaria callosa*, *A. falcata*, *Bambusa longispiculata*, *B. tulda*, *B. spinosa*, *Cephalostachyum capitatum*, *Dendrocalamus hookeri*, *D. sikkimensis* and *Melocanna bambusoides*.

However, N.L. Bor (1940) in his *Flora of Assam Vol. V* has not mentioned any species of bamboo from Lushai Hills. In 1985, one of the authors (HBN) made an attempt to survey bamboo species and reported 24 species of bamboos from the State. Singh *et al.* (2002) while mentioning the forest types of Mizoram mentioned the prevalence of *Chimonobambusa callosa* (*Arundinaria callosa*) and *Dendrocalamus giganteus*

²¹ *Bamboo Resources of Mizoram*, p.131.

from the forests of Mizoram. However, another allied species commonly found in the mountain forests is *Sinarundinaria griffithiana*.²²

The first record of nine bamboo species in Mizoram appear in "*The Flora of the Lushai Hills*" by Fischer (1938). Earlier workers like Gamble (1896), Gage (1901), Bor (1940) had not mention the occurrence of bamboo in Mizoram. Vermah & Bahadur (1980) have mentioned only the species of *Melocanna bacifera*. Naithani (1987) in his report on preliminary survey of bamboo species in Mizoram have mentioned 18 species and the same number of bamboo species are recorded and published by the Department of Environment and Forest, Mizoram.²³

On the basis of knowledge procured from the Lushai elders as well as missionaries like JH Lorraine, F.C. Henniker the Superintendent of Lushai Hills, 1912-13 painstakingly prepared the first authentic account of the bamboo flowering phenomenon. In fact, both Hennikker and the missionaries were amazed that the Mizo elders could correctly identify each of the bamboo species. Henniker was the Superintendent of Lushai Hill during *Thingtam* famine of 1911-12. He was not only stationed in the Mizo Hills to actually witness it, but was also familiar with the literature produced on it. In his note, Henniker also prepared a list of the species of bamboo plants with their botanical names that grew in Mizo Hills along with their properties:

BAMBOOS OF LUSHAI HILLS

Mizo Name

Botanical details

1. Mau, tak

(*Melocanna bambusoides*
(muli). The commonest bamboo
of the hills. Grows as if sown
broadcast, i.e. not in clumps.

²² *Bamboo Species of Mizoram*, Environment and Forest Department, Govt.of Mizoram, Aizawl, 2010, p.52

²³ L.K. Jha, *Natural Resource Management Mizoram*, New Delhi, S.B. Nangia A.P.H. Publishing Corporation, 1997, p.258

2. Phulrua	It flowered and seeded concurrently with the <i>mau</i> and died. The seed is edible and said to be as good eating as maize.
3. Rawthing	Blue-ish under side of leaf.
4. Rawnal	Leaves same colour on both sides. Joints flush stem – not projecting. Grows at low altitude.
5. Rawtha	Tall and graceful. Tapers very gradually. Long joints. Tall. Not very thick.
6. Rawmi
7. Tursingh
8. Talan
9. Ankuar
10. Vai-rua	
11. Rawngal	Tufted leaf. Broad and coarse and ribbed. Very dark or very dark green. Grows in forest. Would not make ropes or bow-strings. Said to have seeded since British occupation, i.e. 1890.
12. Rawte
13. Chal	A dwarf. Grows at a high altitude.

14. Phar	Single. A dwarf bamboo. Small narrow leaves. Short joints with a collar of thorns at each notch.
15. Likh
16. Nat
17. Sairil	A climbing bamboo. Used for bowstrings. Seen at 3,500 ft. ²⁴

1.6 SPECIES OF BAMBOOS IN MIZORAM

However, Environment and Forest Department, Government of Mizoram has published a book on *Bamboo Resources of Mizoram*. In this book 35 species of bamboos found in Mizoram are listed. Some of their characteristics, distribution, geographical location and botanical names are given:

1. *Bambusa balcooa* Roxb.

A tall, stout, caespitose bamboo. *Young shoots* blackish and green, tip acute; culm sheaths covered with blackish hairs; blade erect, yellowish; margin of the sheath greenish-yellow. *Culms* dull greyish-green, 12-20 m tall, 5-10 cm in diameter at the base; *nodes* swollen, with a white ring above each node, hairy below; *internodes* 6th & 8th generally longest, length varying from 18-30 cm.

2. *Bambusa bambis* (Linn.) Voss

Local name: *Rawhling* (Mizo)

It is a tall, graceful, thorny bamboo with curved branches. *Young shoots* deep purple with few white stripes. The tip of growing shoots become blackish or yellowish with

²⁴ Sajal Nag, *Pied Pipers in North-East India Bamboo-flowers, Rat-famine and the Politics of Philanthropy*, Lordson Publishers Pvt. Ltd. New Delhi, 2008, p.70

curled auricles, ciliated blades erect, tip blunt, glabrous. *Culms* strong, hollow, dull to deep green, reached 10-30m tall, 2.7-10 cm in diameter at base; *nodes* comparatively larger in diameter than the internodes.

3. Bambusa dampaeana Naithani

It is a caespitose bamboo. It's culms is about 8 m high; *young culms* white- ashy; *nodes* rooting at base, prominent, without any white band below or above, oblique, few branches at the base; *internodes* upto 45 cm long, 22-23 cm in girth, light green, shining; *wall* 7 mm thick. *Culm sheaths* variable in size, stiff, brittle, generally 30-55 cm long

Etymology: The taxon is named after the area Dampa Tiger Reserve, Mizoram, India.

4. Bambusa Mizorameana Naithani

Local name: Talan (Mizo)

It is about 10-12 m high, apex less branched at the base. Culms not much congested at base, about 20 cm apart; node with a bud, oblique, with white ashy band on the lower side of internode; internodes 12-18 cm in girth, upto 35 cm long, green, ashy grey towards nodes; wall about 1 cm thick. Culm sheath 20-35 cm long, 18-28 cm broad at the base, smooth or covered with appressed white or pale-brown hairs.

Distribution: Endemic to Mizoram and Manipur.

Uses: Used for pandal making, agriculture implements, baskets and heads of men's pipes.

5. *Bambusa Multiplex*

A shrubby, evergreen, caespitose bamboo. *Young shoots* slender, glabrous; *sheaths* yellowish-green; auricles caducous; *blades* erect, brown to purple-brown, spear-shaped with broad base. *Culms* 2-4 m high, 1-15 cm in diameter, green, mature one yellowish or yellowish-green, covered with waxy powder, arched above; branching more or less simultaneously from the 6th and above nodes.

Uses: It makes excellent hedge and is common ornamental in gardens. Culms often used as umbrella handles and for fishing rods.

6. *Bambusa nagalandeana* Naithani

Local name: Ralleng mau (Mizo)

It is a bamboo 12 m high, sympodial, branching at base, slightly zig-zag. *Nodes* with two white bands on upper and lower side, prominent, raised, oblique; *branches* yellow stripes, 10 -12, middle one thick. *Internodes* yellow with green stripes throughout, 60 cm long, 30 cm in girth, sometimes striation in one face only, opposite face green. *Culm sheaths* 50 cm long (including imperfect blade), 35 cm broad at the base.

Distribution: Nagaland and Mizoram, India.

7. *Bambusa nutans* Wall.

Local names: Ankuang (Mizo), Vakila (Bru / Riang)

Moderate-sized, evergreen, caespitose with creeping rootstock. Culms 10-15 m tall, 5-10 cm in diameter, loosely clumped, much- branched above, usually unbranched or thinly branched below, striate, green, smooth, not shining, white-ringed below the nodes; nodes slightly raised, often hairy, lower ones bearing rootlets; internodes

usually 25-45 cm long, thick-walled. Culm sheaths variable, usually 10-23 cm long and upto 30 cm long and upto 30 cm wide at base.

Uses: Culms are graceful and well-apart, smooth, strong, straight, thick walled and with long internodes-features that make them easy to work for profit as the cut culms fetch good price. The species is much esteemed by villagers for growing for sundry uses and as ornamental bamboo . It is very useful as rafters and as shafts.

8. Bambusa tulda Roxb.

Local names: Rawthing (Mizo), Rasohi (Mara), Midingibas (Chakma),
Uarna (Bru/Riang),

It is an evergreen or deciduous, caespitose, arboreous bamboo. Young shoots yellowish-green, sparsely pubescent with black hairs; blades imbricating, powdery above, 5-10 cm in diameter (varying with the localities). Culms green when young, glaucous and sparsely pubescent, 6-20 m tall; nodes slightly swollen; internodes 20-70 cm long.

9. Bambusa vulgaris

Local names: *Vairua* (Mizo), *Bachiabas* (Chakma), *Uasur* (Bru/ Riang)

It is a moderate sized bamboo not densely tufted. *Culms* 8-20 m high, 5-10 cm in diameter, bright green, glossy, erect, matured yellowish; *walls* 7-15 mm thick, branching usually from mid-culm to top; *nodes* prominent, lower ones often with a narrow ring of roots, usually covered with brown hairs.

10. Bambusa vulgaris var. vittata.

Local name: Yellow bamboo.

This species is a graceful, caespitose, loosely clumped, evergreen. *Culms* 8-15 m high, 5-12 cm in diameter, glabrous, yellow with light-green stripes, shining; *nodes* slightly swollen, lower ones rooting; *internodes* 10-35 cm long, walls thick. *Culm sheaths* 10-18 cm long, 15-25 cm broad at base, greenish-yellow when young, rounded at top and concavely truncate, striate, outer surface densely covered with thick.

11. Bambusa vulgaris f. waminii Wen

It is medium sized, bushy, evergreen, loosely clumped, caespitose, graceful bamboo. *Culms* usually 4-8 m high, bright green, glabrous, shining.

Distribution: Cultivated worldwide.

12. DENDROCALAMUS Nees

(Greek word *dendron*, tree; *kalamos*, reed, tree like reed.)

It is densely tufted, sympodial bamboo. *Young shoots* covered with dark brown to black hairs, blades small and deflexed. *Culm* erect with pendulous tip, 20-30 m tall, diameter 8-20 cm near the base; *wall* 11-36 mm thick, sometimes almost solid at base.

Uses: The culms of *Dendrocalamus asper* have thick walls and are very strong and durable. They are used as building material for houses and bridges. The upper internodes of the culm, which are longer than the lowermost ones, are used as containers for water or to collect juice being tapped from palm inflorescences

13. Dendrocalamus giganteus Munro

It is a large bamboo, densely caespitose. Young shoots cone shaped, blackish, covered with purplish hairs; blades reflexed, auricled. Culms 30 m tall, 18-25 cm in diameter, when young covered with white waxy layer, dull green when old, branched above; nodes hairy; internodes 30-40 cm long.

Uses: It is used as an ornamental plant in gardens. Each internode of the culm is made into pitcher which can contain more than half a bucket of water. Also used for building purpose, mast of boats, flower vases, handicrafts, scaffolding etc.,

14. Dendrocalamus hamiltonii Nees & Arn.ex Munro

Local names : *Phulrua* (Mizo), *Ravaw*, *Arua*, *Ravawng* (Mara), *Rawpui*

(Paite), *Uaktormah* (Bru/Riang).

A large bamboo with caespitose culms, sometimes growing tall and erect but more often sending out its stems at an angle or curved downwards. *Young shoots* conical; sheaths yellowish-brown, covered with black hairs; blades stiff, pointed, yellowish-green, velvety pubescent on dorsal surface, ciliate along the margins. *Culms* variable in size, 12-25 m tall, 10-18 cm in diameter, dull green, covered with whitish-brown pubescence.

Uses: It is used for walling of native huts, construction, basket making, mats, water and milk vessels, fuel, floats for timber rafts and shoots for food.

15. Dendrocalamus hookeri Munro

Local names: *Rawpui*, *Rawlak/Rawkhauh* (Mizo)

It is a large bamboo with caespitose stems and long curving branches. Culms 15-20 m tall, 10-15 cm in diameter, often naked at the base, dark green; nodes swollen; internodes 40-50 cm long.

16. Dendrocalamus latiflorus Munro

Distribution: Known from China and Myanmar. Commonly cultivated at Nagaland and Manipur. In Manipur its seeds have been brought from Myanmar by Kuki people.

Uses: Young shoots are used as a vegetable and considered delicious.

17. Dendrocalamus longispathus (Kurz)

Local names : *Rawnal* (Mizo), *Rahnia* (Mara), *Pharbuabas* (Chakma),

Unamlh (Bru/Riang).

It is a large caespitose bamboo. *Young shoots* yellowish-green; *blade* reflexed, covered with shining blackish hairs, apex erect; auricles small; ligule silvery. *Culms* 20 m tall, upto 10 cm in diameter.

Uses: it is used for thatching construction, basket making, fuel, chinks for doors, house posts and mat making and windows, furniture, floats for timber and rafts. Shoots are used as food. Culm sheaths are used for irrigation and musical instruments.

18. Dendrocalamus manipureanus Naithani & Bisht

Local names: Rawchhe, Rawchhe-changdam.

Its Culms 15-20 cm high, caespitose, deep green. Young shoots covered with dark brown hair; nodes prominently rooting upto the 10 internode, raised, oblique, having a narrow white band on lower side; internodes lower 18-20 cm long; middle 40-45 cm long, 30 cm in girth; the middle branch about 4 cm in girth, other 15-16 branches 10-20 mm in girth.

19. *Dendrocalamus Sikkimensis*

Local names : *Rawmi* (Mizo), *Anong*, *Amoi*, *Ano* (Mara).

It is a large bamboo with caespitose stems. *Youngs shoots* densely velvety felted, auricles conspicuous. *Culms* 17-22 m tall, 12-18 cm in diameter, bare at the base, branched at the top.

20. *Dendrocalamus strictus* (Roxb.) Nees

Local name: *Tursing*

It is a deciduous densely tufted bamboo. *Young shoots* brown, glabrous, covered with bloom, no auricle, tip of the blade pointed. *Culms* 6-15 m tall, 2.5-7 cm in diameter, hollow in wet, solid in dry climates, glaucous green when young, dull-green or yellowish when old.

21. MELOCALAMUS Benth. & Hook.f

(Greek word *Melon*, an apple and *Kalam*, a reed, referring to a reed with globular fruits).

Local Names: *Sairil* (Mizo), *Sairi* (Mara), *Uadu* (Bru/riang),

Chhairil (Lai)

It is an evergreen, tufted arborescent bamboo. *Culms* 5-8 m and more tall, sometimes even upto 30 m and climbing over tall trees, grayish-green, scandent, spreading, and arching; *nodes* thickened; *internodes* 35-60 x 2.5 cm, solid, sometimes few with very narrowly hollowed towards the top, with circular band of silvery pubescence below the nodes.

Uses: It is used for hat and basket making in Yunnan (China) and Shan (Myanmar), It is stripped in green state. The resulting fibrous layers of the internodes are very

pliable and soft. These are twisted into strands and shoes/sandles are made by interlocking the strands.

22. MELOCANNA Trin.

(Its name is derived from Greek word 'Melon' meaning an apple and 'Kanna' meaning a reed, it therefore means a reed like bamboo with apple like fruits).

Local names: Mautak, Maomitvel. (Mizo), Ramaw (Mara), Egochiabas

(Chakma), Uarhoi (Bru/Riang), Mou (Paihte).

It is an evergreen arborescent bamboo. Young shoots yellowish- brown, margins and top pink, appressed with silvery hairs, blades subulate. Culms up to 20 m tall, single, distant, green when young, straw coloured when old, very fine silvery bristles present in some young culms, unbranched till near the top; nodes marked with a thin ring.

Uses: It is a very useful bamboo of North east India, the principal material used for building houses and is also an important source of superior paper pulp; fruit is edible. It is also used for making small bridges, thatching, toys, screens, hats, umbrella sticks, baskets, food grain containers, chicken cages and wall plates. In Mizoram, boys made hockey sticks from it.

23. Neomicrocalamus Mannii

Local name : *Siaman* (Mizo)

It is a slender, graceful, tufted, climbing bamboo. *Culms* 10 m tall, solid, having no cavity, dark green; *nodes* swollen, bearing many geniculate branches; *internodes* 70 cm - 1 m long, 1.25 -2.5 cm in girth, smooth.

24. PHYLLOSTACHYS

25. *Phyllostachys mannii* Gamble

It is a caespitose bamboo. Culms 5-6 m tall; nodes prominent; internodes 20 cm long, 2.5-3 cm in girth, green or yellow, flattened on one side.

26. SCHIZOSTACHYUM Nees

(Derived from Greek word *schistos* meaning cleft, divided; and *stachys* meaning ear or corn; referring to the spaced grouping of the spikelets).

Local names: *Rawtlawn* (Mizo), *Rachhie* (Mara), *Uatlau* (Bru),

Dulubans (Chakma).

It is a medium sized bamboo, tufted, sometimes more or less scandent. *Young shoots* sheaths purple towards the margin, black or blackish-green, long-ciliate at the top; *blades* reflexed at least at right angles, silky pubescent on the adaxial surface towards the base. *Culms* 4.9 m tall, whitish below; *nodes* hardly prominent.

Uses: This is a very important bamboo and is used for making kites, Mizo looms, quivers, mats, baskets, umbrellas, small boxes to carry pan, carrying water, loading vessels and building purposes.

27. *Schizostachyum fuchsianum* (Gamble) Majumdar

Local names: *Rawnal* (Mizo), *Rania/Rangia* (Mara), *Ramrikawn*

28. Schizostachyum mannii Majumdar

Local names: *Rawte, Chatle* (Mizo).

It is an erect, graceful bamboo with fascicled branches. Its *Culms* grows 10-13 m tall, 2.5-4.5 cm in diameter, arising singly from a creeping rhizome, fistular, soft, when young covered with glistening golden hairs and variegated with transverse blotches, dark olive-green.

29. Schizostachyum munroi

Local name: Nat (Mizo).

30. Schizostachyum pergracile (Munro) Majumdar

Local name: *Mau-dang* (Mizo)

It is a deciduous, arborescent, tufted bamboo. *Young shoots* almost dark, afterwards chestnut brown; *sheaths* densely covered with dark hairs almost throughout in young and with chestnut brown in slightly older. *Culms* 10-30 m tall, erect, glaucous-green, somewhat whitish-puberulous below the nodes.

Uses: Culms used for walling, shingles, mats, baskets, paper, pulp and tying purpose.

31. Schizostachyum polymorphum (Munro) Majumdar

Local names: *Chal* (Mizo), *Rapai/Ratai* (Mara), *Uanol* (Bru)

It is a large shrubby or semi-arborescent bamboo with single culm from a long creeping, jointed rhizome. Its *Culms* grows up to 7m tall, often supported by adjoining trees, and so appears scandent; *wall* 5 mm thick; *nodes* not swollen; *internodes* 22 cm long, 3.5 cm broad.

Uses: It is a valuable bamboo and considered the best for making baskets and mats, especially those used in tea factories, also used for tying house walls.

32. SINARUNDINARIA Nakai

(Greek word *Sino* = China and *Arundinaria* the name of the genus of bamboo; most of the species of the genus are relatively close to the genus *Arundinaria* and distributed in China).

Local names: *Lik* (Mizo), *Syuli* (Mara).

It is a gregarious shrub with annual culms from a central rootstock. *Culms* usually 2-4 m high, rarely 6.5 m, 1-2 cm in diameter, green, grey, smooth, covered with a conspicuous whitish bloom when young, yellowish when old; *internodes* 15-30 cm long.

33. Sinarundinaria griffithiana (Munro)

Local names: *Phar* (Mizo), *Aphoa* (Mara), *Lik* (Paihte).

It is an erect, gregarious bamboo. Culms 3-10 m tall, olive-green; nodes prominent, armed with a circle of up to 2 cm long conical spines, bent downwards, fringed with soft brown hairs; internodes 7.5-22 long, 2.5-5 cm in girth, solid at the base.

34. Sinarundinaria longispiculata

Its Rhizome is not yet known. Culms erect; internodes largely glabrous but yellowish, velvety under the nodes, bearing root thorns on the nodes. Leaves 2-3 in number on each flowering branch.

Distribution: Endemic to Mizoram, India

35. THYRSOSTACHYS Gamble

(Derived from Greek word *thyrsus*, presumably Gamble intended to refer to the derived botanical term '*thyse*' a particular type of inflorescence; *stachys* relating to the inflorescence; alluding to the disposition of the inflorescence).

It is a handsome densely caespitose bamboo. Culms 5-20 m tall, bright green with whitish silky brown when young, dull green or yellowish when old; nodes hardly prominent, slightly oblique, lower covered with rootlets; internodes 10-60 x 5 cm; wall very thick at the base; branches fascicled at the nodes, ascending below, almost horizontal above.

Local name: Phunkirua (Mizo).²⁵

²⁵ Bamboo Species of Mizoram, pp.51-128.

1.7. REVIEW OF LITERATURE

Lianhmingthanga's *Material culture of the Mizo* is a monograph on tools and implements of Mizo published by Tribal Research Institute, Govt.of Mizoram, Aizawl. This work is a lucid description on various Mizo instruments ranging different fields. Diagrams and pictures are provided for better understanding of the implements. In most of the tools bamboo is employed in one way or another. The tools from agricultural necessities like Axes, hoe, sickle, etc.,require bamboo handle. Likewise baskets of various designs for different usages are made of bamboo. Mizo indigenous games like 'Kal-chhet' require bamboo. These are explained in the work with diagrams. But the cultural approach to which bamboo as an agent of culture is not given.

Mediterranean and Mediterranean World in the Age of Phillip-II is a monumental work authored by Fernand Braudel. Braudel's scope embraces the natural world and material life, economics, demography, politics and diplomacy. This work is a seminal work showcasing the influence of geography in history.

J. Donald Hughes's work *The face of the Earth, Environment and world history* published in USA in 2015 was a sought for concerned for environment worldwide. The author argued that the concept of development fails to address the issue of sustainability. By adopting the ecological process as their major theme, the authors show how the process of human interaction with the natural environment unfolded in the past, and offer perspective on the ecological crises in our world at the beginning of the 21st century. This book highlighted a significant role play be ecology or environment in shaping the course of human affairs.

SS. Neigi and HB. Naithani's *Handbook of Indian Bamboos* is a crucial book for the study of bamboo and its geographical distribution. The book described the forming of bamboo species in a scientific manner. It also talks about bamboo natural vegetation and its various uses. The authors also mentioned the distribution of bamboo and its different characteristics in this book.

A monograph on Bamboo is another forestry book authored by DN. Tewari. The author says that there are 125 indigenous and exotic species of bamboos falling under 20 genera in an area of 10.03 Million hectares. The book is useful as bamboo flowering and its component characteristics are described.

Environment and Forest Department, Govt. of Mizoram had published *Bamboo Resources of Mizoram* in 2010. This book is an important book to study bamboo as all the bamboo in Mizoram whether indigenous or imports are altogether finds mentioned. The book reported that there are 35 species of bamboo presently growing in Mizoram, some of them are located in various plantation gardens in and around Aizawl. However, this is a governmental report and one should be careful when relying on them as there are no specific classifications of which species of bamboos are indigenous and foreign.

AP. Dwivedi's book called *Forest: the non-wood resources* is a book on agroforestry. This book integrates the global developments in forestry science and practices. The book is helpful as it highlight the scientific nature of bamboo. This help in better understanding of bamboo.

