

Supporting Documents
for NAAC Self Study Report (SSR)
(3rd Cycle) Period: 2017-2022

| | |
|---------------------------------|---|
| Criterion 3: | Research, Innovations and Extension |
| Key Indicator:3.3 | Research Publication and Awards |
| Metric Number: 3.3.2 | Number of books and chapters in edited volumes/books published and papers published in national/ international conference proceedings per teacher during last five years |


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3.3.2.1. Total number of books and chapters in edited volumes/books published and papers in national/ international conference proceedings during the year 2017-18

| Name of the teacher | Title of the Book/ Book Chapter published | Name of the publisher | National/in ternational : ISBN/ISSN | Year of publication | Annexure |
|---------------------|--|---|-------------------------------------|---------------------|----------|
| Sarat Ch. Bhuyan | Innovation: A glorious journey Chapter: Understanding the methods of fishing among the Sarania Kacharis of Baksa District (BTAD), Assam | Community College, M. C. College, Barpeta | 978-9381998-20-5 | March, 2018 | 1 |

3.3.2.1. Total number of books and chapters in edited volumes/books published and papers in national/ international conference proceedings during the year 2018-19

| | | | | | |
|--------------|---|--------------------|-------------------|-------------|---|
| Harihar Deka | Book title: Terrorism in North-East India Chapter: Multifaceted Terrorism: An Overview | Young Publications | 978-81-939714-4-4 | April, 2019 | 2 |
|--------------|---|--------------------|-------------------|-------------|---|

3.3.2.1. Total number of books and chapters in edited volumes/books published and papers in national/ international conference proceedings during the year 2019-20


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|-------------|---|-----------------------------------|-----------------------|------------|---|
| Pummy Sinha | Book: Contemporary Issues in Assam Economy Chapter name: Does Education sector need reform in Assam for its economy to develop | Olympia Prakashan, Guwahati | 978-93- 87035-59-1 | June, 2020 | 3 |
|-------------|---|-----------------------------------|-----------------------|------------|---|

3.3.2.1. Total number of books and chapters in edited volumes/books published and papers in national/ international conference proceedings during the year 2020-21

| | | | | | |
|------------------------|---|---|-----------------------|------|---|
| Arjun Adhikari | Forest Resources of North-East India | EBH Publishers, India (National) | 978-93- 90434-69-5 | 2021 | 4 |
| Tridip Baruah | Crude Oil associated abiotic stresses on herbaceous plants | Eastern Book House (National) | 978-93- 90434-47-3 | 2021 | 5 |
| Parthapratim Choudhury | Law Relating to Human Rights and Environment | University Book House Pvt. Ltd, Jaipur, Rajasthan (National) | 978-81- 945288-0-7 | 2020 | 6 |
| Pratyush Purkayastha | B Sc PHYSICS | ABT Publication, Panbazar, Guwahati-1 (National) | 978-93- 89196-20-7 | 2020 | 7 |


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|--------------|--|---------|-------------------|------|---|
| Ramiza Hasan | Book: The Cultural Heritage of Meghalaya Chapter: Traditional healing system of the Garos | Manohar | 978-81-943521-2-9 | 2020 | 8 |
|--------------|--|---------|-------------------|------|---|

3.3.2.1. Total number of books and chapters in edited volumes/books published and papers in national/ international conference proceedings during the year 2021-22

| | | | | | |
|----------------|---|-----------------------------|----------------------------|------------|----|
| Nibedita Gogoi | Book: Biological Methods of nanomaterial synthesis and their applications. Chapter: Microbial Synthesis of Metal and Metal Oxide Nanoparticles: An Eco-Friendly Approach | SCIENG PUBLICATIONS | National 978-93-94766-01-3 | 2022 | 9 |
| Tridip Baruah | Applications of Garlic Oleoresins Name of the book: Handbook of Oleoresins | CRC Press, Taylor & Francis | 978-1-032-03002-9 | June, 2022 | 10 |
| Tridip Baruah | Recent Development in Plum Harvesting and Handling Name of the book: Handbook of Plum Fruit | CRC Press, Taylor & Francis | 978-1003-20544-9 | July, 2022 | 11 |
| Pummy Sinha | Economic Sustainability of Bamboo Industry in North-East India | Eureka Publications | 978-81-951936-8-4 | July, 2021 | 12 |


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| Arjun Adhikari | Forest Resources Book name: An Illustrated Geography of Assam | EBH Publishers, India | | 2022 | 13 |
| Arjun Adhikari | Algae: A potential tool for environmental monitoring Book Name: Biodiversity and Climate Change | Mahavir Publications | 978-93-94095-44-1 | 2022 | 14 |
| Sarat Chandra Bhuyan | Abayabik Nrittwar Chaneki | Lucky Book Stall, Barpeta | 978-81-953344-7-6 | 2021 | 15 |
| Sarat Chandra Bhuyan | Samajik Nrittwar Ruprekha | Lucky Book Stall, Barpeta | 978-81-953344-9-0 | 2022 | 16 |
| Gokul Gogoi | Satyendra Nath Sharmar Sahityo Xomalosona: Axomiya Kahini Kabyor Probah gronthor nirbasito path 'Adhunik Kabyor Unmekhor Adharot' Book name: Glimpses of Thoughts | Publication cell of North Bank College, Ghilamara | 978-93-91953-71-3 | 2022 | 17 |
| Jaydev Mandal | The Struggle of Existence for Scavenging Greater Adjutants Leptoptilos dubius Book name: Imperiled The Encyclopedia of conservation | Elsevier | 978-01282-1139-7 | 2022 | 18 |


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|------------------|---|-----------------------------------|-------------------|------|----|
| Chiranjit Barua | Book: Aquatic Biology | Surya Prakash | 978-93-91338-36-7 | 2022 | 19 |
| Jayanta Deka | Book: Aquatic Biology | Surya Prakash | 978-93-91338-36-7 | 2022 | 20 |
| Runu Swargiyari | Book: Aquatic Biology | Surya Prakash | 978-93-91338-36-7 | 2022 | 21 |
| Himani Ramchiary | Book: Handbook of Tribal Politics in India Chapter name: Transitional Political Environment: Bodos and Tribal Politics in Assam | SAGE Publications India Pvt. Ltd. | 978-93-5388-458-1 | 2021 | 22 |


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INNOVATION

A GLORIOUS JOURNEY


Proceeding of National Seminar on Fisheries & Fish Breeding



Editor: Dr. Ranjit Hazarika, Saurabh Kr. Sarma



ISBN: 978-9381998-20-5


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A glorious journey

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on

Fisheries & Fish Breeding

26th and 27th March, 2018

Assam, India

Community College, M.C. College, Barpeta


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UNDERSTANDING THE METHODS OF FISHING AMONG THE SARANIA KACHARIS OF BAKSA DISTRICT (BTAD), ASSAM

Sarat Chandra Bhuyan
Associate professor
H.O.D (Dept. of Anthropology
M.C. College, Barpeta

INTRODUCTION:

Fishing is one of the means of procuring food adopted both in the prehistoric and the modern period. In most parts of the modern world fishing is carried on conjunction with agriculture. Now much stress has been given on pisciculture by the governments.

Although many people live near the sea shore, rivers and lakes and employ themselves in fishing, they do not depend upon fish for their livelihood. The sell or exchange fish with other commodities from other communities required for their living. For some fish is the only item of food during a specific period of the year. For remaining period they use other items for food. Some Red Indians live near the sea shore for a period during the year and use fish as their staple food. For the remaining period they shift to a place off the shore and live by hunting. In India also fish is used extensively by many people a main item of food.

Fishing may be of three kinds (i) Shallow water fishing (ii) Mid-Water fishing (iii) Deep-water fishing. Deep water fishing is undertaken generally in seas and Shallow water and Mid-water fishing in lakes, streams, rivers, flood water etc.

METHODS OF FISHING:

Fishing communities use different method for catching fishes from ponds, lakes, streams, rivers and seas. Among the Sarania Kacharis, numerous devices are found to be employed in fishing operations. They vary from region to region. There are seasonal variations also.


Both community and individuals fishing are found to be undertaken by the Sarania Kacharis. Men generally resort to fishing but women also are found to take part in it. No definite season is set apart for fishing.

Following are the methods of fishing found among the Sarania Kacharis of Baksa District, Assam.

a) **Fishing without appliance:** Fish is often caught with the bare hand. But this method can not bring out abundant supply of fish.

b) **Fishing by transfixing:** Both single headed and multi headed fishing spears are employed for transfixing fish. These implements are hurled at fish that are pierced through and killed. Both individual and community fishing are undertaken with these implements. Boats are also used for this purpose.

