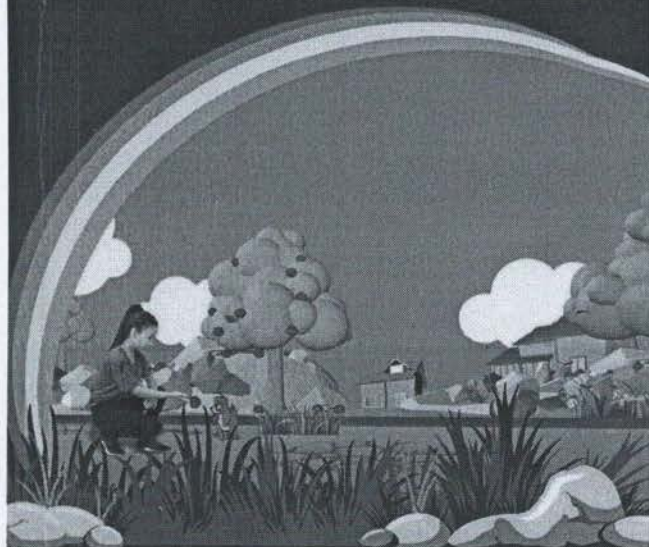


# NUCHHUNGI RENTHLEI LEH NAUPANG LITERATURE

[UNDERSTANDING CHILDREN'S LITERATURE OF  
NUCHHUNGI RENTHLEI : APPROACHES AND SYSTEMS]



Edited by

Dr. Zoramdinthara  
Enid H. Lalrammuani  
H. Laldinmawia



NATIONAL SEMINAR ON 'UNDERSTANDING CHILDREN'S LITERATURE OF  
NUCHHUNGI RENTHLEI : APPROACHES AND SYSTEMS' AT SERKAWN ON 17<sup>th</sup> APRIL, 2018

NUCHHUNGI RENTHLEI hi February ni 7, 1914 khaw Ralvawngah a piang a, hminghiana Renthlei leh Lalhanghlo Zadeng hi fanu a ni. Unau hmeichhia hix panga zung a tum ber a ni a, a lo pian pawh hian unau hmeichhia hix an nih avangin Nuchhungi an ti ta a ni. Kum 1917 khaw a po a borai a, a nu hovin an hmeichhia a. Kum 1918-ah kristonah a inde a, kum 1923 khaw Serkawnah an pem a, Serkawnah an pem hian Pi Zirti te enkawina hmeich School kalai. Kum 1933-ah Middle English leh teacher training chu a ruah a zo a, kum 1934 atengin mission hmeich zirtu hia a thawk ton a ni.

Hia 74 a phuoh a, ama sawi dan chuan 1935 kuma a phuoh 'Zaninah thapiu a eng nle mai' hi hia hi a hia phuoh hmasak ber a ni. A kutchhuok ropui em em pakhat chu. Kum 1938 atanga Serkawn Graded Reader Book I, II leh III a buatsah hi a ni a. Kum sawm chuang cet naupang zira buah hman a ni a, he lehkhabeu hi 'Serkawn bu' hi tem an sawi bawk thin.

Kum 1969 khaw Mizoram chhim lam Middle English School zirtu tha lawmmah pakhat a dawng a, kum 1985 khaw Mizo literature a a thawh mip em avangin India khua leh tuite tana chawimawina bang 'Padma Shri' pek a ni a. Mizo hmeichhe zinga a dawng hmasak ber leh Mizo zinga he chawimawina dawng zinga a pathumina a ni. Kum 1942 khaw R. Rualkhuma pem an mnei a, fanu panga leh fapa pakhat an nei a, February ni 15, 2006 khaw Serkawnah a borai a, Serkawn thianmawia zai a ni.

Nuchhungi hlate hi zirtu nei tha fak tak vek a ni a, a tam ber chu naupang hia a ni. Amsh ngel pawh 'thu leh hla ko lo buatsah leh tuipai zung hi naupang buak vek a ni a. Lalpa ni rawng ka bui ve nana min pek ngiah ka ngal' a ti hial. Chuvangin heng naupang buale a hla phuahne hi zirtu hian a ni a, hman rohu pawimawh a ting a ni.

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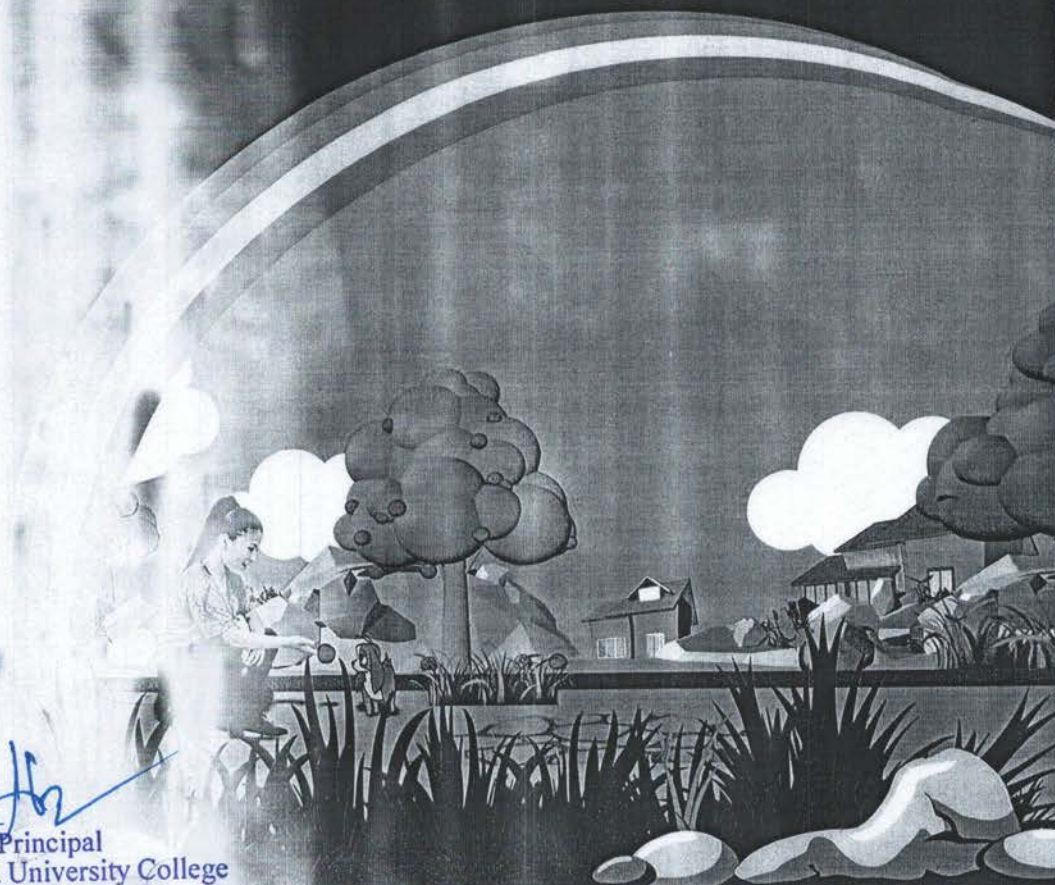
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NUCHHUNGI RENTHLEI LEH

# NAUPANG LITERATURE

(UNDERSTANDING CHILDREN'S LITERATURE OF  
NUCHHUNGI RENTHLEI : APPROACHES AND SYSTEMS)





Principal  
Pachhunga University College  
Aizawl : Mizoram

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Dr. Zoramdinthara  
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# NUCHHUNGI 'MIZO NAUPANG HLATE' THLIRNA

Lalzeitluanga \*

*Abstract:* He paper hian Nuchhungi'n Mizo Naupang hla a phuahte chu naupangte tan inawmtleina a nih piah lamah Mizo culture zirtirna a nih theih dan te, Mizo naupangte tana nungchang mawi leh tha zirna a nih dante leh naupangte rilrua nature duhawmna hmuh thiam tir thei a nihna lai hi a sawi tum a ni a. Mizo naupang hlaa nih anga naupangte tana a hlutna lam leh zirtir nei tha a nihna lam hi sawi uar a tum a ni.

Thutluang ziaak a ni emaw, hla a ni emaw, a ziaaktuin zirtir tum nei taka a phuah leh ziaak a awm thei a, hetiang a mi tibengvar tur zawng te, midang tifing leh nundan mawi hrilhfhahna leh zirtirna hi didactic tih a ni a (The Concise Oxford Dictionary of Literary Terms.66) Hetiang a kan thlir chuan Nuchhungi'n Mizo naupang hla a phuahte hi a phuahchhana te (naupang) ngaihtuahin didactic literature tha tak a tling a ni.

'Naupang Literature' tih thupui hmanga a thuziakah B.Lalthang -liana chuan, "A tlangpuiin English-ho chuan naupang lehkhahu an chhuah hian zirtir nei lam aiin, an rilru hlimna tur lam hawi an phuah

\* Assistant Professor, Department of Mizo, Pachhunga University College



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## NUCHHUNGI HLAA RAM HMANGAIHNA

[Patriotism in Nuchhungi Renthlei's Poem]

Lalzuithluanga \*

Patriotism tih hi Merriam Webster dictionary chuan 'Love that people feel for their country' tiin a dah a, Mizovin 'Ram hmangaihna' tia kan lo letling hi a fuh ang reng hle, hrilhfhahna tawi tak, a nihna phawkhhuak fuh, huam zau baw si a ni kan ti thei ang. Patriot ropui tak tak khawvelin a lo hmelhriat tawh tam tak – Mahatma Gandhi, Thomas Jefferson etc-te hi ram tana lu chhum ban chhum huama inpe an ni a, an chanchin chu history-ah tam tak chhiar tur a awm a ni. Patriotism hian ram tana inpekna, ram tana thil tha tih, ram atanga thil chhuak ngaihhlut, ram hmasawna tur ngaihtuah etc-te hi a huam vek a, chuvangin tu pawh mahni awmna ram leh hnam hmangaihna avanga eng emaw tal ti emaw tih duhna thinlung pu emaw te chu patriot an ni kan ti thei ang.

### Mizote hmangaihtu Nuchhungi:

Serkawn Graded Readers Mizo Thawnthu bua amah Nuchhungi'n introduction a ziah hi ngun tak in han chhiar ta ila Mizo-

\* Assistant Professor,  
Department of Mizo, Churachandpur Govt. College, Manipur

  
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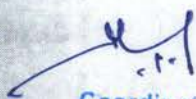
  
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# **PARTICIPATION OF WOMEN IN POLITICS AND GOVERNANCE**

**- Local and State in Mizoram**



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**C. Lalkima  
Lalneihzovi**



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2018

# **Participation of Women In Politics and Governance**

**C. Lalkima  
Lalneihzovi**

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## PARTICIPATION OF WOMEN IN LOCAL COUNCIL WITHIN AIZAWL MUNICIPAL CORPORATION

*H.C. Lalchhuanawma, Lalneihzovi  
Henry Lalfakmawia, Robert Lalchhandama*



  
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### Introduction

Women's participation in politics is a necessity. Participation of women in politics is not a matter of fashion, ambitions or quotas. It is the necessity dictated by global economic and security challenges. Concerted efforts by all – men and women – are needed to overcome these challenges.” (Lithuanian President, 2015). There is a trend among every nation that although they fare very well in different aspects, women are particularly under-represented and un-involved in politics. Inter-Parliamentary Union (IPU) has given information on the political representation of women in parliaments of various countries. According to them, women parliamentarian consisted of 23.4 per cent of the total members of the parliaments worldwide in 2017 and women's share of all parliamentary seats has consistently increased by almost 0.6 percentage points per year. They represented 17.8 percent of parliamentarians in 2007.

### Objectives of the Study and Methodology

The paper mainly seeks to study the participation of women in local governance within Aizawl Municipal Corporation. It attempts to find out the socio-economic profile of elected women through women's reservation in Local Councils. It also studies the contribution of post-reservation



  
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# TLAIZAWNG

(A Study of Selected Mizo Poetry)

**St Xavier's College, Lêngpui**

  
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# **STUDY OF GREAT MAN THEORY WITH REFERENCE TO 'LALTHERI ZAI' AND 'SAIKUT ZAI'**

**Lalrotluanga**

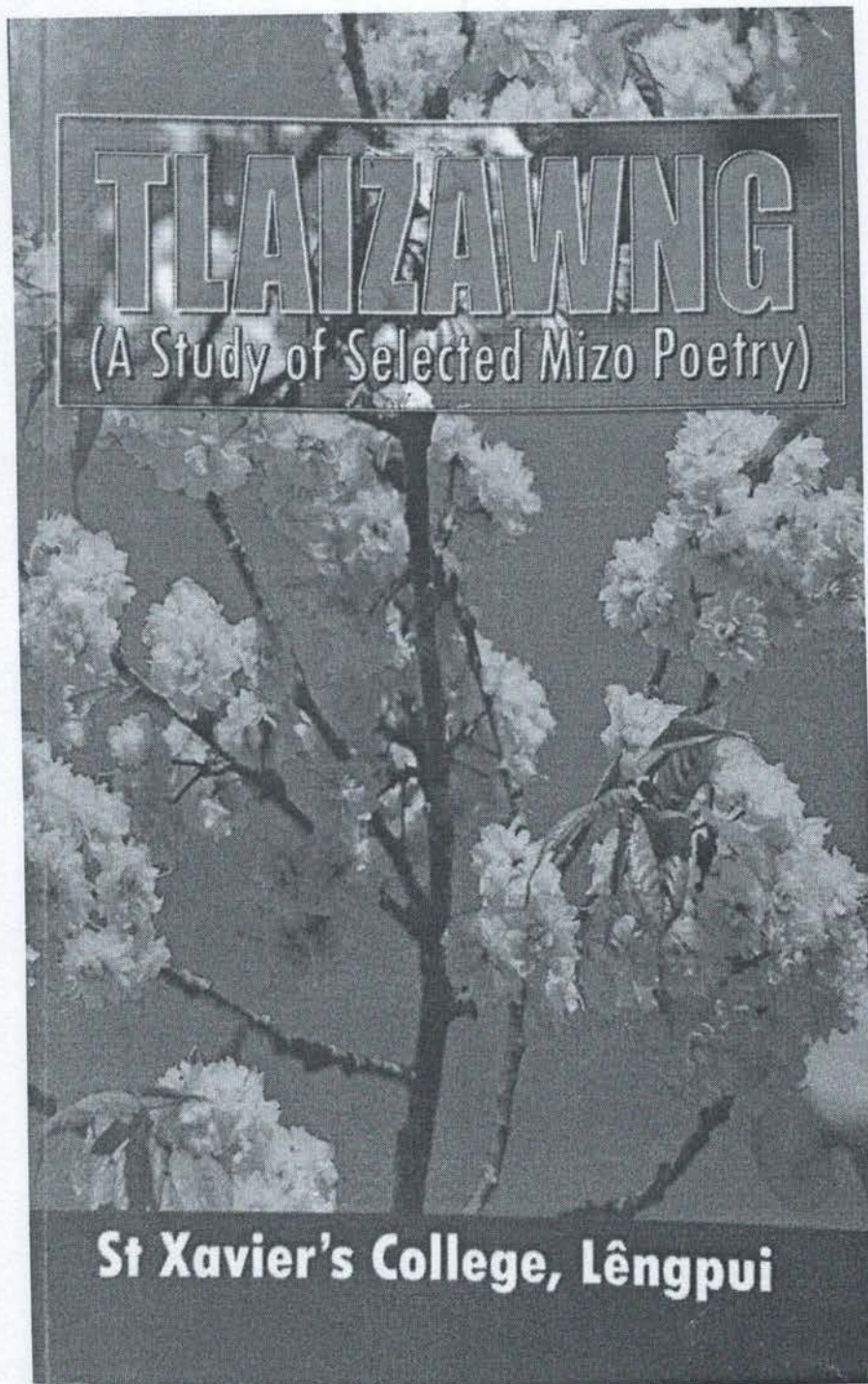
Guest Faculty

Department of Mizo, PUC

Kum zabi 19-na hun lai khan Thomas Caryle chuan mi vantlang chunglam kan tihte nihphung leh dinhmun chu *The Great Man Theory* tiin, chutiang dinhmuna dingte chu an sual chhuah ni lo, an hunlai mihring nunphung avang te, mi hip theihna leh mi dang hneh theihna riau an neih avang te, an finna leh hriatna vang te, rorel thiam bikna riau (*political skills*) an neih that bik riau avangin mi vantlang chunglamte hi an lo awm thei a, chung mite nun dan leh an chet phung chu Thomas Caryle chuan an pianpui ngei nia ngaiin, "*Leaders are born and not made*" tiin ngaih dan a siam a. Napoleon a ni emaw, Shakespeare-a pawh ni se an dinhmun kha a tur ve renga khuanu duan, an pianpui niin a ngai tlat a ni. Mi ropui leh mi hmingthang mi bik kan tih te hian an dinhmun luah tur hian an mimal nun leh chanchin (*biographies*) hian kawngro a su ber niin a hmu a ni.

Khawvela mi ropui tak tak Abraham Lincoln, Julius Caesar, Alexander the Great te pawh kha an ropuina kha siam chawp ni lo an pianpui ngei a ni a, khatiang dinhmun leh ropuina chang tur khan





  
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**INTERPRETING LALZUITHANGA'S  
'LENG DUN ILA'  
AS A POEM OF ESCAPISM**

**Lalrammuana Sailo**

Research Scholar, MZU /  
Guest Faculty,  
Department of Mizo, PUC.

**THUMAIRUAL:**

**Lalzuithanga Chanchin:** Lalzuithanga hi Upa Chawghnuai leh Zachhungi te fa hmingkoh niin kum 1916 April ni 16-ah Kulikawn, Aizawlah a lo piang a. Thiamna lamah Middle English pass a ni a. Welsh Mission Book Room-ah Sales Man hna a thawk tawh a, Boys' Middle English School-ah Drawing Master hna a thawk tawh bawh. Indopui II lai khan Assistant Commander, Labour Corps, Lushai Hills hna a chelh hnuah, A.C.I (Armourer) Royal Indian Air Force-ah kum 1944-1947 chhung a thawk leh a. Indopui a reh hnuin Map Drawer hna Superintendent's Office, Lushai Hills-ah 1948 thlang a thawk leh a, chumi hnuah Agricultural Demonstrator hna, Superintendent's Office-ah tho a thawk leh a. Kam 1950 September ni 9-ah Kunchunpore, Monachera Tea Estate, Cachar-ah boral a, chutah chuan phum a ni (*Vankallawma*).