Random notes on modern Indian history 1757-1947 is a book authored by Ranjan Chakrabarti in 2005. This book serves as an introductory text for a wider reading community. The book focuses more on the fast growing historiography of Modern South Asian History. This historiography is ordered and presented in an intelligible manner. In Chapter 14, the author talks about *New Directions in History: Environmental History*, and attention is drawn on the theoretical framework of Environmental History.

Traditional uses, Economic importance and Ecological services of Meloccanabaccifera Roxb.in Mizoram, India is a research work of H Lalhruaitluanga and MNV Prasad. This work was published in the Journal Global Science Books, 2009. The work researched about the traditional uses of bamboos and canes in Mizoram. It also highlighted the economic significance of bamboo for the Mizo. But significant historical approach on bamboo is not discussed.

The Last Frontier: People and Forests in Mizoram was a book by Ms. Daman Singh. This book is indeed a pioneering effort for the study of Environmental History in Mizoram. It was published way back in 1996 by the Tata Energy Research Institute, New Delhi. There are two parts in this book. The first part is an environmental history of Mizoram, reconstructing the transitions in modes of resource use in traditional Mizo society through the period of colonial rule and into the post-independence period. The account discusses the process of evolution in society, culture, and religion, demographic trends, politics and administration, etc.. The Second part focuses on the nature of resources and their management by people and government. This includes both a description of biophysical resources and an assessment of their quality, Forests are studied for their extent, composition, and the impact of human activities.

Paul Lalremsanga and David C. Vanlalfakawma's work on *Socio economic potential and marketing trend of bamboo in Mizoram: A case study from Aizawl District* is an important work on the marketing trend of bamboo and its product in Aizawl. The study is crucial as it highlighted economic viability of bamboo in modern time.

Mizote Khawsak Phung is another important work published by Tribal Research Institute, Aizawl. The book talks about the society of Mizo as general. Various cultural and traditional practices in Mizoram are highlighted in the book. Mizo indigenous games where certain usages of bamboos are found. The book does not include historical studies on bamboo.

Lushai Chrysalis is a famous book authored by AG. McCall. He gives a vivid description of Mizo society from the perspectives of the colonial officers. The book mentioned about Mizo society and the custom prevailing during colonial period. He described in detail the usages of bamboo in a typical Mizo House construction.

Pied Pipers in North-east India; Bamboo- flowers, Rat- famine and the Politics of Philanthropy is an amazing ecological book depicting bamboo flowering in the hill state of Mizoram authored by Sajal Nag and was first published in 2008 by Manohar Publishers & Distributors, New Delhi. The author extensively researched the causes and impact of bamboo flowering in Mizos society. Two particular species of

bamboo *Mautak* (*Melocanna baccifera*) and *Thing* (*Bambusa tulda*) which flower and fruit approximately every fifty and thirty years had carpeted the hill of Mizoram. The book is about the bamboo fruits which are a delicacy for the wild rats inducing excessive breeding in them which after exhausting the fruits at this instant started to invade human habitat and devour their harvest causing extreme food scarcity leading to famine. Mizo hills have recorded history of such calamity in 1737, 1767, 1827, 1861, 1881, 1911, 1931, 1959, 1977, 2007. This book narrates the politics of colonial, evangelical, nationalist and post-colonial state around an environmental catastrophe. The book serves as an important document on the study of bamboo flowering in Mizoram. However, on the light of bamboo and its implication in the Mizos society information are found wanting.

Zo hnam dan deh written by V.L. Ruala is a book which focuses on different custom and practices prevailing among the Mizo. The author had written this book in vernacular language. He mentioned about bamboo basket called *Thul* and many others. According to the author this *thul* is a traditional basket and it is an indispensable item for a bride to bring it to her new bridegroom's home, at marriage.

Seletthanga's *Pipu Lenlai* is an important book which reflected the tradition and culture of early Mizo. The author in this book suggested that since the Mizos are migratory tribe; they did not built strong houses. They employed bamboo in majority of house construction. During storms or cyclones in the hills houses destroyed were rebuild easily with bamboos.

Mautam leh Sazu is a book about Bamboo and rat in Mizo language, authored by Darkunga. This book is about a close examination on bamboo species in Mizoram which are explained in great details. The bamboo famine called '*Mautam*' and '*Thingtam*' occurred every 48-50 years in Mizoram. This book explained the flowering of bamboo which entails the outbreak of rodent families like rats in Mizoram which quickly devastated paddy field, thereby causing great famine in the state.

James Dokhuma's *Zokhaw Nun* also vividly described the life style of early Mizo. The book talks about the political, societal, economical and predominant culture of

the Mizo prior to the advent of the British. The structure of Mizo society which is based on chieftainship and harmony is reflected in the book. The book also mentioned Mizo usages of bamboo in their society. There is no focus on study of bamboo in the book.

Tawng Un Hrilhfiahna is another book written by James Dokhuma. The book is about explanation of Mizo idioms and phrases. It was published in 2007 at Aizawl. The author contributed countless literary works for the Mizo so much so that he was a Padma shree awardee. This present work is significant for this thesis as so many references of bamboo in Mizo dialect are collected and well explained in this book.

A Monograph on Lushai Customs & Ceremonies is an important work authored by NE. Parry, ICS. This is a helpful book in terms of Lushais customs wherein many chiefs have been consulted for the record of their customs. The daily aspects of lives of Lushai are recorded as Mr.Parry took up the charge of Superintendent of Lushai Hills in 1927. Certain usages of bamboo implements are reflected in the book.

In the *Lushei Kuki Clans*, Lt. Col J. Shakespeare presents the domestic life of the Mizo. Their dress culture as well as ornaments and weapons are explained. Bamboo references are seen in this book under the heading *Implements-Agricultural, Musical, Manufactures- Basket work and Games*. The other chapters talks about laws and custom, folklore etc.,.

Natural Resource Management Mizoram written by L.K. Jha, brought out invaluable information on forest management in Mizoram. The book talks about the land tenure system, status of agriculture, forest resources, resource bases of Mizoram, bamboo, etc. The book consists of nine list of contributors who are Professors and senior Lecturer of Departments of Geography, Economics, Geology, Forestry, etc, from various institutions like that of NEHU, Mizoram University, Pachhunga University etc.,In chapter 9, the book talks about bamboo in Mizoram. The writer JH. Lalramnghinglova had mentioned about his report of 20 species of bamboo from Mizoram (1993). He also talks about bamboo flowering and subsequent famine that ensued soon after the gregarious flowering of bamboo. He highlighted the important uses of bamboos as food and fodder, timber, medicinal uses, Reinforcement of

concrete, and laminated bamboo for sheets as plywood. However, traditional uses of bamboo in Mizoram are not in focus. The scope of bamboo for befitting the economics of the State in terms of trade and agro-based industries was earmarked.

N. Chatterji 's *The Earlier Mizo Society* was an invaluable source of pre-colonial Mizo society. The author described about the economic, social and political activities of the Mizos living in the then Lushai hills. She stated that the Mizo society was largely based on patriarchal system. Women are found to be industrious and they worked hard as much as menfolk. She presented the earlier Mizo Society as a close-knitted society. There flourished an admiration for *Thangchhuahpa* (those who have completed certain social norms and are now entitled to go to *pialral* or heaven after life). The book is an indispensable one for researcher and scholar who imbibed deep interest in early Mizo society.

A brief history and culture of Mizo by B. Lalthangliana emphasized on the origin, migration and culture of the Mizo. In this book, various musical instruments which are made of bamboo are explained with greater details. The book also mentioned some Mizocultural dances viz- Che-raw, Chailam, Khuallam, Tlanglam, Chheihlam, So-la-kia, Chawnglaizawn. This book contains essential information on the history and culture of Mizo; but the bamboo culture of Mizo is found wanting.

Histoy and culture of Mizo in India, Burma and Bangladesh is also another important work by B. Lalthangliana. The book was published in 2001 in Aizawl. As the name suggested the writer traces the southward migration of Mizo from China. He also talks about the migration of Mizos from present day Mizoram to Burma (Myanmar) in the early 20th century. He also mentioned that the early group of Mizos in the course of their migration; had reached present day Bangladesh and settled there. The book gives us an insightful knowledge on the origin of Mizos and their history of movement or migration.

In antother work *Mizo Culture* authored by B. Lalthangliana, the writer focus on the concept of Culture and point out the meaning and definition of culture. He continued to talk about various cultural practices of the early Mizos. The writer suggested that some cultural practices including values and ethics are aspired to continue in the

present context and some are ready to be left out. In this book some Mizos cultural practices like a wrestle to get the bamboo stretcher wherein a deceased man or sick man are carried home are found mentioned.

Hmanlai Mizo Kalphung is a book on Mizo custom and society written in Mizo vernacular by James Dokhuma. In this book, the Mizo way of life in general is reflected.. It also described the Mizo agricultural setup, their religion and festivals, Mizo beliefs system and superstition, etc,. Usages of bamboo are reflected in this book through certain activities carried out by the Mizo.

Pipute Sakhua Leh An Thlarau Khawvel is a useful book written by V. Lalchhawna, published by Mizoram Publication Board in 2006. The title of the book when translated in English is *Ancestors Religion and their spiritual outlook*. As the name suggested it is about the Mizos traditional belief in their religion and their view on life after death. This book helps us to better understand the ritual practices of early Mizos. However, it can be seen that Mizos have their own set of philosophy of religion and proper belief system. Their wanting of better life after death henceforth commanded their live on their society.

C. Lalthlengliana's *The Lushai Hills: Annexation, Resistance and Pacification (1886-1898)* is an insightful book published in New Delhi in 2007. As the title of the book suggested it is about conflict between colonial settlers and the Mizos. The latter are subdued by the colonial British after various expeditions. However, the writer talks about the setting up of village fencing called *Kulhbing* for protection with the help of bamboo.

Mizo Chanchin (Kum 1900 Hmalam) was another invaluable work about the history of early Mizo written by Lalthanliana. This book was published by Mizoram Publication Board in 2000. As the title of the book suggested it is about history of early Mizo prior to 1900 AD. The author significantly mentioned the detail account of Mizo migration, religion, society, polity and economy. He also talks about history of various clans and sub-clans of Mizos and the chiefs and their descendants were also found mentioned. However, usages of bamboo are profoundly mentioned when he described about the significant of *tuibur* or tobacco in Mizo society. Mizos are

fond of smoking and generally it is the assigned work of woman to smoke *tuibur* made of bamboo.

Mizo Awmdan Hlui & Mizo Mi Leh Thil Hmingthangte Leh Sakhua was a rare book written by Rev. Liangkhaia, published in 2008 by Mizoram Publication Board. The writer reduced to writing his valuable experiences and knowledge on early Mizos practices into this book. The writer also discussed in detail about the famous events in Mizo history. He also talked about practices of early Mizo religion.

Hmanlai Mizo Nun is a book authored by C. Lianthanga. It is a book on the life of early Mizo wherein dealing with birth and death is explained vividly. The book also talks about the society of Mizo depicting their moral and mindset in general are given with a closer examination. Lalthanliana's book on *Zoram Chanchin (Kum 1900 hma lam)* is another significant book which displayed the history of Mizoram prior to 1900 AD. The book talks about 'Zoram' or land of the Zo's which is the inhabitant land occupied by five ethnic groups of Mizo viz; Lusei, Hmar, Ralte, Paite (Zomi) and Pawite (Lai). The authored presented an anthropological history wherein the descendants of various ethnic chiefs are traced. No significant mentioned of bamboos are made in the book. But traces of its usage can be made through history of 'Pawi' in their musical instruments, dance and festivals which finds mentioned in the book.

A fly on the wheel or how I helped to govern India was a book authored by Thomas Herbart Lewin who was a Lt. Colonel in the British government in India. He was the first Deputy Commissioner of Chittagong Hill Tracts, published in 1869. However, it was reprinted for the third time in 2005 by Tribal Research Institute, Art & Culture Dept. Aizawl, Mizoram. The book was entirely written by the author from his diaries while he worked in India and kept carefully for his home citizen. He traces subsequent events from the Sepoy mutiny of 1857 to the Lushai Expedition of 1871-1872. He mentioned about the Lushai and Shendus in the last chapter of the book and thereby depicting vivid account of bamboo being in employment in the tribal daily affairs. The book is a valuable source for tracing events in chronological order but however, to take into account all the narration as factual would be absurd. Since the

narration is based from his own diaries and not backed by detailed evidences and references.

Another important book written by Capt. TH. Lewin was *The Hill Tracts Of Chittagong and The Dweller Therein; With Comparative Vocabularies Of The Hill Dialects* published by Bengal Printing Company, Limited in 1869 wherein he described about different people living in Chittagong Hill Tracts. The book is divided into four parts. The Lushai (Mizo) were mentioned in part three of the book. In the appendix C of the book there are mentioned of 11 varieties of bamboos and canes each of them were clearly discussed by the author. The author presented his honest account on the Lushai (Mizo) and their daily activities were clearly mentioned. He described about the significant of bamboo in day to day life. He witnessed that the Lushai used bamboo stick for making fire. Different bamboo cane works such as baskets were found mentioned in the book.

Wild Races of South-Eastern India is also another book written by Capt. TH. Lewin. This work has been selected by scholars as being culturally important. It was originally published in 1870. However, Tribal Research Institute, Govt. of Mizoram, Aizawl had reprinted this book in 1978. The book is a seminal work in study of ethnology and found useful to learn about social life and customs of people in south eastern India including the Lushai or Mizos. However, most of the ideas, facts and descriptions contained in the book are based on the authors' perspectives and therefore could be found lacking objectivity. Nevertheless, the work was one of the early record of the life and custom of the Mizos at first hand.

Mizoram- History and Cultural Identity (1890-1947) authored by Lalrimawia is a significant book which dealt with an administrative developments and cultural aspects of the Lushai hills. In chapter two of the book he mentioned Pre- British Mizo Society. This book talks about the migration of the Mizos and suggested that the Mizos reached the Chin hills in the early 14th Century AD. It also further stated that the first batch of Mizos crossed *Tiau* river in the 16th Century AD. Bamboos and its usages are reflected in the book where mentioned are made in the house

construction, musical instruments, agricultural implements, ornaments and tobacco smoking.

A Monograph on Bamboo is an informative forestry book written by DN. Tewari. This book was originally published in 1992. The author talks about the importance of bamboo to rural community. He stressed that bamboo contributes the human economy providing a variety of goods. He considered bamboo as versatile and multipurpose that helps shaped the human life. There are about 75 genera and 1250 species of bamboos, each of them having widely differing characteristics and uses, such as construction material, raw material for paper pulp and rayon, etc,. The book is about a forestry book which stress on the characteristic and quality of different bamboo species discovered.

5 Years in Unknown Jungles for God and Empire was an account of the Founding of the Lakher Pioneer Mission. It was authored by Reginald A. Lorrain and got its first publication in the United Kingdom by the Lakher Pioneer Mission, London in 1912. As the writer is a missionary he gives a vivid account of the missionary work done on the Lakher people of southern part of Mizoram. His narrative reads like a romance, the divine call received in loyal surrender followed by divine leading, divine protection, divine supply and divine victory- these incidents stand out upon the pages with clearness and captivating interest. However, this evangelical account brought out the societal life of the people concerned and therefore many instances of bamboo which plays crucial role in their daily material life are depicted. The book served as a valuable instrument for bringing out how bamboo is utilized among the Lakher region. Nevertheless, the author writes in a diary or rather in a very personal perspective. The availability of bamboo and other forest products for the Lakher people are clearly mentioned in this book.

A botanical tour in the south Lushai Hills was an important book written by a Scottish botanist AT Gage and the first Indian edition of this book was published in 1978 by Firma KLM Pvt.Ltd, Calcutta on behalf of Tribal Research Institute, Govt.of Mizoram, Aizawl. The book was an account of a short botanical excursion made by

the writer in the spring of 1899 to a portion of the South Lushai Hills. He was the then Director of Botanical Survey of India and documented this book in 1901, where he listed 317 species of trees including 26 species of cryptogram. However, there are no mentions of bamboo species in the book. This is an interesting proposition that the colonial ruler are looking for unique flora and fauna which could in turn benefitting them.

A Grammar And Dictionary of the Lushai Language (Dulien Dialect) was the earliest Lushai Dictionary written by J. Herbert Lorrain and Fred. W. Savidge. They are the pioneer missionaries to the Lushais sent by the Arthington Aborigines Mission. This book was published in 1898 and printed at Shillong- The Assam Secretariat Printing Office. The book was divided into four parts. Part III of this book contains Lushai-English Dictionary. This book is an invaluable source for documenting language reference of bamboo in Mizo dialect.

Joy Lk Pachuau. & Willem Van Schendel work on *The Camera as Witness: A social history of Mizoram, Northeast India*, is another important work focus on chronicling the fascinating history of the Mizos through vernacular photography. This book brings together the questions of identity formation, nation and global cultures. This rare book was published by Cambridge University in 2015. The pictures in the book established the transformation of Mizos society and the many forms of modernity that have emerged in it. It emphasizes how indigenous people in Mizoram used cameras to produce distinct modern identities and represent themselves to themselves, consistently contesting outsiders' imagination of them as isolated, backward and in need of upliftment. This book is vital for scholars due to its use of visual source of a wide range of discourse. Implications of bamboos are seen in various occasions like that of *Vakiria* or traditional Mizo woman headgear.

Pi Pute Biak Hi is a book authored by Rev. Zairema. It was published in 2009. The book is about the religion of early Mizos. Various religious ceremonies of early mizos are described in the book. The author observed that one of the dominant Mizo clan i.e. the Lushai used to perform *Mithirawp lam* or dance to commemorate their

bygone ancestors. They made the effigies of their ancestors whereas the effigy of their main ancestor called *Thlahpa* was made bigger than other. They made a special kind of ladder or carrier with the help of bamboo and they carry these effigies in and around the village squares. The significance of bamboo in religious ritual as well as other useful implication in the early Mizos society could be seen through this book.

Mizopa In leh a chhunga thil awm te is a book written by HC. Thangchungnunga, published in Aizawl by Mizoram Publication Board in 2017. The book is about a descriptive work on a typical Mizos house construction and its household. The author described every material used in constructing a typical Mizos house or cottage. He talks about usages of bamboo for walls, floors and even for roof in house construction. The writer also talks about various instruments and agricultural tools made of bamboos which are kept in every Mizos household. Some of these are - axes, baskets of various shapes and sizes, winnowing tray or *Thlangra*, *Tui-um* or water tubes which are made of bamboos. This book is an invaluable work which gives us an insight into a typical Mizos construction of houses, the material required and every item in the household are vividly described in the book.

Mizo ro, thil leh hmanruate is a very useful book authored by PC. Zosangpuii, published by Tribal Research Institute, Govt. of Mizoram; Aizawl in 2000. The writer goes into details account on writing every useful material in Mizos society. She talks about traditional Mizo tangible heritages like *Thul* or bamboo made basket and other significant tools and implements that early Mizos have been used.

Ṭam do pawlin engnge a tih? was an informative work compiled in a book authored by C. Rokhuma. The writer was a well-known figure among the Mizos. He took into his hands the burden of recording the flowering of bamboos viz- *Mautak* (*Melocanna baccifera*) and *Rawthing* (*bambusa tulda*) in Mizoram and the consequent effect of increasing rodent population leading to an attack on field causing dreadful famine. This book was published in 1988 and English version of this book is also available. However, the book stands basically as about the Anti-Famine Organisation and their work during the famine of 1959 in Mizoram. There are no specific mentioned of bamboo and its utilization in Mizos society. However, implication of bamboo in

quantity measurement of grains at the time of harvest was vividly discussed in the book.

Mizo Miracle was a rare missionary work edited by Sykes Marjorie. This book was published in 1968 by the Christian Literature Society. As the title of the book suggested the work and activities of missionaries engaged in Mizoram are compiled in this book. The missionaries described about Mizo way of shifting cultivation, their forest life or agricultural activities where usages of bamboos are slightly referred. They also talk about Mizo woman and their gender role in dealing household chores. However, the work is one sided as it is set on the missionary viewpoint. Scholar has to be cautious about objectivity when dealing with this kind of work.

Hman Lai Mizo Khawsak Dan & Mizoram Buai Lai Thu is a personal account written by H.S. Luaia. The book depicted about Mizo society in general in part one and Mizo insurgency in part two. The author vividly described Mizos way of childbirth in pre-colonial era whereas a sharp bamboo was used to cut the umbilical cord of a baby. Mentioned were also made on implication of bamboos in the traditional Mizos house construction in details. The book did not incorporate evidences and references. Most of the writings are basically from his own experiences.

Xiaobing Yu's *Bamboo: Structure and Culture, Utilizing bamboo in the industrial context with reference to its structural and cultural dimensions* was a seminal work on bamboo published by Universitat Duisburg-Essen in 2007. The author implies that bamboo has been used as a material since the beginning of human civilization. He further suggested that bamboo has been neglected in the industrial society and regarded as a material for poor people. He observed that through the modernization bamboo can be processed and fabricated into standard industrial products. With more appropriate bamboo designs used in people's daily life, bamboo can build its new cultural identity in the industrial society which represents a harmony of its inner structural and cultural dimensions and the outer industrial context. This study on bamboo also wants to give an example of how design can contribute to a sustainable

development in which not only technology and economics, but also environment, culture and tradition are all considered thoroughly.

R. Lalmangaihsanga's *Mizo General Knowledge 2017* as the name implied is an informative book which traces in simple chronology the history of Mizos and subsequent development in the past events are earmarked in this book. The book has a column called 'Mizo important years' and this ensured us documenting significant events in Mizoram history in a chronological order. The book was a fifth edition of its kind and it was published in 2017.

Mizote Khawsak Dan by C. Lalbiaknema is another important book reflecting traditional Mizo society. In this book, the author mentioned about uses of bamboo particularly at the time of harvesting season. He suggested that the highest quantity measurement of paddy harvest is *Mautlawn zawn*, that is, the height of a bamboo (around 12 feet high). He also talks about custom and social order of the Mizo.

1.8 STATEMENT OF THE PROBLEM

There has been little knowledge on the subject of environmental history in general and bamboo in particular in the context of Mizoram. Bamboo is a part and parcel of mizo society enriching culture and vital for the survival of this tribe. Scholarly approach on this matter would bring insight on the material culture of the Mizos, especially eco-friendly usages of bamboo. Bamboo speaks volumes on the evolution of Mizo culture. This is noteworthy on the study of cultural history. Bamboo has always been the lifeline of the Mizos. How this grass has provided unity and uniformity among them attract great amount of attention. The wonder of bamboo demanded a closer examination and speculation without losing minute detail information.

It is in this context that the propose work assumed significance. However, while it is challenging to work on bamboo, scholarly approach on this aspect is hard to find and wanting in the present context of Mizoram. Therefore, it is a much needed area of study in the field of cultural studies in Mizoram. The bamboo culture of the Mizos could supplement knowledge on the link between nature and the people. Therefore, it is felt that this proposed research work would bring about a better understanding of the nature and relationship between bamboo and Mizo society to the larger audience.

1.9. OBJECTIVES

1. To understand the role played by bamboo in the Mizo culture
2. To study for the relationship between bamboo and Mizo economy.
3. To study bamboo technology and material culture.

1.10. METHODOLOGY

Primary and Secondary sources are used along with oral sources as a methodology. Interviews and archival sources are employed for further references wherever applicable.

1.11. AREA OF STUDY

The present study covered the entire Mizoram.

1.12. CHAPTERISATION

CHAPTER 1: INTRODUCTION

The different species of bamboo and its geographical extension and concentration in Northeast India are studied.