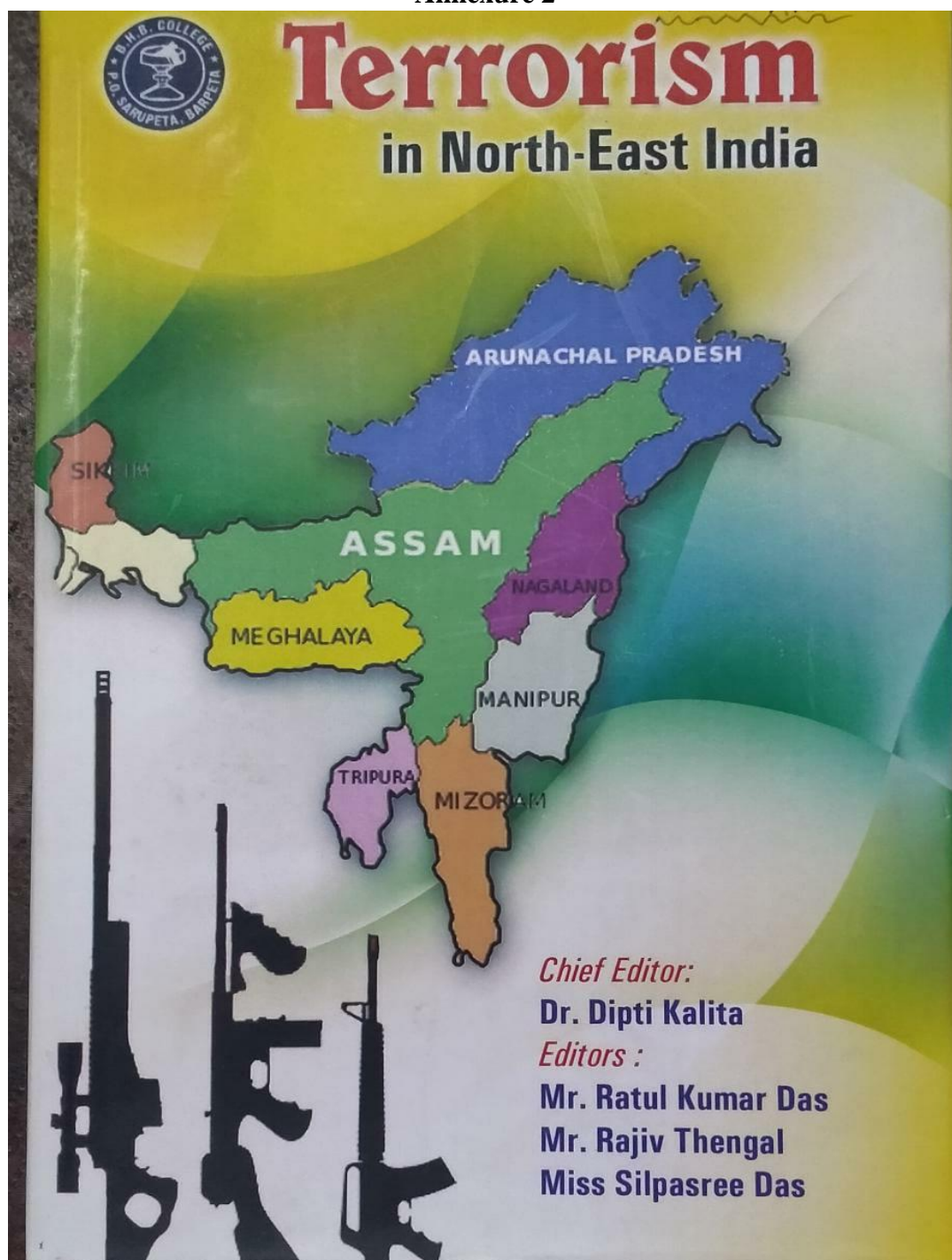
Innovation a glorious journey / 89


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Annexure 2



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Terrorism in North-East India: A book which comprises of seminar papers and research articles on terrorism written by teachers of different colleges of Assam, Research Scholars and students, edited by Dr. Dipti Kalita, Ratul Kr. Das, Rajiv Thengal and Silpasree Das published by Young Publication, Simlaguri, Barpeta.

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Multifaceted Terrorism: An Overview


Harihar Deka

*Asst. Professor, M. C. College,
Barpeta, Assam*

1. Introduction:

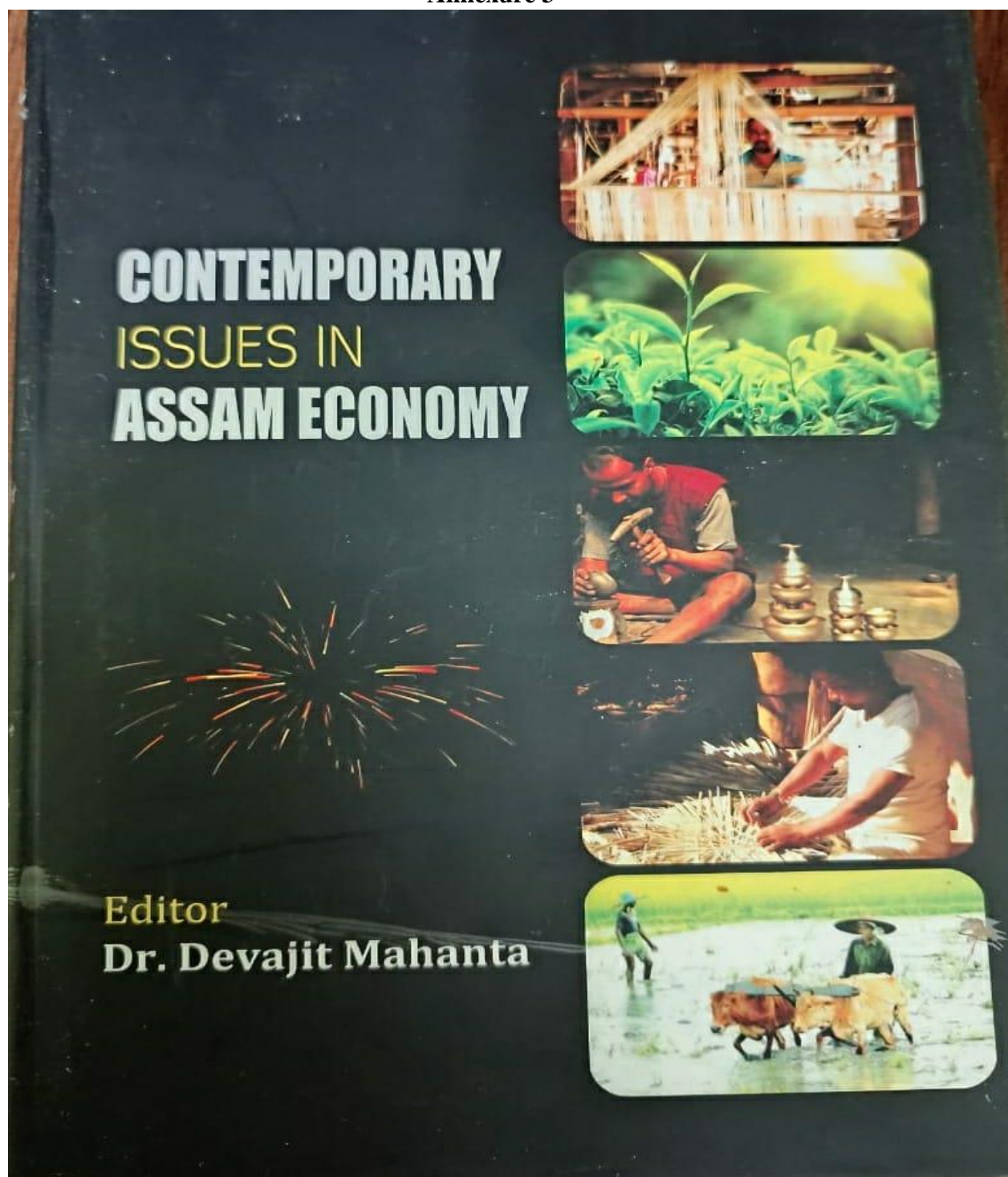
The word 'terrorism' does not have a definite meaning accepted by all. It is very controversial in its usage and connotation. The words insurgency, revolution, intimidation, extremism etc. are very often used to replace the word terrorism or sometimes these are used interchangeably. Still, terrorism is termed to be an organized system of intimidation. It is defined as violent behavior designed to generate fear in the community for political purposes. The most widely accepted definition of terrorism was given by the Central Intelligence Agency (CIA) of the U.S.A. in 1980 which read as "the threat or use of violence for political purposes by individuals or groups whether acting for or in opposition, when such actions are intended to shock, stun or intimidate a target group wider than the immediate victims." Although the aims and objectives of terrorism and insurgency are almost the same but their strategies and methodology may be different from each other. The distinction between terrorism and insurgency remains in the fact that an insurgency wins the support of a large section of the local people while a terrorist need not have to win such support. S.N. Saxena has quoted that a terrorist may or may not be a national of the country in which he operates. But an insurgent is a national of a country which is in revolt against the constitutional government of his country and fights to overthrow the government by guerilla warfare. Terrorism in India as viewed by many writers is a creation of politics. India has been facing multi-dimensional terrorism


