

Current Trends of Biodiversity Research in Mizoram



H Lalramnghinglova
Vanramliana
H Lalthanzara

Current Trends of Biodiversity Research in Mizoram
H Lalramnghinglova, Vanramliana, H Lalthanzara

SCIENTIFIC BOOK CENTRE

Hengrabari Housing Road,
Dispur, Guwahati - 781 006.
ASSAM, INDIA
PH:- +91361-2232846, Mob:- +919435149890.
Email:- scientificbks@gmail.com

Branch Offices-

No. G6/195, Sector 16,
Rohini, Delhi - 110085.
INDIA
Mob:- +919818435279.
Email:- dbc2003@rediffmail.com

H No. CC-62/2420-2421 (SFCERA-10),
Mother Teresa Lane, P.O. Kaloor,
Kochi - 682017.
KERALA, INDIA
PH:- +91484-2337870, Mob:- +919447300752.
Email:- sbcbook@rediffmail.com

ISBN: 978-81-287-0015-6
2016 © Authors
Price: ₹ 300.00

All rights reserved. Except for brief quotations in critical articles or reviews, no part of this work may be reproduced, stored in a retrieval system or transmitted in any form or by any means, electronic, mechanical, photocopying, recording or otherwise, without the prior written permission of the copyright owner and the publisher

Published by:- C. Sasi Kumar for Scientific Book Centre

List of Contributors

xvii

15. Status and Composition of Ground-Herb Community in Tropical Semi Evergreen Forest of Reiek in Mamit District of Mizoram
S. T. Lalzarzovi, Lalnunluanga 206
16. Distribution Pattern and Growth Behavior of *Rhododendron arboreum* Sm along an Elevation Gradient in Mizoram
B. Malsawmkima, U.K. Sahoo 221
17. Ecological Studies of the Community Structure of Tawi Wildlife Sanctuary
Lallawmkimi, H. Lalramnghinglova, Hilda Lalrinpuui
18. Isolation and Characterization Resistance Gene Analogues (RGAs) from Banana Cultivars of Mizoram
Pachua Lalrinfela, Laltanpuia, R. Lalengmawia, Robert Thangjam
19. Comparison of Different Hierarchical Clustering Methods in Analyzing Species Composition
Lalpawimawha 256
- Index 271



Chapter 19

COMPARISON OF DIFFERENT HIERARCHICAL CLUSTERING METHODS IN ANALYZING SPECIES COMPOSITION

Lalpawimawha

Hierarchical clustering treats each data point as a singleton cluster, and then successively merges clusters until all points have been merged into a single remaining cluster. A hierarchical clustering is often represented as a dendrogram (Manning et al., 1999 and Defays, 1977).

In data mining, hierarchical clustering (also called hierarchical cluster analysis or HCA) is a method of cluster analysis which seeks to build a hierarchy of clusters (Oswin Aichholzer et al, 1996).

Classifications are generally pictured in the form of hierarchical trees, also called a dendrogram.

A dendrogram is the graphical representation of an ultrametric (= cophenetic) matrix; so dendrograms can be compared to one another by comparing their cophenetic matrices (Lapointe, FJ et al., 1995). Cluster Analysis (CA), Principal Components Analysis (PCA) and Discriminant Analysis (DA) are three of the primary methods of modern multivariate analysis. Because of its utility, clustering has emerged as one of the leading methods of multivariate analysis (Kettenring et al., 2006).

Coordinator

Internal Quality Assurance Cell
Pachhunga University College

(A constituent college of Mizoram University)

Principal

Pachhunga University College
Aizawl : Mizoram

Rajiv Gandhi

Pioneer of India's 21st Century



Edited by:

Chayanika Uniyal Panda

Surendra Kumar

Courtesy : Rajiv Gandhi Study Circle


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




Principal
Pachhunga University College
Aizawl : Mizoram

Swaraj Book Distributors

First Published : 2016

Copyright © Editors

ISBN. : 978-81-924731-7-8

Disclaimer : The editors are not responsible for the content of chapters, in anyway whatsoever.

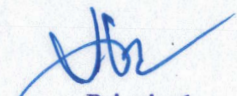
Published by the : **Swaraj Book Distributors**
4648/1, 21, (F-8), Jagdamba Bhavan,
Ansari Road, Daryaganj, New Delhi-110002.
Printed at Om Offset, Shahdara, Delhi-110093


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

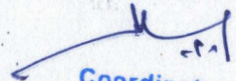



Principal
Pachhunga University College
Aizawl : Mizoram

whic


Principal
Pachhunga University College
Aizawl : Mizoram




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

Chapter 14

Panchayati Raj Institutions : A Decentralisation Process For Rural Development

Dr. T. Sadashivam

Assistant Professor,
Pachhunga University College
Central University of Mizoram

Dr. Shahla Tabassum

Assistant Professor,
Zakir Husain Delhi College (Evening),
University of Delhi

Introduction

India, the biggest democracy in the world, experimented with the local governance in 1990s, to call itself as the most representative and participatory democracy. Initially, in our constitution through the Directive Principles of State Policy provides a democratic decentralization (Article 40) in India, but, it was 73rd and 74th Constitutional Amendment Act (CAA) of 1992, which constitutionally mandated for establishing a true local self-government in India. Here, the importance of the 73rd CAA related to the Panchayati Raj Institutions (PRIs), is utmost important. The

MATCON 2016
*International Conference on
Materials for the Millennium*

January 14 -16, 2016

Proceedings
Volume II

Published by

The Directorate of Public Relations and Publications

for

**Department of Applied Chemistry,
Cochin University of Science and Technology,
Kochi-682 022, India**



Sponsored by

KSCSTE, DST, DRDO, UGC, BRNS


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




Principal
Pachhunga University College
Aizawl : Mizoram

| | | |
|-------|---|-----|
| BIO77 | Chemical Analysis and Standardization of Selected Ayurvedic Formulations <i>Jomon P. J.</i> | 343 |
| BIO78 | Evaluation of Mimosa Pudica for its Hypoglycaemic Activity and its Encapsulation in Core - Shell Nanoparticle for its Application in Drug Delivery <i>Dhanya A. T.</i> | 347 |

Materials for Environmental Applications and Green Materials

| | | |
|-------|--|-----|
| EGM79 | Removal of Nickel(H) from Water and Wastewater using Bicarbonate Modified Coconut Oilcake Residue Carbon and Commercial Activated Carbon <i>Vijayakumari N.</i> | 351 |
| EGM80 | Nanostructured Sorbents for the Removal of Heavy Metal Ions in Wastewater <i>Maria S.</i> | 355 |
| EGM81 | Ground Water Quality Changes in Tsunami Affected Coast of Kerala: Water Hardness <i>Deepa P.</i> | 358 |
| EGM82 | Adsorption of Methylene Blue from Aqueous Solution by Zirconium Impregnated Activated Carbon <i>Rajalakshmi A. S.</i> | 362 |
| EGM83 | Study of Methanolic Extract of <i>Spilanthesacmella</i> as Corrosion Inhibitor of Mild Steel in 1 N HCl and 1 N H ₂ SO ₄ Acidic Medium <i>Jay P. R.</i> | 366 |
| EGM84 | Geochemistry of Ground Water along Tsunami Affected Coastal Area: Arattupuzha Coast, Kerala <i>Regi G. T.</i> | 370 |
| EGM85 | Ground Water Quality of a Tsunami Affected Coastal Region: Evaluation Using Hill Piper Trilinear Plots <i>Ambili M. S.</i> | 374 |
| EGM86 | John Isotherm Model for Characterisation of Mesoporous Materials <i>Mercy T.</i> | 378 |
| EGM87 | Tailoring of Nanostructured Material for the Concentration of Heavy Metal Ions from Wastewater <i>Archana A.</i> | 383 |
| EGM88 | Study on the Distribution of ²¹⁰ Po in the Surface Water and Sediments of Cochin Back Water Ecosystems in Relation to Anthropogenic Inputs <i>Umadevi A. G.</i> | 386 |
| EGM89 | Photocatalytic Degradation of Acid Red 1 by Modified Titania using Visible Light Irradiation <i>Rajesh K. M.</i> | 390 |
| EGM90 | Confining Different Pressure Driven Separation Aspects into Single CHI/PSS Multilayered Membranes <i>Jisha C.</i> | 394 |
| EGM91 | Probing the Binding of Cytochrome C with Ovalbumin in Solution and in Immobilized State <i>Manju M.</i> | 397 |
| EGM92 | Pyran-Pyrimidinetrione Conjugate for Heavy Metal Ion Detection <i>Aswathy A.</i> | 401 |


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




Principal
 Pachhunga University College
 Aizawl : Mizoram

EGM83

Study of Methanolic Extract of *Spilanthesacmella* as Corrosion Inhibitor of Mild Steel in 1 N HCl and 1N H₂SO₄ Acidic Medium

Jay P. R.^a, Mishra R. K.^b

^aDept. of Chemistry, School of Physical Science, Mizoram University, Aizawl, Mizoram

^bDept. of Chemistry, Pachhunga University College, Mizoram University, Aizawl, Mizoram
jaypr33@gmail.com

ABSTRACT

Natural products or secondary metabolites have been the most successful source of value added product in science and industrial research, since they represent molecules that have been useful for applications as therapeutics, cosmetics and corrosion inhibitor of metal in acidic medium. The corrosion inhibition property of plant extracts was evaluated by electrochemical technique such as Potentiodynamic polarisation technique. The methanolic extract of *Spilanthesacmella* plant species as a found maximum corrosion efficiency 91% at 0.5g L⁻¹. From adsorption isotherm study shows that the phytochemical molecule adsorbed on metal surface as a monolayer and obeyed Langmuir adsorption isotherm. The adsorption of extract of *Spilanthesacmella* molecule on metal surface conformed by using SEM technique.

KEYWORDS: acidic media, mild steel, inhibition efficiency, anodic reaction

INTRODUCTION

Mild steel is valued metal for its durability, availability, strength, low cost and used in various tools. A clean surface of mild steel is critical for the performance of many devices, and it is also important for the production of high quality material. However mild steel may be rough or covered with mill scale due to reaction with its contact with surrounding oxygen and humidity. Due to reaction of metal with its surrounding environment the damage of metal surface and losses the thickness of the metal layer [1]. So that the metal equipment must be cleaned from time to time to prevent damage and maintain efficiency of operation. Generally chemical cleaning agent such as acid cleaning or pickling has been used as acidic media HCl and H₂SO₄, which possessed rust removal (iron oxides) properties to remove the inorganic contaminants (Fe₂O₃) by converting them into their ferrous salts. However the main disadvantages of these acids are that it also reacts with the metal and damage the equipment. Taking all these factors into account the corrosion inhibitors are used as additive in acidic, which prevent of metal loss in acidic solution. Most of the well known green corrosion inhibitors containing heteroatom (nitrogen, oxygen sulphur), with multiple bonds are considered as adsorption on metal surface through electron donor-accepter centres, are effective as corrosion inhibitor [2].

The aim of this work is to evaluate and to compare the corrosion inhibition efficiency of *Spilanthesacmella* for mild steel in 1 M HCl at 25°C using electrochemical technique such as potentiodynamic polarization. *Spilanthesacmella* is an important vegetable in Mizoram due to its unique flavour and traditionally it is used in digestive, throat infections and toothache as a medicinally purpose. *Spilanthesacmella* locally known as "Ansapui/Aakasakir" and it is a wild herb, and growing in the hilly slope in this area. N-alkylamides derivative and spilanthol [3] have been reported in *Spilanthesacmella*. The aim of this study is to investigate the ability of *Spilanthesacmella* as environmental friendly, low cost and safe corrosion inhibitors, which protect the mild steel against corrosion in 1NHCl and 1N H₂SO₄ acidic solutions. The investigation of corrosion was evaluated by using electrochemical technique polarization measurements and conformation of protective layer of inhibitor molecule were investigated SEM.