CHAPTER 2: BAMBOO AND LIVELIHOOD

In this chapter attempt is made to bring out the way in which the Mizos depended on Bamboo for their livelihood.

CHAPTER 3: BAMBOO TECHNOLOGY

This chapter examined the various kinds of tools and implements made from bamboo and how these technologies shaped the material culture of the Mizos.

CHAPTER 4: CONCLUSION

This chapter summarized and included the findings of the study.

CHAPTER - 2

BAMBOO AND LIVELIHOOD

2.1. INTRODUCTION

Bamboo is a giant grass that takes on tree-like functions in forest ecosystem. Around 75 genera and 1250 species of bamboo are known to exist throughout the world.²⁶ Technically, Bamboos are perennial arborescent grasses belonging to the family *Gramineae* with culms that arise from rhizome.²⁷ They are evergreen perennial flowering plants in the subfamily *Bambusoideae* of the grass family *Poaceae*. The word 'Bamboo' comes from the Dutch or Portuguese languages, which probably borrowed it from Malay.²⁸ Bamboos have stems that are hollow except at the nodes and narrow alternate leaves borne in two ranks. Therefore, they are found expedient and indispensable for mankind.

Bamboo is widely used as a material in Asia, South America and Africa, where abundant different species of bamboo are found. Bamboo has developed a survival strategy with its competent structure through millions of years of evolution. With the long history of versatile utilizations of bamboo, there seems to develop a kind of 'bamboo culture' in countries like China, Japan and many other countries.

The Mizos depended on their knowledge of nature and environment. For the tribal groups such as the Mizos, their kitchen utensils, hunting bows and arrows, spinning tools for textiles, pots for carrying water baskets, handicrafts, house constructions, agricultural implements, traps and snares, musical instruments, beds and smoking pipes too are made of bamboo. In fact, there is hardly any item which is not made of

²⁶ Yang Yuming, ed.al, *Bamboo Diversity and Traditional Uses in Yunan, China*, Mountain Research and Development, Vol 24, May 2004, p.2 (<https://www.researchgate.net/publication/250069826>.)

²⁷ Ramachandra Laha et.al, *Ethnobotanical uses of bamboos among different tribes in Mizoram, Northeast India*, International Journal of Pharmacy and Biological Sciences, Vol-8, Jul-Sept, 2018. P.329

²⁸ Bamboo,(website), Wikipedia, <https://en.m.wikipedia.org> Accessed on 19 October 2019.

bamboo.²⁹ Thus, Bamboo is employed in a number of ways and used for different purposes. The making of weapons, derivative idioms and phrases, and agricultural weights and measurement, are made and has to do largely from bamboo. They even consume bamboo shoots as their food item. They also incorporated bamboo in their famous dance ‘Cheraw’.

Cheraw dance is characterized by the use of bamboo staves, which are kept in cross and horizontal positions on the ground. It mainly consists of mostly six to eight people holding pairs of bamboo staves upon another horizontally placed bamboo on the ground. The male dancers move these bamboo staves in rhythmic beats and the female dancers perform by stepping in and out of the bamboo blocks. It is said that during the olden time, *Cheraw* dance was performed in rituals as believed, to provide solace to the soul of a deceased mother who had passed on leaving her newborn child on earth.³⁰ Mizos believed that the soul of a woman who died on childbirth followed a path which is so difficult than other normal death. On her way to *Pialral* or heaven, her soul would have to pass through rugged and hard terrain. So to witness and commemorate hardship during her journey, certain women would perform this *Cheraw* dance on her funeral.³¹



Fig: Cheraw dance
Source: Art & Culture, Aizawl.

²⁹ Sajal Nag, *Pied Pipers in North-east India*, New Delhi, Lordson Publishers Pvt.Ltd, , 2008.p.34.

³⁰ <https://www.northeasttoday.in/soul-of-mizoram-cheraw-dance/> accessed 24-Nov-2019

³¹ V. Lalchhawna, *Pipute Sakhua Leh An Thlarau Khawvel*, Mizoram Publication Board, Aizawl, 2006, p.148

Tools played an important role in every culture. The ancient people used tools made from stone and wood not just for hunting. They also used animal bones to record their activities or for divination. Use of bamboo is closely linked to Mizo culture. Bamboo stretcher called *Hlang* is used for carrying injured people or those who met an accident. Even Mizos had a custom known as '*Mi zawn inchuh*' meaning a wrestle between the opposing groups, to get a deceased man from *Hlang*. During the period from 1871 to 1940 in every village, the dormitory-goers played and amused themselves with the game of *Inbuan* or wrestling match almost every night. And also *inbuan* was very often held between two villages whenever a sick person or dead body was carried from a village to another³². Tradition has it that when a person is getting sick or died in another village, it becomes a responsibility for the young men to send the body to his home village. The body was tied up in a bamboo stretcher and proceeded on with haste but they were interjected by the bachelors from destined village at the Village border. Thus, a wrestle for the stretcher was inevitable showcasing Mizo way of *tlawmngaihna*³³ or selfless value which in short is a culmination of philanthropic zeal.³⁴

Bamboo becomes a certain 'material culture' in itself through its numerous utilizations in Mizo society. At birth, it is said that a sharp plaited piece of bamboo traditionally known as '*Tlahthi*' is used to cut the umbilical cord of a newborn baby³⁵. When a child is born the umbilical cord was clapped with thread in two places. And in the middle was cut by using this '*Tlahthi*'. They never employed an iron object to cut the umbilical cord.³⁶ This reflected that bamboo is used from childbirth in the society. When a baby boy is born with no deformity it is a Mizo custom that a spear is clapped in his hand as a wish for him to become a great

³² Lianhmingthanga, *Material Culture of the Mizo*, Calcutta, Firma KLM Private Ltd, Tribal Research Institute, Govt. of Mizoram, Aizawl, 1998, p.16

³³ *Tlawmngaihna* : A person who possesses *Tlawmngaihna* must be courteous, considerate, unselfish, courageous and industrious, he must always be ready to help others even at considerable inconvenience to himself and must try to surpass others in doing his daily tasks efficiently. (NE. Parry ; *A monograph on Lushai custom & Ceremonies*, p.19)

³⁴ C. Lianthanga, *Hmanlai Mizo Nun*, p.36

³⁵ H.S. Luaia, *Hmanlai Mizo Khawsak Dan leh Mizoram Buai Lai Thu*, Mizoram Publication Board, 2004, p.1.

³⁶ C. Lianthanga, *Hmanlai Mizo Nun*, p.13

warrior. And if she is a girl a hoe wherein the handle is made from bamboo is clapped in her hand as a blessing for her prosperity.³⁷

Colonial ethnographers like TH. Lewin, J. Shakespear, AG. Mccall etc, had written the vital role of bamboo in Mizos society. Mrs N.Chatterji's work *The Earlier Mizo Society* recorded that there are 11 varieties of bamboo found throughout the Lushai hills, and canes grow in profusion. The cane is the hill men's rope and with it he weaves baskets, binds his house together and throws bridges over the otherwise impassable hill torrents.

'The bamboo is literally Mizos staff of life. He builds his house of the bamboo; he fertilizes his fields with its ashes. Of its stem he makes vessels in which to carry water, with two bits of bamboo he can produce fire. Its young and succulent shoots provide a dainty dinner dish; and he weaves his sleeping mat of fine slips thereof. The instruments with which women weave their cotton are of bamboo. He makes drinking cups of it, and his head at night rests on a bamboo pillow. His forts are built of it, he crèches fish, makes baskets and stools, and thatches his house with the help of bamboo. He smokes from a pipe of bamboo; and from bamboo ashes he obtains potash. Indeed, the bamboo occupies a forward place in the domestic economy of the inhabitants.'³⁸

2.2. AGRICULTURE:

Mizos mode of production in pre-colonial era was primitive which included slash and burn cultivation, hunting and food gathering, and raid and plunder of foothill villages. They were basically a nomadic people who kept on migrating from East Asia towards South-East Asia because of inter-tribal rivalry, search for new settlements, invasion by powerful tribes, and the gradual decline in fertility of the soil due to jhum, absorption of the farmlands by jungles, water scarcity during dry

³⁷ James Dokhuma, *Zokhaw Nun*, Kulikawn, JD. Press , Aizawl, 1998,p.123

³⁸ N. Chatterji, *The Earlier Mizo Society*, Aizawl, Tribal Research Institute, 1975, pp.15-16

season as well as other serious natural calamities. As nomadic people they hardly had any asset except for domesticated animals and slaves. Although agriculture is the mainstay of the people it was in a rudimentary stage of development. Like rest of the people, of South- East Asia, rice was the staple food of the Mizos. But the technology of wet rice cultivation was unknown to them. Even the knowledge of terrace cultivation was absent. They produced dry rice in hill slopes by clearing the jungle.³⁹ They started practicing slash and burn cultivation when they ascended Chin Hills. Only few of them manage to own iron tools. Majority works with branch-stick, antler and pointed objects. It is presumed that there is a composed poem in that time:

*“Khisa chhukchho chhumpui zing hnuaiah,
A ki riau riau riang hlo thlawh nan a tha e...”*

“On the misty day comes the jumpy deer,
Oh! The antler how good it must be for weeding.”⁴⁰

Bamboo and the people are closely tied since time immemorial. In the pre-colonial Mizoram, neither large scale agricultural practice nor industry developed. Hunting wild animals, gathering vegetables from the forests and also jhum cultivation was the pillar of subsistence. They usually cleared five acres of tree or bamboo jungle and when this has become thoroughly dry in the months of March and April, they burns the wreckage to fertilize the land. Rice is shown in May, broadcast or dibbled on the burned hillside, preferably during soft falling rain, and after two or three weeding during the monsoon, the crop is reaped in December after running the constant risks of damage by drought, insects, wind and storm, excessive and uncontrollable weeds.⁴¹ Their cultivation being confined to cutting down the jungle, burning it, and dibbling in the seed among the ashes, they do not require many or elaborate

³⁹ Sajal Nag, *Pied Piper in North-East India*, New Delhi , Lordson Publishers Pvt. Ltd. , 2008, p.79

⁴⁰ B. Lalthangliana, *Mizo Culture*, Aizawl, Gilzom Offset, 2013, p.12

⁴¹ Sajal Nag, *Pied Piper in North-East India*, p.81

implements and are content with a dao, and axe, and a hoe. The handles are simply pieces made of bamboo, the heads being thrust through the tough root portion.⁴²



Fig: A hoe or agricultural implements.
Source: Art & Culture, Aizawl.

For cultivation a spot covered with a growth of bamboo is desirable, as the bamboo ash is a good fertiliser, and the ground is easily cleared. *Jhumming* season commences about the middle of February to May. When all is cut, the mass is left to dry in the sun, and then heaped up and burnt. The villagers stand round the clearing with long bamboo sticks to beat the flames and prevent them spreading to the forest. This appellation of '*Jhumming*' is given to the system of cultivation which is universally followed by all hill tribes in India, from the Himalayas to the furthest point of Siam.⁴³

When the sowing is completed in the cycle of cultivation, house or rather hut-building is the next attention. The materials have previously been collected and laid ready, and until the harvest has been garnered each family will live on its jhum-house as they engaged on agricultural activities. The Jhum-house is built entirely of bamboo, the hearth being ingeniously and simply formed by binding together four rough logs in a hollow square. The fire is kindled by means of a fire-stick, or piece of bamboo a foot long split in halves. This method of fire-kindling was in use until the introduction of Swedish matches.⁴⁴ '*Chhemthei*' or a hollow bamboo cut around

⁴² J. Shakespear, *The Lushei Kuki Clans*, Tribal Research Institute, Aizawl, 2008, p.26.

⁴³ TH. Lewin, *A fly on the Wheel or How I helped to govern India*, Tribal Research Institute, Aizawl, Mizoram, 2005. P.233

⁴⁴ TH. Lewin, *A fly on the Wheel or How I helped to govern India*, p.234-235.

one foot long was used to rekindle old flame. This “*Chhemthei* “ is a part and parcel of every hearth in Mizo household.

2.3. HOUSE CONSTRUCTION:

Since the Mizos were migratory tribe, they did not build strong houses.⁴⁵ They predominantly used different bamboo species and wood in their construction, with Mautak (*M.baccifera*) making the largest material contribution. Grass thatched roofs are predominantly used in pre-colonial era. Cane is generally used for keeping the joints together. The doors and windows are usually made up of bamboo⁴⁶. Mizos like to perch his village on top of a ridge or spur, partly because of the climate or to get a good defensive position. Migratory habits compelled to sought for a site which was difficult of approach. Houses were constructed maintaining raised floor so that it may allow ample room for the animals under it and ensured good drainage. *Zawlbuk* or bachelors cantonments is a large building constructed by the united labor of the village located usually opposite to the Chief’s house. It is built of timber and bamboos, tied together with cane and thatched with either cane leaves or grass.⁴⁷ In the *Lushai Chrysalis*, AG.Mc.call had vividly described a typical Mizo house and its usage of bamboo in such a way that the floors were of split bamboo, plaited together⁴⁸. He further stated that the Houses are well built and usually last for eight years or so. Bamboo matting provides the alternative to thatch roof.⁴⁹

⁴⁵Seletthanga, *Pipu Lenlai*, Lianchhungi Book store, Aizawl, 1978 (4th edition)p.6.

⁴⁶ H. Lalhrualtuanga and MNV. Prasad, *Traditional uses, Economic importance and Ecological services of Melocanabaccifera Roxb.in Mizoram*, India, Global Science Books, 2009.

⁴⁷ J.Shakespear, *The Lushei Kuki Clans*, 2008, p. 19.

⁴⁸AG.Mccall, *Lushai Chrysalis*, London, 1949; rpt. Aizawl: Tribal Research Institute, Dept.of Art & Culture, Govt.of Mizoram, 2003. p.167

⁴⁹ AG, Mccall, *Lushai Chrysalis*, p.22



Fig: A typical Mizo house (Front view)
Fig: A typical Mizo house (Side view)



Source: Art & Culture, Aizawl
Source: Art & Culture, Aizawl



Fig: Zawlbuk (Bachelor's dormitory)
Source: Art & Culture, Aizawl

Houses on the hills are invariably constructed of bamboo, with centre-posts of unhewn timber. The walls and floors are of bamboo matting; the roof and framework of bamboo stems, and the thatch itself is often composed of bamboo leaves and twigs, although for this purpose the broad leaf of '*thilthek*', a species of dwarf palm, is deemed preferable. The whole structure is tied together by cordage of split cane, not a nail or piece of metal being employed.⁵⁰ The early Mizos did not build a strong

⁵⁰ TH. Lewin, *A Fly On The Wheel*, p.235

house as they were a migratory tribe. The houses were built on one uniform plan. They were raised some three or four feet from the ground.⁵¹

The steepness of the hillside is no obstacle to house building, and frequently the roof of one house will be lower than the floor of the one immediately above it. The materials of which all the buildings are constructed are the same- viz. timber for uprights and cross beams, bamboos for the framework of the floor, walls, and roof, split bamboos for the floor, walls, and if cane leaves are used to cover the thatch; the whole being tied together with cane. Mizos claim that the weight of the cross beams gives the house stability in high winds. The broad bands of split bamboo laid on top of the cane leaf thatch from eave to eave, secured at intervals by longitudinal bamboos tied down with cane; give the roof a semicircular appearance from the outside. When cane leaves cannot be obtained, thatching grass is used, but its extreme inflammability makes it unpopular. When cane leaves are used, holes for the passage of cane ties cannot be avoided and beneath each of these a bamboo split in half is secured as a drain pipe to convey the drippings beyond the walls.⁵²

Mizos constructed their houses with material from their close environment. Houses are built with collective effort as they have a close knitted society. Materials like timber and bamboo are obtained during winter season (October-January) to avert quick deterioration on these supplies.⁵³ And this house-construction is usually completed before the onset of monsoon. The house of a commoner consists of three parts, the front Verandah, approached by a rough platform of logs, the main room, and a small closet partitioned off at the far end, beyond which there will often be a small bamboo platform. The verandah is termed *Sumhmun* from the *sum* or mortar in which paddy is cleaned, which has its place here. And the front wall of the house is the place on which the householder displays skulls of animals and birds he has slain; among them hang bamboo baskets in which the fowls lay.

⁵¹ Lalrimawia, *Mizoram-History And Cultural Identity (1890-1947)*, Spectrum Publication, Guwahati: Delhi, 1995, p.23

⁵² J. Shakespear, *The Lushei Kuki Clans*, p.26

⁵³ HC. Thangchungnunga, *Mizopa In leh A Chhunga Thil Awm Te*, Mizoram Publication Board, Aizawl, 2017, p.3

From the verandah a small door about 2-half feet by 4, opens into the house. This door consists of a panel of split bamboo work attached to a long bamboo which slides to and fro. Immediately inside the door, in one corner, are collected the hollow bamboo tubes which take the place of water pots; opposite will often be a large circular bamboo bin containing the household's supply of paddy. Next to this is a sleeping platform, known as *Khumai*, beyond which is the heart of earth. Beyond the fireplace is another sleeping place called the *Khumpui* i.e., big bed- which is reserved for the parents, while the young children and unmarried girls use the *Khumai*; the bigger boys and young men sleep in the *Zawlbuk*.⁵⁴ Along the wall opposite to the hearth are placed two or more bamboos, forming convenient shelves, while a platform of the same useful plant is constructed from one cross beam to another. The large bamboos, used as bed post, have openings cut in them which convert each joint into a tiny cupboard. Inside these openings were kept valuable instruments like needle and wax, and it is known as *Tungchaw*⁵⁵. It is a bedpost in which a large hole is made to serve as a receptacle for small articles.⁵⁶ This *tungchaw* is available in every household and functions as safety place for minute objects. Even 'Tuibur' (Mizo nicotine water) is kept in here.⁵⁷

There are two bed usually constructed in their houses. They are *Khumai* and *Khumpui*. *Khumai* is placed near the hearth on the side of the wall whereas *Khumpui* took a central place in the interior. These beds are constructed using bamboo. The posts being wood and on its floor was used split bamboo culm.⁵⁸

Mankind always had to cope with calamities. Human history is not a history of the destruction of human civilization by catastrophes but also mankind's ceaseless struggle to understand them and acquire a mastery over nature. Mizo oral history testified that the previous occupants of their land had migrated out of this land due to scourge of bamboo famine and other calamities.⁵⁹ Their construction of houses showcased their dexterity and mechanism to cope with calamities. The hill had often

⁵⁴ J. Shakespear, *The Lushei Kuki Clans*, 2008, pp.23-24

⁵⁵ HC. Thangchungnunga J, *Mizopa In Leh A Chhunga Thil Awm te*, 2017, p.19

⁵⁶ Lianhmingthanga, p. 111.

⁵⁷ Pc. Zosangpuii, *Mizo ro, thil leh hmanruate*, Tribal Research Institute, Aizawl, 2000, p.18

⁵⁸ Hc. Thangchungnunga J, *Mizopa In Leh A Chhunga Thil Awm Te*, 2017, p.18

⁵⁹ Sajal Nag, *Pied Pipers In North-East India*, p.35

been hit-hard by storm. In 1876 the hill was hit by cyclone and this incident earmarked as *Thlichhe tleh*,⁶⁰ well remembered among them. Even during earthquake, houses made of bamboo are often having less damage. TH. Lewin recorded that in his district all houses were built of bamboo and mat, and suffered little or no damage.⁶¹ Another advantage is that it is always easy to repair or rebuild as bamboo could be procured in plenty from close surrounding.

On top of the fireplace or heart was made a shelf called *Rap*. This *rap* or a laid flatten shelf was made with the help of bamboo, wherein un-husked rice was kept and the amber from below heat it up. Above this *rap* was another shelf called *Rappui chung sang*. Here, they put their agricultural implements as well as tobacco leaves, *Zu bel* or fermented rice beer, etc.,.This shelf too was made of bamboo and wood.⁶² Again, on top of *Rappui chung sang* was another layer constructed of bamboo called *Thehlan*. This *thehlan* was used to store varieties of implements.⁶³

At the time of the construction of the chief's house, the villagers were fed to the full by the chief with a feast.⁶⁴ The houses of the chiefs are very similar to those of their subjects, only a good deal larger. Entering from the verandah, the visitor finds himself in a passage running along one side of the house, off which open several small rooms inhabited by the married retainers; the other end of the passage opens into a large room with several sleeping platforms and sometimes two or more hearths. Beyond this is the usual closet, while beyond that is a wide verandah partially closed in, which is especially reserved for the chief's family. These verandahs called *bahzar* are forbidden to all except chiefs or wealthy persons who have given certain feasts. A similar prohibition exists regarding windows, which are

⁶⁰ R. Lalmangaihhsanga, *Mizo General Knowledge 2017*, Efatha Press, Chaltlang, Aizawl, 2017, p.1

⁶¹ TH. Lewin, *A Fly On The Wheel or How I Helped To Govern India*, p.254

⁶² Hc. Thanchungnunga J, *Mizopa In Leh A Chhunga Thil Awm Te*, p.18

⁶³ Hc. Thanchungnunga J, *Mizopa In Leh A Chhunga Thil Awm Te*, p.19

⁶⁴ NE Parry, *A Monograph on Lushai Customs & Ceremonies*, Tribal Research Institute, Aizawl, 2009, p.6

one of the prerogatives of the “*Thangchhuah*”⁶⁵. Openings in the side of the house are viewed with suspicion, as likely to bring misfortune.⁶⁶

The only form of agriculture practice that is known to Mizos is jhumming. It involves felling of trees and clearing and burnt once dried up. The ground abode is thus cleared and manured by the ashes at the same time. In each clearing a small house known as ‘*Thlam*’ is built, well raised off the ground, in which the cultivators stay during the time the work is heaviest. At harvest the rice is cut very high as the straw has no value. It is threshed on a piece of ground specially leveled near the jhum house. Threshing is done with the help of bamboo. *Fasuar* is constructed for the purpose of threshing and for this a circular bamboo bin is fixed at a platform which is constructed about 7 or 8 feet from the ground, into which the grains or paddy are thrown and a young man with a girl as a companion dance merrily, singing all the while, the split end of the bamboos of which the platform is made keeping up a cheerful clatter. The grain is quickly separated from the ear and falls in a golden cone on to the threshing floor, whence it can be easily collected and stored in large round bamboo bins in the jhum houses or in specially built granaries in some sheltered nook at a convenient distance from the village.⁶⁷

2.4. BASKET WORKS:

Basket works is chiefly carried out by man. The patterns are very numerous, each being adapted to some particular use. The material is generally bamboo. The *thul* is a basket with four short legs, about twelve inches square at the bottom, widening till the mouth is a circle with a diameter of about thirty inches. This basket is supplied with a conical lid and is chiefly used to keep valuables in. The outer layer is of finely split bamboo closely woven, and this is lined with broad leaves well dried, called ‘*Hnahthial*’ (*Phrynium Capitatum*) which are held in their place by an inner layer of

⁶⁵ *Thangchhuah* or one who fulfill social norms are entitled a home at ‘*Pialral*’ or Heaven, they could get this status through killing various beasts or organizing ‘*Khuangchawi*’ festival thereby blessing the community with heavy feast.