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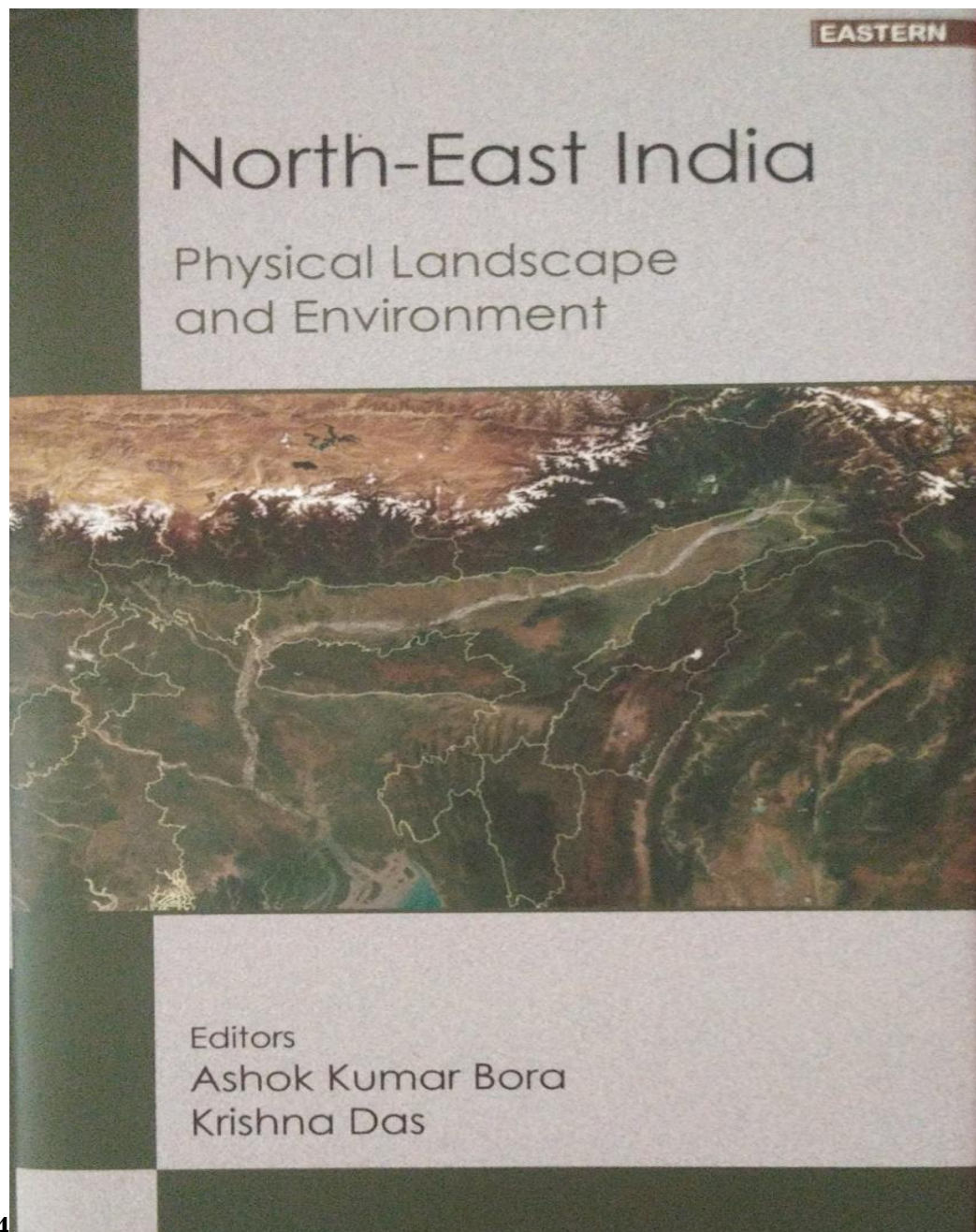
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Ashok Kumar Bora & Krishna Das

North-East India: Physical Landscape and Environment

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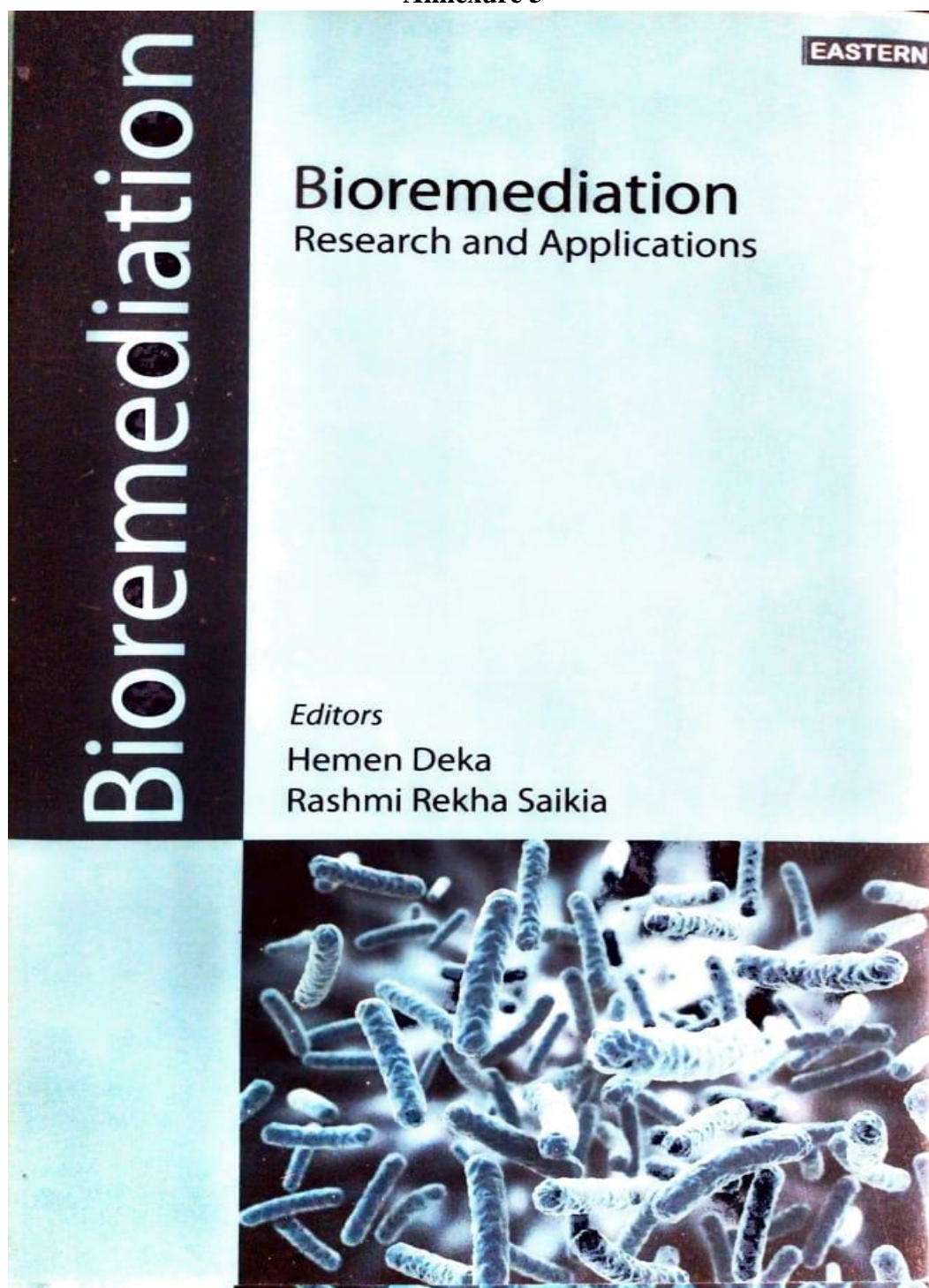

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Hemen Deka & Rashmi Rekha Saikia
Bioremediation: Research and Applications


