Home > Advances in Analytics and Applications > Chapter

### OLS: Is That So Useless for Regression with Categorical Data?

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Atanu Biswas, Samarjit Das & Soumyadeep Das 🖂

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### Abstract

Binary/categorical response data abound in many application areas poses a unique problem; OLS-based model may lead to negative estimate for probability of a particular

### Anthropogenic wastes as Nest Materials of Birds and its effect on Birds' Life

### Srinjoy Das<sup>1</sup> and Biswatosh Ghosh<sup>2</sup>\*

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### Abstract

Every day millions of tons of anthropogenic wastes are produced by human which cause many bad impacts on our ecosystem and biodiversity. Birds are an important part of our biodiversity. As a result, they are also affected by anthropogenic waste pollution. They start using anthropogenic wastes as nest building materials as because of un-scientific urbanization and lack of proper disposal of such wastes. That too causes many harmful effects in birds and as well as affect other animal and human populations. In a recent study, we found different anthropogenic waste materials used by different species of birds like nylon threads, hard plastic, plastic bag, fishing line, medical waste, synthetic cotton, pieces of cloth, bottle caps, plastic straw, pen, different type of plastic rope, plastic strips, balloon, and more interestingly face mask which was regularly used during covid pandemic and also other things.

### **Key Words:**

Anthropogenic wastes, nest, bird, pollution, ecosystem

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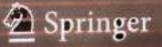
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Tarik Mitran Ram Swaroop Meena Abhishek Chakraborty *Editors* 

# Geospatial Technologies for Crops and Soils





### Chapter 14 Assessment of Urban Sprawl Impact on Agricultural Land Use Using Geospatial Techniques

Kuntal Ganguly, Shewli Shabnam, Srabani Das, and Tarik Mitran

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T. Mitran et al. (eds.), Geospatial Technologies for Crops and Soils, https://doi.org/10.1007/978-981-15-6864-0\_14 489

Abstract The number of city dwellers around the world is expected to increase about 2.5 billion between 2018 and 2050. This increment will lead to urban sprawl which is associated with destruction of agricultural lands, loss of fertile soils and reduction in food production. Already around 3-4% reduction of global crop production has been reported, in which Africa tops the list with 9% loss followed by Asia (5-6%). Hence, impact assessment of urban sprawl on agricultural land uses at both regional and global scale is required. The data from global satellite imageries and new geospatial technologies can play a crucial role in facilitating the impact assessments with precision and regularity. Remote Sensing (RS) and Geographic Information System (GIS) coupled with various modelling techniques have been proved to be an efficient tool for the analysis of land use/land cover (LULC). Such modelling approaches can be utilized to explore potential future impact of urban expansion on croplands and evaluate potential trade-offs between different land demands and thus are helpful for informed decision-making. This chapter emphasizes on the usage of RS and GIS to address the impact of urbanization on agricultural lands.

Keywords Cropland · Global land use change · Geographic information system · Land use/land cover · Remote sensing · Spatial statistics · Urban expansion

### Abbreviations

ANN	Artificial Neural Network
CAPRI	Common Agricultural Policy Regionalized Impact model
CLUE	Conversion of Land Use and its Effects modelling framework
ETM	Enhanced Thematic Mapper
GDP	Gross Domestic Product
GILA	Greater Ibadan-Lagos-Accra
GIS	Geographic Information System
HAF	Harvested Area Fraction
IAMs	Integrated Assessment Models
IRS	Indian Remote Sensing Satellite
ISRO	Indian Space Research Organization
KH	Key Hole
Landsat	Land Satellite
LandSHIFT	Land Simulation to Harmonize and Integrate Freshwater Availability
	and the Terrestrial Environment
LST	Land Surface Temperatures
LULC	Land Use and Land Cover
LULCC	Land Use and Land Cover Change
LUS	Land Use Systems
LUSD	Land Use Scenario Dynamics
MA	Metropolis Area
Mha	Million Hectares



## RECONCEPTUALIZING TEACHING AND LEARNING

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### ADOLESCENTS STRESS IN EVERYDAY LIFE : RETHINKING TEACHERS ROLE SHIKHA ROY,

### ASSISTANT PROFESSOR, BIDHANNAGAR COLLEGE (AFFILIATED TO WEST BENGAL STATE UNIVERSITY), E-mail: royshikhadidi@gmail.com

### ABSTRACT :

stress is uncertain and unavoidable also. The present study is conducted to know teachers experiences of adolescents stress in everyday life. The objectives of this study is to aware the teachers about adolescents stress and the cause and effects of stress among students. In modern days students are facing various problems and challenges. They experience various stress in day to day life. To solve these problems and challenges teachers can help them by organizing different types of curricular and co curricular activities. This study will help the teachers, parents and students to cope with stress.