⁶⁶ J. Shakespear, *The Lushei Kuki Clans*, 2008, p. 25

⁶⁷ J. Shakespear, *The Lushei Kuki Clans*, 2008, p. 32

bamboo more loosely woven. These baskets are quite waterproof.⁶⁸ The mother and the women folks look after the *thul*. A grown up girl has a *thul* of her own where she put her woven clothes for her marriage⁶⁹



Fig: Basket works being performed by Mizo artisans
Source: Art & Culture, Aizawl

Thul is one of the most treasured items in every household. It is always kept near *Khumpui* (parents bed) indicating the safest and most secured place in the house. It is indispensable for young woman to bring with her at her marriage. Generally, there are seven items which young woman bring with them at the time of their marriage. They are – i) *Thul* ii) *Puanpui* iii) *Puanbu* iv) *Hmui* v) *Paikawng* vi) *Hnam* vii) *Zawlpuan*. Among these *thul* is the most important one. All her garments and valuable objects are kept securely in her own *thul*.⁷⁰ Not only *thul* another bamboo basket *em* is also brought at her marriage and therefore *thul* and *em* became an important item for mizo women.⁷¹



Fig : *Thul*.

⁶⁸ J. Shakespear, *The Lushei Kuki Clans*, p.27

⁶⁹ *Mizo Thilhlui Thenkhat (Objects of Mizo antiquity)*, Tribal Research Institute, Directorate of art & culture Aizawl, Mizoram, J&J Press Tuikual S, Aizawl, 1993. P.38

⁷⁰ Hc. Thanchungnunga J, *Mizopa In Leh A Chhunga Thil Awm Te*, p.35

⁷¹ Lalthanliana, *Mizo Chanchin (Kum 1900 Hmalam)*, Aizawl, Mizoram Publication Board, 2000, p.188

Source: Art & Culture, Aizawl

Thlangra is another indispensable item in every household. It is made of bamboo cane Rua, woven closely in 2 ft oval shape. It is used for separating grains from chaff. This involves taking the harvested grain in the tray and lightly throwing it in the air. *Thlangra* served as winnowing tray and in some household two or three *thlangras* are kept. Women are generally expertise in the handling of this.⁷²



Fig: Mizo woman winnowing with her *Thlangra*

Source: Art & Culture, Aizawl

Vaihririk is a filtering tray, made of sairil cane plaited together. This *Vaihririk* can be found in every household. Its sole purpose is to filter out rice from chaff. At the time of harvest, there is a specific filtering tray called *Sisep* which is used to separate grain from chaff. *Sisep* is made of bamboo cane plaited together. Every household kept *sisep* at home for ready to use in the harvesting season.

Pher is another important bamboo work. It is made of split bamboo plaited together in around 6ft square. When a situation arises, vegetables, leaves, grains, etc., are kept in this *pher* and dried off in the sun. So, it is instrumental in every household.⁷³

⁷² Pc. Zosangpuii, *Mizo ro Thil Leh Hmanrua Te*, p.29

⁷³ Hc. Thanchungnunga J, *Mizopa In Leh A Chhunga Thil Awm Te*, pp.33-34

For carrying goods there are the *dawrawn* a truncated cone 30 to 36 inches long with diameter at its mouth of about 24 inches, holding about 50lbs. of paddy; the *em* similar to the *dawrawn*, but about half the size. The *bawmrang* an open-work basket with a oval mouth, 15 inches by 12, is used for carrying goods on long journeys. The *paikawng* similar in shape to *em*, but with openwork sides, is for conveyance of wood, water tubes, etc,. There are also several sorts of flat baskets for holding grain, each with its particular name. The containing power of these is approximately constant, and they are used as measures of quantity.⁷⁴

Among the basket made of bamboo there is a clear distinction of their usages between Man and Woman. *Emping* is a bamboo basket closely woven, and they are generally used by woman for carrying paddy, whereas *Empai*; similar to *Emping*, but larger in size, is used by man to transport grains. *Dawrawn* is used by woman for carrying vegetables and grains from their *jhum*. There are smaller baskets for keeping rice seeds at the time of sowing, called *Benvawn* and *Paihper*. *Paikawng* is generally used by woman to carry firewoods and vegetables from the field.⁷⁵



Fig: Paikawng
Source: Art & Culture, Aizawl

And for carrying all these bamboo baskets there is a specific rope called *Hnam* (made of plaited bamboo and *hruikhau*). *Hnam* is generally used by woman whereas

⁷⁴ J. Shakespear, *The Lushei Kuki Clans*, p.27

⁷⁵ *Mizo Thilhlui Thenkhat (Objects of Mizo antiquity)*, pp.26-27

Nghawngkaw (made of wood) is employed by man folks for carrying baskets. *Hnam* plays an important role in the life of woman. It is used to carry *dawrawn* and *paikawng* baskets. It is also used for carrying firewood from jungle as well as bamboo tubes when they fetch water. They are indispensable in their daily activities and therefore continue to serve as one material which they always brought along with them at the time of their marriage. A particular rope *Darbakhru* which is similar to *Hnam* is used by man for carrying *Dawrawn*. This *Darbakhru* is made from the cane of *Hruipui*, *Thilte* and *Sairil* (*Melocalamus Compactiflorus*) plaited together. At the time of paddy harvest, menfolk tied this *darbakhru* across their chest to carry *dawrawn* and helped themselves agile freely.⁷⁶



Fig: Hnam
Source: Art & Culture, Aizawl

A smoking pipe made from bamboo called ‘*Vaibel*’ had greatly reflected the Mizo culture. *Vaibel* is a typical mizo man’s smoking pipe. The material used for this purpose was clay for the head which was connected with a bamboo pipe.⁷⁷ Mccall suggested that the nicotine water is collected and given to the smoker as an appreciation for his bravery in order to encourage them to attain prestige and fame.⁷⁸ This nicotine water in bamboo tube; when holding in the mouth is said to have a stimulating effect.⁷⁹ Agriculture is taken as the backbone of their economy. Between the sowing and the end of the rains in October the crop requires constant weeding.

⁷⁶ HC. Thanchungnunga J, *Mizopa In Leh A Chhunga Thil Awm Te*, p. 43

⁷⁷ Lianhmingthanga, p.108.

⁷⁸ AG.Mccall, *Lushai Chrysalis*, p.189

⁷⁹ Lalrimawia, *Mizoram- History and Cultural Identity (1890-1947)*, Spectrum Publications, Guwahati: Delhi, 1995, p.27.

So, it is imperative that they used 'Vaibel' to smoke-off mosquitoes and other insects at the time of weeding. *Tuibur* is a typical mizo woman's pipe made of bamboo and earthen pipe of tobacco holder. When a woman is smoking *Tuibur* the water inside will turn into nicotine which is taken by both men and women. Nicotine water or *Tuibur* obtained by smoking tobacco leaves had a great significance. It is a custom of hospitality that their friends and strangers were offered *tuibur* and this placed a great status in their society. Exchanging a salty *tuibur* was considered as utmost blessing to their folks. It is akin to greetings and women are generally assigned the task of smoking *tuibur*. If they are reluctant to smoke *tuibur* they are considered as lazy.⁸⁰



Fig: Vaibel
Source: Art & Culture, Aizawl

2.5. DOMESTIC USES:

Buhtlei is a big bamboo spoon use for stirring rice. A bamboo species *Rawthing* is usually cut in 2 inches width for *buhtlei*. It is used to ladle out rice from the pot. A fowl, which is sacrificed at a marriage ceremony, is to be killed with a *Buhtlei*.⁸¹ And for *chawthleng* or rice plate a specific wood *Thlanvawng* is chiseled. *Mau fian* or Bamboo spoon is used as kitchen spoon for scooping out dishes. And for bigger

⁸⁰ Lalthanliana, *Mizo Chanchin (Kum 1900 Hmalam)*, p.34

⁸¹ Lianhmingthanga, *Material Culture of The Mizo*, TRI, Aizawl, 1998, p.95

spoon, bamboo species *phulrua* cut in the shape of spoon is used.⁸² Bamboo is also utilized to make cup of different sizes.⁸³

Khelawk is a small bamboo ladle or spoon with a hooked handle used to ladle out *Saum* (cheese or fermented fatty pork) from the gourd (*Saumbur*) and for stirring Mizo preparation of dishes like *Bai* or *Sawhbawl*.⁸⁴ Any bamboo species can be used for *Khelawk*. *Fairel bel* is a bamboo basket with coverage wherein fresh paddy rice ready to use for cooking is stored.⁸⁵



Fig: Different bamboo spoons
Source: Art & Culture, Aizawl

Chibur is a vessel for holding salt. It is made of bigger culm bamboo cut open for vessel. Salt is an indispensable commodity and a good *chibur* is to be found in every household.⁸⁶

⁸² C. Lianthanga, *Hmanlai Mizo Nun*, Mizoram Publication Board, Aizawl, 1999, p.44

⁸³ James Dokhuma, *Zokhaw Nun*, p. 25

⁸⁴ Lianhmingthanga, p.114

⁸⁵ Pc. Zosangpuii, *Mizo Ro, Thil Leh Hmanrua Te*, Tribal Research Institute, Aizawl, Mizoram, 2000, p. 55

⁸⁶ Pc. Zosangpuii, *Mizo Ro, Thil Leh Hmanrua Te*, p. 57

Chhihri is another kind of Mizo sieve used to dry up some small articles. A small spit bamboo is woven having a number of small holes.⁸⁷

Lukhum/Khumbeu is a typical hat wore by man only. It is made of *Melocalamus Compactiflorus* or *sairil* cane plaited in a cap designed and lined with leaves called *Phrynium Capitatum* or *Hnahthial*. This helps fitting to wear and found it quite waterproof.⁸⁸ J. Shakespear had written that they have a very strong objection to getting their heads wet, and therefore in the rain wear hats made of strips of bamboo or cane plaited and lined with smoked leaves. The original hats were almost flat and circular, but nowadays these have been discarded in favour of very clever imitations of helmets and solar topis.⁸⁹



Fig: Khumbeu or Mizo typical hat
Source: Art & Culture, Aizawl

⁸⁷ Lianhmingthanga, p.114

⁸⁸ Pc. Zosangpuii, *Mizo Ro, Thil Leh Hmanrua Te*, p. 56

⁸⁹ J. Shakespear, *The Lushei Kuki Clans*, p.9

Zu Sawrna is a funnel for purifying or filtering Mizo Zu (beer). A piece of bamboo is woven widening towards the mouth of the funnel in which a small portion of rice beer is kept to squeeze out pure beer.

Chhemthei is a blow pipe, an indispensable instrument found near the hearth of every Mizo household. It is a hollow tube made of bamboo and is used for blowing to lit a fire.⁹⁰

Tul is a skewer, one end of which is sharply pointed. It is usually made from a bamboo called *Phulrua* (*Dendrocalamus hamiltonii*). When animals are killed; the meat obtained are pierced with the *Tul* at its side and placed above the hearth.⁹¹

Chingal Thlawr Bur is more or less the same as *Zu Sawrna* (Funnel of beer). In lieu of beer they put hot ashes from the hearth. After that water is poured in and then the water runs down to the sharp bottom of the funnel.⁹²

Raw-kuai is also prepared in traditional Mizo village. It means a long bamboo is set up in a village with the skin of a wild cat or other animal suspended from it.⁹³ The intention is to scare away eagle which would threaten their domestic fowls.

2.6. BAMBOO AS MEASUREMENT:

Bamboo is also used for a measurement of adulthood or a marker of age. It is the duty of little boys to collect firewood for the hearth at *Zawlbuk* (Bachelor's barrack). The *Zawlbuk* has a regular system of self-government, very much in the same way as in a public school. The inhabitants are divided into two classes, the *Tlangvals* or young men and the *Thingfawm Naupang* or boys. The latter are the apprentice and have to carry wood for the *Zawlbuk* fire and do any odd jobs that the young men

⁹⁰ <https://glosbe.com/lus/en/chhem-thei> accessed on 25-Nov-2019

⁹¹ Lianhmingthanga, p.102

⁹² Lianhmingthanga, p.115

⁹³ J. Herbert Lorrain and Fred. W. Savidge, *A Grammar and Dictionary of the Lushai Language*, Shillong, Assam Secretariat Printing Office, 1898, p.169

chose to give them, such as washing their cloths, going errands for them, etc. They also have to carry wood, bamboos and stones when a grave is being dug.

All the boys in the village who were over nine years old used to gather firewood to be used in the *Zawlbuk*. The young boys of the village below 15 years were to keep up the supply of firewood for the *Zawlbuk*.⁹⁴ Every evening each boy had to fetch and carry two or more bundles as stipulated by a prefect or leader of the *Zawlbuk*. Those boys were known as ‘Children who gather pieces of wood’. It afforded great pleasure to the parents when their sons reached the age when they could fetch firewood for the *Zawlbuk*. No one was allowed to shrink; and if any of the boys shirked and were reported or found out, the *Zawlbuk* prefect would make them fetch two or three times the usual amount for one day. This punishment was known as ‘recurring or repeated fetching of faggots’. And so, the work and responsibility of fetching and supplying firewood for the *Zawlbuk* was done and carried out by the youngsters.⁹⁵

As they grow with age there is a curious system for deciding whether a *Thingnawifawm Naupang* has attained to the status of a *Tlangval* (Bachelor) and acquired the freedom of the *Zawlbuk*. When a boy appears to be growing up and to have reached the age of adolescence he is examined by the *Tlangvals*, one of his pubic hairs would be pulled out and if it is long enough to encircle the stem of a bamboo pipe, the person is thenceforth classed as a *Tlangval* or young man, if the hair is too short to go round the pipe stem its owner has to continue to work as a *Thingfawm Naupang*.⁹⁶

⁹⁴ Lalrimawia, *Mizoram-History And Cultural Identity (1890-1947)*, p. 22

⁹⁵ B. Lalthangliana, *A Brief History And Culture of Mizo*, Mizoram Publication Board, 2014, p.173

⁹⁶ NE Parry, *A Monograph on Lushai Customs & Ceremonies*, Tribal Research Institute, Aizawl, Mizoram, 2009. P.10



Fig: Zawlbuk
Source : Art & Culture, Aizawl

Bamboos are also used for the purpose of measurement of volume and quantity. After the harvest, the un-husked rice is piled in a conical heap. There are eight ways of measuring the volume and quantity of heaped up paddy. The highest measurement is *Mautlawn-zawn*, meaning the heap is level with the length of a bamboo (around 12 feet high).⁹⁷ , or '*Mautlawnzawn*' is a heap of grain as high as bamboo (i.e., more than 500 *phur*, one *phur* equals 3 tins of Kerosene oil), another is '*Silai zawn*' (about 500 *phur*), *Hreihazawn* (about 400 *phur*), *Tuhazawn* (about 300 *phur*), *Kakzawn* (about 200 *phur*) etc.⁹⁸

The harvest *chhip-zawn* indicated that the heap is level with the top of his head. *Silai-zawn* is level with end of his gun held up perpendicularly over his head. Lesser quantities are denoted by the height of his hand or hoe or axe held up.⁹⁹ The type of measurements are:

1. A kethup : *dawrawn phur* 30-40
2. Chhipzawn : *phur* 120-150
3. Kakzawn : *phur* 180-240
4. Tuhazawn : *phur* 250-350
5. Hreihazawn : *phur* 360-450
6. Silaizawn : 460-500

⁹⁷ C. Lalbiaknema, *Mizote Khawsak Dan*, Mizoram Publication Board, Aizawl, Mizoram, 2000. P.44.

⁹⁸ C. Rokhuma, *Tam do pawlin engnge a tih?*, p. 101

⁹⁹ J. Shakespear, *The Lushei Kuki Clans*, p.18

7. Feizawn : 600

8. Mautlawnzawn : above *phur* 600¹⁰⁰

A more detail analysis of quantity measurement was given by James Dokhuma. According to him, the smallest quantity measurement for paddy was '*a kethup*'(30 *phur*), followed by '*Ban*' or the length of an arm (around 50 *phur*). *Chem sat* or the length of a dao measurement involves around 80 *phur*. Higher than *Chem sat* was called '*Hmeichhe chip-zawn*' meaning the heap of grain is leveled by using bamboo stave at the height of average Mizo woman; that is around 120 *phur*. The next measurement was leveled with a man height called *Chhip-zawn* around 150-200 *phur*. Above these measurements were *Kakzawn* or 200-250 *phur*, *Tuhazawn* or 250-300 *phur*, *Hreihazawn* or 300-400 *phur*, *Silaizawn* or 500-600 *phur*. And at the apex was the measurement called Mautlawnzawn i.e, the length of a bamboo around 700-800 *phur*. One *phur* equals around 4 Kg,¹⁰¹

Fetching water from the well is generally assigned to the task of woman. '*Tui-um*' i.e., 'Water tube' made of bamboo culm cut open at around 2ft is used. Woman around the age of 12-14 years are called '*Tui-um-khirh rual*' meaning a grown-up woman ready to fetch water.



Fig: Mizo girl carrying *Tuium*
Source: Art & Culture, Aizawl

¹⁰⁰ C. Lianthanga, *Hmanlai Mizo Nun*, Mizoram Publication Board, pp.53-54

¹⁰¹ James Dokhuma, *Hmanlai Mizo Kalphung*, Kulikawn, JD. Press , Aizawl, 1998, pp.23-24

2.7. BAMBOO AND TAX COLLECTION:

There is also a tax collected by the chief called '*Fathang*'. It is the due payable to a chief by any of his subjects in his village or by any one from another village who cultivates his land. This due is payable in kind that is to say in paddy.¹⁰² A chief was then entitled food grain measuring a full bamboo plaited basket called '*Kho*' from his subjects. This '*Kho*' is quite big and presumably could contain around 30 Kgs of paddy. The '*Kho*' also called '*Hrai*' or '*TlangHrai*' which is kept at *Zawlbuk* is normally used for the average measurement in the village. The quantity of '*Fathang*' is also measured from this '*TlangHrai*'. '*Tlang-Hrai*' or big '*Kho*' is made of bamboo and is sometime used for lulling a baby. They inserted some warm cotton for the baby to sleep. As they used to lift up the baby time to time from this *Tlang-Hrai* and hence derived famous phrase for Mizo called '*Hraichawi*' as a reference to a baby.¹⁰³ Even the quantity of seeds of rice they cultivated was measured in terms of *Hrai* and it is used as the average measurement in their village.¹⁰⁴

2.8. OTHER USES:

Mizos have a very strong objection to getting their heads wet, and therefore in rainy season they wear hats made of strips of bamboo or cane plaited and lined with smoked leaves. The original hats were almost flat and circular, but these have been discarded in favour of very clever imitations of helmets and solar tops. People used '*Siksil*' which is a bamboo material as a protection from getting wet. It is a large shallow basket-work tray, shaped like an oyster shell, and made waterproof by being lined with smoked leaves. In the rainy season they employed this so that during weeding and while bending, hand and body are kept dry¹⁰⁵.

¹⁰² NE. Perry, *A Monograph On Lushai Customs & Ceremonies*, p.12

¹⁰³ James Dokhuma, *Zokhaw Nun*, p.90

¹⁰⁴ James Dokhuma, *Hmanlai Mizo Kalphung*, p.22

¹⁰⁵ Lt. Colonel J. Shakespear, *The Lushei Kuki Clans*, Tribal Research Institute, Aizawl, Mizoram, 2008.p.9

A bamboo is split into pieces and these pointed spikes are used to comb their hairs¹⁰⁶. Lt. Col. J. Shakespeare in his book mentioned that curly hair or hair with a pronounced wave is uncommon, and is much objected to¹⁰⁷. They also use ‘*thimkual*’ (hair-pins) and ‘*dawhkilh*’ (hair-sticks) generally made of bamboo. Men who had performed ‘*Thangchhuah*’ also wore a head-dress like ‘*Vakiria*’, made and composed of parrots feathers and porcupine quills inserted into a bamboo ring. This head-dress was worn only on important occasions like ‘*Khuangchawi*’.¹⁰⁸ A *Vakiria* acquired in 1882 by the ethnographic collector Emil Riebeck from a Mizo chief has been narrated in the following manner:

‘The central part of the headdress is made of strips of bamboo interwoven with bits of red and yellow orchids and bands of tin. Left and right two extensions are fastened to the back of the headdress by means of tufts. These extensions consist of small bamboo rods with multi-colour appendages. Both the appendages and the tufts are made of black cotton threads with pearls and bunches of pigeon feathers as tassels. Porcupine quills are stuck into the top of the central piece to which are attached tail feathers of parrots with little tufts of pigeon feather on top. The feathers have their natural colour.’¹⁰⁹



Fig: Vakiria
Source: Art & Culture, Aizawl

¹⁰⁶ James Dokhuma, *Zokhaw Nun*, p.77

¹⁰⁷ Lt. Colonel J. Shakespear, *The Lushei Kuki Clans*, p.2

¹⁰⁸ Lalrimawia, *Mizoram- History and Cultural Identity (1890-1947)*, p.27.

¹⁰⁹ Pachuau & Schendel, *The Camera as Witness*, p.283

It is essentially bamboo shoots that are consumed after being cooked. Fresh bamboo shoots are delicious and healthy, with high fiber content. After cooking the shoots are still crisp, because cooking does not destroy their texture. The gregarious flowering of bamboo increases the food supply of the rodents. A research at the Dehradun Institute of Forest Research on the connection between bamboo and rats found that the fruit contained¹¹⁰:

1. Starch (on zero moisture basis)	50.240%
2. Protein	11.556%
3. Fat	0.231%
4. Ash	3.030%
5. Moisture	9.400%
6. Others	26.493%

Bamboos are also used for weapons. This is reflected through bows which were small and made of bamboo. The arrows were carried in a bamboo quiver with a leather cap attached to it. Rev. Liangkhaia implied that early Mizo society was disturbed by frequent war, and therefore when a boy child is born, they let him light a bamboo made torch or '*Meichher*' as a wish for his success in defeating and burning his foe's village.¹¹¹

Before they obtained guns, bows and arrows were always used for hunting. Lt. Colonel J. Shakespear had mentioned in his book that bamboo spikes are used in war time. These spikes are used in such a way that a retreating foe or villagers expecting an attack rendered the ground almost impassable to a bare-footed enemy. These spikes were of two kinds, one used round the village or block house, and the other, carried in a neat little cane-work quiver, and stuck in the path when returning from a raid to delay pursuit. The former were simple bamboo spikes of various lengths, while the latter were carefully smoothed bamboo spikes about six inches long and no

¹¹⁰ Sajal Nag, p.30

¹¹¹ Liangkhaia, *Mizo Awmdan Hlui & Mizo Mi Leh Thil Hmingthangte Leh Sakhua*, Aizawl, Mizoram Publication Board, 2008, p.49

thicker than a knitting needle; each sort was nicked so that it might break off after entering the flesh.¹¹²

As a result of contact with the British Raj, and the inter-tribal feud that came to its height, the construction of stockades greatly improved. The dry ditch, filled in with sharp pointed spikes of bamboo or wood, impeded initial attack. In the middle of the village, the Mizos constructed a thick wooden wall stronghold meant for the hiding place especially for women, children, and others to seek refuge when there is danger from raid. This fort was known as “*Kulhbing*”. It was always supported by the sentry posts where the security guards easily see and attack the enemies as they approached and it was backed up by the thick wooden plank. In addition to this, the whole village was encircled with the thick wooden wall, high enough that raiders may not easily climb through. This fortress was known as “*Khaw kulh*” or outer stockade. If a particular village had no enemy and the situation was peaceful, the *Khaw kulh* was usually made with bamboo. About two metres surrounding the *Khaw kulh* was cleared off all trees and pointed bamboo spikes were placed instead.¹¹³

Daman Singh also supported this view and she remarked:

“The Strategically located village was distinguished by natural boundaries. It was fortified by stockades, and timber block houses commanded the gateways and suitable points along the paths. These block houses were occupied by the village population when an attack was apprehended. *The ground around the stockades and block houses was planted with sharpened bamboo spikes* which could constitute, as Shakespear observed, ‘a very serious obstacle to the barefoot toe’...”¹¹⁴

Before they obtained gun; It would seem that the first weapon used in times of quarrel or conflict was *Talhtum*. James Dokhuma had written that when there is inter clan conflict, they would come out to an open space where they would hit and

¹¹² Lt. Colonel J. Shakespear, *The Lushei Kuki Clans*, p.15

¹¹³ C. Lalthlengliana, *The Lushai Hills: Annexation, Resistance and Pacification (1886-1898)*, Akansha Publishing House, New Delhi, 2007, p.15

¹¹⁴ Daman Singh, *The Last Frontier: People and Forests in Mizoram*, New Delhi, Tata Energy Research Institute, India, 1996, p.7

smashed their head with the culm of bamboo. This period may be traced back to their settlement in between river 'Tiau' and 'Run'¹¹⁵.