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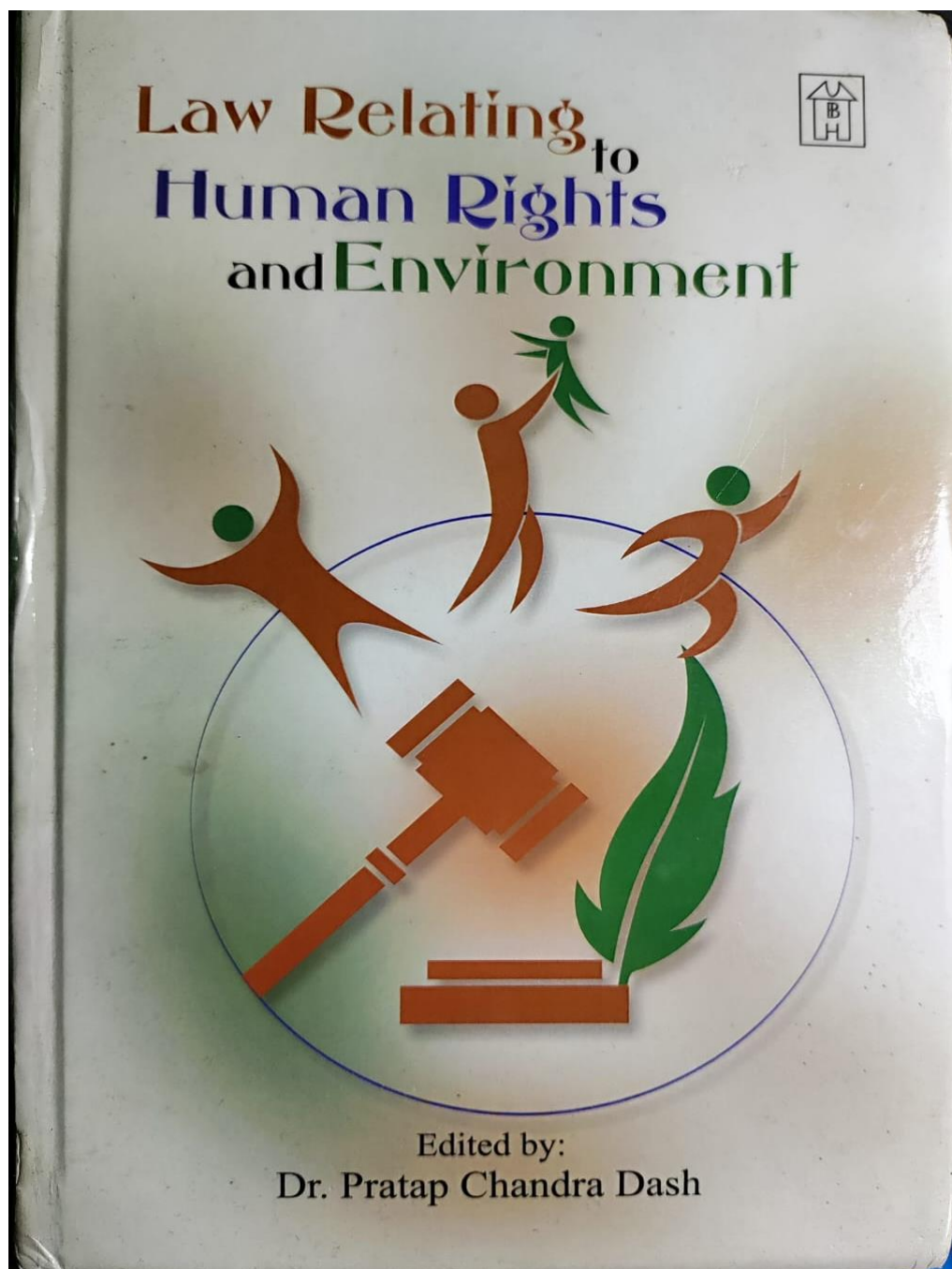
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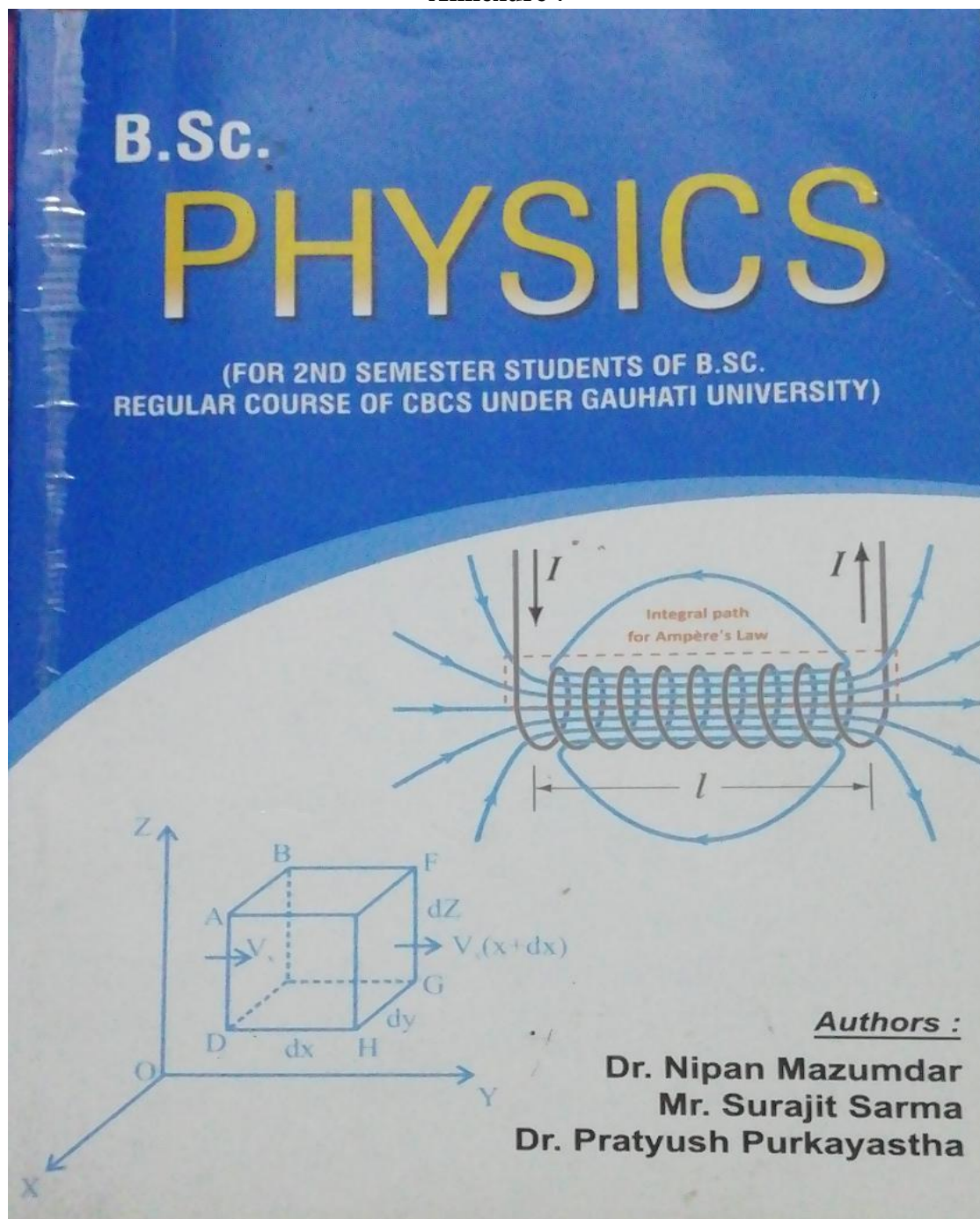
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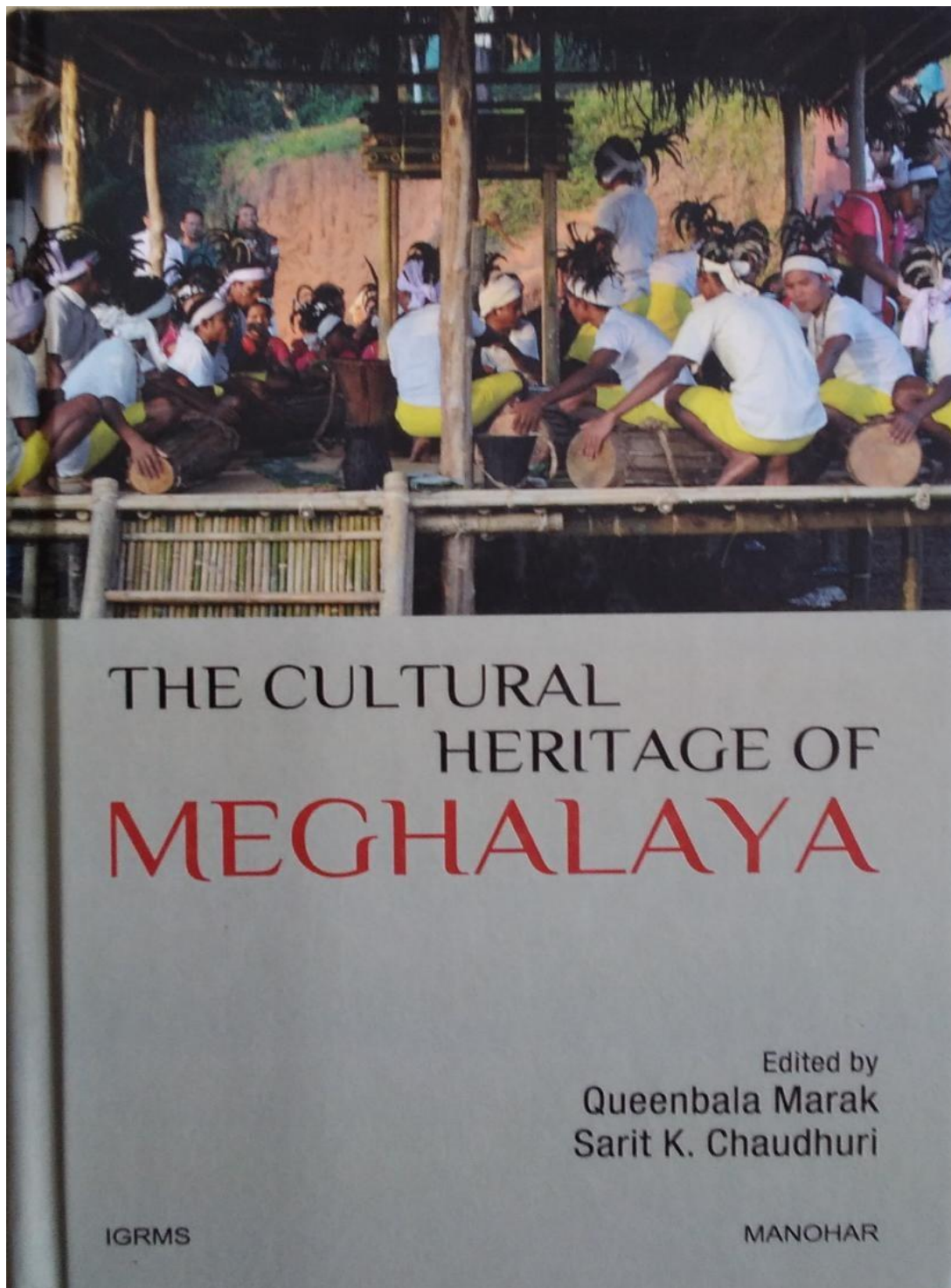
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Three of the contributors are no more with us – *Manoranjana Ray Hajong*, *Dhirendra N. Majumdar* and *Abdullah Ali Ashraf* who passed away before the book took final shape. We are grateful to Hajong's son (his co-author in this volume) and Majumdar's daughter *Mrs Giribala Momin* who gave permission to publish the concerned chapters.