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# ZACHAM PAR-CHHUANG



**L.BIAKLIANA (1918-1941)**

**Mizo Novelist Hmasa Ber  
Piancham Kum Za-na Pual**

**Dr. LALTLUANGLIANA KHIANGTE**



A handwritten signature in blue ink, appearing to be "J. A. I.", written above the printed name.

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1939-1945

**A CRITICAL STUDY OF THE STATUS OF  
WOMEN IN MIZO SOCIETY BEFORE  
SECOND WORLD WAR – ACCOUNT  
FROM BIAKLIANA'S 'LALP' AND  
LALZUITHANGA'S 'ENG DAN NGE'?**

■ Lalrammuana Sailo

Research Scholar, Department of Mizo, MZU

**1. THUHMAHRUAL:**

Hmanlai Mizo khawtlang nun han thlir let hian Mizo hmeichhiate nun hi thim mup anga a lan chang leh chuti anga sawi chhuah a nih chang chu a awm thin. Thufing te pawh a hrilhfiatu awn lam a zirin hrilhfiat dan a hrang thei a; chutiangin Mizote chinphunga a chhe lai leh maw lo lai pawh tun dinhmun atanga zuk thlir leta sawi mam leh sawi bo theih dan a awm ve tho ang. He paper-ah hian Mizo khawtlang nuna hmeichhiate dinhmun, a bikin khawvel Indopui pahnhna thlen hmaa hmeichhiate dinhmun tarlan kan tum dawn a. Hriat fuh loh leh thu lak dik tawh loh avanga tihsual awm thei a nih avangin fimkhur a ngai a. Kawng thenkhatah chuan hmeichhiate dinhmun kan sawi hian hetiang hi hmeichhia zawng zawng chungah a thleng tilna a ni chuang lo a, sawi tur tirgin a lo awm ve tawh a ni tilna a nih zawk mah ang.

**2. LALI THAWNTHU ZIAKTUIN HMEICHHIATE DINHMUN A TARLAN DAN:**

Biakliana thawnthu tawi ziaak Lal/hi Mizote thawnthu tawi neih hmasa ber niin kum 1937-a ziaak a ni a, he thawnthu lo pian chhan lian tak pakhat chu Mizo khawtlang inrelbawlnaa hmeichhe dinhmun chhe lutuk nia hriatna atangin a ni. He thawnthu-ina a

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# A first course in CALCULUS

$$\lim_{h \rightarrow 0} \frac{f(c+h) - f(c)}{h} = f'(c) > 0$$

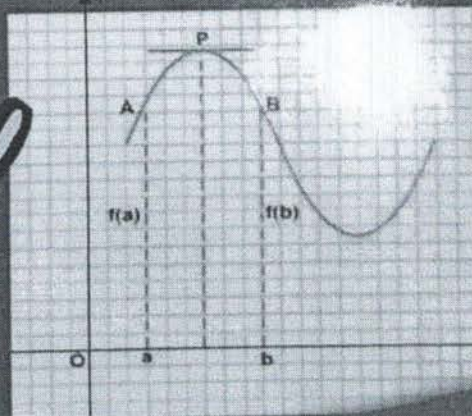
$$\int_0^1 \int_{3y}^3 e^{x^2} dx dy$$

$$\lim_{k \rightarrow 0} \frac{f(a, b+k) - f(a, b)}{k}$$

$$\int_C (x + y^2) ds$$

$$x \frac{\partial f}{\partial x} + y \frac{\partial f}{\partial y} + z \frac{\partial f}{\partial z} = n f(x, y, z)$$

$$\int_C \frac{dx}{x+y}$$



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L. THANGMAWIA

  
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# A first Course in Calculus

L.Thangmawia & J.Lalvohbika

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*[Signature]*  
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## CHAPTER 1

### FUNCTIONS AND GRAPHS

**FUNCTION :** Let  $A$  and  $B$  be two non-empty sets. Then a function from  $A$  to  $B$  is a rule which assigns every elements of  $A$ , a unique element of  $B$ . It is denoted by  $f : A \rightarrow B$ .

**Example of functions :** Let  $f : I \rightarrow I$  be defined as  $f(x) = x^2$   
 $\forall x \in I$ . This is a function.

**Remarks :**

1. A function  $f$  from a set  $A$  to the real numbers  $R$  is called a **real valued function**.
2. Let  $f : A \rightarrow B$  be a function and  $f(a) = b$ ,  $a \in A$ ,  $b \in B$ . Then  $b$  is said to be image of  $a$ , and  $a$  is called the pre-image of  $b$ .

**Domain & Range of a function :** Let  $f : A \rightarrow B$  be a function. Then  $A$  is called the Domain of  $f$  and  $f(A) = \{f(a) / a \in A\}$  is called the Range of  $f$ . The set  $B$  is called the co-domain of  $f$ .

**Remark :** If the domain and co-domain of a function  $f$  are both the same set, say  $A$ , then  $f$  is called an operator or transformation on  $A$ .

**Constant function :** If the range of a function is a singleton set, then it is called a constant function.

**Identity function :** Let  $f : A \rightarrow A$  be a function. If  $f(x) = x$  for all  $x \in A$ , then it is called an identity function on  $A$ . Identity function on  $A$  is usually denoted by  $I_A$ .

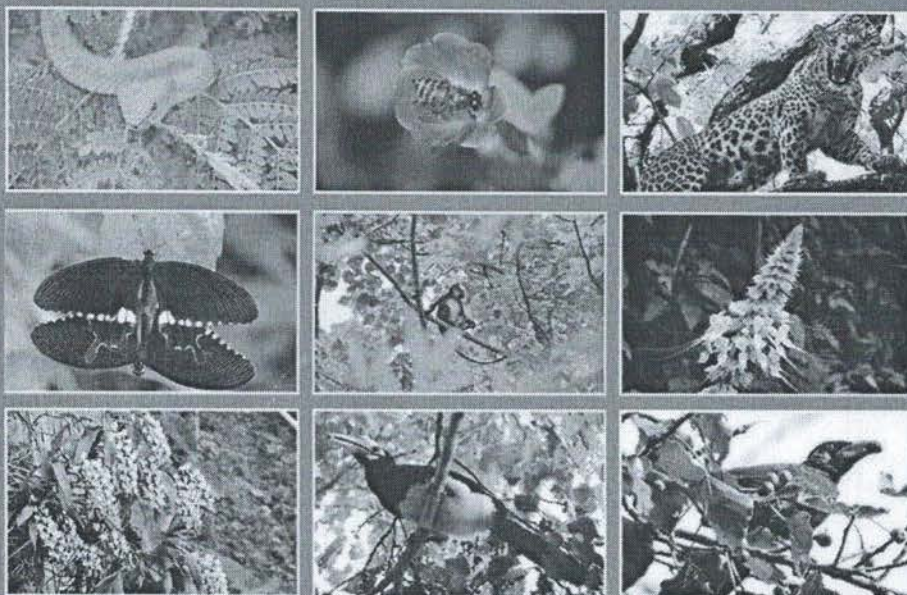
**Equal function :** Two functions are said to be equal if  $f(x) = g(x)$  for all  $x \in A$ .

  
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# BIODIVERSITY CONSERVATION

## Strategies and Applications

Prof. G.S. Solanki



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## 5

### Distribution, Diversity and Interrelationship of the Genus *Channa* (Teleostei: Channidae) in Different Drainage Systems of Mizoram, North East India

*Denis Van Lalhlimpaia, Lalramliana and Mahender Singh Verma*

#### INTRODUCTION

Fishes of the family Channidae are widely distributed in tropical Africa, parts of the Middle East, and Asia. Though Channidae is only a small family of fishes, the species-level diversity is still far from known and the taxonomy of some species groups is obscure (Britz 2013). Myers and Shapovalov (1932) observed that *O. gachua* was more closely related to *Channa orientalis* (type species of the genus *Channa*) than to the other species of *Ophicephalus* and synonymized the genera *Ophicephalus* with *Channa*.

The fishes of the genus *Channa* are characterized by cylindrical bodies, large mouth, well developed teeth on the jaws, pre-vomer and palatines, long dorsal and anal fin bases, fins with only soft rays and accessory air breathing organs which are modified epibranchials situated in the suprabranchial cavity in the head. These fishes are known to inhabit a wide variety of freshwater habitats ranging from hill streams to derelict swamps (Geetakumari and Vishwanath 2011) and are also able to survive out of water for short periods as they possess the accessory air breathing organs.

There are currently 35 valid species in the genus out of which 13 species are known to occur in the northeastern part of India (see Vishwanath and Geetakumari 2009; Geetakumari and Vishwanath 2011; Britz 2013; Knight 2016; Lalhlimpaia et al. 2016): *Channa amphibeus* (McClelland), *C. andrao* Britz, *C. aurantimaculata* Musikasinthorn, *Channa aurantipectoralis* Lalhlimpaia et al, *C. barca* (Hamilton), *C. bleheri* Vierke, *C. gachua* (Hamilton), *C. marulius* (Hamilton), *C. melanostigma* Geetakumari and Vishwanath, *C. pardalis* Knight, *C. punctata* (Bloch), *C. stewartii* (Playfair) and *C. striata* (Bloch).

  
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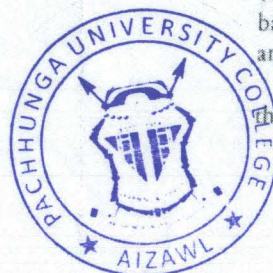
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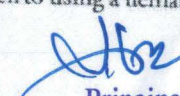
### Preliminary Investigation on the Natural Occurrence and Distribution of Entomopathogenic Nematodes (*Steinernematidae* and *Heterorhabditidae*) in Mizoram, North East India

*Vanlalhlimpuia, Lalramliana and Vanramliana*

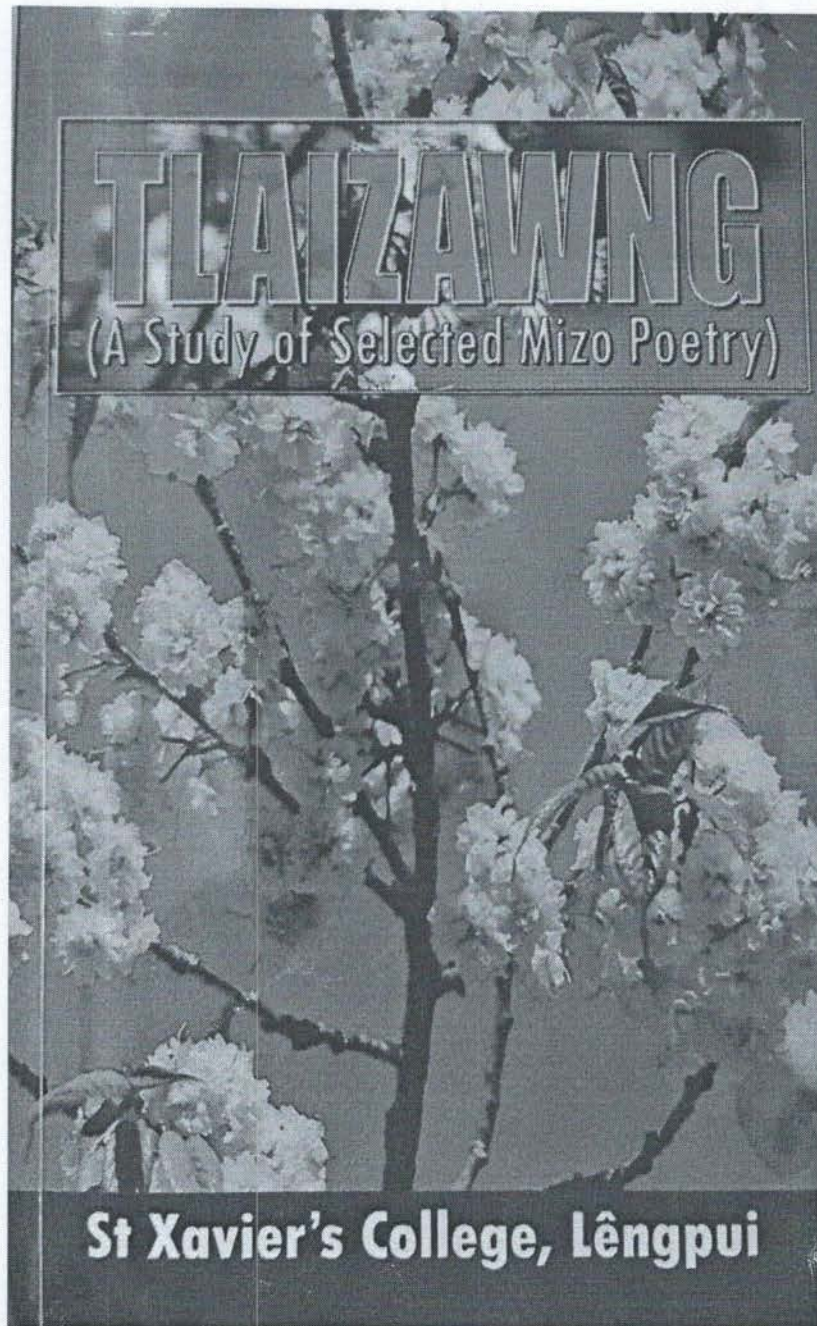
#### INTRODUCTION

Entomopathogenic nematodes (EPN's) are a group of obligate insect parasites inhabiting the soil, which can infect and kill a broad range of insect hosts (Kaya and Gaugler, 1993). They have the ability to actively search and locate their insect host, in response to carbon dioxide, vibration, and other chemical cues (Kaya and Gaugler, 1993), while they remain harmless to other organisms and the environment. EPN species of the genera *Steinernema* Travassos, 1927, and *Heterorhabditis* Poinar, 1976 have attracted the attention of entomologists (and of nematologists) for a number of years for use in controlling economically important insect pests. The nematodes and their symbiotic bacteria (*Xenorhabdus* spp. and *Photorhabdus* spp. for steinernematids and heterorhabditids, respectively) form a remarkable complex capable of infecting a variety of insect pests (Akhurst, 1993). EPNs in combination with their symbiotic bacteria have the ability to kill an insect host within a short period of time (24 - 48 hours). The free-living infective juveniles when in contact with the host insect enter the body through natural openings (anus, spiracles, mouth) (Georgis and Hague, 1981), penetrate into the hemocoel, and release the symbiotic bacteria that multiply and kill the hosts within 48 hours by septicemia (Burnell and Stock, 2000).

EPNs have been known since the 17th century (Nickle, 1984), but it was only in the 1930s, that serious consideration was given to using a nematode to control an insect.

  
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## TREATMENT OF TRAUMA IN THE POEM 'KAN HUN TAWNG ZINGAH'

**Dr. Zoramdinthara**

Asst. Professor  
Department of Mizo  
Pachhunga University College

## INTRODUCTION:

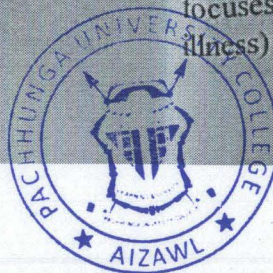
The term 'Trauma' is universal and common in all nations. We can simply define trauma as a deeply distressing or disturbing experience. As such, the events which can be considered traumatic are wide ranging indeed - from what might be considered the stuff of ordinary life such as divorce, illness, accidents and bereavement to extreme experiences of war, torture, rape etc. *The Webster's New World English Dictionary* defines the term, trauma was originally a medical term used to refer to "a bodily injury, wound or shock," or "a painful emotional experience or shock, often producing a lasting psychic effect and sometimes, a neurosis" (1513).