Khuanghlang is an instrument used to carry '*Khuangchawi nu leh pa*' (a couple who performed an important ceremony called '*Thangchhuah*') on the day of *Khuangchawi* ceremony by the people. They are carried in the street and in the village square. It is made of bamboo. A kind of tree called *Hnahkhiah* and *Vaiza* is also sometimes used where bamboo is not easily available.¹¹⁶

Lusei clan who are the dominant Mizos sub-tribe used to perform a dance called *Mitthirawp lam*. And to perform this dance bamboo plays a central role as this dance involved a stretcher made of bamboo. Edifices of their dear departed were made with wood and seeds of cotton; and among them the largest edify called *Thlahpa* or the ancestor is made. All these edifices are then laid in a bamboo stretcher and the largest or *thlahpa* was in the middle. For this stretcher, two bamboo culms called *Phulrua* (*Dendrocalamus hamiltonii*) are used and the stretcher is design to have a railing. They would carry the stretcher about in the village and gongs of various sizes were beaten.¹¹⁷

2.9. BAMBOO FOR COMMUNICATION PURPOSE:

The vitality of bamboo is so significant that it became a medium of conveying messages. Among the Mizos, each village is a separate State, ruled over by its own *Lal* or chief. The chief's house is a sanctuary, where all criminals may take refuge. Murderers closely pursued by the avengers of blood rushed into the chief's presence and saved their lives at the expense of their own or their children's freedom.¹¹⁸ He has other slaves also of those taken in war; by them he sends orders and messages, their authorization being the chief's own spear, which represents his sign manual. A piece of red cloth attached to the spear means "blood," a small piece of cane attached

¹¹⁵ James Dokhuma, *Zokhaw Nun*, p.66.

¹¹⁶ *Mizo Thilhlui Thenkhat (Objects of Mizo Antiquity)*, Tribal Research Institute, Govt.of Mizoram, 1993, p.13

¹¹⁷ Zairema, *Pi Pute Biak Hi*, Aizawl, Zorun Community, Hebron Press, New Delhi, 2009, p 95.

¹¹⁸ J. Shakespear, *The Lushei Kuki Clans*. P.46

means “beating,” and if to the same is added a piece of capsicum, then an offender knows that his punishment will be hot and pungent. Two pieces of bamboo tied crosswise accompanying the spear is a demand for blackmail, the number of head of cattle required being indicated by bends in the bamboo; if the cross-piece be burned or charred with fire at one end, great danger and urgency are denoted.

In the house of a chief there is always drinking going on. The *Zu* or rice beer is either sucked up through reeds direct from the great earthen jars, or drawn off into mighty horns or great brazen bowls. Should there be an extraordinary gathering of guests; auxiliary cups are quickly manufactured from the joints of a bamboo.¹¹⁹

2.10. BAMBOO AND LANGUAGE:

Certain phrases were derived from bamboos. It is imperative that bamboo had enriched the Mizo literature. For example- ‘*Mau Mit Put*’ (i.e, to keep the eye of a bamboo). *Mau* is bamboo in Mizo and a bamboo node is considered as its eye but unlike human being this eye cannot see anything. So, in reference to people who have eyes but cannot see things while others could see them easily; this phrase is used.¹²⁰ Secondly, it is ‘*Satel Mau la ang*’. This phrase is used for someone who is slow in moving. ‘*Satel*’ is tortoise in Mizo and when a person is slow in doing things, this simile is used so as to compare him with a slow moving tortoise. Thirdly, ‘*Thing leh raw innawh hunlai*’ (‘*Thing*’ is Tree in Mizo and ‘*Raw*’ is a modified form of ‘*Rua*’ i.e species of bamboo). This phrase is a metaphor for indicating a transitional period or changing of seasons. So, they had derived important phrases from bamboo in their conversations. Fourthly, ‘*Maupui Sahthlau ang puau*’. This phrase connote a joking tone in a playful manner with friends and is used for matching an ugly person with that of a slightly cut bamboo culm. Fifth, *Maurawkel* which means a bamboo rhizome cut for container of nicotine water.¹²¹

¹¹⁹ TH. Lewin, *A fly on the Wheel or How I helped to Govern India*, pp.243-244

¹²⁰ James Dokhuma, *Tawng Un Hrilhfiahna*, Gilzom Offset, Electric, Aizawl. 2007, p. 204

¹²¹ James Dokhuma, *Tawng Un Hrilhfiahna*, p.204

However, there is also reference of reserved forest which they called it *Mau-hak*. The earliest Mizos Dictionary *A Grammar and Dictionary of the Lushai Language* translated *Mau-hak* as a patch of bamboos not to be jhuned, but preserved for building purposes.¹²² Mizos also discussed about new shoots that sprung up from the roots of old bamboo after jungle fire as *Mau âr-fêp*. The edible shoot of bamboo is also known as *Raw-tuai*.¹²³

2.11. BAMBOO AND FAMINE

Mizos dreaded the flowering of bamboos. Every bamboo in Mizoram bore flowers and fruits. Rats feeding on bamboo fruits are belived to multiply to a great innumerable extent. It is believed that after eating up bamboo fruits they started attacking paddy fields and consumed till the last straw. Mizoram, had gone through since times immemorial such a periodic natural catastrophe locally known as '*Tampui Mitthi*' (Great Famine). These famines known as '*Thingtam*' and '*Mautam*' surely come at a somewhat find periodic interval of time as the winter season turns out once in a year. Such a periodic interval of time is approximately 48 years. *Mautam* used to happen exactly 30th years after *Thingtam* and *Thingtam* used to happen at the 18th year after *Mautam*. The year 1911 was the foremost and clearly known year of *Mautam* on record by Mizos. The year 1881, thirty years before 1911, witnessed *Thingtam* famine which, however, was felt by the people no clearer than just a passing event.¹²⁴

Thingtam and *Mautam* did not produce the same effect in magnitude and there used to be slight difference in how they occurred. *Thingtam* is caused by the flowering of *Rawthing* and the area supporting *Rawthing* growth is less than those supporting *Mautak* and hence the degree of famine due to *Thingtam* was much lesser. Prior to

¹²² J. Herbert Lorrain and Fred. W. Savidge, *A Grammar and Dictionary of the Lushai Language*, p.141

¹²³ J. Herbert Lorrain and Fred. W. Savidge, p.170

¹²⁴ C. Rokhuma, *Tam do pawlin engnge a tih?*, Aizawl , Gosen Press, M.G. Road, 1988. pp. 95-96

actual *Thingtam* famine for the whole country, it used to happen on such areas west to *Langkaih* river only one year ahead. However, *Mautak* is much more abundant and thus supporting much larger number of rat population inducing the famine to more severe. *Mautam* famine was felt one year ahead in those areas east to *Tuirini* river before actual occurrence for the whole region.¹²⁵ But beyond *Khawchhak Tuipui* river, the degree of famine was less because of less bamboo growth. As many people had left Mizoram to avoid these famines *Thingtam* and *Mautam* in the past, their descendants are still living in those areas adjacent to Mizoram.

Generally it is considered that a year ahead to these famines occurrence as '*a vur kum*' (Great harvest).¹²⁶ In such year, agriculture was taken with great enthusiasm. The gregarious flowering of bamboo has greatly affected the political life of the Mizos. Even the reason for certain migration in Lushai hill is due to this flowering of bamboo. The widespread bamboo was inextricably linked to the life-style of the people and had a wide range of uses: walls of houses, floors, the frame for roofs, spears, traps, cups, handles for tools, water containers, mats, baskets, spoons, fuel, as well as edible shoots.¹²⁷ Even in famine situation when food scarcity prevailed in the hills bamboo shoots and yams are the nature's gift on which they sustained their life. So many phrases and similes are obtained from the characteristic of bamboo and in short bamboo had enriched their literature. Thus, bamboo has played significant role in the life of the Mizos. From birth till death bamboo has been a part and parcel of their life.

¹²⁵ C. Rokhuma, p. 97

¹²⁶ C. Rokhuma, p. 101.

¹²⁷ Daman Singh, p.10

CHAPTER 3

BAMBOO TECHNOLOGY

3.1 INTRODUCTION:

Technology is the application of scientific knowledge to the practical aims of human life or, as it is sometimes phrased, to the change and manipulation of the human environment.¹²⁸ The term technology is a combination of the Greek words '*techne*' which means "art, craft" with '*logos*' as "word, speech" meant in Greece a discourse on the arts, both fine and applied. When it first appeared in English in the 17th century, it was used to mean a discussion of the applied arts only, and gradually these arts themselves came to be the object of the designation. By the early 20th century, the term embraced a growing range of means, processes, and ideas in addition to tools and machines. By mid-century, technology was defined by such phrases as "the means or activity by which man seeks to change or manipulate his environment."

Even such broad definitions have been criticized by observers who point out the increasing difficulty of distinguishing between scientific inquiry and technological activity. Essentially, techniques are methods of creating new tools and products of tools, and the capacity for constructing such artifacts is a determining characteristic of humanlike species. Other species make artifacts: bees build elaborate hives to deposit their honey, birds make nests, and beavers build dams. But these attributes are the result of patterns of instinctive behavior and cannot be varied to suit rapidly changing circumstances. Humanity, in contrast with other species, does not possess highly developed instinctive reactions but does have the capacity to think systematically and creatively about techniques. Humans can thus innovate and consciously modify the environment in a way no other species has achieved. By

¹²⁸ <https://www.britannica.com> accessed on 13.11.2019.

virtue of his nature as a toolmaker, man is therefore a technologist from the beginning encompasses the whole evolution of humankind.¹²⁹

It is by means of technology that men acquire from their habitat the foodstuffs, the shelter, and the implements they must have if they are to survive. All those objects they make use for these purposes are generally termed as 'Material Culture'. It is quite understandable that without these objects or materials men would not have maintained their livelihood. It is also possible to measure the advancement of a tribe or people on the basis of technological equipment they possess. In the earlier past, power machine was unknown to men and all the technology was based on the power or strength of men or animal.

Different groups of people live in different regions without being aware of how the other groups survive by the use of technological equipment. However, the basic need of all human being is similar. The use of bow is known to almost all groups of people in the world, but a compound bow made and used by the Eskimos is unknown to other people. The simple bow used by them is commonly used by other groups in different parts of the world. However, the type of bows and how they are used are different in different parts of the world. The Mizos rarely used bows and arrows for hunting animals. They used bows with pellets for hunting birds.¹³⁰

3.2 MIZO AND BAMBOO:

Like any other primitive people, Mizos are also known to have passed through different stages of socio-cultural life. In order to survive and maintain such stages of life, different material objects were used by them. Interestingly, Bamboo are found to occupy an important place in their material culture such as snares, deadfalls and traps, Agricultural implements, Games implements, Musical instruments, Fishing implements etc.

¹²⁹ *History of technology* excerpt from: <https://www.britannica.com> accessed on 13.11.2019.

¹³⁰ Lianhmingthanga, *Material Culture of The Mizo*, Firma KLM Pvt. Limited, Calcutta, 1998, pp. xii-xiii

The degree to which the inherent capability of a resource is harnessed depends upon the available technology. This includes the sources and supplication of energy, material, knowledge, and methods of resource use, both derived from indigenous experience and borrowed from elsewhere.¹³¹ Bamboo is a material with structure and culture. The material bamboo, since its long history of versatile utilization in people's daily life, has become a kind of bamboo culture in countries like China, Japan and many other countries. This kind of "bamboo culture" can be read from three perspectives: firstly bamboo is the medium by which the local cultures have been represented, transferred and developed. An example for this is the Japanese tea ceremony, for which bamboo utensils have been used exclusively. Secondly bamboo becomes a certain "material culture" itself through the numerous utilizations of bamboo goods in people's life. Thirdly bamboo is taken as a motive in the cultural life such as bamboo poems, bamboo paintings and bamboo philosophy.

Bamboo is a 'material' which as a term itself reveals the social attribute of bamboo. In simple word, it is a 'material' because it is useful. Because of their special natural features, bamboos have been used as a universal material by human beings. In China the use of bamboo goes back to 5000 years ago as early as the Stone Age and Bronze Age period. They take bamboos as their friends in their lives; bamboos have often been taken as favourite themes in the painting arts, calligraphy, and in poems (Wang 2001). The widely uses of bamboo have been recorded in historical literature. In the Jing dynasty (265-316 AD) Kaizi Dai wrote the book *Bamboo Encyclopedia* which is regarded the first book on bamboo research in the world.¹³² Furthermore, bamboo has played an important role in cultural development and it can be found instrumental in daily life culture.

J. Shakespear had recorded in *The Lushei Kuki Clan* that all the hill men are very fond of fresh meat and are clever at trapping game. Long lines of rough fencing are run through the jungle, with small openings at intervals, in which snares are set. Pheasants, jungle fowl etc.,. Coming to one of these fences will always run along it till an opening is found, and thus get snared. Porcupines are killed by a bamboo spear

¹³¹ Daman Singh, *The Last Frontier: People and Forests in Mizoram*, p.19

¹³² Xiaobing Yu, *Bamboo: Structure and Culture*, pp.23-24

fastened to sapling bent back like a spring and so arranged that it shall be released just as the animal is opposite the spear point.¹³³

3.3 BAMBOO SNARES AND TRAPS:

Mizos are skillful in making *Thangchep* whereas *Thang* means snare and *chep* means to catch hold of. The snare consists of a bark string, a thin and fine fiber of palm and a bamboo stick which is twisted and bent forming a small arched triangular framework. This snare is mainly used for catching squirrel, rats and sometimes small terrestrial birds are trapped. The triangular framework made of bamboo stick is laid at the ground by fixing split bamboo at both sides. Sometimes the snare is set on a bamboo pole where the animal is frequently passing. A sapling is bent by a bark string which is held by a small fluffy stick (*zangsi*) against the arched bamboo framework and is again held horizontally by another small stick. This short stick is tied with a thin palm fibre which runs down at the base. When the animal comes, it tries to get through, but the palm fiber pulls down the stick which releases the sapling and the noose is tightened at the neck of the animal against the arched bamboo framework.



Fig: Thangchep
Source: Mizoram State Museum

¹³³ J. Shakespear, *The Lushei Kuki Clan*, Tribal Research Institute, Govt. of Mizoram, Aizawl, 2008, p.33

Bamboo technology has been employed among the Mizos in the form of various snare and traps. *Vaithang* is another snare for catching rats and is set in the jhum and jhum house during harvesting time. Sometimes it is also set in the house and granary. The word *Vai* is to wave and *Thang* means snare. At the tip of a pering bamboo stick of about 9ft.long, a bark string is tied and the other end of the string is tied to a smaller bamboo stick which is twisted and bent forming a triangular framework which is again tied to the tapering bamboo stick with a pointed end. The bark string is tightened by bending the tapering bamboo which is fastened by a small fluffy bamboo stick or *Zangsi* which is again held by a thin piece of split bamboo. If this snare is set in the house the pointed end of the bamboo stick is tucked firmly in the wall and the triangular framework attached to the stick is kept in position convenient for the entry of the rat.¹³⁴



Fig: Vaithang
Source: Mizoram State Museum

¹³⁴ Lianhmingthanga, p.3

Another kind of trap for killing small animals like rats, porcupine, monkeys and birds is a trap called *Mangkhawng*. The trap is set at any place in the jhum, jungle and near and under the jhum house. A fence is created around the spot and a gap where animal is likely to enter is left for setting the trap. Over the gap, a log of woods is hung up by a rope which is tied to one end of a stick, which is placed on a forked young tree, the other end of the stick is again tied with another rope which runs down below and attaches to a wooden pole by means of a small and short stick *Zangsi* which is again held by another stick. On this stick are placed some split bamboos or twigs where the animal is likely to set its foot. When animal comes its weight presses down the stick releasing the *Zangsi* and as a result the heavy log falls down and crushes the animal. The same kind of trap is commonly used by the Lakher who call it 'makheu'.¹³⁵

The snare set for catching partridge, wild fowl, black pheasant and peacock pheasant etc, is called *Beai*. *Beai* is the seed of a black hard bean which is used as bait. Unlike other snares, no fencing is done. In the jungle where the birds mentioned above habitually come, several spots are selected at various places. Each spot is cleared by removing leaves and herbs so as to make the bait visible even from a distance. At the spot a hard pointed split bamboo stick of about 6 inches long is fixed firmly to the ground. Near the tip of the bamboo stick, a hole is made where a small piece of bamboo stick about 1 inch long is inserted horizontally. A young tree standing by the side of the spot is bent with a cotton rope in the middle of which is tied a small piece of bamboo stick that has been inserted horizontally near the tip of a bamboo stick. A small piece of bamboo stick or *Zangsi* is held by a folded cane which carries the black seed of bean. This seed of bean is always polished with oil to make it conspicuous and attractive to the birds.¹³⁶

¹³⁵ Lianhmingthanga,p.3

¹³⁶ Lianhmingthanga,p.4



Fig: Beai

Source: Mizoram State Museum

Kilen is a net for catching parrot. Though the name *Kilen* means parrots' net, it is used for trapping wood-pigeon also. The net is stretched by two long bamboo poles at a shallow valley in between two hillocks where the flocks came and pass through. Nearby the spot, the setter of the net keeps himself waiting and hidden under the bush. When the birds come, they cannot see the net and are trapped in the net.

Hnawhtawt is a trap for killing rats. One end of a cut piece of bamboo about one meter long is made forked and near another end a notch is made. A split bamboo of about 2 meters long is then bent like a bow by tying it with a bark rope which rests at one end of another smaller bamboo that is inserted into the bamboo pipe. At the end of the smaller bamboo pipe some cooked rice are put to serve as bait and the pipe is held by a small bark string that runs across the bait. When the rat comes for food, it enters into the notch and bites the string that finally breaks up. As a result the bent split bamboo straightens and the bark rope presses the smaller bamboo pipe which thrusts the rat against the wall of the notch.¹³⁷ This kind of trap is usually made and set in the Jhum house.

¹³⁷ Lianhmingthanga,p.5-6



Fig: Hnawhtawt, a trap for rats.
Source: Mizoram State Museum

Tungthlun is a very simple snare. One end of a rope is attached to a tree or bamboo standing by the side of a path frequently used by animal. The other end of the rope is used as a noose which is kept in position and held by forked small stick. When the animal comes, it enters into the noose and as it goes forward the noose tightens at its neck. In this way, smaller animals like porcupines, wild cat, etc can be caught.



Fig: Tungthlun
Source: Mizoram State Museum

The trap mainly for monkey is called *Kharkhep*. A box like basket is made with split bamboo the basket is then kept in a place where monkeys always frequented in search of food. A sapling is bent by means of a rope, at the end of which is tied a small piece of stick which is held by another small stick where some fruits or objects which are delicious to monkeys are kept for a bait. At one wall of the basket, a hole is made for entry of the monkey and a shutter for that hole is hung up with a rope. As soon as the animal enters into the basket, it displaces the stick which releases the rope of the shutter which goes down and closes the hole. The animal remains trapped inside the basket till the man comes with dao or stick for killing.¹³⁸

Humhiah is a pitfall for killing animals like elephants, tiger, deer, etc. The size and depth of the pit depend upon the animal aimed at. In the jungle, a spot is selected on the path where the animal frequently passes. At the selected spot a hole is dug in the earth. On the floor of the pit, a number of pointed and sharp spears or bamboos are fixed. The pit is covered with split bamboo which is supported by a single wooden pole both ends of which rest at the rim of the pit. The plaited bamboo which is covered with earth and at its top dry leaves is spread in order to conceal all the footprints and work done by human beings. When the animal comes and puts its weights on, the cover of the pit collapses and the animal then falls down into the pit where the sharp and pointed spears pierce into the ventral parts of the animal.¹³⁹

3.4 BAMBOO AND FISHING:

Fishing is carried on with the ordinary casting net, and fish are sometimes killed with spears or daos, but most reliance is placed on the *Ngawi*. This is a weir built of timber and bamboos reinforced with stones, which stretches from side to side of the river. At one side an opening is left through which the water rushes with great force into a long bamboo shoot, which curves slightly upwards and ends in a deep receptacle, also of bamboo. The fish are carried into this by the force of the water

¹³⁸ Lianhmingthanga, p.9

¹³⁹ Lianhmingthanga, p.11

which escape between the bamboos, and are unable to leap out. Any chance openings in the weir are closed with conical baskets which detain small fish, prawns, etc.,. These weirs are constructed by the united labor of the whole village, and any villager can make use of them, but he has to pay a toll in kind to the chief.¹⁴⁰

Ngawi or *Ngawidawh* is a complicated method of catching fish in which all the households of the village can participate. All the participants will get the same share. Even the widow can participate if there is no man in the house. It is usually done during the month of August and the middle of September of the year. All the able-bodied men in the village go down to the river to catch the fish for more than five or six days.¹⁴¹

3.5. INDIGENOUS GAMES AND BAMBOO:

Mizos have many indigenous games and they are very fond of them. But in the past, they seldom organized competition in the field of any discipline as it is done today. Except children, all were busy for jhum or household work from dawn to dusk. They, therefore, never played any game leaving behind their daily works. However, the children had an ample time for playing during day and night time as there was no school to go in the earlier past.¹⁴² Boys and young men are very proficient with the pellet bow, and many birds and squirrel falls victim to the sundried pellets shot from their bamboo bows, with strings of cane.¹⁴³

Kalchhet is one of the most important Mizo indigenous games which required a pair of bamboo. *A Grammar and Dictionary of the Lushai Language* translated *Kal-chhet* as stilts¹⁴⁴. The player in this game attempted to walk on stilts and run a race without falling down. Stilts were made usually from two species of bamboos locally called *Rawthing* (*Bambusa Tulda*) and *Rawnal* (*Dendio Calamus Longispathus*). It was with this that the Mizo boys always played game of *inkheng* or run a race.

¹⁴⁰ J. Shakespear, pp.35-36

¹⁴¹ Lianhmingthanga, p.62

¹⁴² Lianhmingthanga, p.16

¹⁴³ J. Shakespear, p.39

¹⁴⁴ J. Herbert Lorrain and Fred. W. Savidge, p.115.