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Annexure 9

Chapter

2

**Microbial Synthesis of Metal and Metal Oxide
Nanoparticles: An Eco-Friendly
Approach**

DR. NIBEDITA GOGOI

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ABSTRACT

Microbe mediated synthesis of nanoparticles has been emerging as an effective way for synthesizing metal and metal oxide nanoparticle in past few years due to their cost effectiveness, environmentally benign process and applicability of the synthesized nanoparticles in wide range of fields. In this context, the importance of microbial synthesis of nanoparticles has been highlighted. The article is basically focused on the synthesis of nanoparticles using microorganisms such as fungi, bacteria, algae and yeast.

KEYWORDS: Nanoparticle synthesis, microorganism, metal, metal oxide

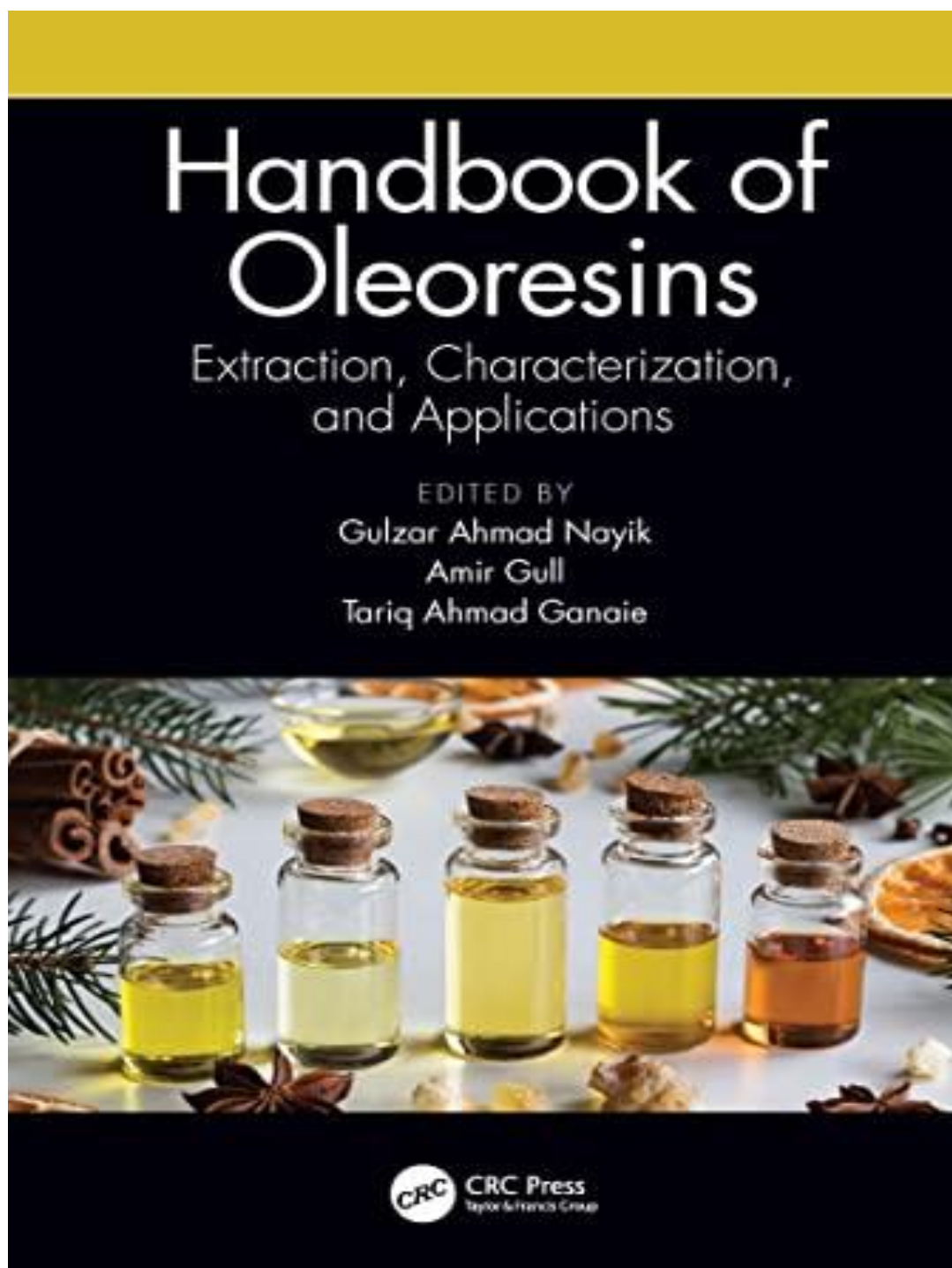
INTRODUCTION

In recent years, nanotechnology has found its wide range of applications in numerous sectors such as agriculture, pharmaceutical, energy, environmental, cosmetic, electronic etc due to its huge potentiality. Synthesis of nanomaterials is one of the most important aspects of nanotechnology. These nanomaterials may exist in different geometric forms such as plates, sheets, tubes, wires and particles. While comparing with their bulk scale counterpart, it is found that nano materials differ from them in terms of chemical, physical and other relevant properties which arises due to their extremely small size, shape and size distribution. Among these various forms of nanomaterials, nanoparticles with size 1-100 nm range are significant due to their wide range of applications.¹ Nanomaterials can be synthesized by conventional chemical approaches as well as from bioresource based green synthesis methods. However, the later is emerging as a predominant one over the former one due to its green chemistry approaches. These green methods use different bioresource based materials such as microorganisms (bacteria, actinomycetes, fungi and algae), enzymes, and plants or plant extracts. Now a days, the synthesis of metal and metal oxide nanoparticles using microbes has been emerged as an interesting and potential area of nano biotechnology which may have significant role in the field of nanomedicine.² The synthesis of nanoparticles using biological processes has many advantages such as low cost, greater


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ABSTRACT



Garlic oleoresin can be extracted from trodden bulbs of *Allium sativum* and is very popular for its obnoxious scent and volatility. A high amount of phenotypic variation is observed in the lineage of garlic which contributes to the diversity of garlic oleoresin. *Allium longicuspis* is considered as the wild type variant of garlic that originated from Central Asia and two varieties that evolved from *A. longicuspis* are *Allium ophioscorodon* and *A. sativum*. It is widely used as a flavouring agent. The phytochemical content is responsible for its high medicinal value that plays a major role in curing diabetes, cancer, obesity, Alzheimer's. Garlic oleoresin and its associated products can provide resistance against fungus, bacteria, viruses, and many other microbes. The extraction of these phytochemicals from garlic is a sensitive and very essential practice. Due to the large genomic size, mapping of the DNA sequence is very competitive, but new biotechnological tools are being introduced to mark the sequences. This chapter focuses on the origin, distribution of garlic and the extraction, characterization of isolated compounds along with its economic importance with special reference to the medicinal values of garlic oleoresin.

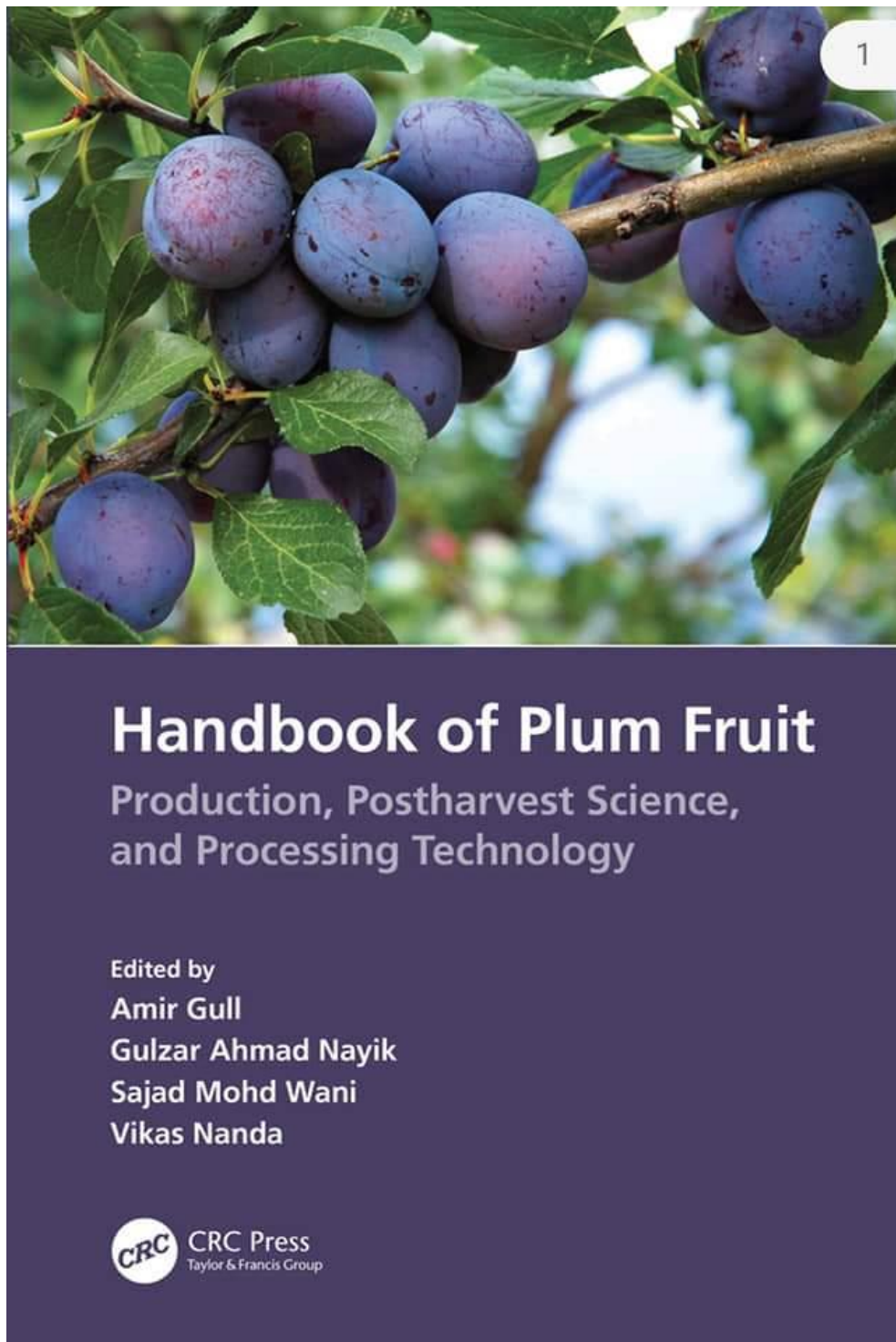
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7 Recent Development in Plum Harvesting and Handling