MATERIAL PREPARATION

The plant *S. acmella* was identified by H. S. Thapa, Department of Botany, Pachhunga University College Mizoram, India and the whole plant including flowers of the plant were collected from the area College campus and were shade dried at room temperature 25°C for 15 days. The plant dried parts are make a powder and passed through a sieve and extracted with methanol (70%) for one week. The extract was filtered and dried on water-bath at 45°C. The complete dried extract was stored in air tied a bottles for corrosion inhibition study. Mild-steel strips of chemical compositions 0.21 wt%

366


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




Principal
Pachhunga University College
Aizawl : Mizoram

ISBN : 978-602-70092-0-2

PROCEEDINGS

**2nd International Conference on the Sources, Effects and
Risks of Ionizing Radiation (SERIR 2016)**

in conjunction with

**14th Biennial Conference of the South Pacific Environmental
Radioactivity Association (SPERA 2016)**

Sanur Paradise Plaza Hotel
Bali, 5-9 September 2016

Organized and hosted by



National Nuclear Energy Agency (BATAN)

in cooperation with



South Pacific Environmental Radioactivity Association


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




Principal
Pachhunga University College
Aizawl : Mizoram

Published by

**Center for Technology of Radiation Safety and Metrology
National Nuclear Energy Agency (BATAN)**

December 2016

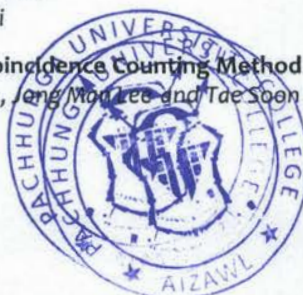
TABLE OF CONTENT

| | |
|---|------|
| Organized and hosted | i |
| Committee | ii |
| Preface | iii |
| Wellcoming Address by President of the Conference | iv |
| Opening Remarks Minister of Research, Technology and Higher Education | vi |
| Press Conference | viii |
| Table of Content | ix |
| Keynote Speakers | xii |

| | |
|---------------------|---|
| Keynote Speaker I | Dr. Stephen Solomon (Principal Scientific Adviser to CEO ARPANSA) "An ARPANSA Perspective on Radiation Protection of The Environment" |
| Keynote Speaker I | Prof. Dr. Yoshiyuki Suzuki, MD (Fukushima Medical University, Japan) "Cutting Edge Radiotherapy" (Including Combination Therapy with Immunotherapy) |
| Keynote Speaker III | Dr. Ferhat Aziz (National Nuclear Energy Agency of Indonesia) "Environment Radioactivity Monitoring Activities in Indonesia and Its Public Concerning" |

| | | |
|----|---|----|
| 1 | Dose Rate of Natural Radionuclides and ¹³⁷ Cs in Marine Biota of Bangka Sea Erwansyah Lubis, Heny Suseno, Wahyu Retno Prihatiningsih and M. Nur Yahya | 1 |
| 2 | Indoor Radon : Inhalation Dose Assessment in North-Eastern Part of India Lalmuanpuia Vanchhawng, P.C. Rohmingliana, B. Zoliana, R. Mishra and B.K. Sahoo | 7 |
| 3 | Environmental Radioactivity and Hazardous Index Around Nuclear Research Reactor Yogyakarta Gede Sutresna Wijaya and Susilo Widodo | 12 |
| 4 | Groundwater Drainage and Soil Formation Effect on High Natural Radiation Exposure in Biak, Papua Heri Syaeful, Kurnia Setiawan Widana and I Gde Sukadana | 18 |
| 5 | Dose Rates Assessment of ¹³⁷ Cs for <i>Chanos chanos</i> using ERICA Tool Wahyu Retno Prihatiningsih, Dedi Soedharma, Heny Suseno, Neviaty P. Zamani | 25 |
| 6 | Concentration of Selected Radionuclides in Sediment and Surface Seawater in Belitung Island, Indonesia Murdahayu Makmur, Mohamad Nur Yahya and Deddy Irawan Permana Putra | 29 |
| 7 | Mapping of Indoor Radon Concentration in Houses Located in South Sulawesi Province Wahyudi, Kusdiana and Dadong Iskandar | 35 |
| 8 | Prospective Polycarbonate from CDs/DVDs as a Radon/Thoron Detector in Indonesia Eka Djatnika Nugraha and Wahyudi | 39 |
| 9 | Radiation Metrology for Environmental in Indonesia Gatot Wurdianto | 45 |
| 10 | Radioactivity Concentrations in Soil Surrounding Experimental Power Reactor Development Plan in Serpong of Indonesia Makhsun, Dadong Iskandar and Wahyudi | 51 |

| | | |
|----|---|----|
| 11 | Standardization of ⁵⁹ Fe by 4πβ(LS)-γ Coincidence Counting Method Agung Agusbudiman, Kyoung Beom Lee, Jong Mo Lee and Tae Soon Park | 59 |
|----|---|----|



Indoor Radon : Inhalation Dose Assessment in North-Eastern Part of India

Lalmuanpuia Vanchhawng, P.C. Rohmingliana, B. Zoliana, R. Mishra and B.K. Sahoo

Department of Physics, Pachhunga University College, Aizawl, PIN-796 001, India.

E-mail: lmuapuia@gmail.com

Abstract. Radon and their progeny concentrations contribute most of the natural radiation dose to general populations. This fact draws a considerable attention and hence, large scale and long-term measurement of radon concentrations has been going on. Radon present in indoor as well as outdoor air as they had been exhaled from soil and building materials. Radon levels in the indoor have been realized as a concern of public health in many countries and even in India. Consequently, studies related to monitoring of radon and the inhalation dose to the public living in that environment has been a keen interest. Measurement of radon concentrations was done over the past 50 years in many countries, but with the improvement of experimental apparatus and technical formulation, the same is going on till today. Subsequent decay products are formed in the air. It is well-known that in radon problem, the progeny species and not the radon are primarily responsible for lung doses. Among the progenies, short lived nuclei viz. ^{214}Po is focused due to its high contribution in deposition and emission of alpha particles inside the lung. Study of indoor radon inhalation dose have been carried out in North-Eastern part of India in 40 dwellings, which were specifically selected according to the site location of the dwellings. Solid-state nuclear track detectors (SSNTD) have been used to obtain the time integrated concentration levels of indoor radon. Globally assumed value of equilibrium factor (F-factor) of radon, which is 0.4, is used to obtain the annual inhalation of indoor radon. The data obtained in the present work has been analyzed to obtain the significant inhalation dose of indoor radon. It has been found that the annual inhalation dose of indoor radon in the study area is 1275.83 $\mu\text{Sv/y}$, which is comparable to the global average.

Keywords: F-factor, Inhalation dose, Radon; SSNTD.

Introduction

Study of the behavior of ^{222}Rn (radon) and its decay products in indoor air is important for assessing the natural background radiation exposures received by general populations, through the inhalation route. Radon and its progeny contribute about 54% of the total annual population exposure. These gases are available in the environment produced from the radioactive decay of radium isotopes, produced as a result of decay of ^{238}U . As a result, the amount of radon concentration in the soil is determined by the amount of uranium present in the bedrock and soil materials. Etiope (2002), Virk (1994) and other researchers (Burton, Neri and Condarelli, 2004) found that monitoring of radon exhalation from soil and its concentration in indoor as well as outdoor air is found to be helpful in many investigations such as uranium exploration, earthquake prediction, ground water transport, assessment of geothermal resources and health risk assessment. Radon is continually formed in soil from its parent nucleus ^{226}Ra and being gaseous it is exhaled to air through pores and fractured portion of the earth and subsequent decay products are formed in the air.

Studies related to monitoring of radon and the inhalation dose to the public living in that environment has been a keen interest. According to UNSCEAR (2000) report, measurement of radon concentrations was done over the past 50 years in many countries, but with the improvement of experimental apparatus and technical formulation, the same is going on till today. Radon is continually formed in soil and is released to air. In radon problem, the progeny species and not the radon are

primarily responsible for lung doses. BEIR V (1990) report mentioned that among the progenies, short lived nuclei viz. ^{214}Po is focused due to its high contribution in deposition and emission of alpha particles inside the lung.²

Annual inhalation dose rate is the amount of radon inhaled per annum ($\mu\text{Sv/yr}$) by individuals living in dwellings. Inhalation dose can be calculated using the obtained concentrations of the parent nuclei and the progenies. For this calculation, the equilibrium factor (F-factor) of radon is required. The equilibrium factor for radon was a globally assumed value and even the calculation of radon progenies were inferred using this value.

In this report, we present the works on indoor radon concentration and inhalation dose of the same in the dwellings in Kolasib District, Mizoram, North-Eastern part of India. As there is no man made sources of radiation present in these areas, like refinery, thermal power plant, geothermal springs, slate mines, industrial zones, etc., the main sources of radiation obtained from these studies is mainly due to natural radiation.

Material and Methods

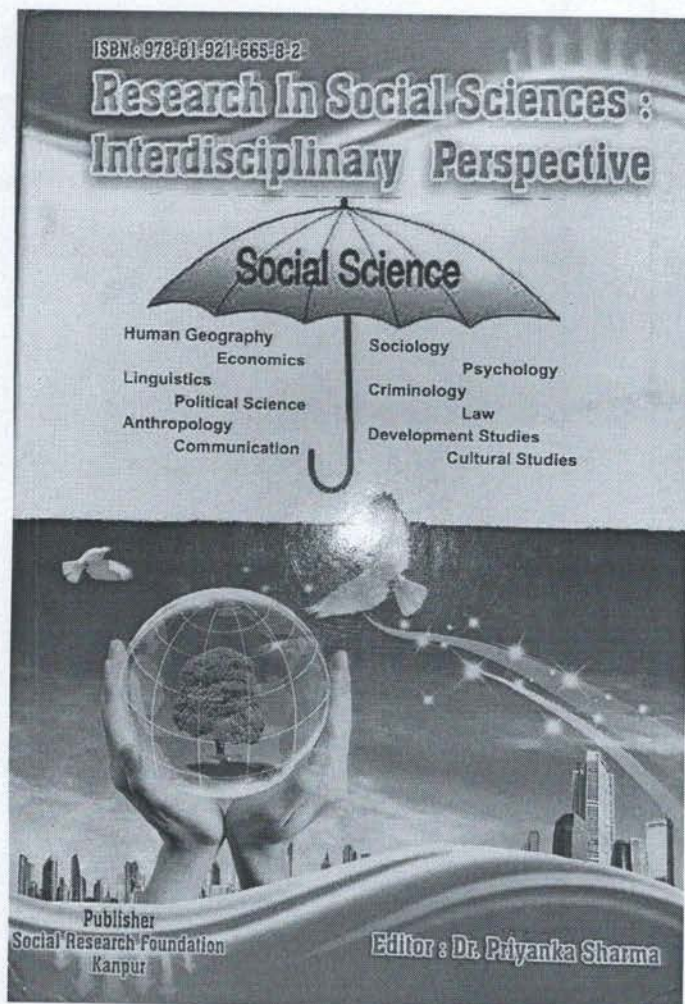
The concentrations of the parent nuclei and equilibrium factors are required to obtain the inhalation dose of indoor radon. In measuring indoor radon concentrations, Solid State Nuclear Track Detector (SSNTD) based pin-hole dosimeters have been used. Eappen (2005) developed this dosimeter system which is a cylindrical plastic chamber in which LR-115 (Type-II) films are used as detectors. Radon gases are allowed to enter through a pin-hole, which is


Coordinator

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




Principal 7
Pachhunga University College
Aizawl : Mizoram



ISBN : 978-81-921665-8-2

Price : Rs. 850/-

Copy Right : Social Research Foundation

Edition : 1st Edition, February, 2016

Publisher : Social Research Foundation
128/170, H-Block,
Kidwai Nagar, Kanpur (U.P.)

Cover Design &
Laser Type Setting : Rajeev Mishra

Printed By : Social Research Foundation
Kidwai Nagar, Kanpur (U.P.)

Contact : 9335332333, 9839074762
socialresearchfoundation@gmail.com

| S.No. | Particulars | Page No. |
|-------|--|----------|
| 1 | Social Sciences and Interdisciplinary Research. Dr. Priyanka Sharma, Jammu | 01-15 |
| 2 | Disciplines in Social Sciences Ankita Choudhary, Jammu | 16-38 |
| 3 | Concepts of Discipline and Research in Political Science Dr. K.H Wasnik, Maharashtra | 39-46 |
| 4 | Introduction to Research in Management Dr. Amisha Gupta, Jammu | 47-58 |
| 5 | Nature of Historical Sources in Research Dr. Aruna Gogania, Rajasthan | 59-67 |
| 6 | Research Design Md. Inaam Akhtar, New Delhi | 68-84 |
| 7 | Qualitative vs Quantitative Research Mrs. Sumita Bhatia, Madhya Pradesh | 85-90 |
| 8 | Qualitative Methods for Conducting Research in Social Sciences Nishi Sathia, Jammu | 91-109 |
| 9 | A perspective on Quantitative - Qualitative Divide in Economics: From Ambivalence to Synergy Dr. Sadhana Singh, Kanpur | 110-122 |
| 10 | Statistical Techniques in Social Sciences for Interdisciplinary Perspective Manish Sharma, Sunali Mahajan and Banti Kumar Jammu | 123-133 |
| 11 | Choosing Appropriate Statistics in Research Zokaitluangi & Dr. Rinpari Ralte, Mizoram | 134-152 |

vii

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

Research in Social Science: Interdisciplinary Perspectives

Choosing Appropriate Statistic in Research

Zokaitluangi
Professor & Head,
Deptt. of Psychology,
Mizoram University

Dr. Rinpari Ralte
Assistant Professor & Head,
Deptt. of Psychology,
Pachhunga University College,
A Constituent College
of Mizoram University

Introduction

Most behavioral researchers are familiar to some degree with descriptive statistical measures such as those of central tendency and those of dispersion. However, we falter at inferential statistics due to the widespread availability of powerful and at the same time user-friendly statistical software. As we have outlined below, a few fundamental considerations will lead one to select the appropriate statistical test for hypothesis testing. However, it is important that the appropriate statistical analysis is decided before starting the study, at the stage of planning itself, and the sample size chosen is optimum. These cannot be decided arbitrarily after the study is over and data have already been collected.

At the initial stage, the researcher has to know the importance of selecting appropriate statistics to have authentic research results and conclusion. These are the important points the researcher has to know for selecting appropriate statistics:

1. What type of hypothesis is to be tested?
2. What type of data is to be analyzed: Level of data measurements
3. What is the sampling size, and number of groups?
4. What sampling method is employed?
5. What are the independent and dependent variables, and how many?