### **KEYWORDS:** Adolescents, Stress

### INTRODUCTION

Today stress among people as well as student is constantly increasing. It is one of the major problems that everyone is facing in day to day life. Stress is the main reason of maladjusted pattern of behavior. In the high technology world the academic stress constantly increasing. Due to the increased pressure mental disbalance is generally observed. Stress among students is increasing day by day. At school there is a lot of academic pressure. There are so many responsibilities to fulfill student's studies. They want to get good grade for their better future. Students spend much time at school. So the teachers aware about their behavior, attitude and stressful events. As the teachers aware about their problems so the teacher might help and support them to cope with stress.

### Reconceptual

### CONCEPT

Stress is de disparity bet needs. Selye Stress affect move us for

### OBJECTIV

- To aware
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### REVIEW O

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## SUSTAINABLE MANAGEMENT OF AQUATIC RESOURCES

## PART-II

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## **48**

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## A STUDY ON THE EFFECTS OF ALPHA-CYPERMETHRIN TO FISH, CYPRINUS CARPIO (LINNAEUS, 1758)

### Suman Bej and Nimai Chandra Saha

### ABSTRACT

The study was done on the actile towards of alpha-sypermathem to fish. Copromis corptio. The behavioral changes of fish were also recorded during the study, 24, 48, 72 and 96 h UC 50 values of alpha-sypermethrm to Cypsions corptio were 15, 13, 10 and 8 agit respectively. A significant variation (p+0.05) between mortality rate of fish and concentrations of the test chemical at all the variation (p+0.05) between mortality rate of fish and concentrations of the test chemical at all the variation (p+0.05) between mortality rate of fish and concentrations of the test chemical at all the variation (p+0.05) between mortality rate of fish and concentrations of the test chemical at all the superinformative (24, 48, 72 and 96 b) was found. The mortality rate of fish at 24h of exposure varial significantly (p+0.05) from the rate of mortality recorded in 77 and 96h of exposure times (24, 48, 72 and 96 b) was found in the rate of mortality recorded in all the exposure times (24, 48, 72 and 96 b) was found to recorded in all the exposure times (24, 48, 72 and 96 b) was found to be the fish was also recorded in all the exposure times (24, 48, 72 and 96 b) was found also recorded in all the exposure times (24, 48, 72 and 96 b) was found also recorded in all the exposure times (24, 48, 72 and 96 b).

Keywords: Acute toxicity, Alpha-cypermetheirs, Wester Converses cuspin, Behavioard changes

### INTRODUCTION

Alpin-cypermethrin is a synthetic and non-systemic pyrchroid insecticide. It is highly active and acts as contact and stomach posson. As a neuropoiston it acts on the axons in the peripheral and central uervous system by modulating sodium ion channels (Verdanova et al., 2000). Alread-cypermethrum is widely used in the field of agriculture, forestry precisionhure and other domestic purposes for controling different insects (Stephenson et al., 1984): Dus and Mikherjee, 2003). After the use of alpin-cypermethrum in the field of agriculture, forestry precisionhure and forestry, it may different to use of alpin-cypermethrum in the field of agriculture in the field of agriculture, forestry intercollare and forestry, it may different to use of alpin-cypermethrum in the field of agriculture of agriculture and delayed toxic effects to a variety of organisms (Chamber, 1994, Yordanova et al., 2009), Bey et al., 2015). The fish and aquatic invertebrates are the most effected non-target organisms (WHO, 1992; Greatlich and Pilagenecher, 2003).