Inzuan-kahlensiak is equivalent to the sport high jump. But early Mizos never organize it for big competition; usually it is conducted as games among friends. Two bamboos are split into two inches width but its height is fixed as per convenience. Holes are carved on it in a row so that bamboo stave stick in between the two poles could be placed higher as one jumped finished a certain height.¹⁴⁵

Kahthek or *Kahkhet* is a kind of gun made of bamboo. The mizo boys called it a gun or *Silai*. A small bamboo tube of about two feet long is generally used for the purpose. The bamboo node at its one end is cut so that the bamboo tube can be used for the barrel of the gun. At the middle point of the tube a hole of about two inches long is made where one end of a split bamboo which will work like a spring, is inserted and the other end of the split bamboo hole near the other end of the bamboo tube. For the bullet, they use small round pebbles and sometimes small pointed bamboo sticks are used as an arrow used in a bow.¹⁴⁶

Kahchik is a kind of water pump. The Mizo boys in the past, used it like today's water pistol. The materials used for *Kahchik* are a small bamboo tube of about one foot long and a split bamboo stick three to four inches longer than the former. One node of the bamboo tube is cut opened and at the other node a small hole is made for drawing and outflow of the water. One end of the bamboo stick is bound with a thick rag which is inserted into the bamboo tube. Drawing and pumping out the water is done by pulling and pressing of the split bamboo stick. This is played exclusively by children only.¹⁴⁷

3.6 BAMBOO AND HUNTING:

Mizos are good hunter, and there are generally two methods of hunting. They are *Lehlang Sapel* which means hunting in and around jhum or nearby distant and *Ramchhuak Sapel* meaning to go in camp for hunting in far distant jungles. Before

¹⁴⁵ *Mizo Infiamna*, Aizawl, Tribal Research Institute, Dept.of Art & Culture, Govt.of Mizoram, 2011, p. 34-35

¹⁴⁶ Lianhmingthanga, p.22.

¹⁴⁷ Lianhmingthanga, pp. 23-24

guns were obtained by them, it is with bows and spears that hunters set out for hunting.

The meaning of bow in Mizo is *Sairawkherh* and arrow is *Thal*. Before guns were introduced, bows and arrows were always used for hunting. The bow was about three and a half feet long and the arrow was short feathered and iron barbed. For killing bear, deer, and other wild animals a poisonous sap was applied at the pointed tip of the arrow. For killing birds clay pellets of about half an inch diameter was generally used.¹⁴⁸

Thal : *Thal* or an arrow is usually used for killing animals. It is propelled from a bow made of bamboo with cane as its string. *Thal* can be made from bamboo and sometimes iron is used. Hunters are expert in using bamboo bows and arrows. This weapon does not make unnecessary sound so it is much in use among mizos.¹⁴⁹ *Thal* is also used as weapon to kill elephant. Sometimes the pointed sharp iron is fixed at split bamboo and a hunter could carry 40-50 *thal* in a bamboo container called *Thal bawm*.¹⁵⁰ However, bamboo *thal* or *thal* made of iron were never used as weapon in wartime; they are cautiously used for killing animals at the time of hunting game.¹⁵¹

Fishing is not only a game or sport but also a source from which they obtain fishes to supplement their diet. In the past they went out for the game when they were free from jhum work or at certain time when they have the urge for fishing. As the land has no sea water or big rivers, large scale fishing was never done and most of the time the fishes caught were enough only for household consumption or if a little more than that, they distributed to their relatives and neighbors. They employed various methods and also used different materials for catching fishes. During the dry seasons they used to catch fishes with their bare hands after draining and throwing out the water, and also one simple method was they stirred the water first and then caught the fishes out of the troubled water.

¹⁴⁸ Lianhmingthanga, p.43

¹⁴⁹ *Mizo Ramchhuah Dan*, Tribal Research Institute, Aizawl, Mizoram, 1993, p.10

¹⁵⁰ Liangkhaia, *Mizo Awmdan Hlui & Mizo Mi Leh Thil Hmingthangte Leh Sakhua*, Aizawl, Mizoram Publication Board, 2008, p. 51

¹⁵¹ Lalthanliana, *Mizo Chanchin (Kum 1900 Hmalam)*, p.141

Aiawt or a bamboo trap for catching small fishes and crabs is employed in a small stream or river where the small fishes are swarming. The trap consists of an open basket. The top of the basket is filled in with a funnel made of bamboo slats which are kept wide apart by the flow of the water to allow small fishes to enter. The funnel is detachable and is removed to allow the fish or crab to be taken out.¹⁵²

3.7 BAMBOO AND MUSICAL INSTRUMENT:

Mizos are very fond of music as their socio-cultural life is also closely interwoven with it. The earlier Mizo music do not seem to have much connection with their religious and ritual performances excepting one item of instrument called *Tumphit*. This particular instrument *Tumphit* was regarded very essential as it was to be blown just before a priest chanted when sacrificial ceremonies were performed.

The *Tumphit* consisted of three small bamboo pipes which emitted three different sounds when played in rotation. The tones are **d r** and **m**. The Pandean pipes were played by putting the rim of the *Tumphit* against the lower lip and blowing downwards into the pipe. The *Tumphit* was indispensable when Mizos ancestors held a dance in celebration of a head taken in a raid.¹⁵³

Though there was no much use of music in their religious life, but all their important occasions and festivals were spent with whatever musical instruments they had. Even while out for hunting, particularly when the game was of dangerous nature, the sound of drums and gongs was utilized to drive the animals away or towards the waiting shooter.¹⁵⁴

Tingtang is a Mizo word referring to 'Guitar'. But this *Tingtang* is played like a violin. It is made of a hollow gourd in which a bamboo shaft is fixed. The hollow gourd is cut opened and covered with a dry bladder of animal. The string taken from *Malay Sago* palm is tied at both ends of the bamboo shaft. It is then played by

¹⁵² Lianhmingthanga, p.61

¹⁵³B. Lalthangliana, *A brief History And Culture of Mizo*, Mizoram Publication Board, Aizawl, 2014, p.148

¹⁵⁴ Lianhmingthanga, p.25

rubbing the string with a thin fine piece of bamboo exactly like the way a violin is played with a bow.

It is difficult to tell when and how the Mizo came to use guitar as their musical instrument. However, legend has it that there was a blind woman named *Chhunruii* in a place called *Kabaw Valley* in Burma, where the Mizo lived in course of their migratory movement during the year not later than 16th Century AD. At that time there was also a man called *Thinlanga* who was always making and playing guitar. But he was very much feared by the villagers. The blind woman, not knowing how fearful the man was, came nearby him. Since then *Chhunruii* knew how to make and play a guitar. She then roamed about in the village singing and playing guitar. During those days, *Chhunruii* became very popular for her sweet music and songs and all those songs were called after her name '*Chhunruii Zai*' that means *Chhunruii's* song. For her pitiable condition, people offered her dresses and in turn she composed songs to express her thankfulness. After the death of *Chhunruii*, a certain man who was believed to be the brother of *Chhunruii* was heard to have always been singing the songs with a guitar. Thus, both of them were said to have popularized the use of guitar among the Mizo.¹⁵⁵

Rawchhem is a Scotch's bag-piper like mouth organ or Mizo bag-piper. It is made of a dry hollow gourd into which are inserted nine bamboo tubes of different size and length, five of which being fixed at the gourd of about two inches distance from the other four tubes both of which are tied together but slightly slanting outwards. To make different notes of sound, holes are made at the desired spot of the tubes. Blowing is done at the tapering end of the gourd. To produce sufficient sound a very hard blow is required and different notes of sound are made by blocking or opening the holes in the tube with fingers.¹⁵⁶

¹⁵⁵ Lianhmingthanga, pp.27-28

¹⁵⁶ Lianhmingthanga, p.28



Fig: Rawchhem
Source: Art & Culture, Aizawl

Tawtawrawt is a bamboo trumpet. *Tawtawrawt* is made by cutting bamboo tubes. The bigger tubes are joined by inserting into it the smaller tubes. Many bamboo tubes are joined one after another till the last tube happened to be the size of a forefinger from where the trumpet is to be blown. A dry empty gourd, the bottom part being cut off is joined with the bigger end of the bamboo tube. The whole length can be more than five feet. It is usually blown in the Jhum to tell their whereabouts and presence and also to pass time and relieve their loneliness.¹⁵⁷ The sounds or tones it produced were **d s m d s**. It was noisy, blatant and earsplitting, and was very useful for frightening and driving away wild animals.¹⁵⁸

Phenglawng is a bamboo flute. A bamboo tube is cut opened at both ends; one end being notched with splinter of bamboo and a small hole is made near its end for blowing. Near the other end of the tube, three holes are made for producing notes. When the performer blows, notes are produced by placing his fingers at the holes.

Another instrument is called *Lemlawi*. This *Lemlawi* is purely a Mizo musical instrument, a kind of which has not been possessed by any other people in the world. It is made of a piece of bamboo the size and length of which being equivalent to an index finger. A string is tied at both ends of the bamboo piece. The bamboo strip was

¹⁵⁷ Lianhmingthanga, p.29

¹⁵⁸ B. Lalthangliana, *A brief History And Culture of Mizo*, Aizawl, Mizoram Publication Board, 2014, p. 148

as flat and thin as a leaf. Two slits were cut through the flat side of the bamboo. The two slits divided the bamboo into three parts. They cut through one end of the middle and formed a tongue. The tongue or middle portion was carved and trimmed till it could wag and shake and vibrate. A short piece of string or twine was tied to the end of the instrument near the base of the tongue and a long string was tied to the other end near the tip of the tongue. The end of the short string was coiled round the base of the little finger of the left hand and the string was held in the first. The end of the longer string was also coiled round the base of the little finger of the right hand.¹⁵⁹ The performer plays with the help of his hand and teeth inside his mouth. Different notes are produced according to the opening of the performer's mouth, narrow or wide.¹⁶⁰

This *Lemlawi* was held firmly like a mouth organ by the lips and the corners of the mouth, and by pulling the short string taut with the left hand. By blowing or sucking the breath like a mouth organ, different sounds were produced such as: Buzzing sounds, humming sounds, the sound of the flapping of the wings of a hornbill as it flew over a village or even simple tunes. Mizo ancestors used their *Lemlawi* to amuse themselves and to pass their time.¹⁶¹

Tuiumdar is also a simple music which was mostly played by children. A chunk of bamboo tube only between two nodes is taken to make this instrument. From the outer covering of the bamboo, two or three pieces of cane like strings are curved out. The strings are then raised up by inserting two pieces of bamboo between the string and the bamboo tube near each node. It is played like a guitar.¹⁶² The instrument was made from a large species of clump bamboo called *Rawnal* (*Dendrocalamus longipathus*) or *Rawthing* (*Bambusa tulda*) or from a *Mau-tak* (*Melocanna bacciferra*). Four slits were made lengthwise, not too far apart, on the large bamboo between the two joints. The three portions between the slits were carved and made

¹⁵⁹ B. Lalthangliana, p.146-147

¹⁶⁰ Lianhmingthanga, pp. 29-30

¹⁶¹ B. Lalthangliana, p.147

¹⁶² Lianhmingthanga, p.32

smooth to form the three strings of the instrument. The slits and strings were of different lengths to produce three different notes. It was played with fingers.¹⁶³

3.8 BAMBOO AND COTTON MAKING:

Mizos grew cotton in their jhum land which was collected carefully, ginned and spun out with the help of a material made from bamboo.

Herawt is a home-made gin consisting of a frame holding two wooden rollers. *Lasai* is a bamboo stick with a wide base and a narrow top, having one cane string which is first tied to the base and then to the top of the stick. The cotton is teased by this bow about five times to become clean. *Hmui* or the spinning wheel is made from wood and bamboo cane, the actual spindle being made of iron. The stand of the wheel is also made of wood.¹⁶⁴

Chawnzial is a mat made of a number of thin strips of wood or bamboo used for keeping the raw rolled cotton to be spun. The cotton is placed on a smooth plank and rolled with the stem of a tall grass called '*Hmunphiah*'¹⁶⁵

Lazar is a bamboo pole supported by two upright posts which is made for drying the hank of the thread. A large stick is placed between the hank of the thread.

Suvel is a revolving tool with four extendable arms around which skein of cotton yarn is put for making the yarn into balls around a small stone. It is made of wood and bamboo having a stand of its own.¹⁶⁶ There may be two/three kinds of *Suvel*. Two sets of holes are made right through the bamboo joint one above the other, and about an inch apart. Four arms made of split bamboo are inserted through these holes overlapping each other, so that they can be lengthened or shortened to suit the length of the skein to be wound.¹⁶⁷

¹⁶³ B. Lalthangliana, p.149

¹⁶⁴ B. Lalthangliana, p.148

¹⁶⁵ Lianhmingthanga, p.64

¹⁶⁶ Lianhmingthanga, p.65

¹⁶⁷ *Mizo Thihlui Thenkhat (Objects of Mizo Antiquity)*, Tribal Research Institute, Aizawl, Mizoram, 1993, p.33



Fig: Suvel
Source: Art & Culture, Aizawl

3.9 LOOM OR WEAVING MACHINE:

Bamboo has been utilized in various ways, making loom or weaving machine is one of them. TH. Lewin had suggested that the bamboo is literally the Hillman staff of life. He weaves his sleeping mat of fine slips with bamboo. The instruments with which women weave their cotton are of bamboo.¹⁶⁸ For dress, man had *Hnawkhal* made of hemp to put around the loin. The same thing for woman had another name *Siapsuap*. When they moved further west to the *Len* range and the *Tiau* valley in the 16th century there was some change in their living conditions. They came to have the knowledge of weaving by hand loom and blankets of medium size were used by both sexes to cover up themselves.¹⁶⁹ And the traditional Mizo loom was made with the help of bamboos.

Handloom weaving has always been an integral part of the mizo life and it offers a rich and varied ethnic range of intricately woven handloom products. The women are the sole weavers in Mizo society. In earlier times, every Mizo girl was expected to know the art of weaving, which met the practical needs of not only herself, but those of her family members. Their craft shows them as being a self-reliant and skillful. *Puan*, which simply means cloth in the native language, is a drape and uncut rectangular cotton cloth with well-crafted edges and prominent horizontal borders,

¹⁶⁸ TH. Lewin, *Wild Races of South-Eastern India*, Firma KLM Pvt. Ltd: Tribal Research Institute, Aizawl, 1978, p. 16

¹⁶⁹ B. Lalthangliana, *A Brief History And Culture of Mizo*, Mizoram Publication Board, Aizawl, 2014, pp.22-23

was the main traditional costume. Weaving is done by women on the loin loom. The weaving in the loin loom is done in two parts, and the fabric is later stitched together. Various parts of the loom are composed of the treadle, reeds, bamboo strips and wooden rods. The weavers work at the loom in their leisure time and during the lean agricultural months.¹⁷⁰

There are a number of craftsman and skilled artisans among the Mizos. Weaving is an integral part of the Mizo culture and the women learn how to weave at an early age. There is a combination of the Loin Loom and the fly shuttle loom in the development of the handloom industry amongst the Mizos. The fly shuttle loom introduced to produce better fabrics for high-ranking members of the society. This complex loom helps the weaver in producing longer lengths of cloth of uniform quality. The loom consists of four large upright bamboo poles, each with a notch and tongue for carrying the front and the back rods. The four poles about 130cm high are rectangular braced by small, horizontally placed bamboo poles, two each on the four sides. The warp threads are stretched between the warp beam anchored to the ground, a few feet away in front of the weaver, and a breast beam tied to a belt or back strap made of fabric or woven bamboo running behind the waist.¹⁷¹

The traditional textiles of the different Mizo tribes like many cultures in Southeast Asia and even in Americas are exclusively woven on the back-strap or back-tension loom. Although there are different varieties of looms, the fundamental technique involved in their style of weaving is essentially similar. The back-strap loom is one of the oldest weaving devices. In primitive societies it provided a weaving device at very little cost and it is highly portable and easy to set up anywhere. The elements of basic Mizo loom consisted of a shed rod called *Thembupui*, made of bamboo which is bigger in diameter than the other rods. It passes over and under alternate warps, to define the shed. Sometimes, depending on the design the weaver make use of a lease or coil rod to hold the warps in order. A temple which is a narrow piece of bamboo split is also employed to maintain the width of the cloth being woven. The sticks or smaller rods used in the loom besides the sword (*Themtleng*) and shed rods are made

¹⁷⁰ <https://www.thenortheastwindow.com> accessed on 30.11.2019

¹⁷¹ <https://ignca.gov.in/textiles-of-mizoram/> accessed on 30.11.2019

of bamboo splits smoothly polished with beeswax.¹⁷² *Thembupui* raises those threads of the warp which are not raised by the *Hnahchawi* and *Themtang*.

Themper is the name of a small pointed bar, made of split bamboo in a loom which keeps the cloth stretched to its full width.

Puanphei/Laphei is a piece of thin bamboo sticks about two inches long, upon which the cotton to form the weft thread has been wound. The shuttle is refilled from the ball by spinning it up and down against the hip with the palm of the hand.¹⁷³

3.10. BAMBOO CANE WEAVING:

Mizos are skilled craftsmen. It is the work of menfolk to cut bamboo for cane work. Bamboo cane works are an important perimeter of craftsmanship. Mizo called cane work as *Hnang tah*. *Hnang* is a piece of cane or bamboo prepared by splitting the bamboo or cane vertically, and is the typical material of the Mizo for tying or weaving. The houses are built with *Hnang* and they make a number of tools and instruments with *Hnang*.¹⁷⁴ For obtaining cane a bamboo species called *Phulrua* (*Dendrocalamus hamiltonii*) is desirable and often sought for. Bamboo cane could be dexterously plaited in different styles and they are instrumental for making roof, floor, wall, baskets, traps, etc., There are various ways of weaving bamboo cane and they are:

1. *Malkalh* or single interwoven
2. *Bawhtah* or Double interwoven
3. *Thumbawh* or Triple interwoven
4. *Bawhtah kaihsawih* or Twisted-double interwoven
5. *Thumbawh Kaihsawih* or Twisted-triple interwoven
6. *Chhuatpui tah* or Floor-style interwoven
7. *Zawngdaikalh* or bamboo fencing. And

¹⁷² Rosaline Varsangzuali, Evolution of Mizo Dress: A historical study.pp196-197

¹⁷³ Lianhmingthanga, p.67-68

¹⁷⁴ Lianhmingthanga, p.97.

8. *Phakrak* or Single woven for roof structure.¹⁷⁵

Mizo Society is remarkably cohesive and class barriers are practically non-existent. Community life in both villages and towns is highly organized and disciplined, founded on principles of mutual cooperation and collective welfare.¹⁷⁶ However, PB. Lalremruata suggested that there is stratification in their society in regards to construction of the wall of houses. *Thangchhuahpa* or those who have attained social norms to get into *Pialral* could make his wall with bamboo woven in *Bawhtah* or Double interwoven form. The layman or average people could use single interwoven or *Malkalh* for their wall but the chief house was invariably constructed using *Thumbawh* or Triple interwoven form.¹⁷⁷



Fig: Some of the cane works of Mizo
Source: Art & Culture, Aizawl

¹⁷⁵ Siamliana Khiangte, interviewed by Pc. Lalrindika at Khawzawl, dt. 17.10.2019. Aged 80 years.

¹⁷⁶ Daman Singh, *The last frontier: People and Forests In Mizoram*, p.xx (introduction)

¹⁷⁷ PB. Lalremruata, interviewed by Pc. Lalrindika at Electric Veng Aizawl. Dt. 8.11.2019.

Hunting, gathering, and jhumming remained the solitary means of resource use in early times, relying entirely on human energy, employing simple tools, using local material and indigenous knowledge, completely free from external influences. An interesting feature of the prevailing technology was its total uniformity within the village and near uniformity across villages and clans.¹⁷⁸ Thus, bamboo and its different species are utilized to utmost advantages in the Mizos society and this in turn shaped the Mizo culture. The uses of bamboo as technology can be of various designs of traps, handloom and musical instrument. Bamboo cane could be used directly for building constructions. It is with this technology that certain walls, snares, baskets and houses could be proficiently assembled.

¹⁷⁸ Daman Singh, p.20

CHAPTER- 4

CONCLUSION

4.1 THE MATERIAL BAMBOO:

Bamboo belongs to the *Gramineae* family and has about 90 genera with over 1200 species. It is naturally distributed in the tropical and subtropical belt between approximately 46 ° north and 47 ° south latitude, and is commonly found in Africa, Asia and Central and South America. Bamboo is an extremely diverse plant, which easily adapts to different climatic and soil conditions. Dwarf bamboo species grow to only a few centimeters (cm), while medium sized bamboo species may reach a few metres (m) and giant bamboo species grow to about 30 m, with a diameter of up to 30 cm. Bamboo stems are generally hard and vigorous, and the plant can survive and recover after severe calamities, catastrophes and damage. Young bamboo shoots were the first sign of new plant life after the nuclear bombing of Hiroshima and Nagasaki.¹⁷⁹

Bamboo is an important resource, which was discovered, adopted and developed by humans in ancient times. The first scripts were written in China on strips of bamboo more than 6,000 years ago, during the Neolithic period. Bamboo pens, brushes and musical instruments were invented 3,000 years ago. The first paper was produced from bamboo in China in the ninth century. Bamboo culture is an essential part of human history and civilization, especially in Asia.¹⁸⁰

Bamboo is a collective term used to identify the culms (stems) of any of a group embracing many different kinds of grasslike woody plants. The characteristics of bamboo vary considerably from species to species. Mature plants are characterized

¹⁷⁹Maxim Lobovikov (ed.al), *World Bamboo Resources; A thematic study prepared in the framework of the Global Forest Resources Assessment 2005*, Food And Agriculture Organization of The United Nations, Rome, 2007, p.1

¹⁸⁰ Maxim Lobovikov (ed.al), *World Bamboo Resources; A thematic study prepared in the framework of the Global Forest Resources Assessment 2005*,p.33

by rapid growth which generates long fibres in a homogeneous structure. It can be used whole, split or flattened into sheets for a great many structural applications. Splits of various sizes can be obtained, and can even be twisted to form ropes. The northeastern region has an immense standing resource of bamboo. Distribution of species is linked to variations in terrain, altitude, rainfall, and soil composition. Some species occur all over the region whereas others may be found only at specific locations.¹⁸¹

4.2. BAMBOO CULTURE:

Out of the 150 bamboo species available in India, about 58 species are found in the North-East India. 35 species of bamboo have been reported from Mizoram. Out of which 20 are indigenous to state, while 15 species have been introduced from outside. *Bambusa tulda* (Rawthing), *Dendrocalamus longispathus* (Rawnal), *D. Hamiltonii* (Phulrua), *Melocanna baccifera* (Mautak), *Melocalamus compactiflorus* (Sairil), *Sinarundinaria griffithiana* (Phar) are the main bamboo species found in the state contributing as much as 29% of the total forest cover in the state. *Melocanna baccifera* contributes about 90% of the bamboo growing stock. This enormous bamboo resource provides a variety of livelihood opportunities to the people of the land.¹⁸²

The presence of all these bamboos in Mizoram accounted for the possibility of having bamboo culture. Bamboo had predominately taken a central role in Mizo society. The common shared utilization of bamboo among them helped developed a bamboo culture. According to a classical definition expounded by E.B. Tylor, Culture is that complex whole which includes knowledge, belief, art, morality, law, practice and other liabilities and habits acquired by man as a member of society. In

¹⁸¹ M.P. Ranjan, *Bamboo Crafts of North-east India*, India International Centre Quaterly, Vol. 11. No.4. 1984, p.97

¹⁸² Sandeep Yadav, Hans Raj (ed.al), *Bamboo Flowering in Mizoram and its impact on livelihood of people*, Conference paper, March 2015, accessed <https://www.researchgate.net/publication/280598499> dated 27.11.2019

man's capacity, he includes language and the method of instrument making also. Therefore, Culture is a learnt and shared behavior.