Principal
134 Pachhunga University College
Aizawl : Mizoram



SUICIDE : SENSITIZATION AND PREVENTION FOR MEDIA PROFESSIONALS

EDITED BY
SAICHAMPUI SAILO
RINPARI RALTE
LALROPUI


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




Principal
Pachhunga University College
Aizawl : Mizoram

ACHHUNGA THU AWMTE

| | |
|---|----|
| <i>Thuhmahruai</i> | 5 |
| <i>MJA President thuhma</i> | 7 |
| <i>Thu Ziaktute</i> | |
| 1. Buaipui tham - Suicide - C.LALHREKIMA | 13 |
| 2. Suicide chhan leh a ven dan - ZOKAITLUANGI | 37 |
| 3. Suicide Responsible Reporting - H.K. LALDINPUJI FENTE | 49 |
| ✓ 4. Mahni intihhlum leh mahni intihlumte report dan - LAL THANTLUANGI SAILO | 59 |
| 5. Mahni kutzâla thite chungchâng media-a (chanchinthar) chhuah dân - LALLIANPUJI | 73 |
| 6. Mahni intihhlumina a nghawng dân – engtin zêl nge? - LALREM RUATI | 81 |
| <i>Editor-te chanchin</i> | 91 |

4

MAHNI INTIHLUM LEH MAHNI INTIHLUMTE REPORT DÂN

- Lalthantluangi Sailo

Oxford dictionary chuan 'suicide' awmzia chu tum
vang renga mahni inti hlum tihin a hrilh fiah a.

Mahni inti hlum tum hi a tam ber chu kum 18-24
inkar an ni tlangpui a. Rilru lam harsatna, depression
leh schizophrenia nei te, zu ngawlvei avanga enkawl
ngai te, mahni chauh a khawsa te, khawtlang nun buai
deuh kara cheng te leh mahni eizawna lama mi bik,
thu leh hla, sumdawna, ziakmi leh lehkhathiam kawnga
lar lawr lak te zingah te hian mahni inti hlum duh mai
na chance hi a sang bawk niin an sawi thin. United
States of America ah chuan an zirna atanga an
hmuhchhuah chu, hmeichhia te hi mipa te aiin a let
thum ngawtin mahni inti hlum an "tum" zing zawk a;
amaherawchu, mipa te hi hmeichhia aiin a let li ngawt

**PSYCHOLOGICAL ANALYSIS
OF THE VICTIMS
AND FAMILY MEMBERS
OF LAIPUITLANG LANDSLIDE
ON 11th MAY, 2013**

Department of Psychology,
Pachhunga University College
and
Disaster Management Centre,
Administrative Training Institute,
Aizawl, Mizoram


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




Principal
Pachhunga University College
Aizawl : Mizoram

Report On

**PSYCHOLOGICAL ANALYSIS OF THE VICTIMS
AND FAMILY MEMBERS OF LAIPUITLANG
LANDSLIDE ON 11th MAY, 2013**



**Department of Psychology, Pachhunga University College
and
Disaster Management Centre, Administrative Training Institute,
Aizawl, Mizoram**

Authors :-

Dr. Rinpari Ralte,
Dr. Lalrokima Chenkual,
Lal Thantluangi Sailo,
Dr. Lalremsangi Sailo,
C. Zothanmawia,
Lalropuii,
Dr. Saichampuii Sailo,
Lalbiakzuali,

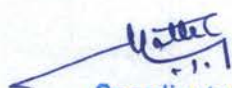

Coordinator
Internal Quality Assurance Cell
Pachhunga University College
(A constituent college of Mizoram University)




Principal
Pachhunga University College
Aizawl : Mizoram

CONTENTS

| Chapter | Topics | Page |
|---------|-------------------------------|------|
| 1 | Introduction | 1 |
| 2 | Landslides in Mizoram | 10 |
| 3 | Objectives and Methodology | 14 |
| 4 | Results | 17 |
| 5 | Interpretation and Discussion | 24 |
| 6 | Limitations | 33 |
| 7 | Recommendations | 35 |
| | Acknowledgement | 39 |
| | References | 40 |

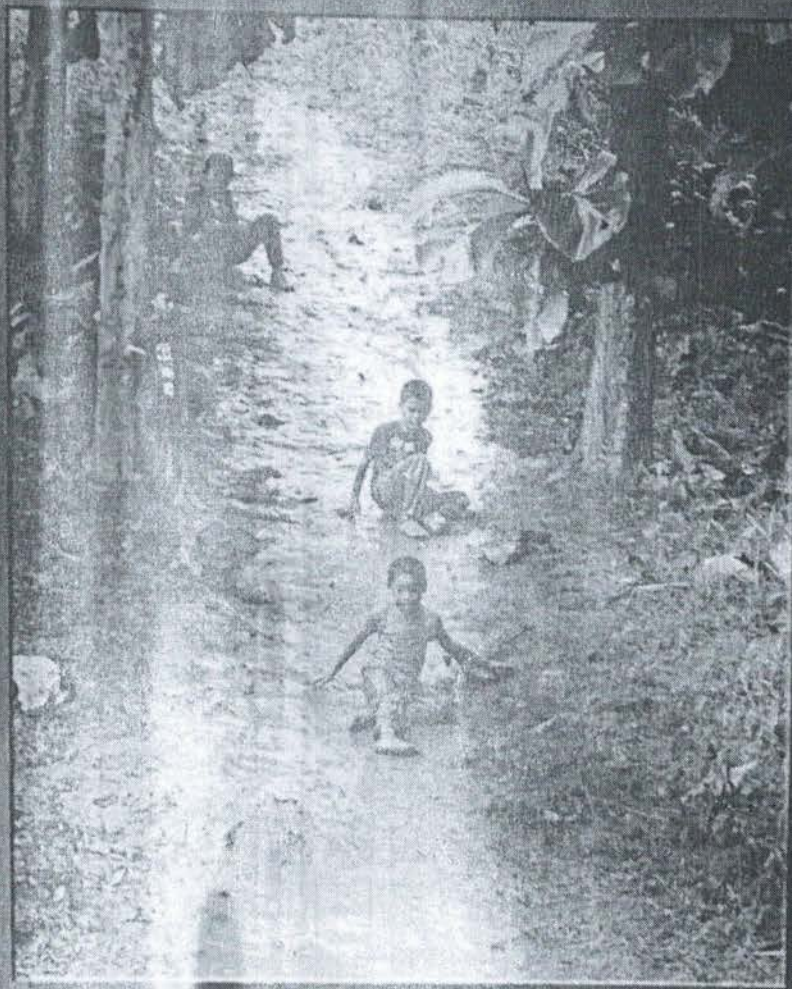

Coordinator

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




Principal
Pachhunga University College
Aizawl : Mizoram

CHILD RIGHTS AND CHILD PROTECTION: ISSUES AND CHALLENGES



C. Laldinsanga
P.B. Lallewmawmi


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




Principal
Pachhunga University College
Aizawl : Mizoram

LIST OF CONTENTS

| | |
|--|------|
| Message | iii |
| Preface | v |
| Foreward | vii |
| List of Table | xiii |
| List of Paper Contributors | xv |
| 1. Child Rights and Child Protection: Issues and Challenges - <i>Prof. Srinibas Pathi</i> | 1 |
| 2. Contextualizing children's rights: A sociological perspective - <i>V. Sawmveli</i> | 13 |
| 3. Child rights and legislations - <i>Dr. Henry Zodinliana Pachuau</i> | 31 |
| 4. The Juvenile Justice (Care & Protection of Children) Act 2000 & Its Amendment Act 2006 & 2011 & The Mizoram Juvenile Justice(Care & Protection of Children) Rules 2010 - <i>Laldikkimi</i> | 45 |
| 5. Provision under Integrated Child Protection Scheme in Mizoram - <i>Amy Lalrinpuii</i> | 65 |


Coordinator

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




Principal
Pachhunga University College
Aizawl : Mizoram

x

| | |
|--|-----|
| 6. Situational analysis of children in need of care and protection in mizo society: past and present - Jenifer Lalbiakdik & Prof. Lalkima (Retd.) | 80 |
| 7. Situational analysis of children in conflict with law in Mizoram - Lalhlansangi Fanai | 86 |
| 8. Need of promoting life skills in child protection with special reference to child abuse - V. Vanlalruati | 97 |
| 9. Negotiating pedagogy of right to education - R. Lalhrualiana | 107 |
| 10. A psychological analysis of children in need of care and protection in Aizawl district - Dr. Rinpari Ralte | 116 |
| 11. Imbalance Cradle - Dr. N. William Singh & Lalbiakzuali Colney | 130 |
| 12. Destitute and Vagrant children in Silchar : factors and Interventions - Ritwika Rajendra | 146 |
| 13. Position of children in Mizo Society: Issues and problems - Lalchhuanmawii & Lalsanghuri Sailo | 158 |
| 14. Promoting gender conformity, against child rights? - Lalmingmawii | 169 |


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




Principal
Pachhunga University College
Aizawl : Mizoram

A PSYCHOLOGICAL ANALYSIS OF CHILDREN IN NEED OF CARE AND PROTECTION IN AIZAWL DISTRICT

Rinpari Ralte

Keywords: children in need of care and protection, depression, stress, psychological interventions

Introduction

Children constitute the most vulnerable section of society and are considered a supremely important asset of our nation. They are dependent on others, have the least power, and have less control of their lives. Among children there are some who are more marginalised and neglected than others because of their socio-economic circumstances. These children are considered as children in Need of Care and protection. These children in Need of Care and Protection (CNPC) are found in the following situations (Mehta, 2008):

1. In Families "At Risk" – at risk families are those that are likely to disintegrate and breakup due to social, economic, cultural pressures, or any other physical, emotional or psychological crises. E.g., single parent families, mentally challenged parents, parents with HIV/AIDS, children of prisoners, parents with terminal illness, parents involved in crime and antisocial activities.


Coordinator

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




Principal
Pachhunga University College
Aizawl : Mizoram

A MITTAL PUBLICATION

Women Entrepreneurship *in* North East India *-Issues and Challenges-*

Elangbam Nixon Singh
Bidhu Kanti Das


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




Principal
Pachhunga University College
Aizawl : Mizoram

350-17-1
SOCIETY, RELIGION AND WOMEN ENTREPRENEURSHIP:
CASE STUDIES

24. MICRO ENTERPRISES IN AIZAWL DISTRICT,
MIZORAM: A GENDER PERSPECTIVE
— Lalthunthara and NVR Jyoti Kumar 297-314
25. DETERMINANTS OF WOMEN ENTREPRENEURSHIP:
LESSONS FROM GLOBAL EXPERIENCES
— Shantendu Singh 315-324
26. ~~IMPACT OF CULTURE IN WOMEN ENTREPRENEURSHIP:
A SPECIAL REFERENCE TO MANIPUR~~
— Ch. Narmi Devi 325-338
27. INFLUENCE OF RELIGIOUS CONSCIOUSNESS
ON WOMEN ENTREPRENEURIAL BEHAVIOUR IN
NORTH EAST INDIA: A CHALLENGE
— Nunglekpam Premi Devi 337-347
28. WOMEN ENTREPRENEURSHIP IN NORTH EAST
INDIA: AN INTROSPECTION
— L. Gyanendra Singh 351-368
29. ROLE OF SCHEDULED CASTE DEVELOPMENT
CORPORATIONS FOR DEVELOPMENT OF
WOMEN ENTREPRENEURS
— Nirmal Kumar Singh and Bidhu Kanti Das 367-377
30. A STUDY OF WOMEN SOCIAL ENTREPRENEURSHIP
IN MANIPUR
— E. Romen Kumar Singh and
Elangbam Nixon Singh 375-384


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




Principal
Pachhunga University College
Aizawl : Mizoram

IMPACT OF CULTURE IN WOMEN ENTREPRENEURSHIP A SPECIAL REFERENCE TO MANIPUR

CH. NALINI DEVI

Introduction

In today's dynamic business world, as we move in to the information age, enterprises need to adapt to the changes in technology and the changing issues in every aspect of enterprise function. Even though our activities are not free from our own culture, local culture, lifestyles, language are being forced to give way to the global culture. We are living together in the same world, one influencing the other. We can't escape from our own culture.

Culture has been defined variously by sociologists and anthropologists, the simplest definition being, "Culture in the way of life" (Melver & Page). Robert Biersiedt has defined Culture as a complex whole that consists of everything we think and do and have as member of Society. Thus, culture of a society includes all the customs, traditions, institutions, beliefs and behaviour patterns of its people and it also includes all the tangible elements like their artifacts, their dress, food, instruments and technology. Every society has its own culture but, we also find many similarities in the cultures of different places. Hofstede (1991) defines cultures as "a collective programming of mind which distinguishes the members of one group or category of people from another". In other words, culture is a collective phenomenon that is shaped by individuals' social environment, not their genes.