It is also an interdisciplinary theoretical body that draws from psychoanalytic, feminist, and poststructuralist discourses and focuses on the study of both personal trauma (eg abuse, mental illness) and collective experience of trauma (e.g The holocaust,

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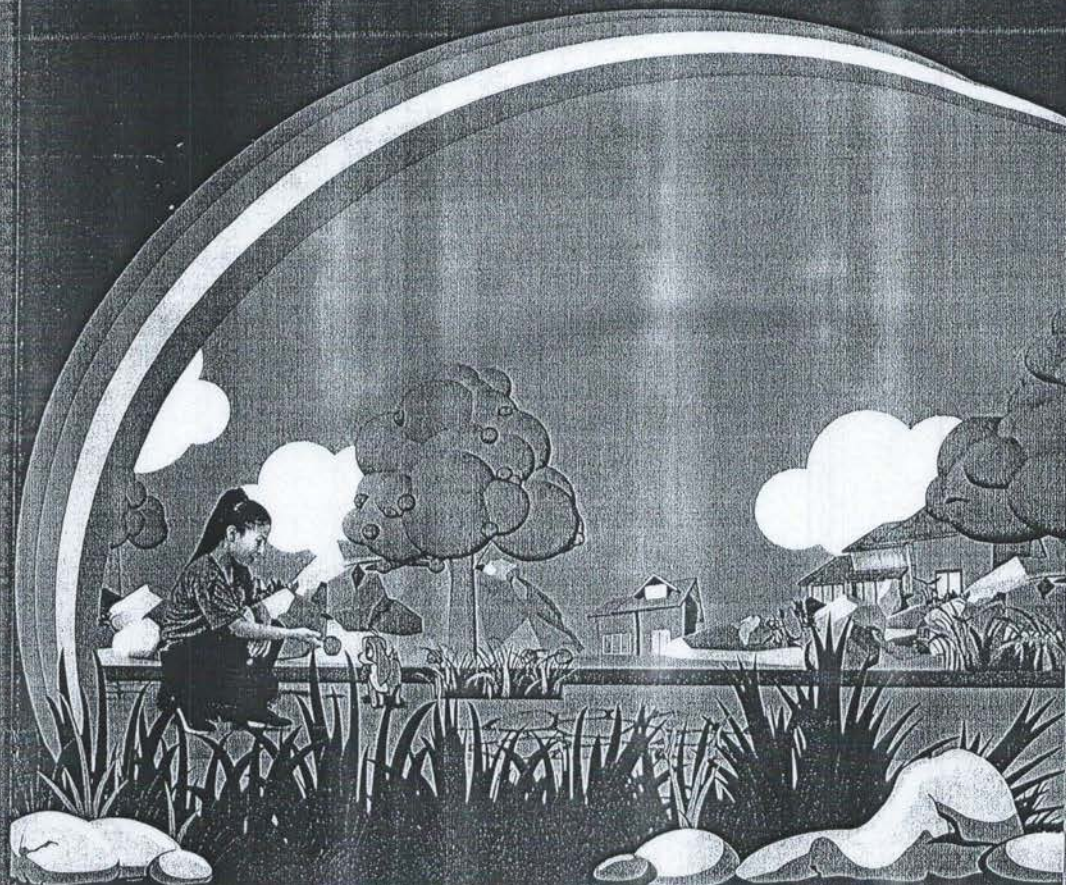
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NUCHHUNGI RENTHLEI LEH  
**NAUPANG  
LITERATURE**

[UNDERSTANDING CHILDREN'S LITERATURE OF  
NUCHHUNGI RENTHLEI : APPROACHES AND SYSTEMS]



Edited by

Dr. Zoramdinthara  
Enid H. Lalrammuani  
H. Laldinmawia

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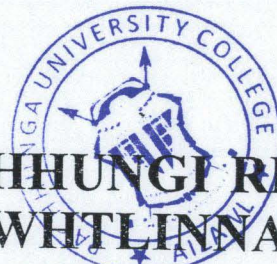
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# NUCHHUNGI RENTHLEI HLAWHTLINNA-A A HUNLAI KHAWTLANG NUNIN KAWNGRO A SUT DAN

Lalrammuana Sailo \*

**Introduction:**

Nuchhungi Renthlei hi 1914-ah Ralvawng khuaah a lo piang a. Kum 1927-ah Lower Primary a zo a, 1929-ah Upper Primary a zo leh a, 1933-ah Middle English a zo leh bawk. Thu leh hla lama a thawh hlawk em avangin India sawrkar chuan Mizo hmeichhiate zinga India Civil mite chawimawina sang dawng hmasa bertu ni turin kum 1986-ah Nuchhungi hi Padma Shri hlan a ni a. He paper-ah hian Mizo literature-a Nuchhungi lansarh chhan leh a hunlai khawtlang nunte inzawm dan sawi chhuah kan tum dawn a ni.

**Great Man Theory (Mi ropuite tobul chhuina):**

'The great man theory' tia an sawi hi khawvel mi ropuite chanchin an zirna chi khat a ni a. 'Kum zabi 19-ah hman nguihdan (idea) rawn irh chhuak niin history hi

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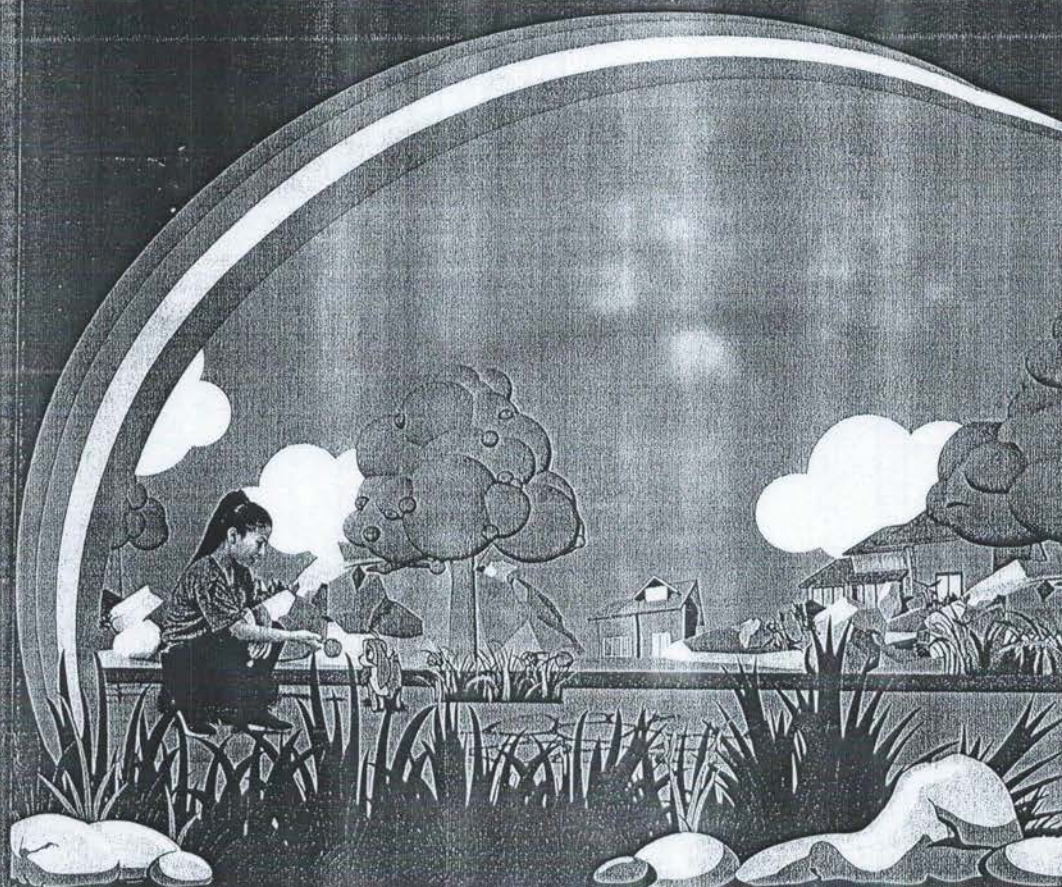
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Pachhunga University College  
Aizawl : Mizoram

*JH*  
Coordinator  
Internal Quality Assurance Cell  
Pachhunga University College  
(A constituent college of Mizoram University)



NUCHHUNGI RENTHLEI LEH  
**NAUPANG  
LITERATURE**

[UNDERSTANDING CHILDREN'S LITERATURE OF  
NUCHHUNGI RENTHLEI : APPROACHES AND SYSTEMS]



Edited by

Dr. Zoramdinthara  
Enid H. Lalrammuani  
H. Laldinmawia

  
Coordinator  
Internal Quality Assurance Cell  
Pachhunga University College  
(A constituent college of Mizoram University)



  
Principal  
Pachhunga University College  
Aizawl, Mizoram



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**Coordinator**  
Internal Quality Assurance Cell  
Pachhunga University College  
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# NUCHHUNGI'N MAWINA (AESTHETICS) A THLIR DAN

[Aesthetic of Nature in Nuchhungi Renthlei's Poetry]

Remlalthlamuanpuia \*

## Introduction:

Nuchhungi Renthlei hian nature lam hawi hrim hrim hi hla sawmli leh pali lai a phuah a, mihring nunphung leh a kaihnhawih lam hi sawm leh pahnih lai a awm bawk. Ram hmangaihna lam hawi pathum a phuah a, midangte phuah ve lem loh thil ho mai mai anga lang; mawina pai si sawmthum leh pakua lai kan hmu bawk.

A hla hrim hrimah hian 'mawi' tih tawngkam ringawt hi vawi sawmruk leh pariat lai a lang a. Mawi tih tawngkam lan ve miah lohna hla dangah pawh hian a hla phuahchhan mawina sawina deuh vek a ni a, hla panga (pawnto hla leh ballad) tih lohah chuan mawina chungchang a phuahna vek a ni.

## Nature Mawina (Eco-aesthetic):

Eco-aesthetic lam hawia zirna hi kum zabi sawm-hnihna tawp lamah khan an rawn uar tan a. Thil mawina

*Assistant Professor, Department of Mizo, Pachhunga University College*  
Internal Quality Assurance Cell  
Pachhunga University College  
(A constituent college of Mizoram University)

hlim hrim thlir bingna lam hawi ngawt buaipui lovin nature mawina lam an rawn zir bing tan a. Chu zirnaah chuan nature mawina hrim hlim lam ngawt ni lovin; mihring leh mihringin nature a thlir dan te, a inkungkaihnhate zir chhoh zel a ni ta a. "Chu zir bingna chuan mihring leh nature inkara thil che vel zawng zawng zirin, nitin nuna thil thleng mawina lam a hawi a. Thil eng pawh mai mawina bakah nitin nun phung a mawina awmte a zir chiang a ni." (Goel, 110)

Kum zabi sawmhnh pakhatna tir lamah chuan zir miten Eco-aesthetic an tih hian, thil engkim mawina hrim hrim zirchianna lam a kaww a. Leilung hmelmhang mawina te, hmun hmelmhang landan te, nitina mihring nun hman dan lam hawi hrim hrim fakna leh a mawina pawh a kaww thei vek a ni.

Eco-aesthetic han tih hian hrilfiah dan kawng thumin an then a. Pakhatnaah chuan thil mawi hrim hrim, entirna'n European ho huan hmelmhang mawina te, leilung hmelmhang mawina te a ni a. Pahnihnaah chuan ropui taka nature mawina a lanna ang chi, tlang mawi danglam bik leh ramngaw dur khup mai te, phul hmun hring dup mai te a ni a. Pathumnaah chuan suangtuahnaa a tak ang maia hmuh theih mawina hi a ni. (Agarwal, 37)

## Mawina chauh thlirtu Nuchhungi:

Nuchhungi nature hla phuahte hian nature mawina ngawr ngawr a thlir hlawn. Heng a hlaphuahte avanga mihring nun duhkhawp lohna emaw; an hamthatna leh venhim an ngaihna lam hawi zawng a kaww lo. Zirsangzela 'Phengphe nunnem' hlaah chuan,

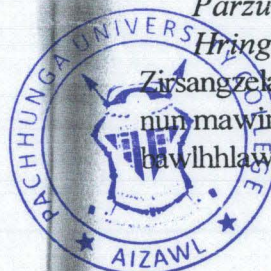
*Phengphe nunnem leh zaidam,*

*Vahkhuai, tho leh hmiri pa'n;*

*Parzu dawn za thlir changin,*

*Hringnun hi ka tahpui thin.*

Zirsangzela hi chuan phengphehle, khawivah, tho leh fanghmira nun mawina a thlir a, mihring nun nen a tehkhin a, mihring a hawhlhlaynzia hmuin a rilru natna a tlangaupui a. Nuchhungin -

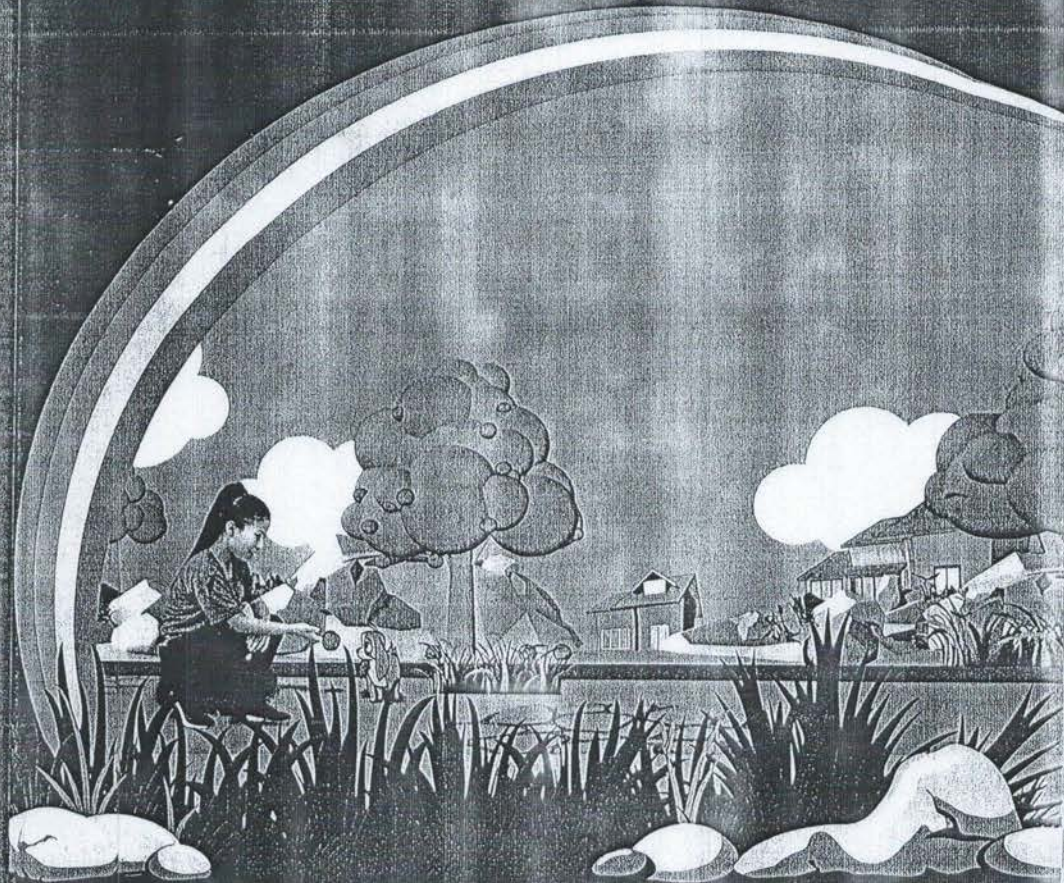


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Enid H. Lalrammuani  
H. Laldinmawia

  
Coordinator  
Internal Quality Assurance Cell  
Pachhunga University College  
(A constituent college of Mizoram University)



  
Principal  
Pachhunga University College  
Aizawl - Mizoram



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Principal  
Pachhunga University College  
Aizawl : Mizoram





  
Principal  
Pachhunga University College  
Aizawl : Mizoram



  
Coordinator  
Internal Quality Assurance Cell  
Pachhunga University College  
(A constituent college of Mizoram University)

## NAUPANG LITERATURE NIHPHUNG

[Understanding Children's Literature  
with special reference to Mizo children literature]

HLaldinmawia\*  
Enid HLLalrammuani\*

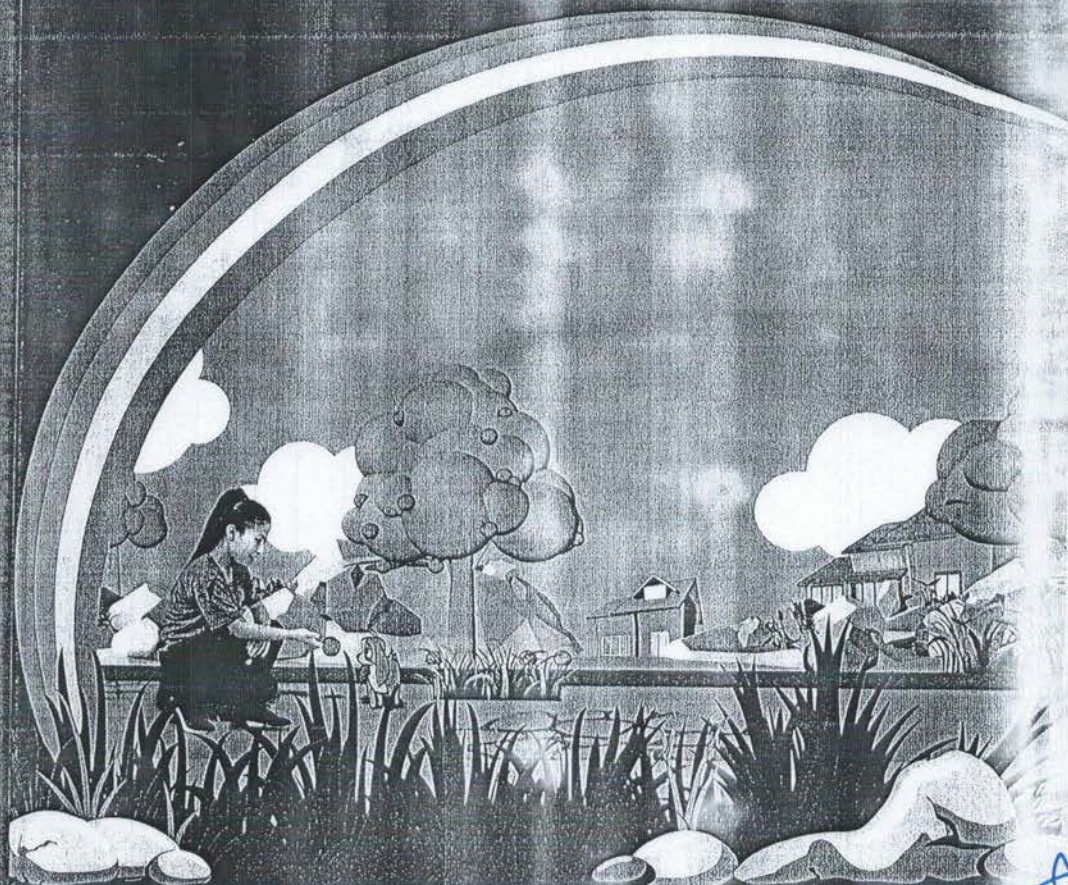
Children literature zir tur hian thil pathum pawimawh tak tak a awm a - Thu leh hla (literature), naupang (children) leh a zirchiangtu (adult critics) te an ni. Children literature tia kan sawi hi a awmzia takah chuan 'Naupangte tana tha lehkhahu' (books which are good for children) tihna a ni ber a. Chutah chuan thu pawimawh tak pahnih a awm a - *Children leh Literature* tih hi a ni (Hunt, 15). *Children* (naupang) tih hian milem chuang lehkhahu enthiam emaw thawnthu chhiar ngaithla thiam atanga kum 14-15 (adolescence) vel thleng a huam thei (Encyclopedia Britannica). *Literature* tih pawh hian awnize hrang a nei thei bawka. Naupang hriatthiam theih tawh, an tuipui tawh leh an kum mil zela an tana pawimawh thei thuziak (prose), hla (poetry), thawnthu (fiction) leh thu (non-fiction) thlengin a huam bawka a ni.