4.4. FINDINGS:

Climatic conditions of these hills, being mild and humid, accounted for the dense forests of evergreen trees and bamboo forest. Therefore, forest played a vital role for their daily livelihood. This work reveals that the abundant growth of bamboo provided considerable household materials of the inhabitants. Indeed, the lives of the inhabitants were largely governed by the bamboo forests. A number of species of bamboo and orchids of various kinds were to be seen in abundance.¹⁸³ Even Missionary like Reginald A. Lorrain who arrived in the Lakher region of southern Mizoram recorded in his work *5 years in Unknown Jungle* that -

The most useful of all these products of the jungle is the bamboo, of which there are six or seven species or more ranging from the size of a very small cane to six inches in diameter. Of all these species of bamboo, the "True Bamboo" is the most useful and springs up in the jungle singly, one by one, rising from twenty to forty feet in height. The other species of bamboo occur in clumps, a number springing out from the common root, and have a much thicker wood, but these are of very little use in the construction of houses, etc, while the "True Bamboo" is invaluable.¹⁸⁴

It is found that the "True Bamboo" or *Mautak* (*Melocanna baccifera*) in Mizoram plays the greatest economic importance for the people. Out of all the bamboo species found in Mizoram, *Melocanna baccifera* is the most important bamboo species and helps the people in day-to-day life. They are extensively used as a handle of agricultural implements. Its rhizome, culm, or combination of culm and rhizome are mostly used as handles for small hoes, axes, spuds, adzes, sickles, bill hooks, and

¹⁸³ C. Lalhlengliana, *The Lushai Hills: Annexation, Resistance and Pacification (1886-1898)*, Akansha Publishing House, New Delhi, 2007, pp.2-3

¹⁸⁴ Reginald A. Lorrain, *5 Years In Unknown Jungle*, New Delhi, Allied Publishers Pvt.Ltd; Tribal Research Institute, Mizoram, Aizawl (Reprint), 2012, pp. 12-13

daos. *M. baccifera* being a multipurpose, eco-friendly crop abundantly available is a blessing for the people. Its young shoots can be used as food. However, young shoots are seasonal and so preservation is necessary for storage, for which there are many methods. The most commonly practiced one in Mizoram is sun drying and drying on fire. The shoots of most bamboo species in Mizoram are edible and are consumed locally. *M. baccifera* are the most consumed species by the people followed by *Dendrocalamus hamiltonii*, *Dendrocalamus longispathus* and *Bambusa tulda*. On average, *M. baccifera* contributes 53.69% to the total annual bamboo shoot consumption.¹⁸⁵

The economic sustainability of the Mizo communities was based on these main basic resources of forest, agriculture and hunting. The forest products were bamboos, wood, fruits and medicinal plants. Hunting of animals supplemented the nutritious value of their food. Agriculture was based on shifting or jhum cultivation. Thus, the early subsistence economy was simple but practical. Forest lands were cleared for jhum cultivation, a method by which crops were raised by using the ashes of burnt vegetation as fertilizers.¹⁸⁶

Forests were the source of food in more ways than hunting and gathering alone. They were also cleared for cultivation, a method in which the ashes of burnt vegetation provided manure to the soil. This method involved slashing and burning the vegetation, raising crops, and then abandoning the plot to recover for a number of years before bringing it under cultivation once again. It is said that the thicker the jungle; the better the crop. However, Bamboo jungle produced less, but had the advantage of being easier to clear and permitted cropping every four or five years whereas the time for adequate regeneration was believed to be 8-10 years for tree forests.¹⁸⁷

¹⁸⁵ H. Lalhrualtuanga and M.N.V. Prasad, *Traditional Uses, Economic Importance and Ecological Services of Melocanna baccifera Roxb. In Mizoram, India*, The Asian and Australasian Journal of Plant Science and Biotechnology, Global Science Books, 2009, p.4

¹⁸⁶ Robert Lalremtuanga Ralte, *Colonialism in Northeast India: An Environmental History of Forest Conflict in the Frontier of Lushai Hills 1850-1900*, International Journal of Humanities and Social Science Invention, Vol 4, Issue I/January, 2015, p.67

¹⁸⁷ Daman Singh, *The Last Frontier: People and Forests in Mizoram*, pp.15-16

Missionaries like E. Chapman and M. Clark reported that the people were dependent on the forest, and on their own efforts, for all the necessities of life. They were entirely self-sufficient, growing all they ate and also the cotton which was spun for clothing and bedding. All the material needed for building their houses- wood, thatch, cane and bamboo- came from the forests.¹⁸⁸

It was found that utilization of forest resources comes naturally to the Mizos. TH. Lewin recorded that there are eleven varieties of the bamboo found throughout the hills, and canes grow in profusion. He stated that the cane is the hill man's rope; with it he weaves baskets, binds his house together, and throws bridges over the otherwise impassable hill terrains. He further suggested that

‘The bamboo is literally his staff of life. He builds his house of the bamboo; he fertilizes his fields with its ashes; of its stem he makes vessels in which to carry water; with two bits of bamboo he can produce fire; its young and succulent shoots provide a dainty dinner dish; and he weaves his sleeping mat of fine slips thereof. The instruments with which his women weave their cotton are of bamboo. He makes drinking cups of it, and his head at night rests on a bamboo pillow; his forts are built of it; he catches fish, makes baskets and stools, and thatches his house with the help of the bamboo. He smokes from a pipe of bamboo; and from bamboo ashes he obtains potash. The hill man would die without the bamboo, and the thing he finds hardest of credence is, that in other countries the bamboo does not grow, and that men live in ignorance of it’.¹⁸⁹

The study found that bamboo and its different species carpeted the hills of Mizoram. The total geographical area of the State is only 21,081 square kilometers of which nearly 40% is occupied by the bamboo forests. Mizoram has an abundant supply of raw material in the form of bamboo species. Mizoram occupies the largest forest area

¹⁸⁸ Marjorie Sykes (ed), *Mizo Miracle*, The Christian Literature Society, 1968, p.9

¹⁸⁹ TH. Lewin, *The Hill Tracts of Chittagong And The Dweller Therein*, Calcutta, Bengal Printing Company Limited, 1869, pp.9-10

under different bamboo species as this region is the largest reservoir of bamboo resource in India.¹⁹⁰

Of all the species of bamboo found in Mizoram, Mizos have a clear cut distinction among bamboo species. Any bamboo species is classified under ‘*Mau*’ and ‘*Rua*’. ‘*Mau*’ bamboo species essentially is most common in the hills and they are botanically labeled as *Melocanna Baccifera*. The ‘*Rua*’ species are bigger in size as compared to ‘*Mau*’. They are tall, firm with strong branches. Located and grow in cluster. However, the ‘*Rua*’ species are not found plentiful in western Mizoram. They are easier to find in the eastern side of Mizoram. Even the ‘*Mau*’ species are not much to find in eastern Mizoram. Among the eight districts in Mizoram, Champhai which is the eastern most districts recorded the lowest percentage of bamboo distribution. Champhai has the lowest area under bamboos (345.68 sq.km).¹⁹¹

B. Lalthangliana also recorded that early Mizos could not get ‘*Mau*’ species in the Chin Hills when they moved from Kabaw Valley. In the northern part of *Chin* Hills precisely between *Than* range and river *Run*; *Mau* species of bamboo are hard to find till today. But the early mizos are familiar with ‘*Rua*’ species of bamboo like *Rawngal* (*Schizostachyum fuchsianum*) and *Rawpui* and thereby their weapon like bow and arrow, snare and traps etc., were obtained from ‘*Rua*’. Most of the cane, water tubes or bamboo ropes used for tying are obtained from ‘*Rua*’ species. Their weapons like *thal* or arrow were made of bamboo. *Thal* was among the first weapon they locally made and it was composed in the song:

“*Phulraw pan dingdi ang chawiin;*

Hlukva leng 30 kap ing..”

“With my fatal arrow shot from mighty Phulraw bamboo

Down there goes thirty fowls..”¹⁹²

¹⁹⁰ <https://www.thenorthseatwindow.com> accessed on 28.11.2019

¹⁹¹ *Bamboo Resources of Mizoram*, Environment and Forest Department, Govt. of Mizoram, Aizawl, 2010, p.131.

¹⁹² B. Lalthangliana, *Mizo Culture*, Aizawl, Gilzom Offset, Electric Veng, 2013, pp.52-53

Some of the *Rua* species of bamboo are- *Rawthing* (*Bambusa tulda*), *Rawnal* (*Dendrocalamus longispathus*), *Rawngal* (*Schizostachyum fuchsianum*), *naat* (*Schizostachyum munroii*), *Rawthla* (*Schizostachyum dullooa*), *Chal* (*Schizostachyum polymorphum*), *Phar* (*Arundinaria callosa*), *Tursing* (*Dendrocalamus strictus*), etc.¹⁹³

Another important characteristic of traditional Mizo society was nomadic life, which was necessitated by their economy based on swidden. They moved regularly from place to place in search of virgin forest. Their nomadic life was reflected in their house which was constructed mainly with bamboo and thatches, lasting only six to seven years. Mizo community is involved in the bamboo related activity since time immemorial. Earlier it was confined to only household level. Fire was constructed from rubbing thin bamboo stick for cooking. *Chhemthei* was made from bamboo culm to blow and lit fire at the hearth. Houses were set up with bamboo. Water reservoir or storage was prepared with bamboo. Drinking and eating at mealtime was done with the help of bamboo cups and spoons. Fowls are caged in a bamboo weaving basket called *Arbawm*. Later on some big involvement of bamboo came up in Mizos society at the performance of ritual like *Cheraw* dance, *Tlawmngaihna* or Mizo value was depicted with bamboo stretcher as they help to carry fellow man who met accident or died even though the household activities of works continued. Traditional ornaments are made from bamboo. During festivals, Mizo women use a headgear of a bamboo band with parrot feathers stuck in it, the ends of which are decorated with beetles.¹⁹⁴

The special structure of bamboo has many advantages such as lightness, strength, elasticity, beauty, fast growth and easiness in processing. These structural factors help bamboo to be one of the most important and popular materials in the pre-industrial time in countries and places where bamboos are abundant. In all the bamboo objects there is the representation of the bamboo's special structure as well as the intelligence of human beings. For example, the bamboo bridge in South Asia,

¹⁹³ Rev. Darchungnunga, *Rua leh Mau hi thliar hran a tha lo maw?*, Vanglaini daily newspaper, Aizawl on 22 Aug. 2019

¹⁹⁴ <https://www.thenortheastwindow.com> accessed 28th.11.2019

in which bamboo culms serve as the supportive element of the building, shows the strength and lightness of bamboo culms. Whereas the elasticity of bamboo culms can be seen in the bamboo basket, where bamboo culms are split into strips and woven together. With these traditional bamboo objects the advantages of bamboo as a material cannot be replaced by other natural materials like wood or metal. Here the use of bamboo as a material has not destroyed but enhanced the natural beauty of the structure.¹⁹⁵

Bamboo crafts, like any other traditional crafts in the world, have been developed into a kind of applied arts which have served people's everyday life from one generation to another, and at the same time recorded the history and culture of the local people. They are themselves a traditional, regional culture. Because bamboo is a local material with the connection to its geographic conditions, the developments of bamboo crafts also represent the changes of the local culture from a special perspective.¹⁹⁶ Among the Mizos, Bamboo crafts or bamboo baskets like *em*, *thul*, *dawrawn*, *paikawng*, *kho*, etc, represent a kind of mizo culture. These bamboo baskets are indispensable item in every household. *Em or Emping* was carried by Mizo women on their way to jhum-work. Another bamboo crafts like '*Thlangra*' or winnowing tray and '*Thul*' were always carried by mizo women at their marriages.

There is a reason as to why Mizos house were built with the help of bamboo. In fact, bamboo culm and split are used in almost every construction in the hills. The bamboo building has special advantages against humidity, high temperature, the rain, insects and other small animals. The most important reason for bamboo building is that the bamboo as a building material is easy to get, easy to work with and easy to build. When natural calamities like cyclone, landslide, earthquakes etc, occurs, it did not caused heavy loses and they are easily repaired since bamboos are found in plenty.

Bamboo and its different usages reflected a culture among Mizos. This work found that a split bamboo pieces called *Thlahthi* was used to cut the umbilical cord of a

¹⁹⁵ Xiaobing Yu, *Bamboo: Structure and Culture*, p.73

¹⁹⁶ Xiaobing Yu, *Bamboo: Structure and Culture*, p.129

newborn baby and neither metal nor iron objects were used. Mizos were agriculturalist and all the handle of their tools were more or less made of bamboo. Baskets of all kinds were made of bamboo cane woven for holding vegetables and grains. Water storage or reservoir was in the form of bamboo culm. Bamboo is used for measurement of volume and quantity. The highest form of harvest which after heaped up is measured with the help of bamboo and they called it as *Mautlawn-zawn*.

Bamboo is an eco-friendly material for Mizos. Houses cannot be built without this Green-gold. Bamboo stem or pipe is used to exempt certain boys from their assigned work in *Zawlbuk*. Bamboo has endowed their languages in the form of sentence constructions. In other words, bamboo contributed for certain phrases like '*Mau mit put*', '*Satel mau la ang*', etc. Therefore, it is clear that bamboo has enriched their life and society so much so that it bequeathed for their philosophy. Bamboo regenerates itself within a close year and metaphorically mizo poets borrowed this in their lyrics as a wish to refresh or renew one's own life.

The early Mizo society was primitive in which contact with outside world was very minimal. The society is patriarchal and patrilineal, and has a well-defined pattern of culture of its own. Bamboo has crucially plays an important role in shaping their culture. It is a material which takes a central role in their society. Houses will not stand without it; agriculture will not be possible, water could not be fetched, Handloom and traps will not be effective. It is difficult to exaggerate the role of bamboo in Mizo society. Their tribal life depended heavily on this bamboo. In short, Bamboo and Mizo society could not be separated and it is with this bamboo that their society developed and cultures thrive. Thus, Bamboo and Mizo society goes interrelated and cordially find its existence together.

BAMBOO AND MIZO SOCIETY: A HISTORICAL STUDY

**(An Abstract of the Dissertation Submitted in Partial Fulfillment of the
Requirement of the Degree of Master of Philosophy in History & Ethnography)**

BY

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1. INTRODUCTION:

The study of history encompasses a diverse subject. The writing of history in the nineteenth century dwelt more on scientific methods of historical research. History writing in the 19th century engrossed on politics, particularly of 'great men' and narrative of events. A new approach to history writing emerged in Europe at the end of the 19th century and the beginning of the 20th century. This new style of history writing intended to present 'total history' by including the roles and attitude of the people who are marginalized in the society. It denied the role of events in historical processes and rejected the traditional political history. The concept of total history combined ecology with economy in order to explain long-term phenomena which shaped mankind's history. The 1980s saw the emerging development in the field of environmental history as a result of environmental awareness. 'Nature' may be seen as a parallel category with race, class, gender, ethnicity or nationalism as categories deployed to reveal power relationships in societies. The concern for nature did exist in the past. Historians or philosophers of the past were aware that the natural environment plays an important role in how humans behave, relate to one another or organize themselves. Historians since Herodotus and Thucydides have understood the value of geography and environment in the understanding of human societies.

The Annales School has been nurturing the seeds of environmental history since the 1970s. They adopted total history which is a history that sought a synthesis of all the material, physical and mental forces that had shaped the life of men in the past. Fernand Braudel could discern in his work *Mediterranean and Mediterranean World in the Age of Phillip-II*¹ a powerful influence of geography. Ladurie brought to light the point of environmental change in some of his major works. This school served as a great source of inspiration to the environmental historians of the future. In South

¹ *The Mediterranean and Mediterranean World in the Age of Phillip-II*, first published in 1949 was a seminal work of Fernand Braudel. His work covered Mediterranean world from the renaissance to the 16th century. His work contained three key elements— notion of “total” history, role of time in history, and importance of geography.

Asia, a basis for environmental history was laid and it began to emerge from the late 1980s.²

This trend was also followed up in India when scholars like Madhav Gadgil, Ramachandra Guha and others have come up to meet the situation. As far as North-east India is concerned, few studies have come up in the last decade. In regards to Mizoram studies on environmental history is rare. However, this research work intends to search a close relationship and cohesion that exist between the Mizo society and forest resources, particularly bamboo in pre-colonial Mizoram.

Bamboo and Mizo society had a close link since Mizoram is geographically endowed with rich biological diversity. In the precolonial Mizoram, neither large scale agricultural practice nor industry developed. Hunting wild animals, gathering vegetables from the forests and also jhum cultivation was the pillar of subsistence. The Mizos depended on their knowledge of nature and environment. Here, Bamboo is employed in a number of ways and is used for different purposes. Their handicrafts, house constructions, agricultural implements, weights and measurement, traps and snares, musical instruments, weapons of war, idioms and phrases, etc., has to do largely with bamboo. They even consume bamboo shoots as their food item. They also incorporated bamboo in their famous dance 'Cheraw'.

Bamboo is widely used as a material in Asia, South America and Africa, where abundant different species of bamboo are found. Bamboo has developed a survival strategy with its efficient structure through millions of years of evolution. India is one of the leading countries of the world, second only to China in bamboo production. There are 125 indigenous and exotic species of bamboo falling below 20 genera in an area of 10.03 Million hectares. The distribution of bamboo also differs from one region to another with certain bamboo taxa characteristics of a particular zone.³

² Ranjan Chakrabarti, *Random notes on Modern Indian History: 1757-1947*, Tandrita Chandra Readers service, Kolkata, 2005, pp. 403-404.

³ DN. Tewari, *A Monograph on Bamboo*, India, Valley Offset Printer, Dehra Dun, 1996, p.15

The North Eastern Hill (NE) regions of India possess the largest species of bamboos in India. Among seven states of NE India, Mizoram has the largest bamboo-covered forest area. The bamboo forest area of Mizoram constitutes 14% of the total of India's bamboo area i.e., 8.96 Million ha⁴. Most of the bamboo species in Mizoram are found between 400m-1,500m altitude and their distribution is somewhat restricted to above 1,550m⁵. There are 35 different species of bamboos in Mizoram⁶. Among all these species of bamboos '*Mautak*' (*Melocanabaccifera*) is the dominant forest resource of the state⁷. This '*Mautak*' is a versatile species; it is a spreading species forming no clumps. The culms grow up to 8-10m. Some species in Mizoram are viz: Rawte (*Schizostachyum manni*), Chalte (*Schizostachyum polymorphum*), Rawnal (*Schizostachyum fuchsianum*), Mautak (*Melocana baccifera*), Rawlak, Rawthing (*Bambusa tulda*), Rawthla (*Schizostachyum dullooa*), Talan (*Bambusa mizoramiana*), Tursing (*Dendrocalamus strictus*), Rawngal (*Dendrocalamus hookeri*), Raw-mi (*Dendrocalamus sikkimensis*), Phulrua (*Dendrocalamus hamiltonii*), Phar (*Sinarundinaria falcata*), Sairil (*Melocalamus compactiflorus*)⁸, etc.,

With the long history of versatile utilizations of bamboo, there seems to develop a kind of bamboo culture' in countries like China, Japan and many other countries. Bamboo becomes a certain 'material culture' in itself through its numerous utilizations in Mizo society. At birth, it is said that a sharp plaited piece of bamboo traditionally known as '*Tlahthi*' is used to cut the umbilical cord of a newborn baby⁹. This reflected that bamboo is used from childbirth in the society. When a baby boy is born with no deformity it is a Mizo custom that a spear is clapped in his hand as a wish for him to become a great warrior. And if she is a girl a hoe wherein the handle is made from bamboo is clapped in her hand as a blessing for her prosperity¹⁰.

⁴ H. Lalhruaitluanga and MNV. Prasad, *Traditional uses, Economic importance and Ecological services of M.baccifera in Mizoram, India*. Global Science Books, 2009.

⁵ Bamboo Development Agency (Website), <https://mizobamboo.nic.in> (Accessed on 19th March 2019)

⁶ According to the report published by E&F Dept.Govt.of Mizoram, Aizawl, <https://mizobamboo.nic.in>

⁷ Bamboo resources in Mizoram (Website) 2017, <https://forest.mizoram.gov.in> (Accessed on 21 November 2018).

⁸ Darkunga, *Mautam leh Sazu*, Mizoram Publication Board, Aizawl. 2006.p.4

⁹ H.S. Luaia, *Hmanlai Mizo Khawsak Dan leh Mizoram Buai Lai Thu*, Mizoram Publication Board, 2004, p.1.

¹⁰ James Dokhuma, *Zokhaw Nun*, JD. Press, Kulikawn, Aizawl, 1998,p123

Materials played an important role in every culture. The ancient people used tools made from stone and wood not just for hunting. They also used animal bones to record their activities or for divination. Use of bamboo is closely linked to Mizo culture. Bamboo stretcher called *Hlang* is used for carrying injured people or those who met an accident. Even Mizos had a custom known as '*Mi zawn inchuh*' meaning a wrestle to get a deceased man from *Hlang*.

Since the Mizos were migratory tribe, they did not build strong houses¹¹. They predominantly used different bamboo species and wood in their construction, with *Mautak* (*Melocanna baccifera*) making the largest material contribution. Grass thatched roofs are predominantly used in pre-colonial era. Cane is generally used for keeping the joints together. The doors and windows are usually made up of bamboo¹². In the Lushai Chrysalis, AG.Mc.call had vividly described a typical Mizo house and its usage of bamboo in such a way that the floors were of split bamboo, plaited together. He further stated that the Houses are well built and usually last for eight years or so. Bamboo matting provides the alternative to thatch roof.

A smoking pipe made from bamboo called "*Vaibel*" had greatly reflected the Mizo culture. McCall suggested that the nicotine water is collected and given to the smoker as an appreciation for his bravery in order to encourage them to attain prestige and fame. This nicotine water in bamboo tube; when holding in the mouth is said to have a stimulating effect. Agriculture is taken as the backbone of their economy. So, it is imperative that they used '*Vaibel*' to smoke-off mosquitoes and other insects at the time of weeding.

Bamboo is also used for a measurement of adulthood or (age classification). It is the duty of little boys to collect firewood for the hearth at *Zawlbuk* (Bachelor's barrack). As they grow with age there is one condition on which they could escape this assigned task and that is upon examination of his body by '*Tlangval*' (bachelor). For

¹¹ Seletthanga, *PipuLenlai*, Lianchungi Book store, Aizawl, 1978 (4th edition) p.6.

¹² H. Lalhrualtuanga and MNV. Prasad, *Traditional uses, Economic importance and Ecological services of Melocanabaccifera Roxb.in Mizoram*, India, Global Science Books, 2009.

this they use the stem of a bamboo pipe as an examination for his up-gradation to *Tlangval* from *Thingfawm naupang*.

Fetching water from the well is generally assigned to the task of woman. '*Tui-um*' i.e., 'Water tube' made of bamboo culm cut open at around 2ft is used. Woman around the age of 12-14 years are called '*Tui-um-khirh rual*' meaning a grown-up woman ready to fetch water.

Bamboo is also used for the purpose of measurement of volume and quantity. At the time of harvest, the measurement for the largest quantity is '*Mautlawn zawn*' i.e., a harvested paddy is heaped up and it literally reached the length of a bamboo (around 12 feet high). This is equivalent to '*phur*' 400.