*Tridip Boruah¹, Debasish Das¹, Gargee Dey¹ and
Imtiyaz Ahmad Malik²*

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² Agriculture Production & Farmers Welfare
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Forest Resources

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Juthika Dihingia
Jyotishmita Dutta
Arjun Adhikari
Souravjyoti Borah*

Introduction

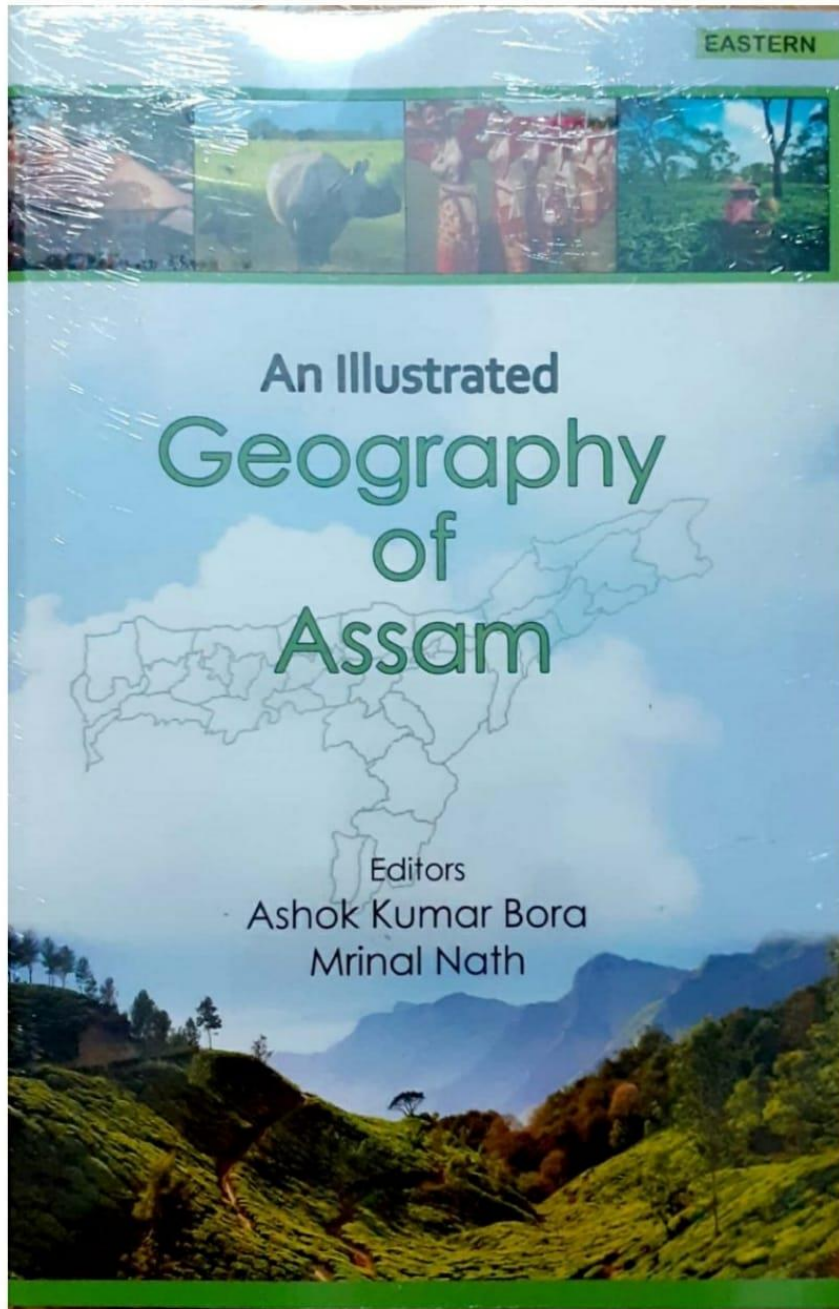
Assam, the gateway to North-East India lies between $24^{\circ}8'6''$ and $27^{\circ}58'8''$ North latitudes and $89^{\circ}40'48''$ and $96^{\circ}1'22''$ East longitudes with a geographical area of 78,438 sq km which accounts for 2.39 per cent of country's total geographical area (SFR 2019). Assam is situated towards the south of the Eastern Himalayas with two river valleys - the Brahmaputra and Barak. It is a land of enchanting aesthetic beauty with lush green hills, pastures, tea gardens, river plains and wilderness. The state has around 28326.51 sq km of forested area which form 36.11% of its geographical area. The vegetation of Assam is primarily of tropical type which can be further classified into several classes, types and divisions.

The sub-tropical monsoon climate with average rainfall ranging between 1,500 mm to 3,800 mm and the annual temperature of 5°C to 32°C make these forest areas ideal habitats for diverse flora and fauna. The forest areas of Assam are the meeting grounds of Indo-Tibetan and Burmese flora and fauna. It is estimated that the region houses 4,273 species of vascular plants of which 3,895 species of angiosperms, 23 species of gymnosperms, 355 species of pteridophytes, 293 species of orchids, 10 species of canes (Chowdhury *et al.*, 2005), 958 odd species of birds (including 208 migratory birds), 195 species of mammals, 14


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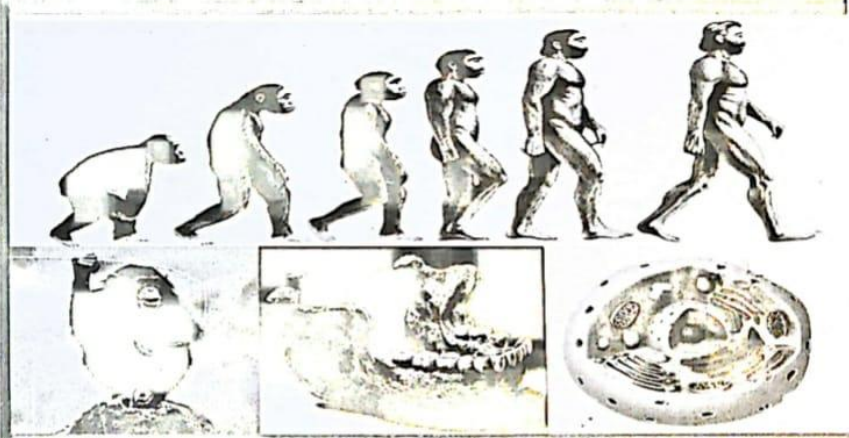