Vette

Coordinator

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

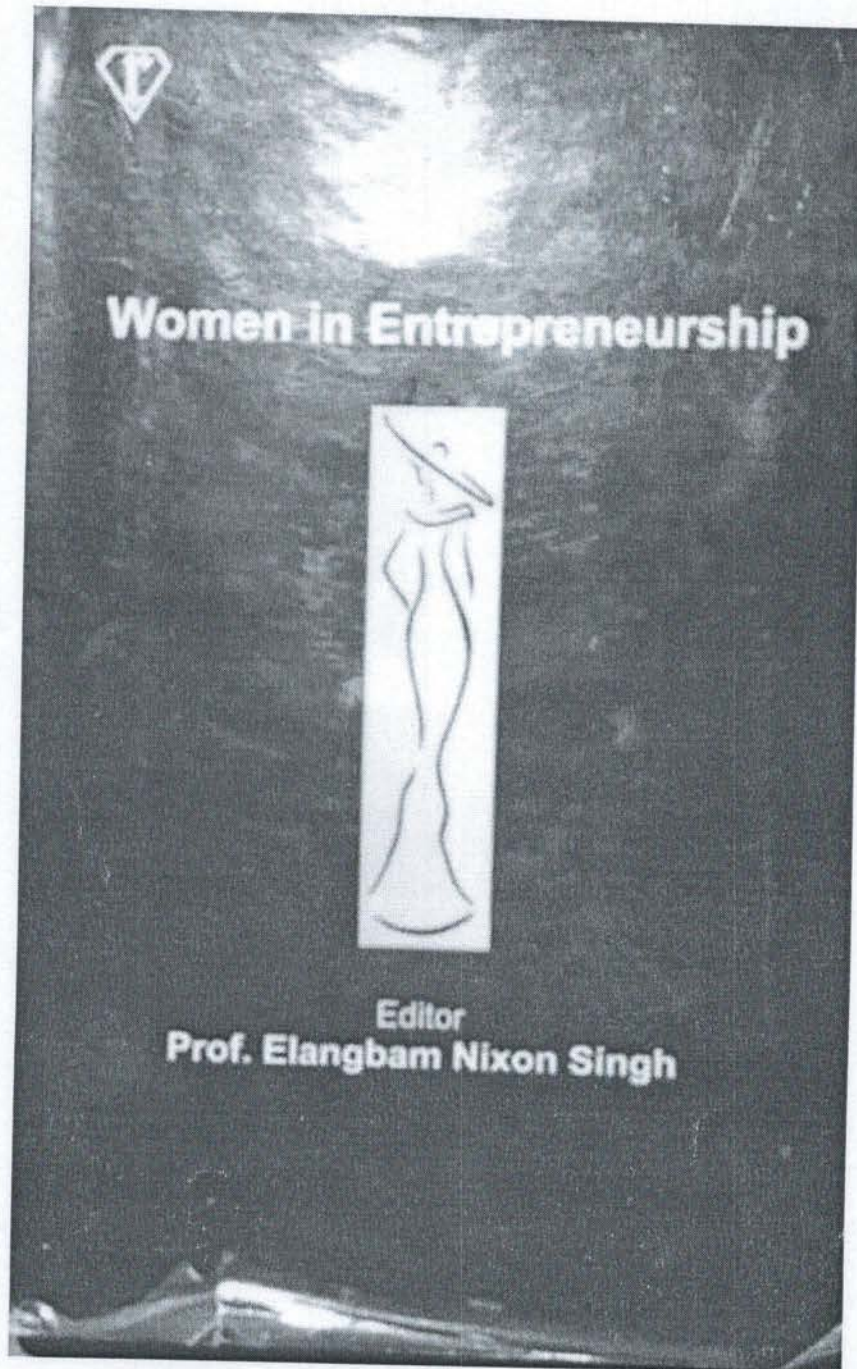


Ubn

Principal


Pachhunga University College
Aizawl : Mizoram

2018




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




Principal
Pachhunga University College
Aizawl : Mizoram

Contents

| | |
|--|-------------|
| <i>Preface</i> | <i>ix</i> |
| <i>List of Contributors</i> | <i>xvii</i> |
| 1. FACTORS CAPABLE OF INFLUENCING ENTREPRENEURIAL INTENTION OF FEMALE STUDENTS: AN EMPIRICAL STUDY | 1 |
| - Kingshuk Adhikari, Ptnak Deb | |
| 2. DEVELOPING ENTREPRENEURSHIP THROUGH THE PROCESS OF VENDORISATION IN ASSAM | 11 |
| - Ajanta Borgohain Rajkonwar | |
| 3. WOMEN ENTREPRENEURS IN THE INFORMAL SECTOR: A STUDY OF WOMEN VEGETABLE VENDORS IN AIZAWL TOWN | 32 |
| - K. Angela Lalthmingsangli, K. Laldinkima | |
| 4. CORPORATE GOVERNANCE PROMOTING WOMEN ENTREPRENEURSHIP IN INDIA: A STUDY | 48 |
| - Md. Iftikar Balg, Bidhu Kanti Das | |
| 5. STRATEGIC WOMEN ENTREPRENEURSHIP | 59 |
| - Memcha Lotlongbam, Okram Sulochana Devi | |
| 6. WOMEN ENTREPRENEURS AND THEIR WORK CULTURE IN MANIPUR | 85 |
| - Ch. Nalini Devi | |
| 7. ENTREPRENEURSHIP PRACTICES AMONGST THE WOMEN COMMUNITY IN MIZORAM: A CASE STUDY OF AIZAWL | 101 |
| - K. Adak, P. Guha | |


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




Principal
 Pachhunga University College
 Aizawl : Mizoram

WOMEN ENTREPRENEURS AND THEIR WORK CULTURE IN MANIPUR

Ch. Nalini Devi

INTRODUCTION

Every state has its own story of women entrepreneurship in India. For example, in Manipur, its women are taking very good role in developing the industrial sector of the state by way of active participation in promoting handloom industry and others in short from the very early period women have their responsibility in some sectors like handloom, handicraft, embroidery, knitting and food processing, etc. Not only in industrial sector but also in social developmental activities they had contributed in many ways. In economic activity handloom sector is solely controlled and run by the women folk in the society. In Manipur it is believed that, the handloom activity is done before the birth of Christ. It is said that the Goddess "Panthoibi" once saw a spider producing fine threads.



Coordinator

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



Principal
Pachhunga University College
Aizawl : Mizoram

ZIAKFUNG CHAWIA RAMTUANNA

A JOURNEY THROUGH WORDS



Dr. Robert L Khawlhing

TABLE OF CONTENT

| Poem | Translation/ Analysis | |
|--|--------------------------------------|----|
| 1. Learn | Dr. John Zohmingthanga | 2 |
| 2. Lines on my life | Faka Hnamte | 6 |
| 3. Recalling father | Lynch Ralte | 12 |
| | Lalhmingliana Saiawi, IAS (Retd.) | |
| 4. Be strong | Lalduhawmi Thomte | 18 |
| 5. Satisfaction | John Lalnunsanga | 24 |
| 6. Now and when i'm gone | Faka Hnamte | 30 |
| | Lalzoenga | |
| 7. 7 essentials | Jacob Zohmangaiha | 36 |
| 8. Living life in abundance | Saihmingliani Sailo | 48 |
| | Jennifer Lalbiakdiki | |
| 9. Our land and us... | Robert L Khiangte | 52 |
| | Dr Rinpari Ralte | |
| 10. Hardships and rain | Dr. Krossnunpuii | 58 |
| | Malsawmi Jacob | |
| 11. My friend, Mafaka | Lalthanpari | 64 |
| 12. Work | Lynch Ralte | 70 |
| | Lalhimpuii | |
| 13. The sufferings of a schizophrenic patient | Dr. Krossnunpuii | 76 |



Coordinator

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

Principal
Pachhunga University College
Aizawl, Mizoram

OUR LAND AND US...

*Calm and serene as far as the eyes can see,
Strong and rugged 'the adventurer' it stirs up in me...
Far across the rows and rows of hill,
Fills the desire to seek a pleasurable thrill.*

*The woods, the rocks and the teeming green,
Brings a sense of peace one has even been...
The sweet water and bubbling stream,
Quenches thirst like fulfillment of a distant dream.*

*The pristine air that fills the lung,
A feel of life all around - far flung...
And sweet fragrance of forest flowers,
Reminds one of the great master's powers.*

*The melody of sounds that fills the air,
In integrated harmony that all beings share...
Fruits and leaves to hunger satisfy,
A circle of life and death - to comply.*

*The feel of breeze upon the face,
Brings a reminder of our human race...
While everything is in its proper place,
Why can't we live in peace and grace...?*

Dr. Robert L. Khawlhing,
Dt. 26.8.2014

KAN RAM LEH KEINI

*Hawi vel ila, mit tlin tawk, a thiang, a mawi ngei e,
Thinlaiah hai ang a thang e, 'Pasaltha' chham ang zal hnu;
Tlang tin mual tin, kawlvalechham thlengin,
Chuan ka nuam e, lung lawm a kim ngei ang.*

*Tuk loh ram, leilung leh phul hring a no nghial e,
Tawn ngai loh thinlung damna min pe;
Luite dam diai leh siktui thiang,
Tawnmang rama duhaisam iang tuihal rehna.*

*Boruak thianghlim han hip meuh chuan,
Nunna a thar, kawng tinrengin;
Ramnaw par tin rimtui leng vel chuan,
Siamtu ropui thiltihtheihna min hriattir e.*

*Boruak thiang karah rimawi a thang vel
Hringfa nunkhua min dawntir e;
Thilsiam tinreng an nih tur ang an nih laiin,
Eng vang kher nge hlim leh muanga kan len theih loh?*

POEM TRANSLATION

Robert L Khiantge

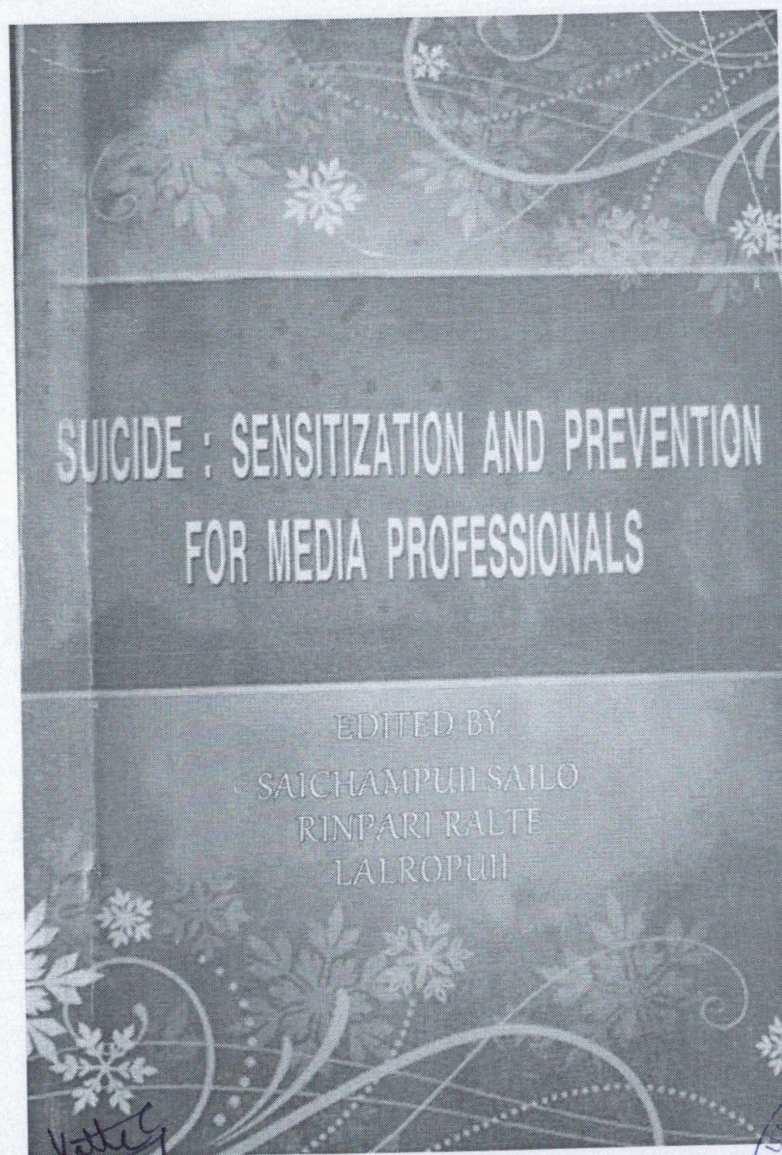


Coordinator

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

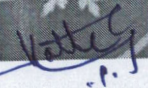
Principal

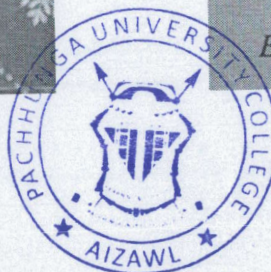
Pachhunga University College
Aizawl : Mizoram



ACHHUNGA THU AWMTE

| | |
|--|----|
| <i>Thuhmahruai</i> | 5 |
| <i>MJA President thuhma</i> | 7 |
| <i>Thu Ziaktute</i> | |
| 1. Buaipui tham - Suicide - C.LALHREKIMA | 13 |
| 2. Suicide chhan leh a ven dan - ZOKAITLUANGI | 37 |
| 3. Suicide Responsible Reporting - H.K. LALDINPUII FENTE | 49 |
| 4. Mahni intihhlum leh mahni intihlumte report dan - LAL THANTLUANGI SAILO | 59 |
| 5. Mahni kutzâla thîte chungchâng media-a (<i>chanchin</i> thar) chhuah dân - LALLIANPUII | 73 |
| 6. Mahni intihhlumina a nghawng dân – engtin zêl nge? - LALREMRUATI | 81 |
| <i>Editor-te chanchin</i> | 91 |


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



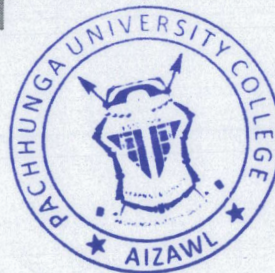

Principal
Pachhunga University College
Aizawl : Mizoram

**MIZORAMA THIL THLENG
KA VEIZAWNGTE
(2003-2014)**

(Essays on contemporary issues in
Mizoram : 2003-2014)

L.H. Chhuanawma


Principal
Pachhunga University College
Aizawl : Mizoram



Mizorama thil thleng ka veizawngte (2003-2014)

(Essays on contemporary issues in Mizoram: 2003-2014)

Copyright Reserved by The Author

Published by : Mualchin Publication

Year of Publication : 2016

ISBN : 978-81-931027-3-2



PRINTED AT :