Department of Mizo, Pachhunga University College



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Bachhunga University College  
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2018

Nuchhungi kutchhuak chungchanga national seminar kan buatsaiha paper ziaktu, college leh university lama thawkte chungah lawmthu kan sawi a. Seminar kan neih theihna tura ruahmanna min siamsaktu leh kawng tinrenga min phurpuitu kan principal chungah kan lawm takzet a. He lehkhahu pawh hi zirlai te, research scholar te leh literature lam tuimite tan a tangkai ngei kan beisei a. Mizo hnam tana kan tha thawh ve niin kan hria a. Kan hnam literature pawhin bung khat talin hma a sawn phah ngei kan beisei a ni.

Editors

## COORDINATOR THUSAWI

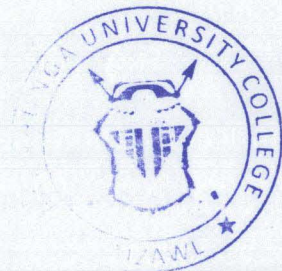
*(Introduction, Report and Welcome Speech on  
Pachhunga University College Diamond Jubilee Celebration  
National Seminar on Understanding the Children's literature  
of Nuchhungi Renthlei : An Approaches and Systems)*

**Dr. Zoramdinthara**  
Coordinator of the Seminar

Madam chairman, Enid H. Lalrammuani, kan khuallian zahawm tak Rev Dr. CL Hminga, he seminar Keynote Speaker Prof. Laltluangliana Khiantge, HoD, Department of Mizo, Mizoram University, Padma Shri Awardee and Former Principal of Serampore College (University), Pachhunga University College principal zahawm tak Dr. Tawnenga, Pu R. Biaksanga, Nuchhungi Renthlei fapa leh former principal, Government Aizawl College, he seminar a resource person tha tak tak rawn kal khawm te leh he hun hman tura rawn kal kal zawng zawng te a hmasain chibai ka buk a che u.

A hmasa berin inlawmna leh inhma hriattirna in bul han tan ila. Kan khuallian zahawm tak Rev Dr. CL Hminga, hun chep tak kara kan sawmna tih hlawhtling a he seminar khuallian a i rawn tang thei hi kan lawmin, he seminar huaihawttute aiawhin kan lo lawm a che. He *National Seminar on Understanding the Children's literature of Nuchhungi Renthlei : An Approaches and Systems* Keynote Speaker, Prof. Laltluangliana Khiantge, HoD, Department of Mizo Mizoram University, Padma Shri Awardee leh Former Principal of Serampore College (University) pawh inthlahrung tak, pangchang ang reng tak sia kan sawmna ngai pawimawha he seminar thupui sawi hawna hun hman tura i rawn tel theih avangin kan lawm em em a. Sir, he seminar huaihawttute hian kan lo lawm a che.

  
**Coordinator**  
Internal Quality Assurance Cell  
Pachhunga University College  
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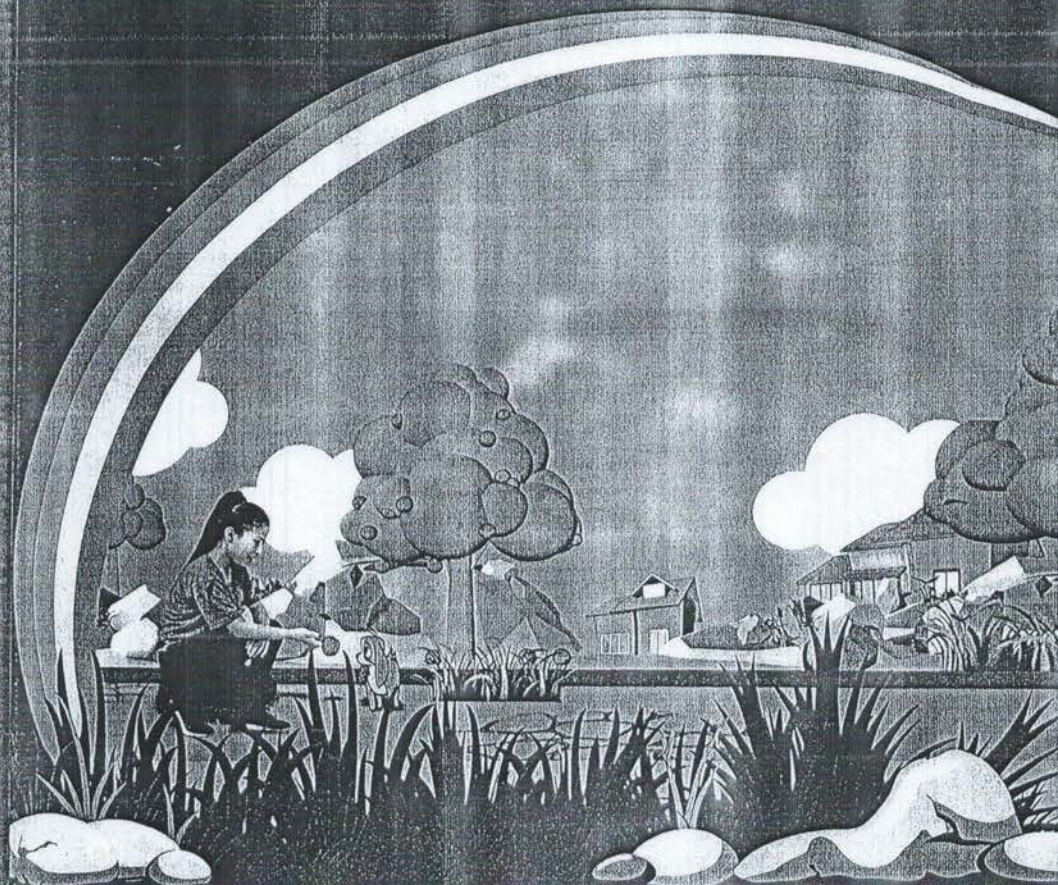


  
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# MIZO CHILDLORIST THAWH HLÂWK NUCHHUNGI RENTHLEI

Lalnunpuia Renthlei \*

## 1. Nu ropui Nuchhungi Renthlei

Serkawn nu chhuanawm, Mizoram tana thil ropui leh tangkai tak tak tia, Zofate tana hriat reng tlâk ni kumkhua tur, Nuchhungi Renthlei (1914-2006) kha Mizo hmeichhe zinga India Civil mite chawimawina sâng ber, Padma Shri dawng hmasa ber a ni thei kha thil âwm leh mâwi tak a ni phawt mai.

Nu ropui, kawng hrang hranga Mizo hmeichhiate hmahruaitu, Isua hnungzuitu a nihna ang taka inggaitlâwm em em, Pi Nuchhungi Renthlei hi kum 2006-a a boral khan, kei mi benghawng lo ber mai pawh hian ui nachâng ka lo hre pha ve viau mai a. A boral hlim-chhâwn-ah khan amah thlah nan sùna hla (elegy), elegiac stanza hmanga phuah, châng ruk laia sei chu a thupuih Leitlangpui Zai Kûngpui Sùna tia vuahin ka phuah ve a; chu chu ka lehkhabu hmasa ber, Hringnun bu-ah khan ka lo chhuah ve tawh nghe nghe a ni. A châng hmasa ber pawh –

\* Assistant Professor, Department of Mizo, Mizoram University  
**Coordinator**  
Internal Quality Assurance Cell  
Pachhunga University College  
(A constituent college of Mizoram University)

**Principal**  
Pachhunga University College  
Aizawl : Mizoram

Chhimhlei vangkhua Leitlang a ngui ruai e,  
Zalêng zawngte 'n chal khat dawmin an sîn;  
Vohbik zamual liam tur an thlir za e,  
Karei, a liam ang maw enchim loh chûn!

(lh a ni. Chu hla chu thinlung zawng zawnga phuah ka ni a; a chhan pawh amah Nuchhungi hi mi mal taka hria ni lo mah ila, a kutchhuak thu leh hlate hnam tana a ropui em avang leh a chhuanawm em vang a ni.

Nuchhungi Renthlei chanchin leh a kutchhuak thu leh hlate chu amah a boral aṭanga a kum lina, kum 2010 tâwp lamah khan a fate, R. Biaksangate unau chuan thawkho leh tang rualin a buin an hlâwm khawm a, a bu hmingah Nuchhungi Renthlei Thu leh Hla an vuah a. He lehkhahuah hian ama chanchin chipchiar leh ngaihnawm tak bakah a kutchhuak thu leh hla eng emaw zat a chuang bawk a, a zir Chiang duh tan pawh he lehkhabu hi a tangkai hle a ni.

## 2. Thu leh hla lama a hnathawh leh kutchhuakte

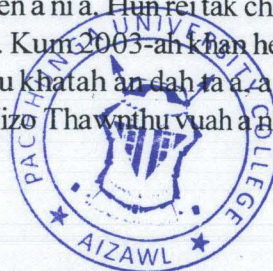
Kohhran leh khawtlanga a nihna hrang hrang leh a thiltih tam tak te, zirtirtu hna a thawh chhung kum tam tak chhunga a hnathawh chhuanawm tak takte chu tun hunah hian kan sawi hman dawn lo va. Thupui kan luh hmain thu leh hla lama a kutchhuak thenkhat lo tar lang hmasa i la.

Nuchhungi Renthlei Thu leh Hla buah hian a kutchhuak hi hlâwm lian pahni – thu lama a kutchhuak leh hla lama a kutchhuak tiin then a ni a.

### 2.1. Thu lama a kutchhuakte –

#### I. Mizo Thawnthu –

(a) *Serkawn Graded Readers*: Tun hma chuan bu hrang hrang pathuma then a ni a. Hun rei tak chhung chu Primary zirlai bu atan hman a ni a. Kum 2003-ah khan heng bu hrang hrangte hi hlâwm khâwm bu khatah an dah ta a, a bu hmingah Serkawn Graded Readers: Mizo Thawnthu vuah a ni.

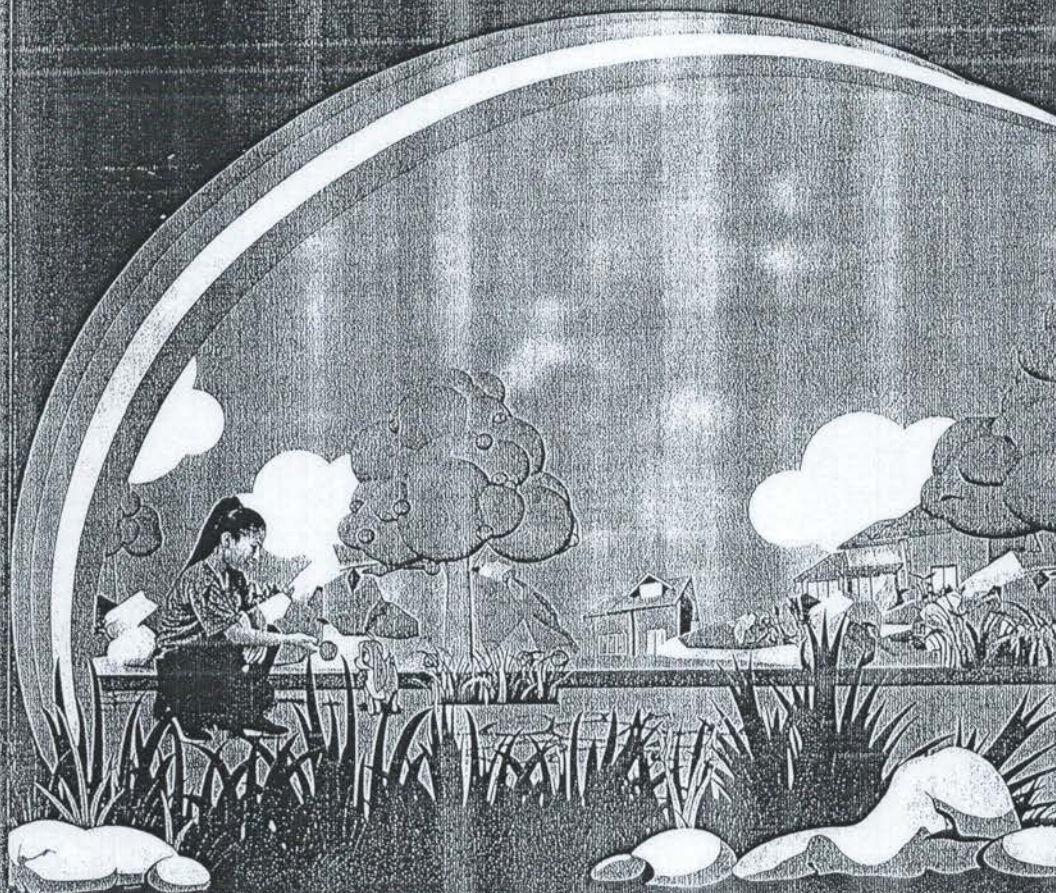




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Dr. Zoramdinthara  
Enid H. Lalrammuani  
H. Laldinmawia

*Commissioner*  
Mizoram Sahitya Akademi  
Pachhunga University College  
(A constituent college of Mizoram University)



*Principal*  
Pachhunga University College  
Aizawl, Mizoram



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3. Nuchhungi's literature  
— **Lalrinfel**
4. Mizo Naupan  
— **Thangbia**


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## DECONSTRUCTING THE HERO: LITERARY THEORY AND CHILDREN'S LITERATURE OF NUCHHUNGI

Lalrotluanga\*

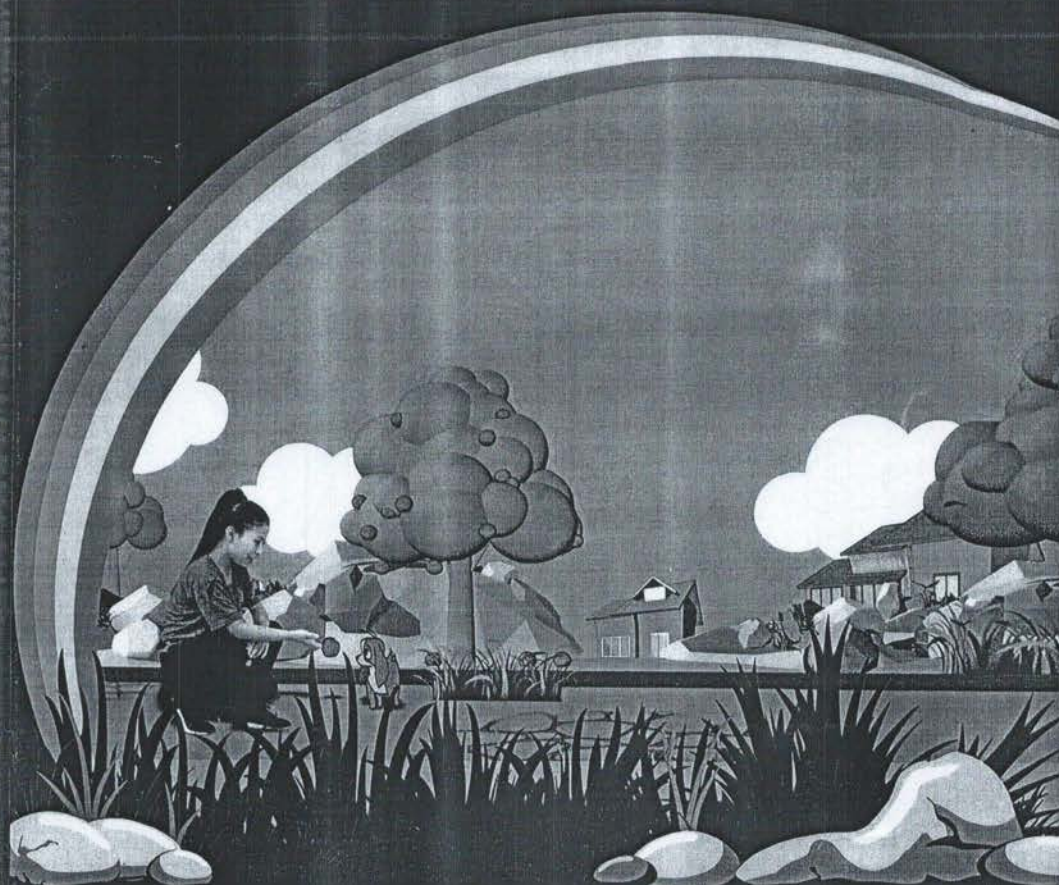
"Literary Criticism chuan thuziak eng pawh a chhui fiah a, Hei hi chutiang tak chu a ni e, a ti thin a, Literary theory erawh chuan thuziak kalphung thar a lo awmin, hei hi chumi atanga lo chhuak a ni a, a pianhmang chutiang chu a ni a, chu lam hawi leh nger zawng nei chu a ni, a lo ti var thin" (Theory of Literature, 112) tia R. Thangvungan a sawi ang hian Nuchhungi kut chuak pianhmang leh nger zawng hi chhui tur leh zir zau tur thahnem tak a awm a, a kut chhuak hrang hrang avang hian Mizo zingah a hming hi a la thang zual deuh deuh dawn niin a lang. Mihring zirna leh thiamna a sang zel a, a hmaa hriat bel tawh aia ril zawk thuk zawk leh mumal taka lo dawn sawn a lo hminghmerh hi Literary theory in a tum zinga mi a nih ang in Nuchhungi kut chhuak hlutna mumal zawka zir chian hi thil pawimawh tak a ni. Darchuailova Renthlei chuan Nuchhungi kut chhuak hlutna chu, Mizoram zirna kawnga Nuchhungi hnathawh hi a ropui hle a, teh sen rual loh, buk sen rual loh, hlu deuh

\* Assistant Professor, Department of Mizo, Pachhunga University College



NUCHHUNGI RENTHLEI LEH  
**NAUPANG  
LITERATURE**

[UNDERSTANDING CHILDREN'S LITERATURE OF  
NUCHHUNGI RENTHLEI : APPROACHES AND SYSTEMS]



Edited by

Dr. Zoramdinthara  
Enid H.Lalrammuani  
H.Laldinmawia

  
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tenaute thlengin hlaah a chawi thei zel hi a ropui bikna leh a hla zia danglam bikna a bawk.