The reports on the acute toxicity of alpha-cypermithrin to fish are scartly 24h LC  $_{50}$ (since of alpha-cypermethrin to common mirror and silver barb are recorded as 4.50 µg 1 and 20.0 µg I respectively (Grayson et al., 1990). Sarikaya (2009) and Yilmaz et al (2004) found that 96h LC  $_{50}$  values of alpha-cypermethrin for Nile riliona and gappies were ( 99 µg) and 9.43 µgT respectively. 48h LC  $_{50}$  value of heta-cypermethrin in male gappies

.85

### Feeding and Foraging Activity of Sitophilus sp. and Tribolium sp.

### Sreerupa Das and Biswatosh Ghosh

### Department of Zoology, Bidhannagar College, EB-2, Sec-I, Salt Lake, Kolkata

Abstract: Weevils from the genus *Sitophilus* are considered as major pests of stored rice, maize etc. worldwide. Different investigations in relation to the study of their life history, habits and habitats were carried out which are necessary to have thorough understanding of the situation favourable to the pest and to know what are the weak links in its life history which should be taken advantage for the effective management of the pest. The species share the same life history but do have a number of differences in their seed exploitation strategies. Several research works have been carried out for Sitophilus sp. Flour beetles of genus Tribolium are pests of cereals and are widely used as laboratory animals for storage pest study because of their handling is very easy. The flour beetles consume wheat and other grains, are able to be adapted in very dry environments. They are a major pest in the agricultural industry and are highly resistant to insecticides. The comparative study on the feeding and foraging behaviour of both the pest species are observed when placed with their species specific grain items and respective response on light-dark conditions and also their effect during starvation period. From these experiments, it has been observed that Sitophilus sp. have shown extreme adaptation in stored environment. Due to lack of feedstuff few individuals become dead and most of them are capable to survive. It means the endurance of the insects depends on their physical profile, health status and adaptability to harsh condition. Whereas in another species, Tribolium has shown very less death rate compared to Sitophilus. Sitophilus shows typical apical preference and husking characteristics. Presence of too husks might lead to mortality of the species. In two days starvation analysis experiments, despite of absence of any feedstuff both the insects showed little or no movement. Nonetheless mortality was observed in Sitophilus but not in others. The foraging activity showed the typical irregular pattern. It results that no direct path has been used to find the food source before the optimal path is achieved. However, it is seen that Sitophilus is more sensitive to sugar and wet rice than Tribolium as sugar exert water and mortality is due to wet environment. It determines the suitable habitat of *Sitophilus* in dry condition and their survivality are restricted to particular grains.

**Keywords:** Weevil, Mortality, Food grains, Flour beetles.



# প্রাচীন ভারতের ইতিহাস

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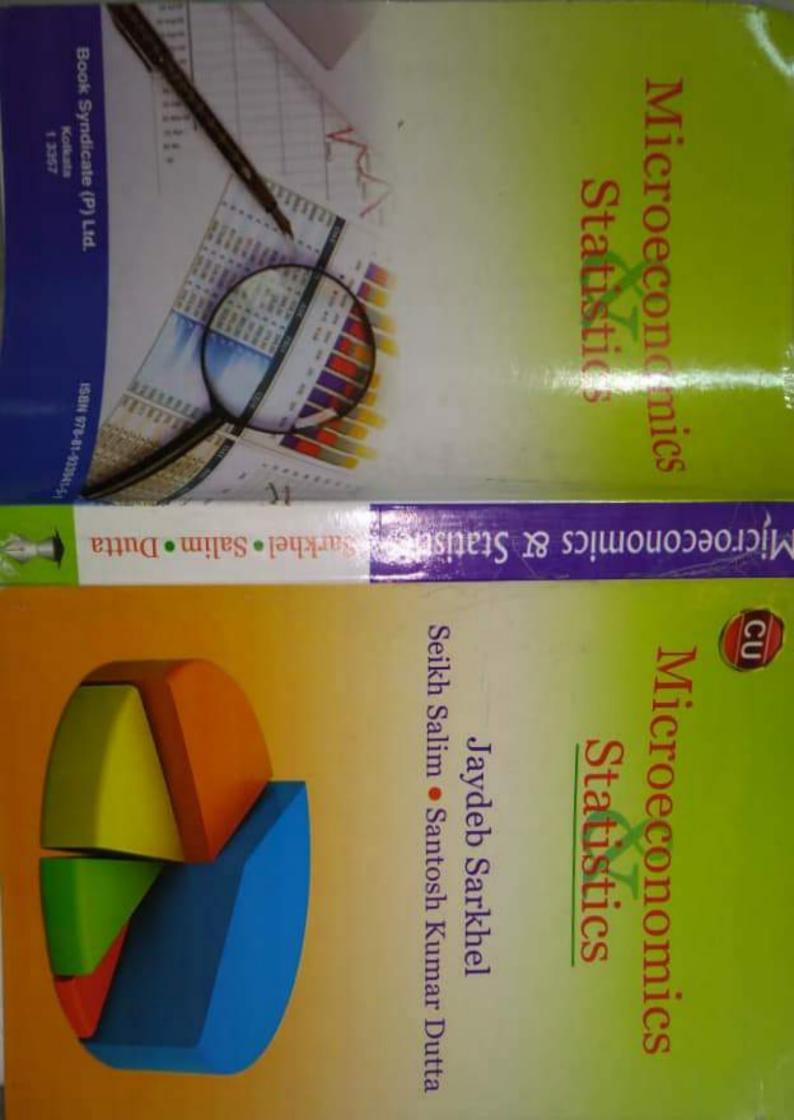
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## CHAPTER - 9