MUALCHIN PUBLICATION & PAPER WORKS

PETER STREET, KHATLA, AIZAWL

PHONE : 0389 - 2333243/2334563

email : mualpub@gmail.com

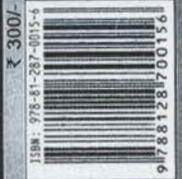

Coordinator
Internal Quality Assurance Cell
Pachhunga University College
(A constituent college of Mizoram University)

Current Trends of Biodiversity Research in Mizoram



H Lalramnghinglova
Vanramliana ✓
H Lalthanzara ✓

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



SCIENTIFIC BOOK CENTRE
Hengrabari Housing Road
Dispur, Guwahati, ASSAM - 781 005.
PH:- +91361-2232846
Mob:- +919435149890.
Email:- scientificbcs@gmail.com



Current Trends of Biodiversity Research in Mizoram
H Lalramnghinglova, Vanramliana, H Lalthanzara

SCIENTIFIC BOOK CENTRE

Hengrabari Housing Road,
Dispur, Guwahati - 781 006.
ASSAM, INDIA
PH:- +91361-2232846, Mob:- +919435149890.
Email:- scientificbks@gmail.com

Branch Offices:-

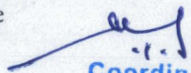
No. G6/195, Sector 16,
Rohini, Delhi - 110085.
INDIA
Mob:- +919818435279.
Email:- dbc2003@rediffmail.com

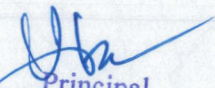
H No. CC-62/2420-2421 (SFCERA-10),
Mother Teresa Lane, P.O. Kaloor,
Kochi - 682017.
KERALA, INDIA
PH:- +91484-2337870, Mob:- +919447300752.
Email:- sbcbook@rediffmail.com

ISBN: 978-81-287-0015-6
2016 © Authors
Price : ₹ 300.00

All rights reserved. Except for brief quotations in critical articles or reviews, no part of this work may be reproduced, stored in a retrieval system or transmitted in any form or by any means, electronic, mechanical, photocopying, recording or otherwise, without the prior written permission of the copyright owner and the publisher

Published by:- C. Sasi Kumar for Scientific Book Centre



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


Principal
Pachhunga University College
Aizawl : Mizoram



ABOUT THE AUTHORS

Prof. H. Lalramnghinglova completed his B.Sc. from St. Edmund's College, Shillong, M.Sc (Botany) and Ph.D. from NEHU, Shillong. He had been teaching in Lunglei Govt. College for ten years (1978-1988); worked as Forest Botanist in E&F Dept. Govt. of Mizoram (1988-2003); joined Mizoram University as Reader (2003-2004) and became a Professor since 2005 onwards. He holds the posts of Head of the Department of Environmental Science for two terms (2003-2007 & 2009-2013) and Dean of the School of Earth Sciences & Natural Resources Management (2007-2009). Having 20 years of teaching experience; and 17 years of research experience, He has written 4 books (including edited books), 2 booklets & 1 manual and more than 50 research papers in national and international journals and periodicals. He has been invited for lecture at the state, regional and national levels seminars and conferences. He takes initiatives and organized tree plantation programme in the University Campus on World Environment Day, 5th June, every year since 2003 onwards. He has guided 12 Ph.D scholars, 4 on the pipe-line and 5 registered. He undertook research projects from GBPIEHD, NIPER, NMPB/SMPB, MoEF, UGC, DBT & ICFRE. He has been awarded for outstanding contribution in the field of Non-Wood Forest Products


Principal
Pachhunga University College
Aizawl: Mizoram




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

CONTENTS

| | |
|---|------|
| About the Authors | v |
| Acknowledgements | vii |
| Introduction | viii |
| List of Contributors | xi |
| | |
| 1. Global Biodiversity: An Overview <i>H. Lalramnghinglova</i> | 1 |
| 2. Barcoding <i>Culex</i> Mosquitoes: A Potential Vector of Japanese Encephalitis in Mizoram <i>Lal Ringngheti, Lalramliana, Vanramliana</i> | 17 |
| 3. Comparison of Diversity and Population Dynamics of Centipede (Chilopoda) Under Shifting Cultivation and Forest Ecosystem in Mizoram <i>H. Lalthanzara, Betsy Zodinpuui, Lalnunluanga</i> | 30 |
| 4. A Preliminary Study on the Helminth Parasite of Freshwater Fishes in Mizoram <i>Malsawmtluangi, Lalramliana, Vanramliana</i> | 45 |
| 5. Laboratory Evaluation of the Pathogenicity of three Entomopathogenic Nematodes against Larvae of Greater Wax Moth, <i>Galleria</i> <i>mellonella</i> (L.) From Mizoram <i>Vanlalthlimpuia, Lalramdinthara Chenkual,</i> <i>Vanramliana, Lalramliana</i> | 60 |

₹ 300/-



SCIENTIFIC BOOK CENTRE

Hengrabari Housing Road
Dispur, Guwahati, ASSAM - 781 006.

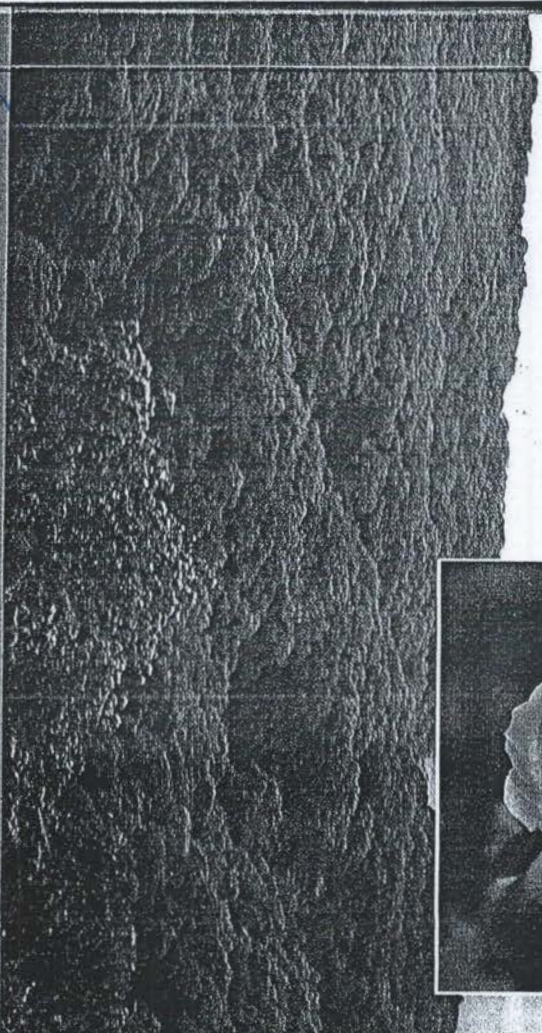
PH: +91361-2232846

Mob: +919435149890

Email: scientificbks@gmail.com



Current Trends of Biodiversity Research in Mizoram



H Lalramnghinglova
Vanramhlana
H Lalthanzara

Handwritten signature/initials in blue ink.

Handwritten signature/initials in blue ink.



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

H. B.
Principal
Pachhunga University College
Aizawl : Mizoram

CONTENTS

| | |
|--|-------------|
| About the Authors | <i>v</i> |
| Acknowledgements | <i>vii</i> |
| Introduction | <i>viii</i> |
| List of Contributors | <i>xi</i> |
| 1. Global Biodiversity: An Overview <i>H. Lalramnghinglova</i> | 1 |
| 2. Barcoding <i>Culex</i> Mosquitoes: A Potential Vector of Japanese Encephalitis in Mizoram <i>Lal Ringngheti, Lalramliana, Vanramliana</i> ✓ | 17 |
| 3. Comparison of Diversity and Population Dynamics of Centipede (Chilopoda) Under Shifting Cultivation and Forest Ecosystem in Mizoram <i>H. Lalthanzara, Betsy Zodinpuui, Lalnuntluanga</i> | 30 |
| 4. A Preliminary Study on the Helminth Parasite of Freshwater Fishes in Mizoram <i>Malsawmtluangi, Lalramliana, Vanramliana</i> ✓ | 45 |
| 5. Laboratory Evaluation of the Pathogenicity of three Entomopathogenic Nematodes against Larvae of Greater Wax Moth, <i>Galleria</i> <i>mellonella</i> (L.) From Mizoram <i>Vanlalhlimpuia, Lalramdinthara Chenkual,</i> <i>Vanramliana, Lalramliana</i> ✓ | 60 |

Shankar Raman, T.R.(1995). Shifting cultivation and conservation of Tropical forest bird communities in Mizoram, North-East India, A Dissertation, Wildlife Institute of India, Dehra Dun.

Sharma, J.R. and Singh, D.K.(2000). Status of plant diversity in India: An overview. In Roy, P.S., Singh, S. and Toxopeus, A.G. (Eds.). *Biodiversity & Environment. Remote Sensing & Geographic Information System Perspective*. Indian Institute of remote Sensing, National remote Sensing Agency, Dehra Dun.

Statistical Handbook of Mizoram (2012). Directorate of Economics & Statistics, Mizoram, Aizawl, 155p.

Wilcox, B.A. and Soule, M.E.(1980). *Conservation biology: evolutionary-ecological perspective*. Sinauer Associates, Sunderland, Massachusetts, USA.

Chapter 2

BARCODING *CULEX* MOSQUITOES: A POTENTIAL VECTOR OF JAPANESE ENCEPHALITIS IN MIZORAM

Lal Ringngheti, Lalramliana
Vanramliana



Arbovirus - a class of viruses transmitted to humans by arthropods such as mosquitoes and ticks are known to cause diseases such as yellow fever, dengue, West Nile fever, encephalitis including Western equine encephalitis, St. Louis encephalitis, Eastern equine encephalitis, California encephalitis, Venezuelan equine encephalitis and Japanese encephalitis (Foote and Cook, 1959).

Culex (Diptera: Culicidae) mosquitoes which breed at temperatures ranging from 15° C to 30° C (Loetti et al., 2008) are increasingly being implicated in the transmission of arboviral and parasitic diseases worldwide. Accurate identification of the mosquito vector species involved is a prerequisite to successful control of these diseases (Gunay et al., 2015).

The application of genetic markers has proven extremely useful for resolving cryptic and hidden species of mosquitoes (Gunay et al., 2015). DNA barcoding uses cytochrome oxidase I gene of mitochondrial DNA. The COI gene is slowly evolving compared to other protein coding mitochondrial genes and is

Principal
Pachhunga University College
Aizawl: Mizoram

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

- Scolopendromorpha) from Kerala. *Zoos' Print Journal*, 21(6): 2285-2291.
- Swift, M. and Bignell, D. (2001). Standard methods for assessment of soil biodiversity and land use practice. Alternatives to Slash-and Burn Lecture Note 6B, International Centre for Research in Agroforestry, Bogor, Indonesia. pp. 9-18.
- Takeda, H. (1981). Effects of shifting cultivation on the soil mesofauna with special reference to Collembolan populations in the northeast Thailand. *Memoirs of the College of Agriculture, Kyoto University*, 118: 45-60.
- Tripathi, G., Ram, S., Sharma, B.M. and Singh, G. (2005). Soil faunal biodiversity and nutrient status in silvopastoral systems of Indian desert. *Environmental Conservation*, 32: 178-188.
- Vatsauliya, P.K. (1981). Ecological Studies on Jhum Fallows of Byrnihat (Meghalaya) with particular reference to Soil fauna. Unpublished Ph.D. Thesis, NEHU, Shillong.
- Vatsauliya, P.K. and Alfred, J.R.B. (1980). Quantitative study of the soil arthropods in jhum ecosystems of northeast India. *Indian Zoologist*, 4: 153-160.
- Watanabe, N and Ruaysoongnern. (1984). *Effects of shifting cultivation on soil macrofauna in North eastern Thailand*. *Memoirs of the College of Agriculture, Kyoto University*, 125: 35-43.



[Signature]
Principal
Pachhunga University College
Aizawl: Mizoram

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

Chapter 4

A PRELIMINARY STUDY ON THE HELMINTH PARASITE OF FRESHWATER FISHES IN MIZORAM

C. Malsawmtluangi, Lalramliana ✓

Vanramliana ✓

Fish constitute an important component of diet for the people of North-East India. They are extensively used as a protein-rich diet for human consumption. A majority of fishes carry heavy infection of parasites, which causes deterioration in the food value of fish and may even result in their mortality. Helminths are an important group of pathogens, which cause infection and diseases of fish both in freshwater and marine environments, their importance being related directly to the fish that may affect the general public health (Hoffman 1967). In recent years, diseases transmitted by fish have probably become more widely distributed, and have greater economical and medical impacts (Ko 1995). The World Health Organization (1995) has estimated that the number of people currently infected with fish-borne are at large and the trematodes alone exceeds 18 million. Every parasite living in or on a fish extends some degree of harmful influence on its host (Williams and Jones 1994). Besides there

Chapter 5

LABORATORY EVALUATION OF THE PATHOGENICITY OF THREE ENTOMOPATHOGENIC NEMATODES AGAINST LARVAE OF GREATER WAX MOTH, GALLERIA MELLONELLA (L.) FROM MIZORAM

Vanlalhlimpaia, Lalramdinthara Chenkual
Vanramliana, Lalramliana

Entomopathogenic nematode (EPN) species of the genera *Steinernema* Travassos, 1927, and *Heterorhabditis* Poinar, 1976 (Rhabditida: Nematoda) have attracted the attention of entomologists (and of nematologists) for a number of years for use in controlling economically important insect pests. The nematodes have been reported to occur in the tropical, subtropical and temperate countries (Kaya 1990). The only continent where they have not been found to occur is Antarctica (Griffin *et al.* 1990). Numerous surveys for EPNs have been conducted throughout the world by using baiting technique (Bedding & Akhurst 1975). Since the use of chemical pesticides pose environmental threats, these nematodes have received considerable attention as biopesticides, because they are environmentally safe, they have a broad host range, negative impacts on non-target organisms, easy mass production, ability

to search (chemoreceptors) the target insects, kill the target insects within a short period of time (24 - 48 hours), easy storage and application.