- Nuchhungi Renthlei hian siamte nun dan leh awmdan atanga keini mihringten zir tur kan neihte thiam takin a tarlang pah zel thin a. Chuvangin, thilsiam mawina mai ni lovin thilsiam atanga zir lai zir chhuah tur a tarlang tel thin hi a hlain a zirtu naupangte nuna hlen chhuah a tum pakhat chu niin a lang bawk.

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## NUCHHUNGI'N THILSIAM MAWINA A PHOCHHUAH DAN

[Study of an Ecoaesthetics in Nuchhungi's selected poem]


HLaldinmawia\*

**Thuhma:** He paper-ah hian Nuchhungi naupang hla 72 zinga 'Hunbi hla' (season poem) panga (5) kan hmuh te zirchian a ni a. Heng 'Hunbi hla' atanga hunbi chungchang a sawifiahna te, hunbi hrang hrang mawina a tarlan dan te, hunbi-in rimawi a chhuah dan te, Hunbi-in rawng mawi tak tak a lanir dan te leh hunbi leh mihring nun inzawmna a hla hmanga a puanchhuah te chu zirchian a ni.

#### Ecoaesthetics:

Thuziak mawina te, lemziak mawina te, rimawi mawina te, thil mawina te, mihring mawina te leh thil mawi mawina zawng zawng hi aesthetics tiin a sawi theih mai awm e. Literature zirna mulah hman lar a ni ang bawkin Philosophy lamah pawh hman rim ni a. Chutiang bawkin Aesthetics chu Science hmanga thil mawi hlan (the science of study of the beautiful) (Coles, 4) tih a ni. Aesthetics approach hi hlawm hnih - philosophical leh psychological approach hi a. Philosophical approach-ah chuan thil mawi

Assistant Professor, Department of Mizo, Pachhunga University College

  
Principal  
Pachhunga University College  
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An easy reference to  
**HISTORY OF INDIA**  
(GUPTA TO SULTANATE PERIOD)



Dr. Rohmingmawit  
Lalrameng K. Gangte



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## CHAPTER 1

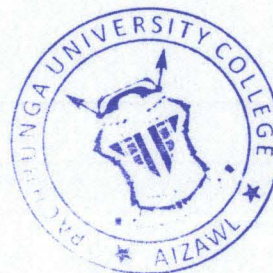
### AGE OF THE GUPTAS

#### Introduction

The period c.300-600 CE is often referred to as the Gupta period though dynastic labels have no longer found much favour among the historians. After the decline of the Mauryan Empire, various political powers like the Kushanas, the Sakas and the Satavahanas established their rule in India which was followed by political disintegration. The next powerful political power was the Gupta who established their rule on the ruins of the Kushans. They were probably the feudatories of the Kushans and succeeded them without much time lapse. Prayag (modern Allahabad) was the centre of their power from which they spread to the other regions and in course of time became an all-India empire.

The ancestry and early history of the Gupta family are little known. Scholars like RS Sharma and Romila Thapar believe they may have been of vaishya origin while some historians accord them brahman origin. The first important Gupta ruler was Chandragupta I and his accession to the throne in 319-320 CE marked the beginning of the Gupta era. The Gupta Empire was not as large as the Mauryans but it was able to keep north India politically united for more than a century.

  
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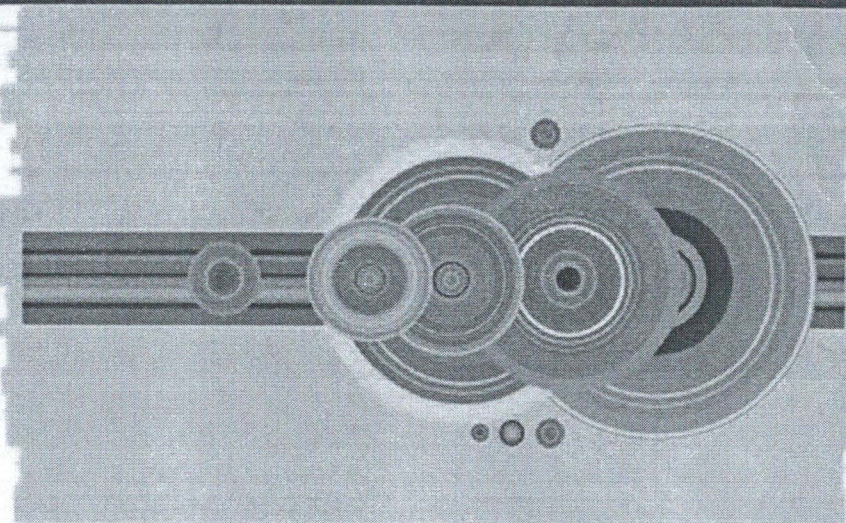


  
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This clear, concise and highly readable text, Para-contact metric manifold, deals with the study of various type of metric and non-metric connection in context of Para-contact manifolds. A brief introduction related to the definition of Differentiable manifold, vector field and tangent space, Lie-Bract, Lie-derivatives, covariant derivatives, Exterior derivatives, connection, Riemannian manifold, curvature tensor, Almost contact metric manifold, submanifolds and hypersurface has been given in this book. Certain curvature tensors like, Quasi-conformal curvature tensor, Pseudo projective curvature tensor, G-projective curvature tensor etc are explained with P-Sasakian manifold. The characteristics properties of the different type of almost Para-contact metric manifold, Almost Para-contact submanifolds and Hypersurfaces of almost product manifold are briefly discussed in this book.

On Para-contact metric manifold



Rajesh Kumar

## A Note on Para-contact Metric Manifold

A Fundamental Approach



Dr. Rajesh Kumar is a teacher in Mathematics with over fifteen years of teaching and research experience in the Mizoram University (PUC-Campus), Mizoram, India. He obtained P.G. and Ph.D. from Purvanchal University, India in 2006. His special interest is on the Differential Geometry of Contact manifold, Para-contact manifold and Sasakian manifold.



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*Kote C*  
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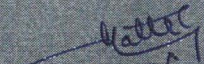


GOVERNMENT AND POLITICS OF

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# Rethinking Colonialism and Globalisation

the historical saga of India from the  
19th century onwards

Madhuri Saikia

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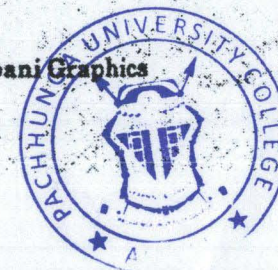
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# Contribution of British Missionaries in Mizoram towards constructing colonial modernity during the 19<sup>th</sup> century

Emily F. Lalnunpuii

Mizoram, one of the states of North East India was formerly known as Lushai Hills. Since 1826 up to the last decade of the 19<sup>th</sup> century, when the British expanded their territory to the Chittagong Hill Tracts, the Mizos (inhabitants of Mizoram) frequently raided the territory occupied by the British subjects. This raised the attention of the British Government who made several retaliatory expeditions which were all unfruitful. The first British Indian Army Lushai expedition was sent in 1871-1872 (Woodthorpe 1873) which helped in the virtual domination of the Hills by the British in 1889 (Malsawmdawngliana & Rohmingmawii 2013). This opened the doors for the Christian Missionaries who came to the Lushai Hills and started educating the Mizos thereby paving the way for modernity.

## Traditional Pre-Christian Mizo ethos

Religion has always been the centre of all activities amongst the traditional Pre-Christian Mizos. Their religion was based on animistic view. They believed in

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## Seasonal variations of organic carbon in the sediments of Imphal River, Manipur

Khurajam Usha<sup>1\*</sup>, K. Khelchandra Singh<sup>2</sup>

<sup>1</sup>Department of Environmental Science, D.M. College of Science, Imphal 795001, Manipur, India  
<sup>2</sup>Department of Environmental Science, Pachhunga University College, Aizawl 796001, Mizoram, India

Corresponding author: khurajamusha16@gmail.com

The Imphal River is major river in Manipur, India, that connects Manipur River and Bay of Bengal. The seasonal variations of organic carbon in surface sediments and the major sources along the course of the river were studied. Sediment samples were collected from five sampling sites, namely Lamlong Thong (Site 1), Minuthong (Site 2), Sanjenthong (Site 3), Bamon leikai (Site 4) and Singamei Leishangthem leikai (Site 5). Organic carbon contents were determined using the Walkley-Black rapid back titration method. It varied considerably in different seasons as well as between different sampling sites. Highest organic carbon was at Site 3 (2.76%) in the winter season, whereas lowest was at Site 4 (1.29%) in the monsoon season. The highest organic carbon at Site 3 may be attributed to large amount of organic matter released from the Sanjenthong residential area and the cumulative effect of organic matter from municipal deposition in the upstream area. There is no proper mechanism of waste disposal, as inhabitants dumped waste directly into the river. The seasonal variation is also partly due to sedimentation of the dissolved and suspended particles found in the river. Site 1 and Site 4 are kept comparatively cleaner. People cultivate crops and they do not dump wastes into river as traditional dumping sites are properly maintained especially at site 1 and 4. Incidentally, lower organic carbon values were recorded from these sites.

Keywords: Organic carbon, variation, sediment, Imphal River, Manipur.

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## Life-form characteristics and biological spectrum of the aquatic macrophytes in Tam Dil, a natural lake in Mizoram

K. Khelchandra Singh<sup>1\*</sup>, J. C. Zirthingmawia<sup>1</sup>, Khuraijam Usha<sup>2</sup>, Kulendra Ch. Das<sup>1</sup>

<sup>1</sup>Department of Environmental Science, Pachhunga University College, Aizawl, 796001, Mizoram, India

<sup>2</sup>Department of Environmental Science, D.M. College of Science, Imphal, 795001, Manipur, India

Corresponding author: k.k.singha@pucollege.edu.in

Tam Dil is a natural lake but reconstructed as fish pond at Saitual, Mizoram. The area around the lake enjoys a moderate climate owing to its tropical location. It receives an adequate amount of rainfall. It is also fed by small streams from surrounding catchment area. During the present investigation, sixteen aquatic macrophytic species were found in the lake. The plants were categorized into submerged, rooted with floating leaves, free-floating, and emergent groups. Life-form of the macrophytic vegetation were determined based on the height, form, habit and nature of the position and degree of protection of the perennating buds together with occurrence of each species in the field. Life-forms were classified as chamaephytes, hemikryptophytes, geophytes, therophytes and errant vascular hydrophytes. Therophytes had the greatest number of species, such as *Alternanthera philoxeroides*, *Alternanthera sessilis*, *Brachiaria mutica*, *Echinochloa stagnina*, *Kyllinga tenuifolia*, *Leersia hexandra* and *Polygonum glabrum*. Errant vascular hydrophytes had three species such as *Ceratophyllum demersum*, *Eichhornia crassipes* and *Marsilea quadrifolia*. Also, three species of hemikryptophytes, namely *Commelina bengalensis*, *Enhydra fluctans* and *Hygrophysa aristata* were identified. Geophytes was represented by *Nymphaea pygmaea helvola* and *Zizania latifolia*. Only one species *Phragmites karka* belong to chamaephytes. Thus, therophytes dominated over the other life-forms classes. Therefore, the lake may be designated as therophytes type of phytoclimate.

Keywords: Life-form, biological spectrum, macrophytes, Tam Dil, Mizoram.

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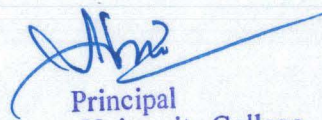
Contributors to this volume are:

- Margaret L. Pachuau, Professor and Head of the Department of English, Mizoram University
- Dr Lalbiaktsangi Chawngthu, Associate Professor, Pachhunga University College
- Dr Lalhansangi Fanai, Associate Professor, Government Aizawl College
- A Hmangaihual E Poonte, Associate Professor, Government Aizawl College
- Lalrinsangi Nghinglova, Associate Professor, Government Ziri Residential Science College
- Henry Lalnwizuala, Assistant Professor, Pachhunga University College
- Thangnghinglova, Assistant Professor, Government Johnson College
- Dr Vanlalchami, Assistant Professor, Government T. Romana College



  
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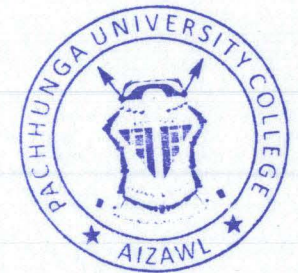
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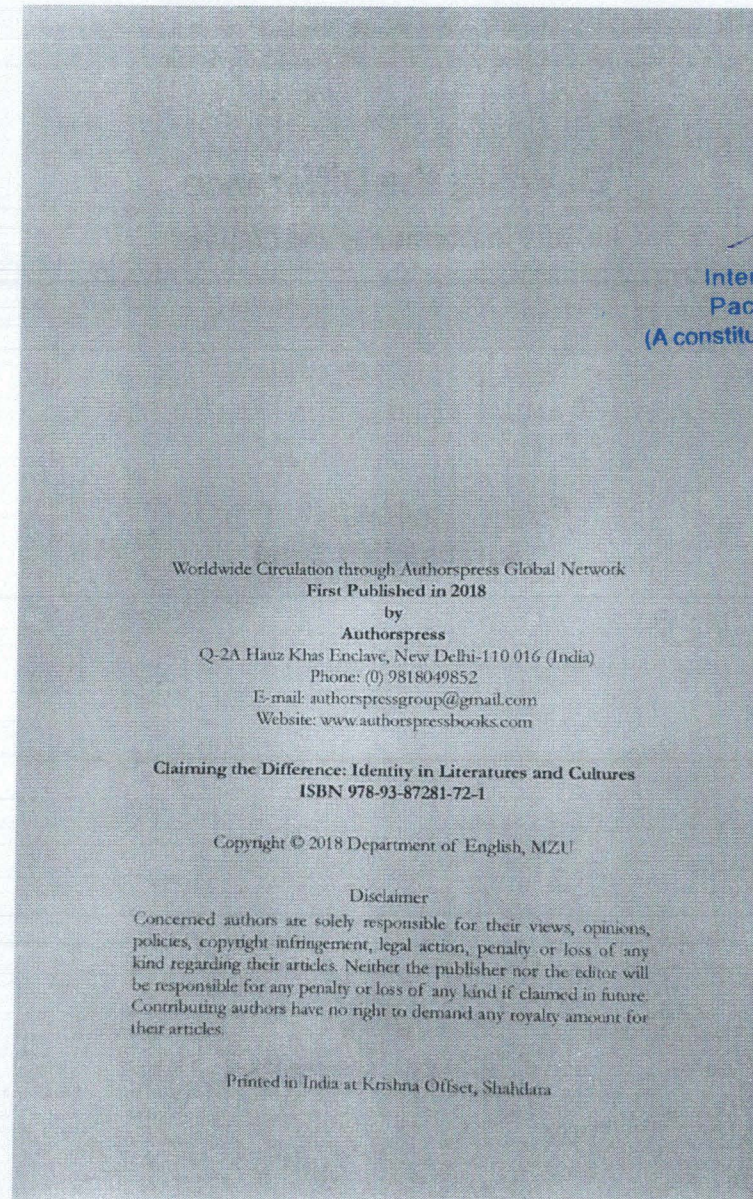
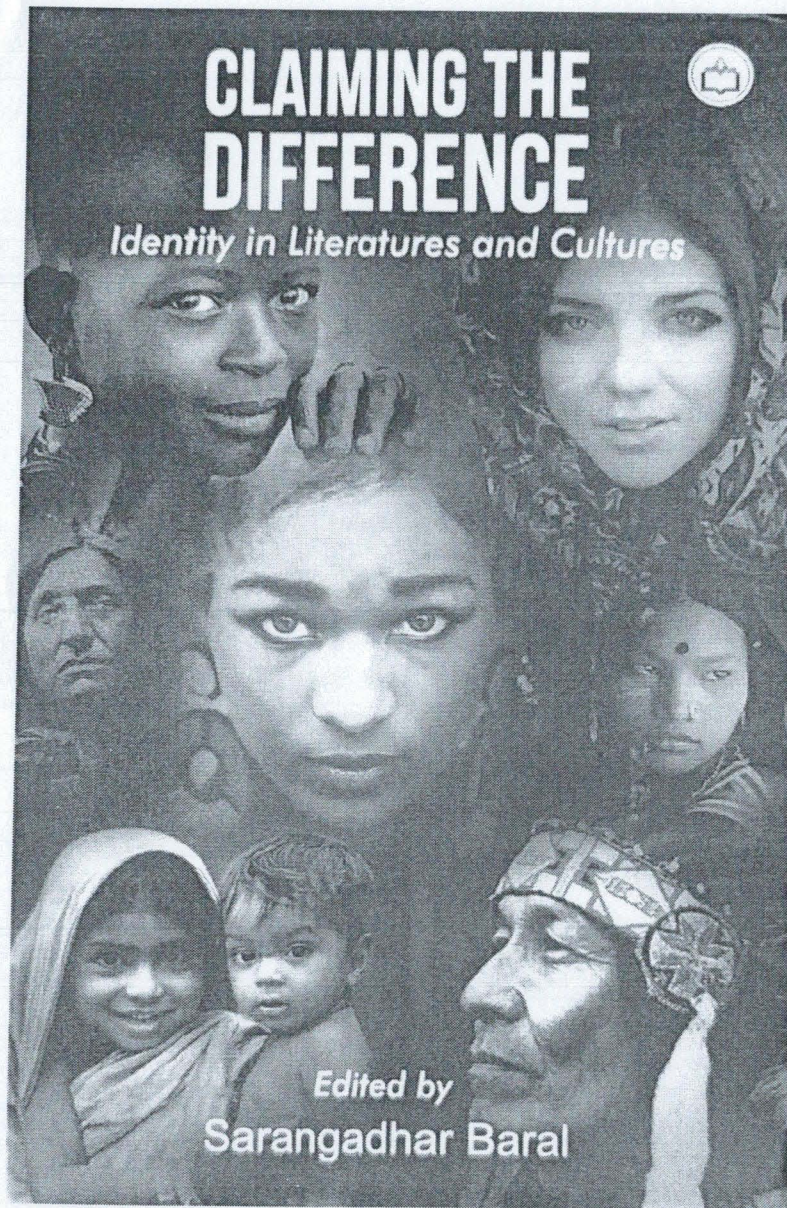
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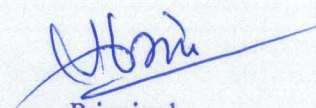
  
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### Jazz Poetry of Langston Hughes as a Device for Establishing Black Culture Consciousness in America

Henry Lalmawizuala

Culture consciousness or cultural awareness is not only an essential component for an organised or social group in order to be fundamentally recognised for the establishment of an objective or an agenda or plainly for the promotion of one's own culture, but it is also a prerequisite for an individual as a means of self-actualisation. Culture consciousness sometimes used synonymously with cultural awareness is a term popularly defined as one's awareness or consciousness towards one's own race or culture. Stephanie Quappe and Giovanna Cantatone described it as the, "foundation of communication [which] involves the ability of standing from ourselves and becoming aware of our cultural values" (1).