# HISTORY OF RIVERS AND ECOLOGY OF THE TISTA-BRAHMAPUTRA VALLEY

## BHASKAR ROY

Assistant Professor, Department of History, Bidhannagar College, Salt Lake City, Kolkata Government of West Bengal

### ABSTRACT

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Geographically the river Tista and Brahmaputra were the natural peripheral boundary of the rulers of Kamarupa, Koch Behar and its adjoining areas since early times. The Tista-Brahmaputra valley is bounded in the northern side by the Himalaya. This region stretched in southern side up to the confluence of the Brahmaputra and Karotoya. The Tista and Karotoya were the two rivers stood as the natural boundary of the western part of this region. The Brahmaputra and Baranadi were the eastern boundary of this region since ancient period. The extensive river network system, spreading all over this region is the lifeline of the people of this region. These rivers created extensive well-cultivated plains, the numerous hills and dales, forests and marshes, rising grounds, thick jungles etc. These are the basic geographical features of this land. These versatile environments enrich the ecology of this region which also led a deep impact on the socio-religious history of this geographical

Keywords: Ecology, Tista-Brahmaputra, Kamarupa, Koch Behar

### Back GEOGRAPHY OF RIVER SYSTEM

The book covers different aspects and facets of river system scientifically studied, analyzed and presented by eminent scholars. Contribution from multiple authors exhibits a deep exposure of various features and characteristics of river with special case analysis of north and north-east Indian rivers. The book not only highlights the physical perspective but also envisages the socio economic approach related to river system. Detailed study and presentation from active research scholars and educationalists, makes this book a valuable asset in the research field of geography, geomorphology, geology, oceanography and hydrology. The book content is also advantageous to the undergraduate, postgraduate students of the same field and competitive exam aspirants.



**Dr Biplab Tripathy** is a well known author, educationalist, currently working as Assistant Professor and Research Coordinator in Arunachal University of Studies, Namsai Arunachal Pradesh. As a social scientist he has written a huge number of research papers and articles for leading newspapers and journals. He has contributed his wisdom on composing a valuable book on cultural realm of Khampti Tribe of Arunachal Pradesh. He also authored a book on women empowerment, soil geography.



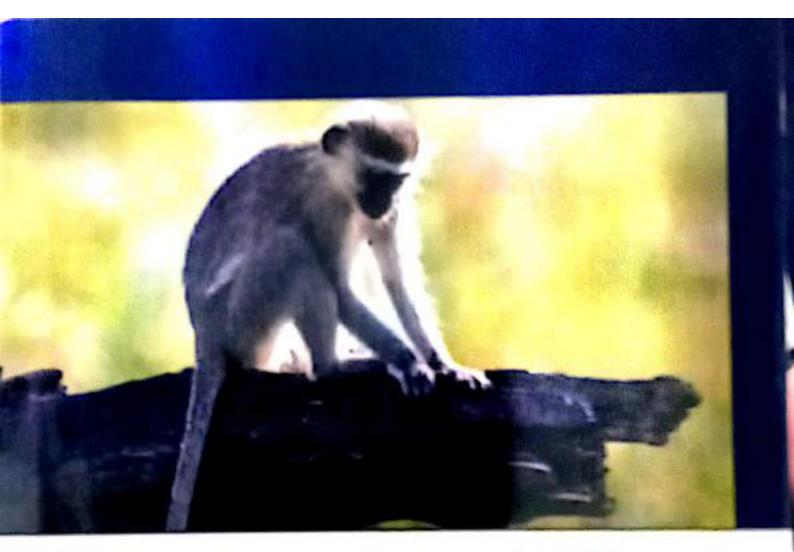
Subhechya Raha is an author, editor and a research scholar of Arunachal University of Studies, Namsai Arunachal Pradesh. She has written numerous research papers and articles for leading newspapers and journals of national and international repute. She has been active both in the field of education and women empowerment research works. She also authored a research book on Khampti Tribe of Arunachal Pradesh along with two more books on women empowerment and soil geography.