There is also a tax collection for the chief called '*Fathang*'. A chief collected food grain full of bamboo plaited basket called '*Kho*' from his subjects. This '*Kho*' is quite big and presumably could contain around 30 Kgs of paddy. The '*Kho*' also called '*Hrai*' or '*TlangHrai*' which is kept at *Zawlbuk* is normally used for the average measurement in the village. The quantity of '*Fathang*' is also measure from this '*TlangHrai*'. This '*Tlang-Hrai*' or big '*Kho*' is made of bamboo and is sometime used for lulling a baby. They inserted some warm cotton for the baby to sleep. As they used to lift up the baby time to time from this *Tlang-Hrai* and hence derived famous phrase for Mizo called '*Hraichawi*' as a reference to a baby.

In rainy season they wear hats made of strips of bamboo or cane plaited and lined with smoked leaves. People used '*Siksil*' which is a bamboo material as a protection from getting wet. It is a large shallow basket-work tray, shaped like an oyster shell, and made waterproof by being lined with smoked leaves. In the rainy season they employed this so that during weeding and while bending, hand and body are kept dry.

A bamboo is split into pieces and these pointed spikes are used to comb their hairs. Lt. Col. J. Shakespeare in his book mentioned that curly hair or hair with a pronounced wave is uncommon, and is much objected to. They also use '*thimkual*' (hair-pins) and '*dawhkih*' (hair-sticks) generally made of bamboo. Men who had

performed *'Thangchhuah'* also wore a head-dress like *'Vakiria'*, made and composed of parrots feathers and porcupine quills inserted into a bamboo ring. This head-dress was worn only on important occasions like *'Khuangchawi'*.

Bamboos are also used for weapons. This is reflected through bows which were small and made of bamboo. The arrows were carried in a bamboo quiver with a leather cap attached to it. Before they obtained guns, bows and arrows were always used for hunting. Lt. Colonel J. Shakespear had mentioned in his book that bamboo spikes are used in war time. Before they obtained gun; It would seem that the first weapon used in times of quarrel or conflict was *Talhtum* made of big bamboo culm. James Dokhuma had written that when there is inter clan conflict, they would come out to an open space where they would hit and smashed their head with the culm of bamboo. This period may be traced back to their settlement in between river *'Tiau'* and *'Run'*.

Basket works are mainly carried out by men. The *Thul* is a basket with four short legs made from bamboo. At the time for marriage it is mandatory for a bride to bring *Thul* in her husband home. For carrying goods there are the *Dawrawn* holding about 50lbs of paddy; the *Em* similar to *dawrawn* but about half the size, are made of bamboos. The *Paikawng* similar in shape to the *'em'* is used for conveyance of wood, water tubes, etc., There are also several sorts of flat baskets for holding grain, each with its particular name. The containing power of these is approximately constant, and they are used as measures of quantity.

Certain phrases were derived from bamboos. For example- *'Mau Mit Put'* (i.e, to keep the eye of a bamboo). *Mau* is bamboo in Mizo and a bamboo node is considered as its eye but unlike human being this eye cannot see anything. So, in reference to people who have eyes but cannot see anything; this phrase is used. Secondly, it is *'Satel Mau la ang'*. This phrase is used for someone who is slow in moving. *'Satel'* is tortoise in Mizo and when a person is slow in doing things, this simile is used so as to compare him with a slow moving tortoise. Thirdly, *'Thing leh raw innawh hunlai'* (*'Thing'* is Tree in Mizo and *'Raw'* is a modified form of *'Rua'* i.e species of bamboo).

This phrase is a metaphor for indicating a transitional period or changing of seasons. So, they had derived important phrases from bamboo in their conversations.

Thus, considering all the stated nature and vitality of bamboo in the Mizo society one could not deny the fact that bamboo is closely embedded in their culture. Bamboo is used in countless number of ways as food items, for shelter, weapons, music, dance, snare & traps, birth and death, agro-implements and even for dresses. In other words, it may not be wrong to argue that the entire Mizo life revolves around the use of bamboo resources. It would be extremely difficult to comprehend the Mizo society without having a proper understanding of their close relationship with nature and forest resources particularly bamboo.

2. REVIEW OF LITERATURE

Literature has little to offer on environmental issues in Mizoram, apart from the occasional brief and often cryptic remark. The vagueness of such references posed hindrance and the lack of published material was daunting, but the research work was carried throughout with the help of published books by local authors, interviews, archival sources and newspapers etc.,. However, More than 65 books are consulted at one point or another for this research work. Environmental subject is an area where Mizos are found lacking in the present scenario and therefore utmost achievements are hard to attain. More than 30 books of Mizo author pertaining to environmental subject reflecting Mizo culture are referred. The rest of the sources are attributed to ph.d thesis, Research Journal and published Environmental related books as well as Forestry subjects.

Local authors are efficient in their task of portraying early Mizo society; but on the line of studies on material culture of the Mizos information are dwindling. Quite a number of research works had been carried out on the studies on bamboos but those works had dominantly botanical approach or connotation. In other words, there is so much space for improvement on researcher from scholar of humanity background to unearth the bamboo material impact on society. This perspective can be useful

enriching history when tracing people or community to study about their relationship between environment and society. It is with this in line that the present research on bamboo and Mizo society is imbued.

3. OBJECTIVES OF THE STUDY

1. To understand the role played by bamboo in the Mizo culture
2. To study for the relationship between bamboo and Mizo economy.
3. To study bamboo technology and material culture.

4. METHODOLOGY

Primary and Secondary sources are used along with oral sources as a methodology. Interviews and archival sources are employed for further references wherever applicable.

5. AREA OF STUDY

The present study covered the entire Mizoram.

6. CHAPTERISATION

CHAPTER 1: INTRODUCTION

The different species of bamboo and its geographical extension and concentration in Northeast India are studied.

CHAPTER 2: BAMBOO AND LIVELIHOOD

In this chapter attempt is made to bring out the way in which the Mizos depended on Bamboo for their livelihood.

CHAPTER 3: BAMBOO TECHNOLOGY

This chapter examined the various kinds of tools and implements made from bamboo and how these technologies shaped the material culture of the Mizos.

CHAPTER 4: CONCLUSION

This chapter summarized and included the findings of the study.

7. CONCLUSION & FINDING

Bamboo belongs to the Gramineae family and has about 90 genera with over 1200 species. It is naturally distributed in the tropical and subtropical belt between approximately 46 ° north and 47 ° south latitude, and is commonly found in Africa, Asia and Central and South America. Bamboo is an extremely diverse plant, which easily adapts to different climatic and soil conditions. Dwarf bamboo species grow to only a few centimeters (cm), while medium sized bamboo species may reach a few metres (m) and giant bamboo species grow to about 30 m, with a diameter of up to 30 cm. Bamboo stems are generally hard and vigorous, and the plant can survive and recover after severe calamities, catastrophes and damage. Young bamboo shoots were the first sign of new plant life after the nuclear bombing of Hiroshima and Nagasaki.

Bamboo is an important resource, which was discovered, adopted and developed by humans in ancient times. The first scripts were written in China on strips of bamboo more than 6,000 years ago, during the Neolithic period. Bamboo pens, brushes and musical instruments were invented 3,000 years ago. The first paper was produced from bamboo in China in the ninth century. Bamboo culture is an essential part of human history and civilization, especially in Asia.

Bamboo is a collective term used to identify the culms (stems) of any of a group embracing many different kinds of grasslike woody plants. The characteristics of bamboo vary considerably from species to species. Mature plants are characterized by rapid growth which generates long fibres in a homogeneous structure. It can be used whole, split or flattened into sheets for a great many structural applications. Splits of various sizes can be obtained, and can even be twisted to form ropes. The northeastern region has an immense standing resource of bamboo. Distribution of species is linked to variations in terrain, altitude, rainfall, and soil composition. Some species occur all over the region whereas others may be found only at specific locations.

Out of the 150 bamboo species available in India, about 58 species are found in the North-East India. 35 species of bamboo have been reported from Mizoram. Out of which 20 are indigenous to state, while 15 species have been introduced from outside. *Bambusa tulda* (*Rawthing*), *Dendrocalamus longispathus* (*Rawnal*), *D. Hamiltonii* (*Phulrua*), *Melocanna baccifera* (*Mautak*), *Melocalamus compactiflorus* (*Sairil*), *Sinarundinaria griffithiana* (*Phar*) are the main bamboo species found in the state contributing as much as 29% of the total forest cover in the state. *Melocanna baccifera* contributes about 90% of the bamboo growing stock. This enormous bamboo resource provides a variety of livelihood opportunities to the people of the land.

Climatic conditions of these hills, being mild and humid, accounted for the dense forests of evergreen trees and bamboo. Therefore, forest played a vital role for their daily livelihood. The abundant growth of bamboo provided considerable household materials of the inhabitants. Indeed, the lives of the inhabitants were largely

governed by the bamboo forests. A number of species of bamboo and orchids of various kinds were to be seen in abundance. Even Missionary like Reginald A. Lorrain who arrived in Lakher region of southern Mizoram recorded in his work 5 years in Unknown Jungle that -

“The most useful of all these products of the jungle is the bamboo, of which there are six or seven species or more ranging from the size of a very small cane to six inches in diameter. Of all these species of bamboo, the "True Bamboo" is the most useful and springs up in the jungle singly, one by one, rising from twenty to forty feet in height. The other species of bamboo occur in clumps, a number springing out from the common root, and have a much thicker wood, but these are of very little use in the construction of houses, etc, while the "True Bamboo" is invaluable.”

It is found that the "True Bamboo" or Mautak (*Melocanna baccifera*) in Mizoram plays the greatest economic importance for the people. Out of all the bamboo species found in Mizoram, *Melocanna baccifera* is the most important bamboo species and helps the people in day-to-day life. They are extensively used as a handle of agricultural implements. Its rhizome, culm, or combination of culm and rhizome are mostly used as handles for small hoes, axes, spuds, adzes, sickles, bill hooks, and daos. *M. baccifera* being a multipurpose, eco-friendly crop abundantly available is a blessing for the people. Its young shoots can be used as food after cooking. However, young shoots are seasonal and so preservation is necessary for storage, for which there are many methods. The most commonly practiced one in Mizoram is sun drying and drying on fire. The shoots of most bamboo species in Mizoram are edible and are consumed locally. *M. baccifera* are the most consumed species by the people followed by *Dendrocalamus hamiltonii*, *Dendrocalamus longispathus* and *Bambusa tulda*. On average, *M. baccifera* contributes 53.69% to the total annual bamboo shoot consumption.

The economic sustainability of the Mizo communities was based on these main basic resources of forest, agriculture and hunting. The forest products were bamboos, wood, fruits and medicinal plants. Hunting of animals supplemented the nutritious

value of their food. Agriculture was based on shifting or jhum cultivation. Thus, the early subsistence economy was simple but practical. Forest lands were cleared for jhum cultivation, a method by which crops were raised by using the ashes of burnt vegetation as fertilizers.

Forests were the source of food in more ways than hunting and gathering alone. They were also cleared for cultivation, a method in which the ashes of burnt vegetation provided manure to the soil. This method involved slashing and burning the vegetation, raising crops, and then abandoning the plot to recover for a number of years before bringing it under cultivation once again. It is often said that the thicker the jungle; the better the crop. However, Bamboo jungle produced less, but had the advantage of being easier to clear and permitted cropping every four or five years whereas the time for adequate regeneration was believed to be 8-10 years for tree forests.

Missionaries like E. Chapman and M. Clark reported that the people were dependent on the forest, and on their own efforts, for all the necessities of life. They were entirely self-sufficient, growing all they ate and also the cotton which was spun for clothing and bedding. All the material needed for building their houses- wood, thatch, cane and bamboo- came from the forests.

It was found that utilization of forest resources comes naturally to the Mizos. TH. Lewin recorded that there are eleven varieties of the bamboo found throughout the hills, and canes grow in profusion. The cane is the hill man's rope; with it he weaves baskets, binds his house together, and throws bridges over the otherwise impassable hill terrains. He further suggested that-

'The bamboo is literally his staff of life. He builds his house of the bamboo; he fertilizes his fields with its ashes; of its stem he makes vessels in which to carry water; with two bits of bamboo he can produce fire; its young and succulent shoots provide a dainty dinner dish; and he weaves his sleeping mat of fine slips thereof. The instruments with which his women weave their cotton are of bamboo. He makes drinking cups of it, and his head at night rests on a bamboo pillow; his forts are built of it; he catches fish, makes baskets and stools, and thatches his house with the help

of the bamboo. He smokes from a pipe of bamboo; and from bamboo ashes he obtains potash. The hill man would die without the bamboo, and the thing he finds hardest of credence is, that in other countries the bamboo does not grow, and that men live in ignorance of it'.

The study found that bamboo and its different species carpeted the hills of Mizoram. The total geographical area of the State is only 21,081 square kilometers of which nearly 40% is occupied by the bamboo forests. Mizoram has an abundant supply of raw material in the form of bamboo species. Mizoram occupies the largest forest area under different bamboo species as this region is the largest reservoir of bamboo resource in India.

Of all the species of bamboo found in Mizoram, Mizos have a clear cut distinction among bamboo species. Any bamboo species is classified under '*Mau*' and '*Rua*'. '*Mau*' bamboo species essentially is most common in the hills and they are botanically labeled as *Melocanna Baccifera*. The '*Rua*' species are bigger in size as compared to '*Mau*'. They are tall, firm with strong branches. Located and grow in cluster. However, the '*Rua*' species are not found plentiful in western Mizoram. They are easier to find in the eastern side of Mizoram. Even the '*Mau*' species are not much to find in eastern Mizoram. Among the eight districts in Mizoram, Champhai which is the eastern most districts recorded the lowest percentage of bamboo distribution. Champhai has the lowest area under bamboos (345.68 sq.km).

B. Lalthangliana also recorded that early Mizos could not get '*Mau*' species in the Chin Hills when they moved from Kabaw Valley. In the northern part of Chin Hills precisely between *Than* range and river *Run*; *Mau* species of bamboo are hard to find till today. But they are familiar with '*Rua*' species of bamboo like *Rawngal* (*Schizostachyum fuchsianum*) and *Rawpui* and thereby their weapon like bow and arrow, snare and traps etc., were obtained from '*Rua*'. Most of the cane, water tubes or bamboo ropes used for tying are obtained from '*Rua*' species. Their weapons like *thal* or arrow were made of bamboo species called *Phulrua* (*Dendrocalamus Hamiltonii*). *Thal* was among the first weapon locally made and it was composed in the song:

*"Phulraw pan dingdi ang chawiin;
Hlukva leng 30 kap ing.."*

"With my fatal arrow shot from mighty Phulraw bamboo
Down there goes thirty fowls.."

Some of the *Rua* species of bamboo are- *Rawthing* (*Bambusa tulda*), *Rawnal* (*Dendrocalamus longispathus*), *Rawngal* (*Schizostachyum fuchsianum*), *naat* (*Schizostachyum munroii*), *Rawthla* (*Schizostachyum dullooa*), *Chal* (*Schizostachyum polymorphum*), *Phar* (*Arundinaria callosa*), *Tursing* (*Dendrocalamus strictus*), etc.

Another important characteristic of traditional Mizo society was nomadic life, which was necessitated by their economy based on swidden. They moved regularly from place to place in search of virgin forest. Their nomadic life was reflected in their house which was constructed mainly with bamboo and thatches, lasting only six to seven years. Mizos community is involved in the bamboo related activity since time immemorial. Earlier it was confined to only household level. Fire was constructed from rubbing thin bamboo stick for cooking. *Chhemthei* was made from bamboo culm to blow and lit fire at the hearth. Houses were set up with bamboo. Water reservoir or storage was prepared with bamboo. Drinking and eating at mealtime was done with the help of bamboo cups and spoons. Fowls are caged in a bamboo weaving basket called *Arbawm*. Later on some big involvement of bamboo came up in Mizos society at the performance of ritual like *Cheraw* dance, *Tlawmngaihna* or Mizo value was depicted with bamboo stretcher as they help to carry fellow man who met accident or died even though the household activities of works continued. Traditional ornaments are made from bamboo. During festivals, Mizo women use a headgear of a bamboo band with parrot feathers stuck in it, the ends of which are decorated with beetles.

The special structure of bamboo has many advantages such as lightness, strength, elasticity, beauty, fast growth and easiness in processing. These structural factors help bamboo to be one of the most important and popular materials in the pre-industrial time in countries and places where bamboos are abundant. In all the

bamboo objects there is the representation of the bamboo's special structure as well as the intelligence of human beings. For example, the bamboo bridge in South Asia, in which bamboo culms serve as the supportive element of the building, shows the strength and lightness of bamboo culms. Whereas the elasticity of bamboo culms can be seen in the bamboo basket, where bamboo culms are split into strips and woven together. With these traditional bamboo objects the advantages of bamboo as a material cannot be replaced by other natural materials like wood or metal. Here the use of bamboo as a material has not destroyed but enhanced the natural beauty of the structure.

Bamboo crafts, like any other traditional crafts in the world, have been developed into a kind of applied arts which have served people's everyday life from one generation to another, and at the same time recorded the history and culture of the local people. They are themselves a traditional, regional culture. Because bamboo is a local material with the connection to its geographic conditions, the developments of bamboo crafts also represent the changes of the local culture from a special perspective. Among the Mizos, Bamboo crafts or bamboo baskets like *em*, *thul*, *dawrawn*, *paikawng*, *kho*, etc, represent a kind of mizo culture. These bamboo baskets are indispensable item in every household.

The work of weaving bamboo cane was mostly done by menfolk. Among the basket made of bamboo there is a clear distinction of their usages between Man and Woman. *Emping* is a bamboo basket closely woven, and they are generally used by woman for carrying paddy, whereas *Empai*; similar to *Emping*, but larger in size, is used by man to transport grains. *Dawrawn* is used by woman for carrying vegetables and grains from their jhum. There are smaller baskets for keeping rice seeds at the time of sowing, called *Benvawn* and *Paihper*. *Paikawng* is generally used by woman to carry firewoods and vegetables from the field.¹³

And for carrying all these bamboo baskets there is a specific rope called *Hnam* (made of plaited bamboo and *hruikhau*). *Hnam* is generally used by woman whereas *Nghawngkaw* (made of wood) is employed by man folks for carrying baskets. *Hnam*

¹³ *Mizo Thilhlui Thenkhat (Objects of Mizo antiquity)*, pp.26-27

plays an important role in the life of woman. It is used to carry *dawrawn* and *paikawng* baskets. It is also used for carrying firewood from jungle as well as bamboo tubes when they fetch water. They are indispensable in their daily activities and therefore continue to serve as one material which they always brought along with them at the time of their marriage. A particular rope *Darbakhru* which is similar to *Hnam* is used by man for carrying *Dawrawn*. This *Darbakhru* is made from the cane of *Hruipui*, *Thilte* and *Sairil* plaited together. At the time of paddy harvest, menfolk tied this *darbakhru* across their chest to carry *dawrawn* and helped themselves agile freely. Another bamboo crafts like '*Thlangra*' or winnowing tray and '*Thul*' were always carried by mizo women at their marriages.

There is a reason as to why Mizo houses were built with the help of bamboo. In fact, bamboo culm and split are used in almost every construction in the hills. The bamboo building has special advantages against humidity, high temperature, the rain, insects and other small animals. The most important reason for bamboo building is that the bamboo as a building material is easy to get, easy to work with and easy to build.

Houses are built with collective effort as they have a close knitted society. Material like timber and bamboo are obtained during winter season (October-January) to avert quick deterioration on these supplies.¹⁴ And this house-construction is usually completed before the onset of monsoon.

Bamboo and its different usages reflected a culture among Mizos. This work found that a split bamboo pieces called *Thlahthi* was used to cut the umbilical cord of a newborn baby and neither metal nor iron objects were used. Mizos were agriculturalist and all the handle of their tools were more or less made of bamboo. Baskets of all kinds were made of bamboo cane woven for holding vegetables and grains. Water storage or reservoir was in the form of bamboo culm and it is usually the duty of mizos women to fetch water from village pond. Bamboo is used for

¹⁴ HC. Thangchungnunga, *Mizopa In leh A Chhunga Thil Awm Te*, Mizoram Publication Board, Aizawl, 2017, p.3

measurement of volume and quantity. The highest form of harvest which after heaped up is measure with the help of bamboo and they called it as *Mautlawn-zawn*.

Bamboo is an eco-friendly material for Mizos. Houses cannot be built without this Green-gold. Bamboo stem or pipe is used to exempt certain boys from their assigned work in *Zawlbuk*. Bamboo has endowed their languages in the form of sentences construction. In other word, bamboo contributed for certain phrases like '*Mau mit put*', '*Satel mau la ang*', etc. Therefore, it is clear that bamboo has enriched their life and society so much so that it contributed for their philosophy. Bamboo regenerates itself within a close year and metaphorically mizos poet borrowed this in their lyrics as a wish to refresh or renew one's own life.

Mizos are lonesome and love socialized by nature. Their melancholy was serenade with the help of musical instruments indigenously build. The technology of bamboo was depicted through their utilization of this material to make Guitar or *Mizo Tingtang*, *Rawchhem*, *Tawtawrawt*, *Tumphit*, *Lemlawi*, etc.,

This paper found that bamboo was utilized for trapping wild animals and fowls. With the help of bamboo various snare and traps are designed. Mizos are fond of eating meat and they are enthusiastic when they could get wild animals. Another intention is to safe their jhum from rodent and wild beasts. So they constructed traps like *Vaithang*, *Thangchep*, *Kar*, *Mangkhawng*, *Kilen*, *Hnawhtawt*, *Kharkhep*, *Humhiah*, etc, with the help of bamboo. The study also found that Mizos games and entertainment vehemently uses bamboo. Such games are like *Kal-chhet*, *Kah-khet*, *Inzuan-kahlensiak*, *Kahchik*, etc, These indigenous games are mostly played by kids. However, youths are also found enjoying themselves with these games as Mizos are sportive and competitive.

This research work also found that *Cheraw* (bamboo dance) was incorporated at the time of funeral. *Cheraw* dance was performed in rituals as believed, to provide solace to the soul of a deceased mother who had passed on leaving her new-born child on earth. This dance required bamboo staves which are kept in cross and horizontal positions on the ground. It mainly consists of mostly six to eight people holding pairs of bamboo staves upon another horizontally placed bamboo on the ground. The male

dancers move these bamboo staves in rhythmic beats and the female dancers perform by stepping in and out of the bamboo blocks. Early Mizos believed that the soul of woman's death on childbirth followed a path which is so difficult than other normal death. On their way to *Pialral* or heaven, her soul would have to pass through rugged and hard terrain. So to witness and commemorate hardship involves in her soul journey certain women would perform this *Cheraw* dance on her funeral.

The early Mizo society was primitive in which contact with outside world was very minimal. The society is patriarchal and patrilineal, and has a well-defined pattern of culture of its own. Bamboo has crucially plays an important role in shaping their culture. It is a material which takes a central role in their society. Houses will not stand without it; agriculture will not be possible, water could not be fetched, Handloom and traps will not be effective. It is difficult to exaggerate the role of bamboo for mizos society. Their tribal life depended heavily on this bamboo. In short, Bamboo and Mizo society could not be separated and it is with this bamboo that their society developed and cultures thrive. Thus, Bamboo and Mizos society goes interrelated and cordially find its existence together.