African Americans went through various transformations, from physical bondage to freedom and from mental slavery to virtual freedom. While freedom, in its strictest sense entails complete impartiality and acknowledgment of existence in complex social strata, it also encompasses one's ability to assert one's own ideas, identity, culture and customs. Even though the *Declaration of Independence* of the United States of America assured the 'freedom of all mankind', African Americans were still lynched, constantly abused, their rights contemptibly denied and repeatedly violated during the 1900s.

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# Rethinking Colonialism and Globalisation

the historical saga of India from the  
19th century onwards

**Madhuri Saikia**

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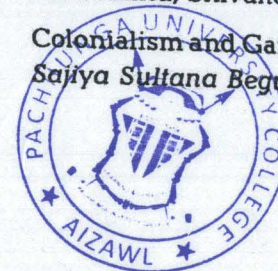
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## Mizo National Movement 1966 – Issues and Challenges in Indian National Movement from the context of North-East India

Vanlal Tanpuia

### 1. Introduction

Nothing is more striking than the confusion pertaining to the concept of freedom and identity, the core foundations of nationalism. It one way or the other happens in a situation of a community when the traditional foundations of both freedom and identity are undoubtedly shaken and deprived of. In a situation of internal-external biases, there's a tendency of re-interpreting, re-defining and re-structuring the concept of nationalism. There was a situation when a good number of ethnic communities of North-East India enter into those debates, particularly among the tribes' communities by re-questioning their concept of freedom and identity due to certain political initiatives. This even culminates in the ethnic movements in various places. Of the notable movements of such, this paper focusses on the Mizo National Movements, recorded to happen on 1st March, 1966. This reflects the other ethnic groups of the region and the problems faced in the history as well as in the present political scenario.

  
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# Contemporary Short Stories from Mizoram

Edited by  
Margaret Ch. Zama

  
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# Spirit Kawn<sup>1</sup>

By Lalrammawia Ngente

*Though there be days of dark cloud and tears,  
It is often the means used by the Creator to  
enable man to mend his ways.*

1

Pi<sup>2</sup> Dawli sat bolt upright in bed, awakened instantly by the strange sounds that she heard. The electricity had gone off and she groped blindly for the candle that was usually kept on the bedside, but she was unable to locate it. As she turned confusedly about in the darkness, a sharp sound came from the direction of the window, and her gaze darted frantically around.

Amidst the sounds of her hammering heart, she heard noises coming from the garden in their *kawmthlang*<sup>3</sup>, of someone, obviously exhausted, breathing heavily and walking with heavy steps. She also heard people talking, but was unable to decipher their conversation. There was a strong wind about, and she was unable to fathom why anyone would want to venture out under such conditions, let alone in their *kawmthlang* of all places.

She knew she ought to get up and investigate but she was too scared to move. Sitting in the darkness, she thought she detected flashing lights coming from the area and she also heard people whispering. Then there would come sudden scuffling sounds indicating that someone had slipped and fallen. She thought she discerned both adult and children's voices, and the lights she saw kept flashing off and on.



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Hearing her cries, he came running towards her. Pi Dawli saw him gazing down at the spot where she stood and taking in the scene around her. Before she could call his name again, he was not to be seen.

Pi Dawli examined the pot again and slowly realized that this was their pot which had mysteriously disappeared sometime back. She had been unable to determine how or where she had lost the pot. She gathered the chicken feathers in her hands, and she realised that these were the feathers of the chicken that had gone missing some time ago. Those *ramhuai* had certainly been busy indeed! Pi Dawli gnashed her teeth, beating the surrounding vegetation, unafraid now of whatever may be hiding there.

She found many other things and realization dawned clearly upon her. There had indeed been evil activities happening in their *kawmthlang*.<sup>10</sup>

Clutching one of the things she found, she ran up towards the clearing in which her husband sat, and flung what she was carrying down in front of him. "This is indeed a *ramhuai liam kawn*, and one of them must have forgotten this here. Look closely at what it is", she cried.

Her husband looked carefully at the shoe he had lost, sometime back, encrusted and mouldy. Pi Dawli angrily interjected, "So we really did have *ramhuai* around, and they had been busy operating here".

But when she saw the guilt written clearly on her husband's face, she relented. Embracing him from behind, she said, "The *ramhuai* that stole our pot and had a penchant for losing his shoe has now attained salvation".

Her husband, unable to think of a reply, gave her the glimmer of a smile.

Translated by Vanlalveni Pachuau

## Source

"Ramhuai Liam Kawn" from *Hrimthlan Hlimthla-2* By Lalrammawia Ngente. Pub. H.C. Lalthasangi, Zoth Compugraphics, Aizawl. 2005

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# SOCIO-ECONOMIC AND POLITICAL DEVELOPMENT IN POST- PEACE ACCORD MIZORAM

  
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Dr. H. Lalnunmawii

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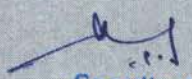
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## 18. AN OVERVIEW OF URBAN GOVERNANCE IN AIZAWL.

*—Dr. David V. Khiangte & H.C. Lalchhuanawma*

**Introduction:** The global urban population has predominantly become more urban than rural. Cities are important drivers of development and poverty reduction. It draws large numbers of people due to its attractive locations of facilities and infrastructure. In 2015, 54 % of the world's population lives in urban areas and the proportion is expected to increase to 66 % by 2050. The largest growth of urban area will take place in India, China and Nigeria (UN, 2014).

According to Census 2011, for the first time in India the absolute increase in population is more in urban areas than the rural areas. India's urban population is 37.7 crore while that of the rural areas is 83.3 crore. In terms of percentage, rural-urban distribution in India is 68.84 % and 31.16 % respectively.

Aizawl was established on 25th February 1890 and originally it was a military fortified place. Infrastructures such as Tlawng river water way, Cart road between Sairang and Aizawl and Aijal bazaar which were instrumental in the growth of Aizawl town already existed. When the British left India, Mizo District Council (MDC) was formed in 1952, Aizawl became the capital of MDC and since then, new residential areas have sprung up and it has been growing haphazardly without any control. There were more avenues for employment, both in private and public sector, which has resulted in pull factor and more and more people migrated to Aizawl.

The other factor in a population boom in Aizawl is the insurgency and its aftermath, the grouping of villages and its consequences. Mizo National Front resorted to violence on the

  
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# Perspective and Trends in the Development of Science Education and Research

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# Geochemistry and nature of protolith of quartz sillimanite schist from Sonapahar area, West Khasi Hills district of Meghalaya

V. Vanthangliana<sup>1\*</sup>, Jimmy Lalnunmawia<sup>2</sup>, Laldinpuia<sup>1</sup>, Lalhmingangi<sup>1</sup>

<sup>1</sup>Department of Geology, Pachhunga University College, Aizawl 796001, Mizoram, India

<sup>2</sup>Department of Geology, Mizoram University, Tanhril 796004, Mizoram, India

Corresponding author: vantea\_g@yahoo.com

The Precambrian terrain of the Sonapahar area is characterised by the presence of a thin, long, discontinuous band of quartz-sillimanite schist which hosts the massive sillimanite-corundum deposits. The quartz sillimanite schists are generally siliceous, SiO<sub>2</sub> (60.59-76.82 wt %) and are characterized by high Al<sub>2</sub>O<sub>3</sub> content with average value (27.22 wt %), low P<sub>2</sub>O<sub>5</sub>, Fe<sub>2</sub>O<sub>3</sub> and MgO, MnO Na<sub>2</sub>O, K<sub>2</sub>O and TiO<sub>2</sub>. Average MgO, CaO, K<sub>2</sub>O and Na<sub>2</sub>O values are generally less than 0.15 wt %. TiO<sub>2</sub> values range from 0.13-0.35 wt %. Compared with the post-Archean metasediments, the Sonapahar schists are richer in SiO<sub>2</sub> and Al<sub>2</sub>O<sub>3</sub> but depleted in other oxides. In Harkers variation diagram, SiO<sub>2</sub> shows a linear inverse correlation with Al<sub>2</sub>O<sub>3</sub> and TiO<sub>2</sub>, but there are no significant correlations observed with other oxides. In general, Al<sub>2</sub>O<sub>3</sub> and SiO<sub>2</sub> constitute more than 97 wt % in most of the samples. Among trace elements, Zr, Hf and Pb are characterized by high concentration and low La/Th and Th/U. The schistose rocks are generally low in Sr/Ba ratios (< 0.88 %) and relatively high content of Rb in contrast to Ba. Chondrite normalize REE patterns of the schists reveals a strongly fractionated patterns with enriched LREE and low HREE values [(La/Yb)<sub>N</sub> = 27.38-43.98] with prominent negative Eu-anomaly. The concentration of V (10.28-51.49) shows the apparent mobility in these quartz sillimanite schists and the oxidizing conditions prevailed during weathering. Geochemical characteristics suggested that quartz sillimanite schists from Sonapahar area are derived from post-Archean recycled upper crust sources and the precursor sediments are possibly derived from felsic rocks and probably not mafic rocks.

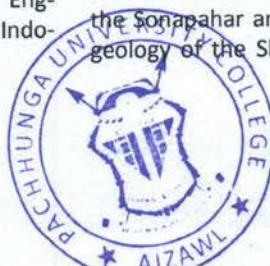
**Keywords:** Quartz sillimanite schists, Sonapahar, geochemistry, sediment, rock.

## INTRODUCTION

Precambrian basement of the Shillong plateau in Meghalaya, India, is characterised by high grade gneisses which are intruded by basic and ultrabasic rocks of different ages. In Sonapahar area, cordierite bearing granulitic gneisses, basic granulites and quartz sillimanite schists were largely exposed. The Shillong plateau, elsewhere considered a detached Precambrian block of Indian Peninsula in the northeast India is bounded to the south east by E-W trending Dauki fault (Figure 1), to the north by Brahmaputra fault<sup>1</sup> or Oldham fault (Bilham and England, 2001) to the west by the broadly NNE-SSW Indo-

Myanmar belt. The plateau is separated from Mikir Hills in the northeast by the alluvium tract of the Kopili fault system (Dasgupta and Nandy, 1982). The demonstrable recognition of Mesoproterozoic granulites in the Shillong Meghalaya Gneissic Complex (SMGC) is new and their similarity with temporally related rocks elsewhere in the Indian shield indicates that the Shillong Plateau has been a part of the Indian shield since the Mesoproterozoic.

Chatterjee *et al.* (2007) suggested that the Pan-African suture passing through Prydz Bay in Antarctica possibly continued northward into India through the SMGC with the western margin of the suture between the Sonapahar and the Garo-Goalpara Hills regions. The geology of the Shillong plateau is very complex, as the





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# Petrography of Barail sandstone of Champhai-Mualkawi section in Champhai district, Mizoram: Implication on provenance and tectonic setting

Malsawmtluangkima Hauhnar<sup>1\*</sup>, Jimmy Lalnunmawia<sup>1</sup>, V. Vanthangliana<sup>2</sup>

<sup>1</sup>Department of Geology, Mizoram University, Tanhril 796004, Mizoram, India

<sup>2</sup>Department of Geology, Pachhunga University College, Aizawl 796001, Mizoram, India

Corresponding author: mstluangkima@gmail.com

The area around Champhai district contains exposed Barail Group of rocks (Oligocene) which comprises of buff-coloured sandstones with alternating beds of shale and siltstone. This study focussed on the provenance and tectonic setting of the Barail sandstones with the help of detailed petrographic studies and quantitative and qualitative modal analysis by point counting technique. The general lithological units consist of sandstone, shale, crumpled shale, silty-shale and siltstone. A modal analysis of the 25 sandstone samples was carried out on selected detrital grains like quartz, feldspar and lithic fragments which indicated that quartz ranges between 69.75 to 82.25%, feldspar ranges between 1.80 to 6.91% and lithic fragments ranges between 13.82% to 29.43%. The sandstones belong to sublitharenite, litharenite and feldspathic litharenite indicating predominant presence of quartz in the sandstones with lesser components of feldspar and lithic fragments. Different variants of quartz such as undulatory monocrystalline quartz and polycrystalline quartz and other lithic fragments like schist and gneiss indicate metamorphic source rock. The common occurrence of micas in almost all the sandstone samples may also indicate the common occurrence of mica-bearing metamorphic schists or gneiss in the provenance. Various characteristics of feldspar like strong alteration in orthoclase, deformed twinning of plagioclase and presence of micas may be indicative of low to high grade metamorphic rocks and acidic to basic igneous rocks. On the basis of different tectonic discrimination diagram using QFL and QmFL, the tectono-provenance of the sandstones was found to be Quartzose Recycled Orogen. It is concluded that the source area might be the tectonically active continent-continent collision zone of eastern Himalaya and the Indo-Burmese belt and that the associated extrusive and intrusive igneous rocks are prone to weathering and erosion by various denudation processes.

**Keywords:** Barail Group, Champhai-Mualkawi, petrography, provenance, sandstone, tectonic setting.

## INTRODUCTION

Petrography of sedimentary rocks reveal the nature of source rock of the region and tectonic settings of the sedimentary basins. Several geological investigations have been carried out by different workers in Mizoram. The geochemistry and petrographic characteristics of Muthi sandstones of Upper Bhuban Formation have indicated that the rock belongs to Litharenite (Lalmuankimi *et al.*, 2011). Based on petrographic modal analyses Lalnunmawia and Lalhlipuii (2014) concluded that the current sandstones are sublitharenite to litharenite having provenance of recycled orogeny.

Petrographic analyses of major framework constituents would not have been possible without the invention of thin-section petrography by Sorby (1880), who also carried out the first detailed investigation of quartz varieties. Judd (1886) first recognized the influence of climate on the preservation of feldspars. These early studies were expanded by Mackie (1899a,b) who also established criteria for the recognition of quartz derived from igneous and metamorphic rocks and the use of feldspar as indicators of contemporaneous climate.

Provenance studies received new impulses through the work of Dickinson (1970), who established clear cut operational definitions for grain types to improve the reproducibility of detrital modes. Subsequently, Dickinson







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# Effects of frequency parameter due to elastic wave in monoclinic elastic medium

J. Lalvohbika\*

Department of Mathematics, Pachhunga University College, Aizawl 796001, Mizoram, INDIA

Corresponding author: [vohbikajongte@pucollege.edu.in](mailto:vohbikajongte@pucollege.edu.in)

The propagation of elastic waves has many applications especially in geophysics and engineering. They are used in the detection of notches and faults in different types of materials such as in railway tracks, buried landmines, seismic activities, and exploration of valuable materials such as minerals, crystals, natural gas, etc. When the seismic signal passes through different discontinuities inside the earth, the phenomena of reflection and transmission takes place. In this paper, the phenomenon of reflection and transmission of elastic waves due to incident qSV-wave at a corrugated interface between two different monoclinic elastic half-spaces are discussed. There exist an irregularly reflected and transmitted waves due to undulated nature of the interface, besides the regularly reflected and transmitted ones. Using Rayleigh's method of approximation, the expressions for the reflection and transmission coefficients of the regular and irregular waves are obtained. It is observed that these coefficients are functions of angle of incidence and elastic constants and they are greatly influenced by the frequency and corrugation parameter. For a special type of interface,  $x_3 = d \cos px_2$  we have computed these coefficients and discussed the effects of frequency parameter.

**Keywords:** qSV and qP-waves, monoclinic medium, reflection and transmission coefficients, corrugated interface, phase velocity.

## INTRODUCTION

Elastic wave propagation is a very interesting topic that deals with numerous problems in various fields such as earthquake engineering, geophysics, signal processing, echography and metallurgy. They are useful in detection of notches and faults in different types of materials such as in railway tracks, buried land-mines, etc. The technique of seismic wave propagation is a tool for investigating the internal structure of the earth and also used for exploration of valuable materials such as minerals, crystals, fluids (oils, water) etc. beneath the earth surface. When the seismic signal passes through different discontinuities inside the earth, the phenomena of reflection and transmission takes place. These signals carry lots of information about the earth's structures and many such problems are in open literatures, i.e. Chattopadhyay and Choudhury (1995), Chattopadhyay *et al.* (1997), Dowaikh and Ogden (1991), Sheriff and Geldart

(1995), Singh (1999), Singh and Khurana (2002), Udias (1999) and others.