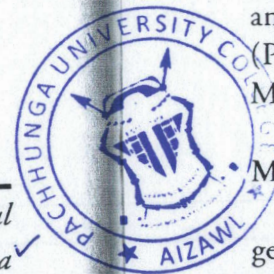
There is an intense interest to isolate entomopathogenic nematodes from different regions of the world, which are climatically adapted and have the potential for biological control of pests in that area. Surveys have been conducted in many parts of the world demonstrating their wide spread occurrence and providing an indication of which species are indigenous for a given area. The present study aims to evaluate pathogenicity and behaviour of three locally isolated *Steinernema* spp. (PUCEPN-01, PUCEPN-02 and PUCEPN-03) from Mizoram for their future use as a biopesticides in the region.

Materials & Methods

All the nematodes used in the experiment belong to the genus *Steinernema*, coded here as PUCEPN-01, PUCEPN-02 and PUCEPN-03 collected from Chalrang, Kawlberm and PUC Campus respectively. Laboratory cultures of all the EPNs were reproduced using final instar larvae of *G. mellonella*, maintained in the artificial diet and reared as described by modification of Singh (1997). Infected dead larvae were transferred to modified White traps (Woodring & Kaya, 1988) and incubated at 25 °C. Nematodes were multiplied using the methods of Dutky *et al.* (1964).

Mortality Test for Larvae

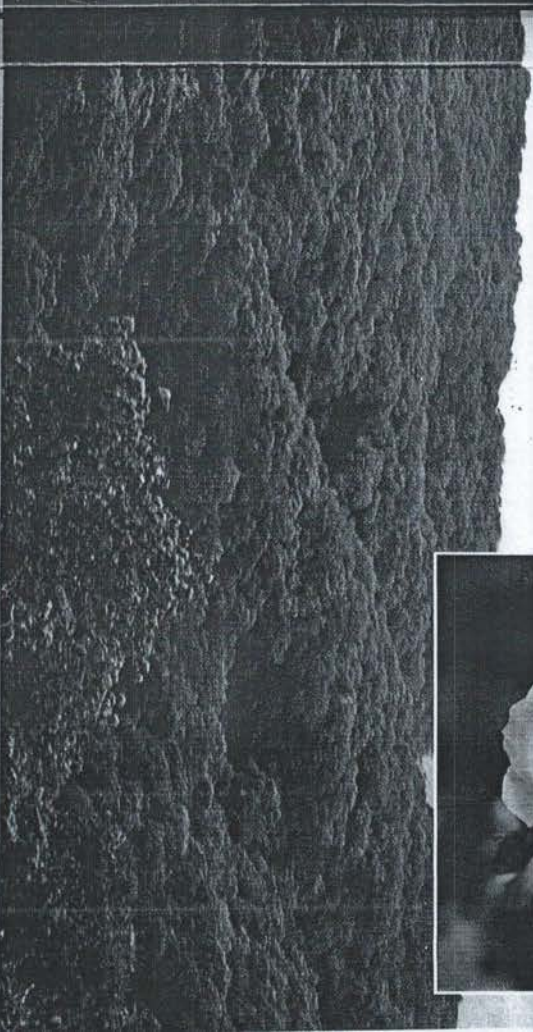
Six well tissue culture plates were used for the assay. Each well was lined with double layer of Whatman No.1 filter paper for each nematode concentration. Nematodes of different concentrations (50, 100, 200 and 400 IJs/larva in 0.5 ml of D.W.) were evenly distributed on the filter paper of the well and kept for at least for 30 minutes. One larva was placed in each



Principal
Pachhunga University College
Aizawl: Mizoram

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

Current Trends of Biodiversity Research in Mizoram



SCIENTIFIC BOOK CENTRE
Hengrabari Housing Road
Dispur, Guwahati, ASSAM 781 008
Ph: +91361 2232808
Mob: +919436140800
Email: scientificbooks@gmail.com

H Lalramnghinglova
Vanramliana
H Lalthanzara

6. Choice of Oviposition Site by Nicobar Frog,
Hylarana nicobariensis (Amphibia: Anura) 70
H. T. Lalremsanga, Saipari Sailo,
C. Lalfamkima Varte, R.N.K. Hooroo
7. Occurrence of *Oreochromis Mossambicus* in
Rivers of Mizoram: A Boon or A Bane? 89
Beihrosa Solo, Lalnunluanga, Lalramliana
8. Assessment of Rivers in Mizoram using Length-
Weight Relationship and Condition Factor of Fishes 100
Bibian K. Lalchhuanliana, Lalrinzuali,
C. Lalfakawmi, Lalramliana
9. Estimating Density and Relative Abundance
of Kalij Pheasant *Lophura Leucomelanos* in
and around Lengteng Wildlife Sanctuary 109
H. Lalthanzara, Lalawmawia Sailo,
G.S. Solanki, S.N. Ramanujam
10. New Records, Monitoring the Threats
and Conservation of Bats in the
Lengteng Wildlife Sanctuary 118
C. Vanlalnghaka
11. A Report on Soil Macrofungi in some
Selected Sites of Mizoram 132
H. Lalrinawmi, John Zothanzama
12. Algal Diversity of Eastern Aizawl City 142
Zothanmawia, H. Lalruatsanga
13. Fungal Diversity in Pachhunga University
College Campus 149
Vanlalhruii Ralte, P.C. Vanlalhluna
14. Bamboo - A New Source of
Microcrystalline Cellulose (MCC) 182
David C. Vanlalfakawma, Lalduhsanga Pachuau,
Shri Kant Tripathi

15. Status and Composition of Ground-Herb
Community in Tropical Semi Evergreen Forest
of Reiek in Mamit District of Mizoram 206
S. T. Lalzarzovi, Lalnunluanga
16. Distribution Pattern and Growth
Behavior of *Rhododendron arboreum* Sm
along an Elevation Gradient in Mizoram 221
B. Malsawmkima, U.K. Sahoo
17. Ecological Studies of the Community
Structure of Tawi Wildlife Sanctuary 232
Lallawmkimi, H. Lalramnghinglova,
Hilda Lalrinpuui
18. Isolation and Characterization Resistance
Gene Analogues (RGAs) from Banana
Cultivars of Mizoram 242
Pachuaui Lalrinfela, Laltanpuia,
R. Lalengmawia, Robert Thangjam
19. Comparison of Different Hierarchical Clustering
Methods in Analyzing Species Composition 256
Lalpawimawha
- Index 271

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



Principal
Pachhunga University College
Aizawl: Mizoram

Chapter 17

ECOLOGICAL STUDIES OF THE COMMUNITY STRUCTURE OF TAWI WILDLIFE SANCTUARY

Lallawmkimi, H. Lalramnghinglova
Hilda Lalrinpuui

Tawi Wildlife Sanctuary is selected for the present study. The sanctuary is located in the South eastern part of the Aizawl District, Mizoram (Latitude - 23030'N and Longitude 930'E), with altitude ranging between 500 m- 1894 m asl. It occupies an area of 35.75 sq. km, and is situated about 101 km, from the state capital Aizawl towards east. The sanctuary was notified as "Tawi Wildlife Sanctuary" on 8th April 1999. It is surrounded by 5 villages viz, Hmuntha, Maite, Hualtu, Tawizo and Lenchim.

The vegetation of the sanctuary falls under the Tropical semi-evergreen and Sub-tropical broadleaved hill forests. The area experiences equable warm climate to chilly winter during November-January at the higher altitude. Maximum temperature ranges between 170C to 280C and the minimum between 100C to 160C with the annual rainfall between 2000 and 2500 mm. June and July experience heavy showers.

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

Quantitative measures are employed to describe the structure of plant communities with much ecological precision, qualitative characters such as species richness, life-form spectrum and vertical disposition of species are some of the important parameters to describe community structure. Raunkiaer (1934) described communities of different climatic zones or phytoclimatic zones of the earth on the basis of life-form spectrum or Biological spectrum. Any change in the life-form composition away from its phytoclimatic zone is considered as an indicator of alteration in vegetation either due to biotic or edaphic factors or both. However, in recent years man has abused the natural vegetation so much so that often plant communities do not show their natural structural complexities. Over exploitation of forest resources and overgrazing has resulted in change in the life form composition of plant communities (Reddy *et al.* 2002). Vegetation profile of the component species indicates the phytoclimatic condition of the area and is employed commonly in community structural description through profile diagrams (Ashton and Hall 1992; Chen Wei-Lie 1995; Pignatti 1995)

The research work was an attempt to evaluate the ecological and botanical aspect of plant diversity of Tawi wildlife sanctuary. The study focused on the status of floristic diversity and their mutual adjustment with respect to the habitat and life processes. The outcome of the present investigation contributes to the better understanding of the floristic and ecosystem diversity in the sanctuary.

Materials and Methods

A detailed floristic survey was carried out in the study area during the period from July 2006 to April 2010. Plant species were collected at monthly intervals and identified with the help of regional flora including the books of "Flora of British India

Principal
Pachhunga University College
Aizawl : Mizoram

SHAPING INDIAN HISTORY ACROSS TIMES AND REGIONS

A SELECT ANTHOLOGY

EDITED BY
ALOK KUMAR GHOSH & MALSAWMDAWNGLIANA



A FELICITATION VOLUME IN HONOUR OF PROF. RATTAN LAL HANGLOO

Serials

viii *Shaping Indian History Across Times and Regions: A Select Anthology*

- | | |
|---|-----|
| 8. Religious Missions and Diplomatic Engagements in Contemporary Times: from Little Lhasa in India to the Buddhist Regions of Russia – M.N. Rajesh and Arnav Keyur Anjaria | 100 |
| 9. Environmental Conflict Redefined: Case Study of Marichijhanpi (1979) – Alok Kumar Ghosh | 118 |
| 10. Local People and the Global Tiger: An Environmental History of the Sundarbans – Ranjan Chakrabarti | 130 |
| 11. Indo-Naga Conflict: A Role for Indigenous Spirituality and Oral Tradition in the Naga Peace Process – Visier Sanyu | 159 |
| 12. Youth and the Politics of Change in Colonial Mizoram – Rohmingmawii | 185 |
| 13. Mizo Literature: A Repository of Historical Elements – Jazire Zodihsangi Hrahsel | 203 |
| About the Contributors | 213 |
| Index | 219 |

12

YOUTH AND THE POLITICS OF CHANGE IN COLONIAL MIZORAM

Rohmingmawii

I

The process of modernization (which is interchangeably understood with westernization) in Mizoram can be said to have begun from the Colonial period. After much resistance, the Mizos who lived under separate independent chiefs were put under the rule of the British from the last decade of the 19th century, the last tribe to be subjugated by the British in Northeast India. With the establishment of British rule in Lushai hills, a systematic and uniform administration enforceable by law was introduced and the Mizos experienced modern political system which was totally new to them. Thus, establishment of colonial rule ushered in a new era in the Mizo hills.

Christianity followed the heels of Colonial rule in Mizoram. The pioneer missionaries J.H.Lorrain and F.W.Savidge landed on the hills on 11th January, 1894. Christianity in Mizo hills proved to be one important agency of change. In fact, with the process of Christianisation, the whole cultural development in the hills took a new turn. It prepared the minds of the Mizos to accommodate the socio-political changes that came as a result

Notter

Coordinator

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



Uson

Principal

Pachhunga University College
Aizawl : Mizoram

Customs and Traditions of the Hill Peoples of North East India

S. Haukhanlian Mate
Vanrammawii

AKANSHA PUBLISHING HOUSE
4649/31-B, Ansari Road
Daryaganj, New Delhi - 110 002
Phones: 23263193, 9435116718
Email: ektabooks@yahoo.com
Visit us: www.akanshapublishinghouse.com

Customs and Traditions of the Hill Peoples of Northeast India
© Editors

First Published, 2016

ISBN 978-81-8370-477-9

[No part of this publication may be reproduced, stored in a retrieval system or transmitted, in any form or by any means, mechanical, photocopying, recording or otherwise, without prior written permission of the author/publisher.]

[The views expressed and conclusions reached in papers are the respective contributors' own; and the Editors and Publishers own no responsibility for them whatsoever.]

PRINTED IN INDIA

Published and Printed by Akansha Publishing House, New Delhi - 110 002.

12


Children in Mizo Society: An Historical Investigation

Rohmingmawii


Children in a society are found to have little role in history, and as such, writings in historical studies about them are lacking. Recent interest in children and child's rights have brought the issue of children to the attention of the people at large, and psychologists and social workers in particular have carried out many significant studies on children. However, it has not yet received enough attention in academic forum of social sciences especially in Mizoram. Much of the writings on children are from the perspective of social work.