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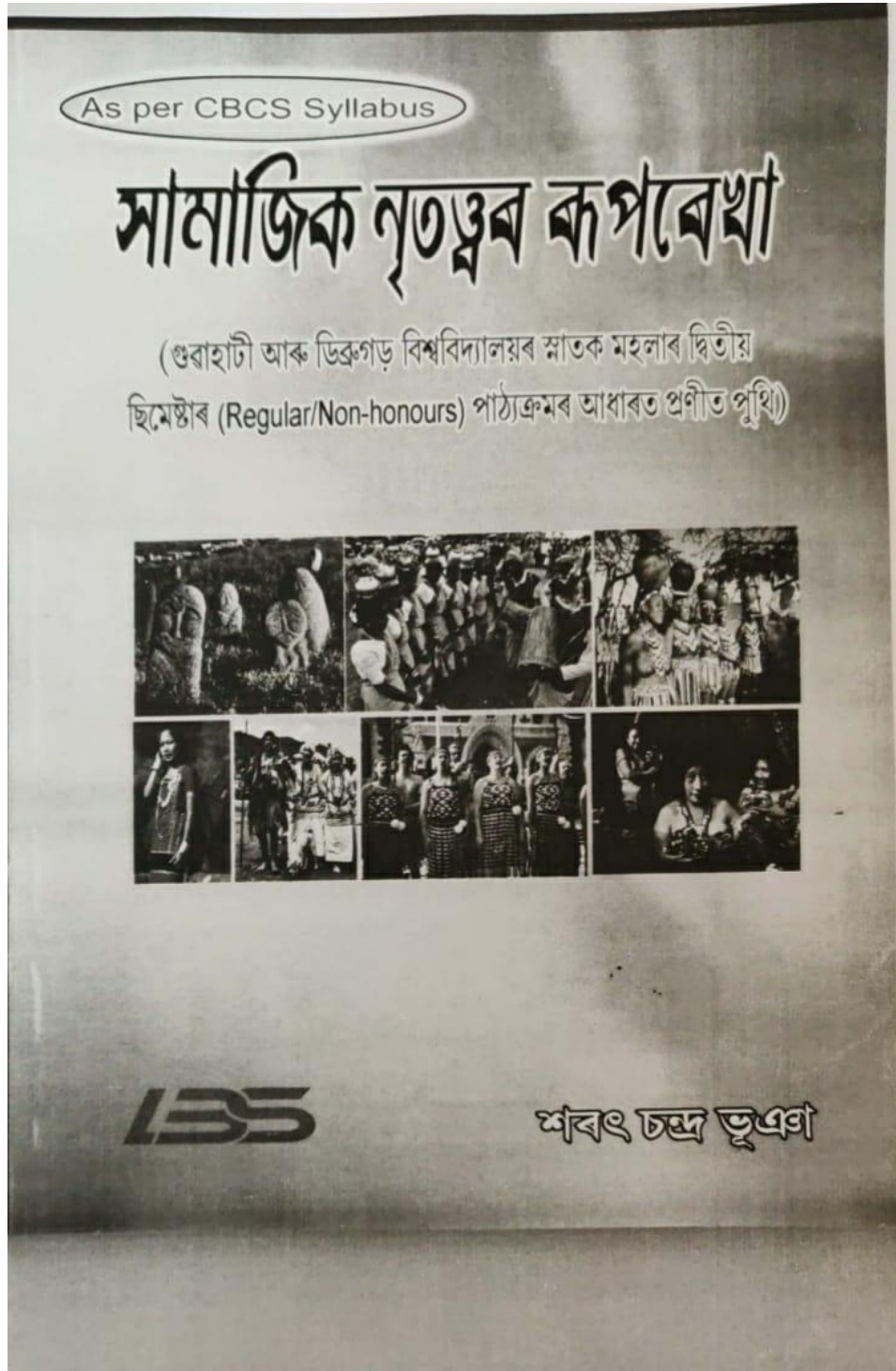



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সত্যেন্দ্ৰনাথ শৰ্মাৰ সাহিত্য-সমালোচনা :
'অসমীয়া কাহিনী কাব্যৰ প্ৰবাহ'
গ্ৰন্থৰ নিৰ্বাচিত পাঠ 'আধুনিক কাব্যৰ উন্মেষ'ৰ আধাৰত

ড° গকুল গগৈ

উনবিংশ শতিকাৰ মাজভাগৰপৰা আৰম্ভ হোৱা অসমীয়া সমালোচনা সাহিত্যক বিশেষভাৱে সমৃদ্ধ কৰা এগৰাকী অগ্ৰগণ্য সমালোচক হ'ল সত্যেন্দ্ৰনাথ শৰ্মা। নিৰন্তৰ গৱেষণা আৰু অধ্যয়নৰ দ্বাৰা তেখেতে অসমীয়া সাহিত্যৰ বিভিন্ন দিশ সামৰি একাধিক সমালোচনামূলক গ্ৰন্থ ৰচনা কৰিছে। তেখেতৰ 'অসমীয়া সাহিত্যৰ সমীক্ষাত্মক ইতিবৃত্ত' (১৯৮৩) শীৰ্ষক মূল্যবান সাহিত্যৰ বুৰঞ্জী পুথিখনত একো একোটা সাহিত্যিক ভাবাদৰ্শক কেন্দ্ৰ কৰি গঢ়ি উঠা অসমীয়া সাহিত্যৰাজিক উদ্ধাৰ কৰি সেইসমূহক প্ৰণালীবদ্ধভাৱে বিভাজন কৰি দেখুৱাইছে আৰু সিবোৰৰ সুচিন্তিত বিচাৰ-বিশ্লেষণৰ জৰিয়তে তেখেতে নিজস্ব মতামত প্ৰদান কৰিছে। তদুপৰি উপন্যাস, নাটক আদি সাহিত্যৰ ভিন্ন ৰূপকৰ্ম অনুসৰিও তেখেতে ক্ৰমে 'অসমীয়া উপন্যাসৰ ভূমিকা' (১৯৬৫) 'অসমীয়া উপন্যাসৰ গতিধাৰা' (১৯৭৭), 'অসমীয়া নাট্য সাহিত্য' (১৯৬২) আদিকৈ একাধিক বুৰঞ্জী সাহিত্য তথা সমালোচনাত্মক গ্ৰন্থ প্ৰণয়নৰ জৰিয়তে শৃংখলাবদ্ধ আৰু প্ৰণালীবদ্ধ অধ্যয়নৰ স্বাক্ষৰ অসমীয়া সাহিত্যানুগাৰীৰ আগত দাঙি ধৰিছে। অৱশ্যে এনেবোৰ গ্ৰন্থত বিশেষ একোটা সাহিত্যকৃতিৰ বিস্তৃত আৰু বিশদ বিশ্লেষণৰ পৰিৱৰ্তে একোটা যুগক বা আন্দোলনক প্ৰভাৱিত কৰা চিন্তাধাৰা, যুগ পৰিৱৰ্তনৰ ঐতিহাসিক কাৰণ, পৰম্পৰা, এটা যুগৰ সাহিত্য-চিন্তা আদিয়েহে প্ৰাধান্য পাইছে। এই গ্ৰন্থসমূহৰ মাজেৰে লেখক শৰ্মাৰ পাণ্ডিত্যপূৰ্ণ আৰু তীক্ষ্ণ সমালোচনাত্মক দৃষ্টিভংগীৰ গভীৰতা স্পষ্টকৈ প্ৰতিফলন ঘটিছে।

অসমীয়া সাহিত্যৰ ইতিহাসত কাব্য সাহিত্যৰ অন্তৰ্গতভাৱে কাহিনী-কাব্যৰ এক সমৃদ্ধিশালী ঐতিহ্য আছে। চতুৰ্দশ শতিকাৰ পৰা পৰিদৃষ্ট হোৱা এই শ্ৰেণীৰ কাব্যৰ গতিধাৰা স্বাধীনতা লাভৰ পৰৱৰ্তী সময়লৈকে ক্ষীণভাৱে হ'লেও প্ৰবাহিত

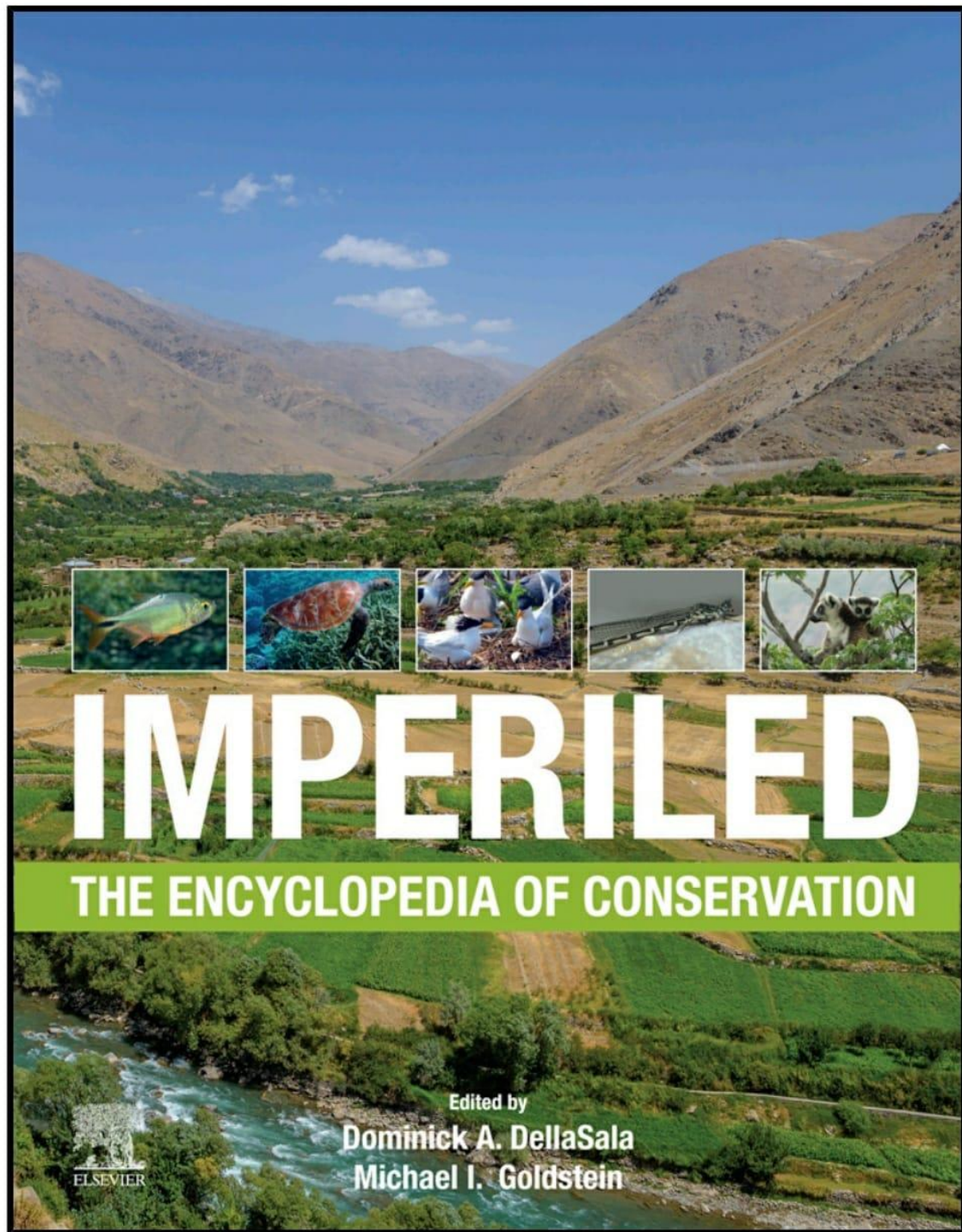
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The Struggle of Existence for Scavenging Greater Adjutants *Leptoptilos dubius*