Singh and Khurana (2001) investigated the reflection and transmission of P and SV-waves at the interface between two monoclinic elastic half-spaces. Singh and Tomar (2007) investigated the problem of qP-waves at a corrugated interface between two dissimilar monoclinic elastic half-spaces and obtained the reflection and transmission coefficients of the irregular waves using Rayleigh's technique. Kaur and Tomar (2004) investigated the problem of reflection and transmission of shear wave incident upon a corrugated interface between two monoclinic elastic half-spaces with the help of Rayleigh's technique. But, there are many experimental evidences that the interfaces between layers are not perfectly plane, but they are of irregular in nature. These irregular natures of the interfaces affect in the reflection and transmission of elastic waves. Thus, it is important to take into account the problems related with the effects






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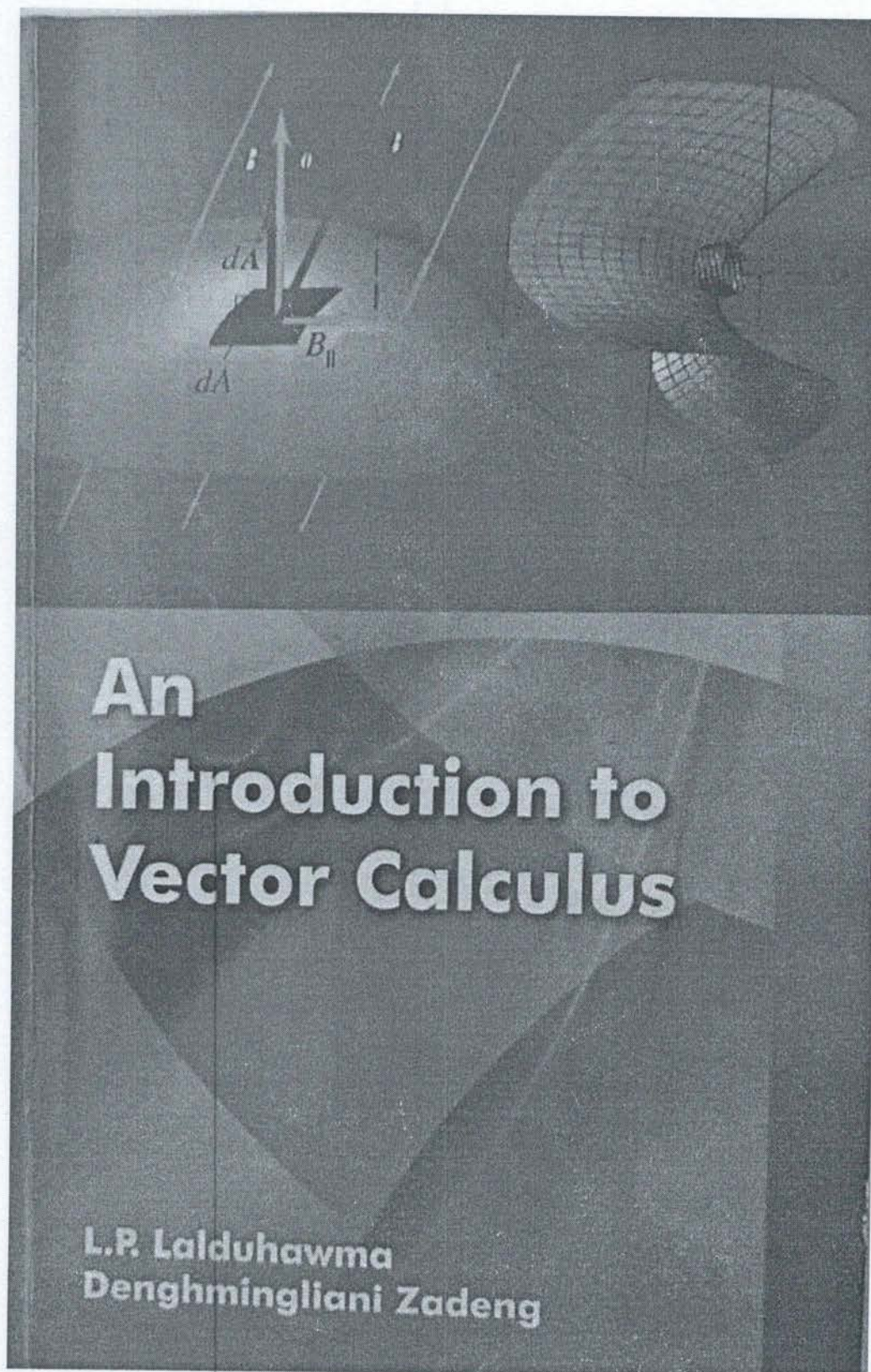
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## Chapter 1

### Transformation of Co-ordinates and Invariants

#### 1.1 Transformation of Co-ordinate:

A point in a two-dimensional coordinate system is determined by a pair of numbers which depends on the position of axes. If the co-ordinate axes are changed by shifting the origin or by rotating the axes or by both, then the co-ordinate of the point i.e. the equation of a locus will be changed. These processes are known as transformation of co-ordinates.

#### 1.2 Change of Origin without change of Direction of Axes:

Let  $(x, y)$  be the co-ordinate of P with respect to rectangular axes OX and OY after shifting the origin O at the point  $(h, k)$  of  $O'$  the new co-ordinate of the point P becomes  $(x', y')$  referred to the new set of axes  $O'X'$  and  $O'Y'$  which are parallel to the original axes OX and OY respectively.

We have  $x = ON$ ,  $y = NP$ ,

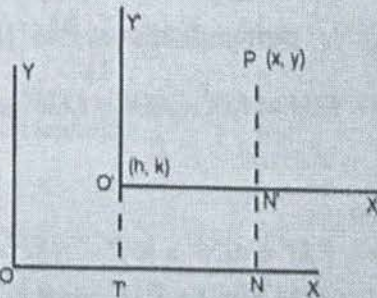
$$x' = O'N', \quad y' = N'P$$

$$h = OT' \text{ and } k = O'T'$$

Now  $x = ON = OT' + T'N$

$$= OT' + O'N' = h + x'$$

$$y = PN = NN' + N'P = k + y'$$



This transformation is known as transformation formulae for translation of axes.

**Note:** In the equation of locus referred to original system of axes  $(x, y)$  will be replaced by  $(x' + h, y' + k)$  when the equation is referred to new pair of axes. Inversely  $(x', y')$  will be replaced by  $(x - h, y - k)$ .

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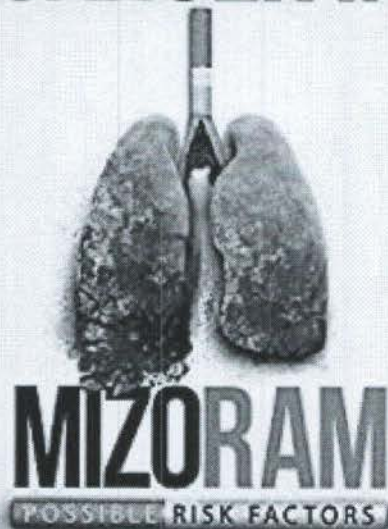
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# CANCER IN



Lalpawimawha

## Chapter 1

### Background

#### 1.0 Introduction

Cancer is a term used for diseases in which abnormal cells divide without control and are able to invade other tissues. Cancer cells can spread to other parts of the body through the blood and lymph systems.

Cancer is not just one disease but many diseases. There are more than 100 different types of cancer. Most cancers are named for the organ or type of cell in which they start – for example, cancer that begins in the colon is called colon cancer; cancer that begins in melanocytes of the skin is called melanoma.

Cancer is the leading cause of death in economically developed countries and the second leading cause of death in developing countries (WHO<sup>1</sup> 2008). The burden of cancer is increasing in economically developing countries as a result of population aging and growth as well as, increasingly, an adoption of cancer-associated lifestyle choices including smoking, physical inactivity (WHO 2008).

#### 1.1. Cancer in World

In 2013, WHO launched the Global Action Plan for the Prevention and Control of Non-communicable Diseases 2013-2020 that aims to reduce by 25% premature mortality from cancer, cardiovascular diseases, diabetes and chronic respiratory diseases by 2025. Some of the voluntary targets are most relevant for cancer prevention, including target 5 aimed at reducing the prevalence of tobacco use by 30%.

According to world cancer report 2014, approximately 14 million new cases were diagnosed and 8.2 million cancer related deaths in 2012. The number of new cases is expected to rise by about 70% over the next 2 decades. Among men, lung, prostate, colorectum, stomach, and liver cancer were very common. Among women the 5 most common sites diagnosed were breast, colorectum, lung, cervix, and stomach cancer.

<sup>1</sup> World Health Organisation (WHO) was established on 7th April 1948, head quartered in Geneva, Switzerland. Which is specialised agency of the United Nation concerned with international public health. The WHO is a member of the United Nations Development Group.

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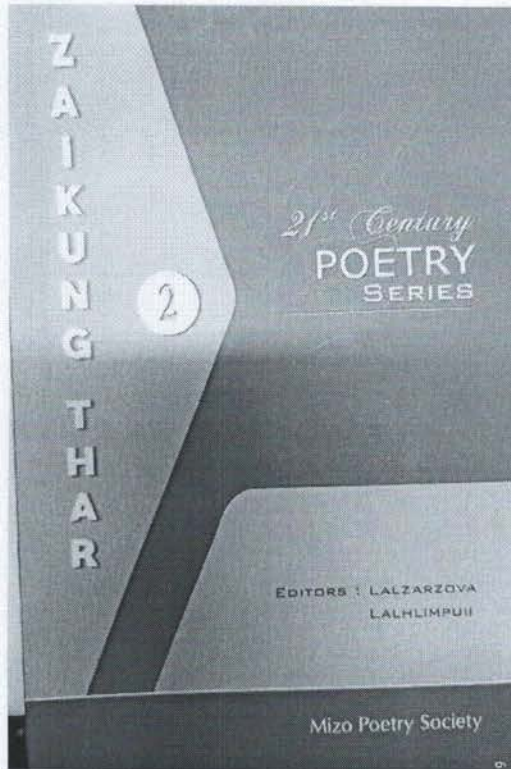
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Phu Loh D  
- H. Laldinmawia

Kumtluang par ang i sakhmel kha lungrun,  
Chhingmitin a tawni atang rengin,  
Duhai ka lo sam nang nena len dum;  
Hmangaihna khawvel hlimte'n chen turin.

Sakhmel mawina parin min hip changin,  
In run sang karawn kai beiseina nen;  
Mahse, val dang nen nuihiaura lengin,  
Ka tawng che, thlah nan 'mangtha' awka nen.

Nemte'n hmangaih biahtu ka hlan zawngte'n,  
Lung a dum lo ch'em ni duhlai Parte?  
Ka phu lo maw nang nen kumtluang inrem?  
Tapin ka thlir ta'ng Chhawrthla eng zawngte.

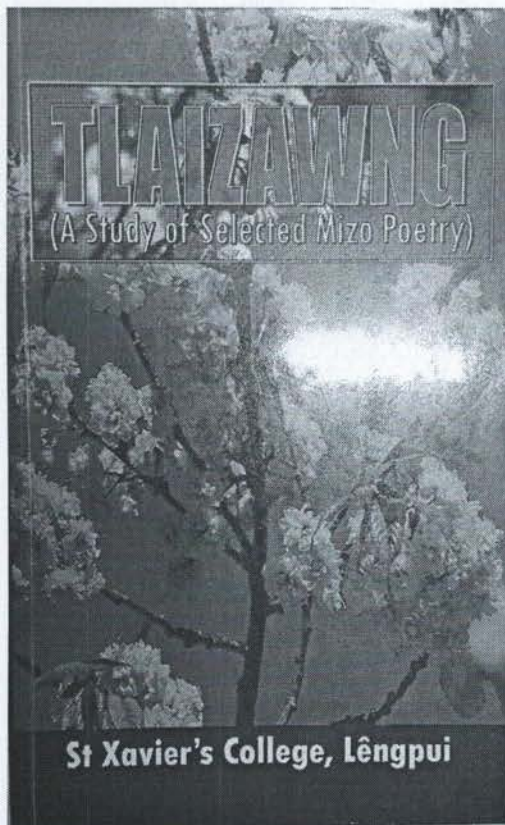
Aw, khiangawin i vul lai tiak mah se,  
Tiak hnu par a uai lo'ng duhlai Parte.



  
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**V.THANGZAMA DUHTHUSAM RAM**  
 (IDEAL STATE) 'THO LA, DING TA CHE'  
 HLA ATANGA THLIRNA

**H.L.Laldinmawia**  
 Asst. Professor  
 Mizo Department  
 Pachhunga University College

Hla thenkhat chu a hunlain larin langsar hle mah se chuai ni leh chul hun an nei a. Hla thenkhat chu tute emaw tan chauha phuah a ni a, mi dang tan sak a rem ve lo. Hla thenkhat chu tute pawl emaw puala phuah a ni a, mi nawlpui tan sak ve a rem lo fo. Hla thenkhat chu mi tin mil ni mah se hun bik leh hunbi neia sak chi te a ni bawh.

Hetih rual huan hla thenkhat chu a pian tich atanga thangzama zelte pawhin an tuipui leh an ngainat zui, hun bi leh hman bik pawh awm em em chuang lova sak mai theih, mi tin mi tangin thla em hnuai leh bus bang beng chung pawha an sak mai theih hla awm bawh. Chutiang hla zingah chuan V. Thangzama "Tho la ding ta che" ti hi chhiar tel loh rual a ni lo.

**1. CONTEMPORARY FOLK SONG:**

Pi leh pute hla, tawngka hmanga an lo inhlan chhawn zelte hi traditional folk song tia sawi a ni ber thin. A chhan pawh mipui



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# MIZO IDENTITY BIHCHIANNA



Editor: B. Lalnunzira

SCMI: ATC Unit



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## MIZO IDENTITY VAWN HIM LEH MIZO HNAM INHUNGNA

- H. Laldinmawia

Identity chu 'nihna' tilna a ni mai awm e. Merriam Webster Dictionary chuan, 'mimal zia leh nihphung danglamna' tiin a sawifiah. Identity hi kawngnhia sawifiah theih a ni a. *Psychology Identity* leh *Sociology Identity* tiin. *Psychology Identity* hi chuan mimal (individual or personal) identity lam a thilir deuh ber a. Mimal nihna, rin dan, chetphung, lan dan leh inphochhuah dan zawng zawng hi a huam thei ang. A awisam zawng chuan mahni hlimthla (self image), mimal nihna (self esteem) leh mahni (individual) thil a kaww.

Hetih rual hian *Social Identity* chu mimal hrang hrang awmkhawmin inanna te, inkungkaiha te, thil nihphung inang an injawmna hi a ni ber a. Sociologist-ho chuan mahni theuhin nia kan inhriat tlanna leh kan pawm tlan thei nihna hi 'social identity' chu niin an sawi. Entiman - sakhaw inang vawn avanga nihna injawm te, political party thuhmuna awm avanga ngaihdan leh pawm dan in ang te, hui zawng leh duh zawng inang avanga te, chungkua nih avanga chetphung leh nihphung thuhmun kan neih te thleng hian a huam ang. Tunlai bunah phei chuan 'nihna thuhmun' (social identity) hian HIV/AIDS veibo dinhimun te, fahrah nihna avanga nihna thuhmun neih te, zu leh ruihtheih thil duh avanga harsatna leh nihphung thuhmun te thleng hian a huam thei an. Chuvang chuan 'social identity' hi 'collective identity' ti te pawhin an sawi thin.



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**Multiword Expressions (MWE) for Mizo Language: Literature Survey**

Authors: Goutam Majumder, Partha Pakray, Zoramdinthara Khiangte, Alexander Gelbukh

Publisher: Springer International Publishing

Published in: Computational Linguistics and Intelligent Text Processing

**Abstract**

We examine the formation of multi-word expressions (MWE) and reduplicated words in the Mizo language, basing on a news corpus (reduplication is a repetition of a linguistic unit, such as morpheme, affix, word, or clause). To study the structure of reduplication, we follow lexical and morphological approaches, which have been used for the study of other Indian languages, such as Manipuri, Bengali, Odia, Marathi etc. We also show the effect of these phenomena on natural language processing tasks for the Mizo language. To develop an algorithm for identification of reduplicated words in the Mizo language, we manually identified MWEs and reduplicated words and then studied their structural and semantic properties. The results were verified by linguists, experts in the Mizo language.

  
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PROCEEDINGS OF THE MIZORAM SCIENCE CONGRESS 2018 (MSC 2018) - PERSPECTIVE AND TRENDS IN THE DEVELOPMENT OF SCIENCE EDUCATION AND RESEARCH

**Focal mechanism solutions of certain earthquakes in Mizoram and its vicinity using P-wave first-motion data****Authors**

Saitluanga

**Corresponding Author**

Saitluanga

Available Online December 2018.

**DOI**<https://doi.org/10.2991/msc-18.2018.18> How to use a DOI?**Keywords**

Focal mechanism, earthquake, fault geometry, P-wave first-motion data

**Abstract**

Determination of focal mechanism solution permits characterization of the earthquake source most effectively with the estimation of fault geometry. Fault geometry is described in terms of the orientation of the fault plane and the direction of slip along the plane. However, the body wave, surface wave

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and the parameters such as equivalent forces at the source and seismic impulse response etc. are used to determine the orientation of fault plane the direction of the movement associated with the earthquake. Since the majority of earthquake source processes are either complicated or cannot be observed directly, it has been necessary to find ways to determine source characteristics from seismic wave motion. The source mechanisms through P-wave first-motion data are determined by acquiring data from local seismic network supplemented by phases from the stations at teleseismic distances. Focal mechanism solutions for the events  $M > 4.0$  are well constrained. Although the uniform distribution of azimuth of a large number of stations is one of the important prerequisites for a reliable focal mechanism solution, this is not the case for the events ( $M < 4.0$ ) originated in NER. This situation worsens in the case of events  $M < 3.0$ . Determinations of focal mechanisms for these events tend to near impossible with first motion P-wave arrival because very less number of stations record these events.

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### Geotechnical investigation of landslide near Sairang Village in Aizawl district, Mizoram, India

Authors

H. Lawmkima

Corresponding Author

H. Lawmkima

Available Online December 2018.

DOI

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Keywords

Landslide, Sairang, sandstone, silty-shale, joints, drainage

Abstract

The investigated landslide area is about 5.4 km north of Sairang village on Aizawl-Silchar road (NH-54). The length, breadth and height of slide are 110 m, 20 m and 70 m respectively. The dominant rock types exposed in the study area are sandstone, siltstone and shales and their admixtures in various

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proportions. The main factors for the instability of this area stems from the intersection of two sets of joints dividing the rock beds into varying dimensions and the presence of bedding shears and clay pockets/beds with swelling and shrinkage properties, decrease in the shear strength of overburden and bed rocks during rainy season due to water saturation and erosion of shaly layer by scouring action and a high hill slope. Remedial measures such as; lined catch water drains and chute for channeling surface water flow along the hill slope; lining of side drain to prevent toe erosion and also to prevent water percolation through debris. Sealing/filling of ground fractures/cracks with clayey material; breast and retaining structures to prevent toe erosion are suggested.