The scanty references in historical texts of the Mizos on children are found in connection with birth and death rituals, the games played by children, their participation in festivities and their role in *Zawibuk*, the young men's dormitory. The situation that these references could have inferred in regards to children is different from the common perception as it is with all other aspects of the period. This may be due to the fact that the pre-literate Mizo society had their history first written by colonial ethnographers and western missionaries whose works had been the main source of information about the society for a long time. It successfully influenced the people's mind in the construction of a mental image in which the pre-colonial period was considered to be a 'dark age' and the lot of children was no better than others. Therefore, it was generally concluded that the children were the unwanted component of the society and they were never really cared for. However, there could be different picture if we choose to shift our window and change our lenses.

The Mizos have certain rituals at the birth of a child, but reference of this is missing in most of the works on Mizo culture. J. Shakespear, the


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




Principal
Pachhunga University College
Aizawl : Mizoram

EDITED BY
ALOK KUMAR GHOSH & MALSAWMDAWNGLIANA



A FELICITATION VOLUME IN HONOUR OF PROF. RATTAN LAL HANGLOO

Serials


Coordinator

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




Principal
Pachhunga University College
Aizawl : Mizoram

MIZO LITERATURE: A REPOSITORY OF
HISTORICAL ELEMENTS*Jamie Zodinsangi Hrahsel*

The ties between place and identity are fundamental to the lives of individuals and groups. They shape the way in which relationships and social networks are created and maintained, how heritage is understood, reconceived and rewritten, how everyday life is anchored by a strong sense of self, and how narratives and histories are located in time and space. While the values and meanings attached to place remain significant, we are increasingly involved in networks that extend far beyond our immediate physical locations with the more recent acceleration of globalizing forces, particularly with the development of electronic communications. These, in turn, have enabled and have increased cultural juxtaposing, meeting and mixing. Indeed, locales are now often subjected to the influences of distant places. With this emerging global communication, queries on the issues of ethnic and cultural identities suddenly become more vital. Globalization has necessitated a questioning of the very essence of identity. Kobena Mercer opines, "Something fixed, coherent and stable is displaced by the experience of doubt and uncertainty." (Mercer, 12) Now the idea that identities are contradictory and cross-cut or dislocate

Editors: Margaret L. Pachuan

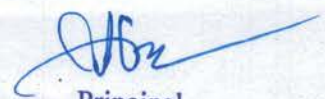
Thongam Dhanajit Singh

EMERGENT IDENTITIES in LITERATURE


Coordinator

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





Principal
Pachhunga University College
Aizawl : Mizoram

Folktales and Culture: Representation of Orphans in Select Mizo Folktales

5

■ *Jamie Zodingsangi Hrahsel*

Through all societies, thousands of orphans had existed and continue to exist on the fringes of society where they could not even acquire the same status as children in the poorest of families. These children were often abandoned altogether or more commonly, ill-treated, exploited and ignored in the house. This paper attempts to explore the social reality of Mizo society that has been projected through the various orphan characters in Mizo folktales. Due to certain sanitisation and censorship, folk and fairy tales have often been associated with unrealistic, inhuman flawlessness and situations. That quality of perfection, however, is not representative of these tales as a whole, for they possess examples of behaviour that are realistic portrayal of cultural elements. Lutz Rohrich suggests that folktales are:

...a reflection of the reality in which they were produced, the characters and the settings being based upon real people and their surrounding culture. In that sense, folk tales mirror the stages of socialization of one specific group of people, and each version is representative of its own cultural context. (Rohrich, 199)

Themes of redemption, love, familial ties, honesty, heroism as well as negative features such as abandonment, fear, incest and abuse become significant in folk and fairy tales. If removed from their immediate surroundings, these tales are virtually incomprehensible and to recover their meaning, the situation in which they were produced has to be reexamined. Therefore, it can be surmised that literature, including folk narrative, can be a reference to understanding culture. Stephen Greenblatt writes:

Literary texts are not merely cultural by virtue of reference to the world beyond themselves; they are cultural by virtue of social values and contexts that they have themselves successfully absorbed. (Greenblatt, 229)

The orphan protagonist is a potent symbol of human isolation in the oral narratives of many diverse cultures. This enduring popularity is indicative of the universal recognition of the orphan's outsider status. Children are often considered as "Orphans" if "they had one surviving parent, had been abandoned by their family, or were forced out into the world because of overcrowding at home". (Cunningham, 4). Melanie A. Kimbell has described the orphan as "the eternal other", a Lacanian term derived from the theoretical view that humans have no sense of self separate to the world surrounding them:

Orphan characters in folktales and literature symbolize our isolation from one another and from society. They do not belong to even the most basic of groups, the family unit, and in some cultures this is enough to cut them off from society at large. In other cultures, orphans are regarded as special people who must be protected and cared for at all costs. In either case, orphans are clearly marked as being different from the rest of society. They are the eternal Other. (Kimbell, 559)

15/04/2016
2016
15/04/2016


Principal
Pachhunga University College
Aizawl : Mizoram




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

MYANMAR'S MOUNTAIN AND MARITIME BORDERSCAPES

This edited volume adds to the literature on Myanmar and its borders by drawing attention to the interplay of geography, history, politics and society in the construction of the border regions and the country. First, it alerts us to the fact that the border regions are not in the mountainous and maritime domains of the country, highlighting the complexities that arise from shared geography. Second, it looks at the foreground socio-spatialities — economic, intimate, spiritual, cultural — of border and boundary-making in a local context. This demonstrates how state-defined notions of territory, borders and identity are enacted or challenged. Third, despite sharing common features, Myanmar's borderscape also possesses unique configurations of ethnic, political and economic features, producing social formations and figured worlds that are more cohesive or fractious in some border areas than in others. Understanding and comparing these social features and their corresponding life-worlds allows us to re-examine the connections from borders and back to the hinterland and to consider the relevance of border and boundary studies in problematizing and conceptualizing recent changes in Myanmar.

An ambitious project combining sophisticated conceptualization, global context, and a format of practice and empirical studies, this edited volume is a landmark publication and a welcome addition to the country's social sciences literature. It is a must-read for scholars and students of the border regions of the country, as well as for those interested in the border studies and border studies and border studies.

Noni and Jang, University of Birmingham, UK

This is the first book to attempt to bring together the mountain and maritime land and maritime border regions for comparative studies. It highlights the complexity of the country's geographic, social, economic and political landscape, and shows how the border regions are not in the centre of the country. It reveals how the border regions are not in the centre of the country, but rather, they are in the periphery. This book is a landmark publication and a welcome addition to the country's social sciences literature. It is a must-read for scholars and students of the border regions of the country, as well as for those interested in the border studies and border studies.

FEARS
PUBLISHING

PIC242S

OH MYANMAR'S MOUNTAIN AND MARITIME BORDERSCAPES

MYANMAR'S MOUNTAIN AND MARITIME BORDERSCAPES LOCAL PRACTICES, BOUNDARY-MAKING AND HIGHLY WORKING

EDITED BY SUANNI CHEN

First published in Singapore in 2016 by
ISEAS Publishing
30 Heng Mui Keng Terrace
Singapore 119614

E-mail: publish@iseas.edu.sg
Website: <http://bookshop.iseas.edu.sg>

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form or by any means, electronic, mechanical, photocopying, recording or otherwise, without the prior permission of the ISEAS – Yusof Ishak Institute.

© 2016 ISEAS – Yusof Ishak Institute, Singapore

The responsibility for facts and opinions in this publication rests exclusively with the author and his interpretations do not necessarily reflect the views or the policy of the publisher or its supporters.

ISEAS Library Cataloguing-in-Publication Data

Myanmar's Mountain and Maritime Borderscapes : Local Practices, Boundary-making and Figured Worlds / edited by Su-Ann Oh.

Papers originally presented at a Conference on Myanmar from the Margins, held in Institute of Southeast Asian Studies, 14–15 November 2013.

1. Internal migrants—Myanmar.
 2. Myanmar—Politics and government.
 3. Myanmar—Boundaries.
 4. Myanmar—Religious life and customs.
 - I. Oh, Su-Ann.
 - II. Conference on Myanmar from the Margins (2013, Singapore)
- DS528.7 M99

ISBN 978-981-4695-76-3 (soft cover)
ISBN 978-981-4695-77-0 (e-book, PDF)

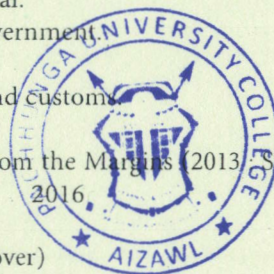
Cover photo: Watercolour paintings on the front and back covers reproduced with kind permission of Su-Ann Oh


Typeset by Superskill Graphics Pte Ltd
Printed in Singapore by Mainland Press Pte Ltd

Contents

| | |
|--|------|
| <i>List of Tables</i> | vii |
| <i>List of Figures</i> | viii |
| <i>Acknowledgements</i> | ix |
| <i>Notes on Language, Terminology and Geographical Names</i> | xi |
| <i>Contributors</i> | xiii |
| <i>Abbreviations</i> | xix |
| | |
| 1. Introduction Su-Ann Oh | 1 |
| | |
| I. Overview of Myanmar's Mountain and Maritime Borderscapes | |
| 2. Electoral Sovereignty in Myanmar's Borderlands Nicholas Farrelly | 39 |
| | |
| 3. The Maritime Frontier of Myanmar: Challenges in the Early 21st Century Maung Aung Myoe | 70 |
| | |
| II. Territorial Claims and Imagined Boundaries | |
| 4. Burman Territories and Borders in the Making of a Myanmar Nation State Maxime Boutry | 99 |
| | |
| 5. Ritual and the Other in Rakhine Spirit Cults Alexandra de Mersan | 121 |
| | |
| 6. Rohingya Territoriality in Myanmar and Bangladesh: Humanitarian Crisis and National Disorder Anders Bjørnhaug | 146 |


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




Principal
Pachhunga University College
Aizawl : Mizoram

III. Social Organization and Border Economies

7. The Culture and Landscape of the Humanitarian Economy among the Karen (Kayin) in the Borderland of Southeast Myanmar and Northwest Thailand 171
Alexander Horstmann

8. Navigating Learning, Employment and Economies in the Mae Sot-Myawaddy Borderland 191
Su-Ann Oh

IV. Mobile Practices and Moving Borders

9. The Spatiality and Borderless-ness of Contentious Politics: Kachin Mobilities as Capability 215
Karin Dean

10. The Mule Caravans as Cross-Border Networks: Local Bands and their Stretch on the Frontier between Yunnan and Burma 237
Jianxiong Ma and Cunzhao Ma

V. Identity Construction and the Politics of Belonging

11. "I Want to Stay Forever in You" 261
Decha Tangseefa

12. Life along the Naf Border: Identity Politics of the Rohingya Refugees in Bangladesh 283
Kazi Fahmida Farzana

13. Home of the Housekeeper: Will Shan Migrants Return after a Decade of Migration? 306
Amporn Jirattikorn

14. Moving on: Spaces of Engagement in the Kayah-Mae Hong Son Borderland 323
Carl Grundy-Warr and Chin Wei Jun

VI. Institutionalized Identity and Border Practices

15. The Chin State-Mizoram Border: Institutionalized Xenophobia for State Control 353
Bianca Son and N. William Singh

16. Tāi Buddhist Practices on the China-Myanmar Border 369
Takahiro Kojima

List of Tables

| | | |
|------|---|-----|
| 2.1 | Characteristics of Borderland Constituencies, Sorted by Border Length | 41 |
| 2.2 | Myanmar 2010 General Election Results in Borderland Constituencies | 45 |
| 2.3 | Voter Density (per km ²) by Party Contesting 2010 General Election | 56 |
| 3.1 | Myanmar Waters | 71 |
| 3.2 | The Largest Offshore Gas Projects | 86 |
| 3.3 | Income from Yadana and Yetagun Projects (Sale of Gas to Thailand) US\$ Million Fiscal | 88 |
| 16.1 | Number of Priests and Monasteries | 373 |

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



Principal
Pachhunga University College
Aizawl : Mizoram

The Chin State-Mizoram Border: Institutionalized Xenophobia for State Control¹

BIANCA SON AND N. WILLIAM SINGH

In Mizoram State of India, a popular weekly television programme, *Lamtluang* (Mizo Lyric Blog 2014), reports on different cultures, lifestyles, religious institutions, transport systems as well as other facets of daily life abroad. In 2013, journalists from the programme travelled to the Chin State of Myanmar. In an interview of Chin elders, the topic that arose was the close ethnic relations between the Chin and the Mizo² (interview with Chin elders at Aizawl 2014).³ The elders maintained that while Chin State was part of another country, they were not different from the Mizo in any significant way. They explained that the Chin and the Mizo shared a culture and language and that in many cases, even had kin living across the border. Although the border was drawn during the colonial period, the people have always considered themselves, “wrongly divided; they are brethren” (comments by Mizo Elders during the *Lamtluang* television programme, 12 February 2014 at Aizawl).⁴ This was not a new concept. Numerous arguments for this shared ethnicity, history and the wrongly imposed division of the Chin and the Mizo can be found in Vumson (1986, p. 32) and Son (2013, p. 56). In fact, most Chin and Mizo accept that they are the “same people”, yet, the television show emphasized that the Chin are from a “different” country. Chin interviewees did not accept this position and further commented on how badly most Chin are treated by their Mizo “brothers” when they cross the border from Myanmar to access services