Jaydev Mandal^a, Rupam Bhaduri^b, and Narayan Sharma^c, ^a Department of Zoology, Madhab Choudhury College, Barpeta, Assam, India; ^b Centre for the Environment, Indian Institute of Technology Guwahati, Kamrup, Assam, India; and ^c Department of Environmental Biology and Wildlife Sciences, Cotton University, Guwahati, Assam, India

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Abstract

Greater Adjutant *Leptoptilos dubius* are large birds measuring approximately 1.5 m in height with long thick beaks. The species is currently distributed in Brahmaputra floodplains (Assam, India), Gangetic plains (Bhagalpur, Bihar, India), and in Cambodia. The global population of the species is estimated to be around 1200–1800 individuals, two-thirds of which are found in the Brahmaputra valley. *L. dubius* prefers tall canopy trees for nesting. They are efficient scavengers and occasional feeders, especially during the breeding season. Multiple anthropogenic threats exist, the largest of which are associated with toxic compounds at garbage dumps. Here we describe an example of the impacts at the Guwahati garbage dump in Brahmaputra valley, and how a solid-waste management system within the urban city of Guwahati can itself reduce the risk of health hazards.

Introduction

India has six resident stork species: Asian Openbill *Anastomus oscitans*, Asian Woollyneck *Ciconia episcopus*, Black-necked Stork *Ephipiorhynchus asiaticus*, Painted Stork *Mycteria leucocephala*, Lesser Adjutant *Leptoptilos javanicus*, and Greater Adjutant *Leptoptilos dubius*; and two winter visitors: Black Stork *Ciconia nigra* and White Stork *Ciconia ciconia* (Ali and Ripley, 1983). *A. oscitans* and *C. episcopus* are well spread throughout the country, except at higher altitudes of the Himalayas. *M. leucocephala*, more common in western, central, and southern parts though spreads to eastern region during winter. *E. asiaticus* though confined to parts of central and north-eastern regions, they occur to western region (Gujarat). *L. javanicus* are found in parts of the northern and southern regions although they are mostly confined to northeastern states. On the other hand, Greater Adjutant are known to occur primarily in the Brahmaputra floodplains (Assam) and Gangetic (Bhagalpur, Bihar) plains of India (Fig. 1). The global population of the Greater Adjutant is estimated at 1200–1800 individuals, of which the Brahmaputra valley has 650–800 individuals (Birdlife International, 2021).

Despite the similarity in the preferences of feeding and nesting habitats of Storks, there are several ecological and behavioral differences among all of them. For instance, *M. leucocephala* breeds in heronries with other waterbirds (Urft, 2010), while *A. oscitans* breeds in large mono-specific colonies (Kahl, 1970, 1972a; Urft et al., 2005). Some form lifelong pairs and are monogamous, while others may be polygamous (Verner, 1964; Beehler, 1983; Korpimäki, 1988; Black, 1996; Reichard and Boesch, 2003). Some breed solitary while others breed in colonies (van Vessem and Draulans, 1986; Arroyo et al., 2001; Schreiber and Burger, 2002; Ebensperger et al., 2007). Some form social groups, the 'cooperative breeder' in which one or more members provide care to young (Stacey and Koenig, 1990).

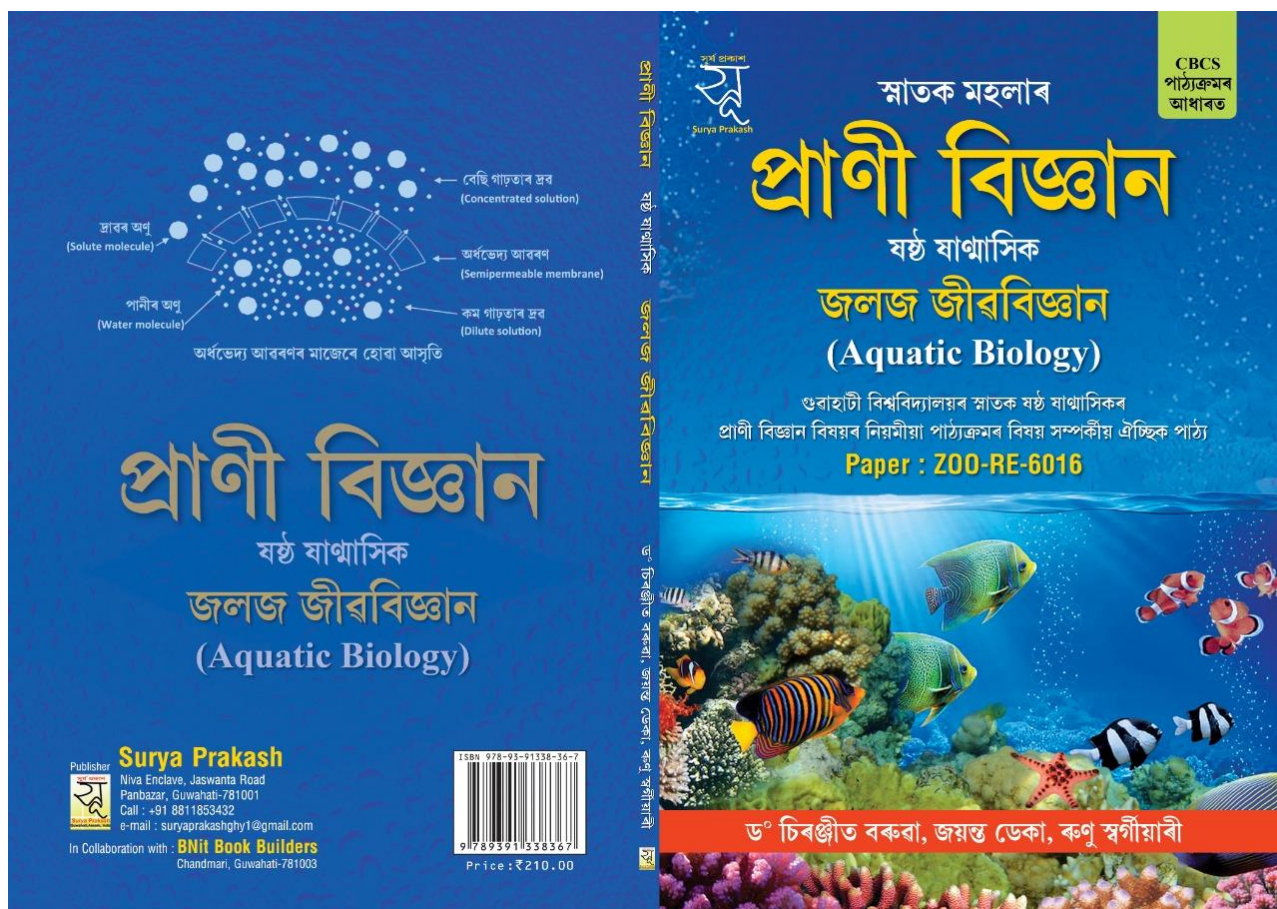
The breeding behavior of *L. dubius* is reported to be similar with its congener the Marabou Stork *L. crumenifer* of South Africa, and differs only in certain aspects of plumage structure, and in the sequence of 'Up-Down' display (Kahl, 1972b; Saikia and Bhattacharjee, 1996; Singha, 1998; Singha et al., 2003; Mandal, 2018). Post-breeding, *L. dubius* move to various garbage dumps in cities and towns for feeding on rubbish, juveniles after fledging also move directly to these areas (Saikia, 1995; Mandal, 2018). The non-breeding individuals mostly remain throughout the year in areas with small wetlands adjacent to waste disposal sites (Saikia, 1995; Mandal, 2018). The breeding season starts after monsoon, with the onset of dry season when there is an increase in prey density in drying out agricultural lands, pools, and wetlands in the Brahmaputra valley (Saikia, 1995; Saikia and Bhattacharjee, 1996; Singha, 1998; Singha et al., 2003; Mandal, 2018). The nests are constructed using twigs and sticks on horizontal branches of tall trees on rocky cliffs along the bank of Attaran river (Jerdon, 1864; Bingham, 1878; Oates, 1878). Later Saikia (1995) and Singha (1998) individually studied breeding biology and behavior of the species in the Brahmaputra valley suggesting resemblance of most of the behavior with Marabou as described by Kahl (1972b). The distribution pattern of *L. dubius* in Brahmaputra valley, showed seasonal variation following the breeding cycle of the species and climatic conditions in accordance with food availability

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Annexure 19, 20, 21



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