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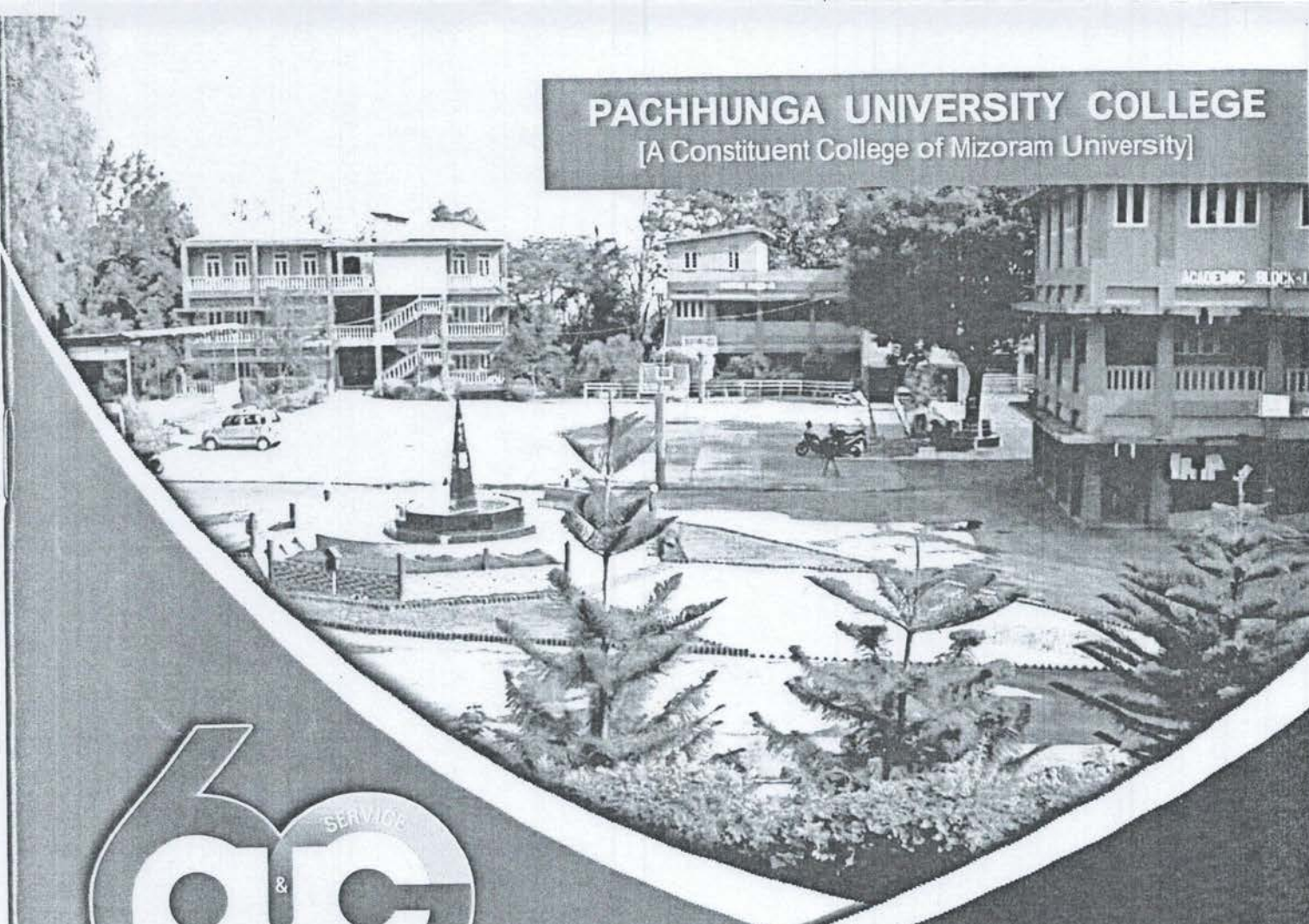
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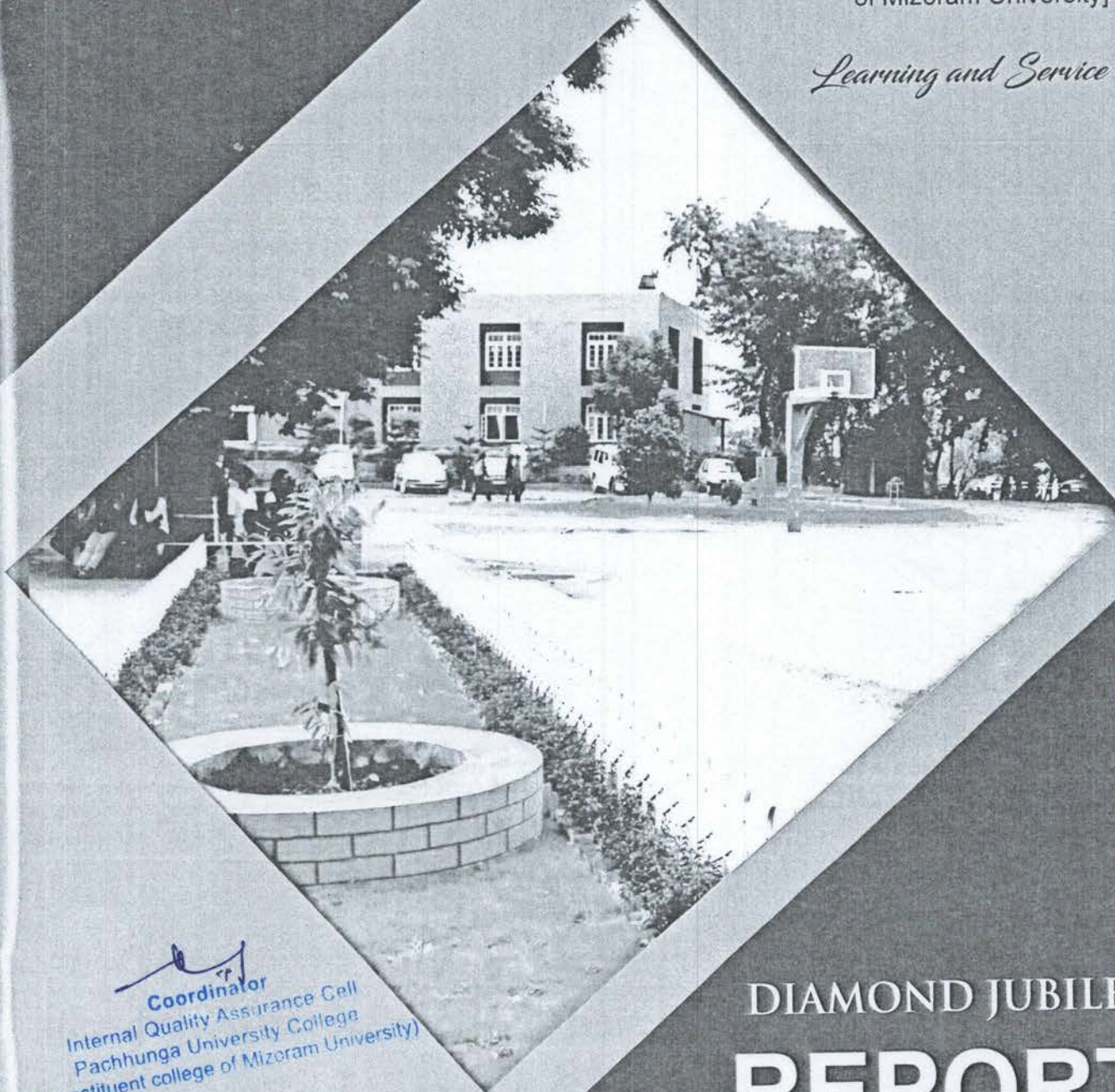
  
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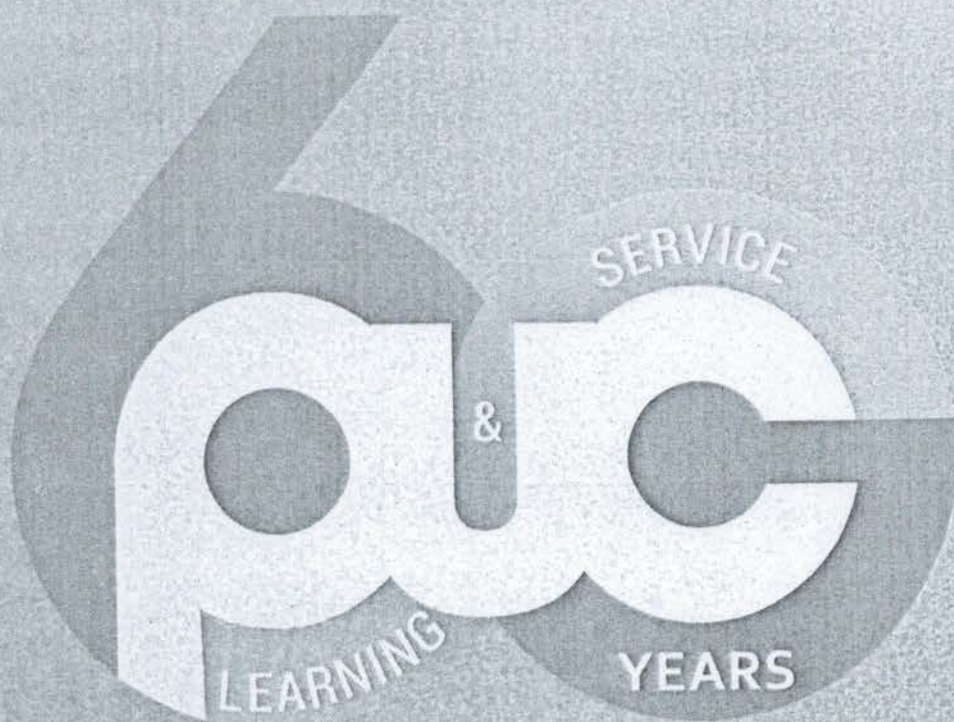
  
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Mr. H. Laldinmawia  
Asst. Professor, Department of Mizo

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This book rethinks Northeast India as a lived space, a centre of interconnections and unfolding histories, instead of an isolated periphery. Questioning dominant tropes and assumptions around Northeast, it examines socio-political and historical processes, border issues, the role of the state, displacement and development, debates over natural resources, violence, notions of body and belonging, tensions and relations, strategies, struggles and narratives that frame discussions on the region.

Drawing on current and emerging research in Northeast India studies, this work will be of great interest to scholars and researchers of politics, human geography, sociology and social anthropology, history, cultural studies, media studies and South Asian studies.

**Mélanie Vandenhelsken** is a researcher in anthropology at the Centre for Interdisciplinary Research and Documentation of Inner and South Asian Cultural History (CIRDIS), University of Vienna, Austria.

**Meenaxi Barkataki-Ruscheweyh** is Research Fellow, Department of Social and Cultural Anthropology at Vrije Universiteit (VU) Amsterdam, The Netherlands.

**Bengt G. Karlsson** is Professor of Social Anthropology at Stockholm University, Sweden.

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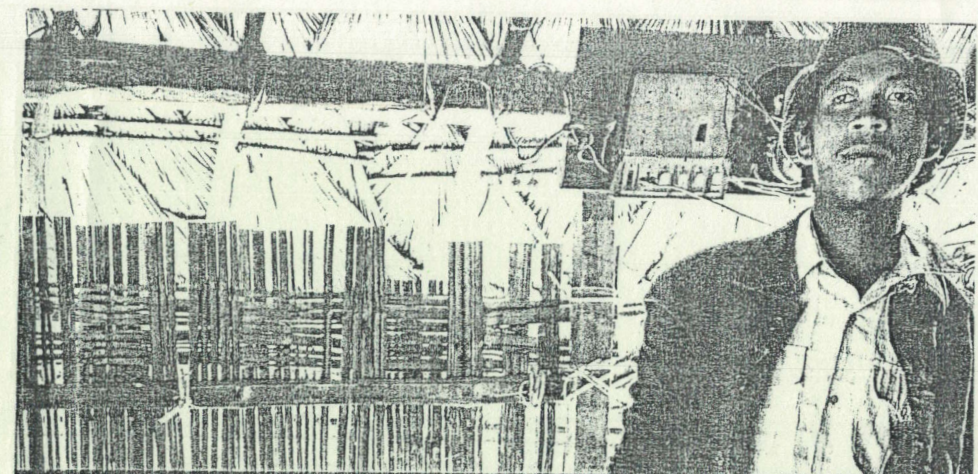
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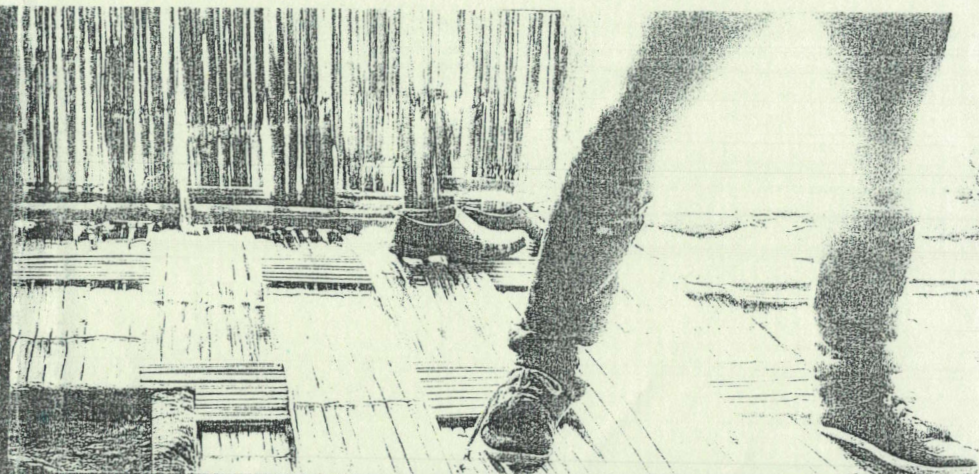

GEOGRAPHIES OF DIFFERENCE

Edited by Mélanie Vandenhelsken,  
Meenaxi Barkataki-Ruscheweyh  
and Bengt G. Karlsson



# GEOGRAPHIES *of* DIFFERENCE

Explorations in Northeast Indian Studies



Edited by Mélanie Vandenhelsken,  
Meenaxi Barkataki-Ruscheweyh and  
Bengt G. Karlsson

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### 13 Mizo identity

#### The role of the Young Mizo Association (YMA) in Mizoram

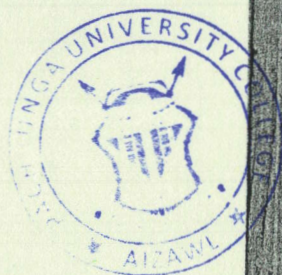
N. William Singh

Young Mizo Association or YMA (hereafter called simply the Association) is the largest NGO in Mizoram with a membership of more than 400,000 members.<sup>1</sup> Although calling itself a social organisation that exists to serve the needy, its activities promote the awareness of Mizo identity through notions of shared history, shared religion, shared culture and shared rituals. It organises community services and cultural events on a regular basis, which it utilises effectively to impart a sense of 'Mizo-ness' to its members. A particular feature of the YMA in contrast to associations in other communities or other parts of India is that membership is compulsory for all Mizos.

This chapter aims at analysing the central role of the YMA in promoting awareness and moulding ethnic identity through everyday social activities. This first shows that the activities of the YMA are not limited to the declared aims of the association; this further demonstrates that although the leaders of the association claim that it is a purely non-political organisation, some of its activities have explicit political overtones.

The differences between the written rules of the YMA constitution and the actual practices of the association will be detailed in the first section. The second section explores both the positive aspects and the problematic roles of the Association as regards the other communities in the state of Mizoram. First, the promotion of volunteerism through community service, linked to the traditional Mizo practices of *Tlawmgaihna* and *Hnatlang*, and the significant roles of Central Young Mizo Association (CYMA),<sup>2</sup> especially regarding the promotion of traditional dress and festivals, will be discussed. Members of the YMA also seek to develop an awareness of a distinct ethnic identity among Mizos through the promotion or organisation of everyday practices as well as events bearing social and cultural significance. This section also examines the problematic role of CYMA in supporting compulsory Mizo language, besides English and Hindi, in the school curriculum since Mizoram became a full-fledged state of the Indian Union in 1987. This policy of promoting the dominant language

Principal  
Pachhunga University College  
Aizawl : Mizoram



Coordinator  
Internal Quality Assurance Cell  
Pachhunga University College  
(A constituent college of Mizoram University)



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*Coordinator*  
Internal Quality Assurance Cell  
Pachhunga University College  
(A constituent college of Mizoram University)



*Principal*  
Pachhunga University College  
Aizawl : Mizoram



Th. Asha Sinha  
W. Mema Devi

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## A STUDY ON THE WATER QUALITY STATUS OF CHITE RIVER, AIZAWL, MIZORAM

K. Khelchandra Singh  
Khurajam Usha\*\*

### Introduction

Rivers are very important sources of water. Water from rivers are utilized for variety of purposes in agriculture, industry, transportation, aquaculture, public water supply etc. Since time immemorial, river waters are used by people for different day to day domestic utility. Water is also an essential natural resource which humanity cannot live without it. Freshwater ecosystems are considered as one the most important natural resources for the survivability of all the living organisms of the biosphere. Freshwater habitats are of much importance to mankind but they occupy a relatively small portion of the earth's surface as compared to the marine and terrestrial habitats (Santra, 2012). It is the availability of water which determines the nature, composition and abundance of terrestrial life. Over exploitation, misuse and pollution of water are responsible for making it scarce and unfit for consumption. The mounting problems of the degradation of our rivers has necessitated regular monitoring of our freshwater resources like our rivers (Das & Sinha, 1993). This will help to identify the ecological health status of the water bodies.

In the early time, Chite river is an important river that provides freshwater needed for irrigation and other agriculture purposes. But, due to increase in population, rapid urbanization and disposal of municipal waste water, effluents, sewage from diffused sources leads to the pollution of the Chite river. River health is directly related to their physical, chemical and biological integrity. Water quality evaluation leads to information about their misuse by indicating the pollution status. Since the quality of aquatic life depends on the water quality, a thorough assessment of the water quality is important. It is essential to carry out the present

\*Pachhunga University College, Mizoram University.

\*\*Deptt. of Environmental Science, D.M. College, Aizawl.

*Watter*

Coordinator

Internal Quality Assurance Cell  
Pachhunga University College  
(A constituent college of Mizoram University)



*Usha*

Principal  
Pachhunga University College  
Aizawl : Mizoram