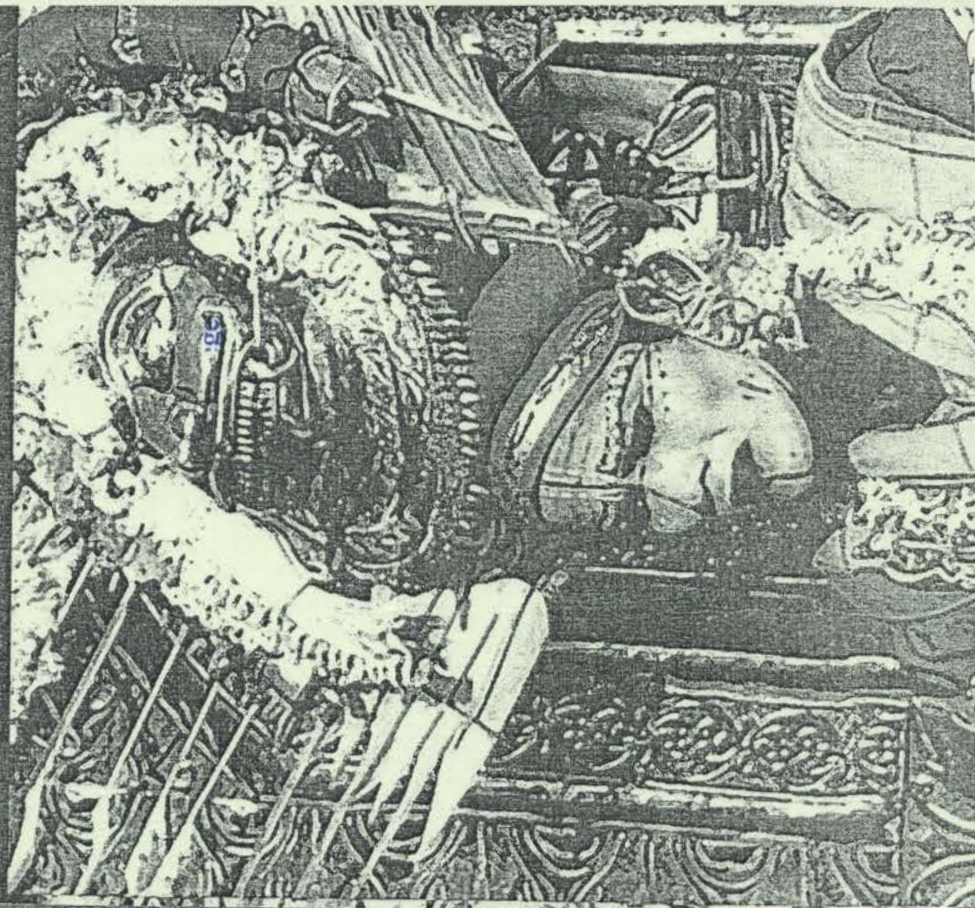

Coordinator
Internal Quality Assurance Cell
Pachhunga University College
(A constituent college of Mizoram University)




Principal
Pachhunga University College
Aizawl : Mizoram

EXPLORING ALTERITY IN A GLOBALIZED WORLD

Edited by **Christoph Wulf**



EXPLORING ALTERITY IN A GLOBALIZED WORLD

Edited by
Christoph Wulf

ROUTLEDGE
an informa business

This volume develops a unique framework to understand India through indigenous and European perspectives and examines how it copes with the larger challenges of a globalized world. Through a discussion of religious and philosophical traditions, cultural developments as well as contemporary theatre, films and media, it explores the manner in which India negotiates the trials of globalization. It also focuses upon India's school and education system, its limitations and successes, and how it prepares to achieve social inclusion. The work further shows how contemporary societies in both India and Europe deal with cultural diversity and engage with the tensions between tendencies towards homogenization and diversity.

This eclectic collection on what it is to be part of a global network will be of interest to scholars and researchers of South Asian studies, philosophy, sociology, culture studies and religion.

Christoph Wulf is Professor of Anthropology and Education and a member of the Interdisciplinary Centre for Historical Anthropology and the Graduate School 'InterArts' at Freie Universität Berlin.

**SOUTH ASIAN STUDIES / PHILOSOPHY / SOCIOLOGY /
CULTURE / RELIGION**

Cover image: The form of deity Jarandaye, Yelnje, District Mangalore, Karnataka, India, 1987. Photograph courtesy of Heidrun Brückner.

Cover design by Silika Mohapatra

Exclusively distributed by:



Manohar Publishers & Distributors
47/53/23, Ansari Road, Daryaganj,
New Delhi 110002 India
Tel.: 23289100, 23284848, 23275162
e-mail: manoharbooks@gmail.com
www.manoharbooks.com

an informa business

₹ 1495

ISBN 978-1-138-65863-8

ROUTLEDGE
Taylor & Francis Group
www.routledge.com

Routledge
2016
CUL, US, INDIA
[Signature]
Principal
Pachhunga University College
Aizawl : Mizoram



[Signature]
Coordinator
Quality Assurance
Internal Quality University
Pachhunga University College of Mizoram
(A constituent college of Mizoram)

First South Asia edition 2016
First published 2016
by Routledge
2 Park Square, Milton Park, Abingdon, Oxon OX14 4RN

and by Routledge
711 Third Avenue, New York, NY 10017

Routledge is an imprint of the Taylor & Francis Group, an informa business

© 2016 Christoph Wulf

The right of Christoph Wulf to be identified as the author of the editorial material, and of the authors for their individual chapters, has been asserted in accordance with sections 77 and 78 of the Copyright, Designs and Patents Act 1988.

All rights reserved. No part of this book may be reprinted or reproduced or utilised in any form or by any electronic, mechanical, or other means, now known or hereafter invented, including photocopying and recording, or in any information storage or retrieval system, without permission in writing from the publishers.

Trademark notice: Product or corporate names may be trademarks or registered trademarks, and are used only for identification and explanation without intent to infringe.

British Library Cataloguing-in-Publication Data
A catalogue record for this book is available from the British Library

Library of Congress Cataloging-in-Publication Data
A catalog record has been requested for this book.

ISBN: 978-1-138-66863-8
ISBN: 978-1-315-65846-9 (ebk)

Typeset in Goudy
by Apex CoVantage, LLC

Digitally Printed at Replika Press Pvt. Ltd.

For sale in India, Pakistan, Nepal, Bhutan, Bangladesh and Sri Lanka only.

CONTENTS

| | |
|----------------------|------|
| List of figures | ix |
| List of contributors | xii |
| Preface | xvii |

| | |
|--|---|
| Introduction: exploring alterity in a globalized world CHRISTOPH WULF | 1 |
|--|---|

| | |
|--|----|
| PART I Religion, philosophy and culture | 35 |
| 1 Kali's daughters: the tantric conception of the divine feminine as an emancipatory role model for Hindu women ARCHITA VAJPAYEE AND MATTHIAS SEMMLER | 37 |
| 2 The sacred cow and the ideal of <i>ahimsā</i> KRISTINA SCHMITZ-VALKENBERG | 59 |
| 3 Re-reading Gandhi for a reformed knowing: where to put that <i>Little Inner Voice</i> ? BHAKTI PATIL | 79 |
| 4 Education for a better world? Gandhi's ideas on education and their relevance in modern India THERESA VOLLMER | 94 |

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



Principal
Pachhunga University College
Aizawl : Mizoram

CONTENTS

| | |
|---|-----|
| PART IV | 401 |
| Homogenization versus diversity | |
| 23 Socialisation in the context of globalisation: how adolescents in India deal with global processes BENJAMIN WAGENER | 403 |
| 24 Power to the people: a long road to conscientization MARIA SCHNEIDER | 418 |
| 25 The new and young Indian middleclass: life between traditions and Western values CHRISTIANE MÜLLER | 434 |
| 26 Risk-taking and entrepreneurship in India: implications of social and cultural norms for poverty alleviation policies ALEXANDER J. WULF | 441 |
| 27 Thinking about climate change: young people from Ladakh responding to global warming – an explorative study SOFIA GETZIN | 454 |
| 28 Health promotion and diversity: theoretical reflections and personal experiences in everyday India MARKUS WIENCKE | 468 |
| 29 Absence of a presence: text, pedagogy and social anthropology in Northeast India WILLIAM N. SINGH | 480 |
| 30 Dispositions as properties: irrelevance of functional characterization S. K. ARUN MURTHI | 491 |
| Index | 507 |

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



Principal
Pachhunga University College
Aizawl: Mizoram

FIGURES

| | |
|--|-----|
| 6.1 Distribution of daily activities | 141 |
| 12.1 Family made of stone, Jayaprakash Narayan Park, Bangalore, Mathikere | 228 |
| 12.2 Man with newspaper and radio, Hanging Gardens, Mumbai | 229 |
| 12.3 Hedge animals, Botanical Gardens Lal Bagh, Bangalore (preferred version) | 230 |
| 12.4 Hedge animals, Botanical Gardens Lal Bagh, Bangalore (not preferred version) | 231 |
| 12.5 Approximate composition of Figure 12.3 | 232 |
| 12.6 Approximate composition of Figure 12.4 | 233 |
| 12.7 Vaishno Devi Temple, Ahmedabad (preferred version) | 234 |
| 12.8 Vaishno Devi Temple, Ahmedabad (not preferred version) | 234 |
| 12.9 Approximate composition of Figure 12.7 | 235 |
| 12.10 Approximate composition of Figure 12.8 | 236 |
| 12.11 Garden, Malabar Hill, Mumbai (preferred version) | 237 |
| 12.12 Approximate composition of Figure 12.11 | 237 |
| 12.13 Garden, Malabar Hill, Mumbai (not preferred version) | 238 |
| 12.14 Approximate composition of Figure 12.13 | 238 |
| 12.15 Botanical Gardens Lal Bagh, Bangalore | 241 |
| 12.16 Glass-house, Botanical Gardens Lal Bagh, Bangalore | 242 |
| 12.17 Lake, Botanical Gardens Lal Bagh, Bangalore | 242 |
| 12.18 Cows made of stone, Jayaprakash Narayan Park, Bangalore, Mathikere | 243 |
| 12.19 Children made of stone, Jayaprakash Narayan Park, Bangalore, Mathikere | 243 |
| 12.20 Children's playground, Garden, Malabar Hill, Mumbai | 244 |
| 12.21 Garden, Malabar Hill, Mumbai | 244 |

ABSENCE OF A PRESENCE

Text, pedagogy and social anthropology
in Northeast India

William N. Singh

The validity of a particular knowledge depends on territories, facts and social systems: thus knowledge has certain borders. Trees defy gravity by rising up to the sky. Like trees, social scientists need to rise above with a view to examining different cultures and interpreting different social practices: in this case, the diverse ways of living in Northeast India and their differences. This must be the hallmark of social anthropological research and pedagogy in Northeast India.

Higher education's main objective is to capture social phenomena both universal and local, revealing new forms of knowledge and making sense of such phenomena in pedagogy. Revealing mysteries and making the unfamiliar familiar to others is not just a task for ethnologists, but for all believers of science. Social scientists must question the validity of a Eurocentric understanding of social customs in order to reveal differently grounded understandings. The following will illuminate social anthropology in Northeast India from the point of view of practice and of pedagogy. It will formulate the innovations necessary to making the discipline relevant to the subjects it studies, as well as to international academic discourse.

Absence of a presence

Social anthropologists focus on different cultures and reveal different cultural codes. The interpretation of different social practices and beliefs defines social anthropology. However, the sociocultural thinking of Northeast India remains silent in mainstream academic texts. There is a fair amount of absence regarding the existing social realities of Northeast India in mainstream academia and institutions of higher learning. Northeast Indian

issues are not discussed in academia, reported on by mainstream Indian media, or examined in scholarly journals. This failure to regard the social anthropological realities of Northeast India is what is meant by 'absence of a presence'. Why is local knowledge absent in mainstream texts? Why does Northeast India remain unconsidered in anthropological observations?

The term 'absence of a presence' is intended to support the visibility of social anthropology in Northeast India across the continent. It will make the inaudible audible, unnoticed values noticeable, and most importantly, counter the fickle nature of epistemology. The absence of a Northeast Indian presence urges for the creation of innovative, more grounded forms of epistemology. This 'absence of a presence' is not just a body of concepts. It is also a form of methodology in pursuing more meaningful studies of Northeast India. It looks for narratives, biographies and facts of the social realities of Northeast Indian societies. It incorporates event-based, densely contextual and spatially located forms of social facts occurring in Northeast India into the pedagogy and research of higher educational institutions.

The social history of Northeast India differs from the rest of India as much as it varies among the different parts of the region. Northeast India has brought forth diverse forms of social movements, from armed secessionist movements and new forms of violence and punishments to environmental movements and the rapid growth of Non-Government Organizations (NGOs). The growth of social problems is pandemic. Social anthropological teachings and research cannot remain confined to concepts of tradition, culture, tribe, indigeneity, etc. It must expand its horizons and engage in analysing these new forms of movement and violence. New social facts with specific historicities have arisen from the changes in social structures of Northeast Indian societies. By studying the relevant relations among facts, moral problems, and the historiography of Northeast Indian society, anthropological exercises in Northeast India can become more relevant, more concrete and more appealing. The goal is to make pedagogy and the practice of social anthropology more fruitful for the inhabitants of Northeast India, as well as contribute to the global academic discourse.

In identifying this absence of a presence, what consolidates is the need to theorize local knowledge by systematizing its existing forms in Northeast India. Indigenous knowledge is dying out due to the hegemonic nature of scientificity and universalism in knowledge systems. Western science has propounded its own forms of knowledge with certain political agendas, but in the process has threatened indigenous forms of knowledge (see Cohn 1996, also see Nandy 1983). Thus, a comprehensive examination of local knowledge is still absent in texts of higher studies in Northeast India. Practitioners of social science avoid analysing local meaning structures if they merely follow the

Principal
Pachhunga University College
Aizawl : Mizoram



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