Tanmoy Mondal is an active research scholar and lecturer in Arunachal University of Studies, Namsai Arunachal Pradesh. He is very much active in the field of research of river system and has composed several research papers, articles and chapters on his research topic and several others topics in geography.







Sudesna Chanda

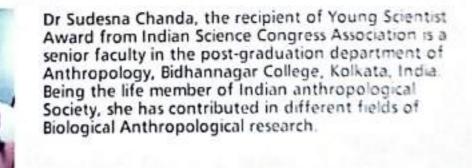
## On The Variation of Primates Head Hair

An Insight into Primate Evolution





Biological variations are the prime important properties of evolution which through the process of selection shapes the animal body which are generally being considered as signatures for understanding the evolution. Like other organs and parts of animal body, hair has also a range of diversity and the microscopic details of hair strands offer certain definite and variable features as well. These are found to be useful for the purpose of identification. This book contains a doctoral work on some intricate facts of Primates head hair for the partial understanding of species specific variation and Evolution. The present study attempted to understand the variation of some histomorphological and qualitative variables of hair within different species and between different primates Genus and to identify the sexual dimorphisms within different Species. Since Sexual Dimorphism is one of the major features of evolution, sex differences in terms of different histomorphological and quantitative variables might be of basic interest for partial understanding of the evolutionary process.





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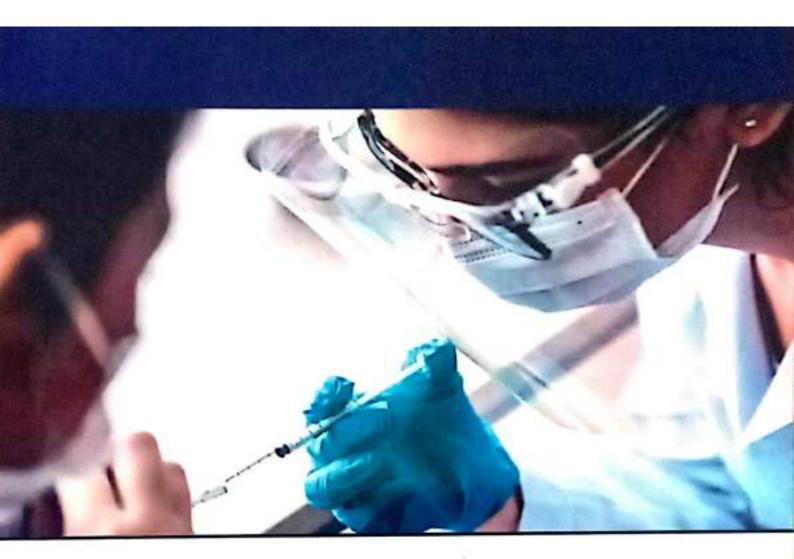
Zugl. / Approved by: In order to understand the evolutionary features and variation within and between head hair of fifteen non-human primate species and human has been taken for the investigation of histomorphological and quantitative variables

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Sudesna Chanda

## Side Effects of Covid Vaccines Among the Bengali Indian Population

An Anthropological Report





Vaccines aid in the prevention of illness from incurable conditions by stimulating the body's adaptive immunity. It is therefore quite apparent that the only way to prevent the spread of the disease, saving human life and rescuing global economies in this pandemic time remains to vaccinate people. This is very important to identify the major side effects of these vaccines in human body as the reluctance of people to receive safe and recommended available vaccines are already a growing concern in India. This book is a report of a small-scale research conducted among the adult vaccinated Bengali populations on the basis of the reported nature of their side effects (if any) after vaccination. Different biological parameters were taken into consideration for understanding the nature of relationships of those biological traits with the degree and variations of the side effects. The major concern of the research was to focus on the association of different parameters with the severity and types of side effects of vaccination. This book can be of great use for the upcoming endeavors in the field of Covid 19 research.



Dr Sudesna Chanda is a well known Anthropologist and Assistant Professor of Anthropology in Bidhannagar college, Kolkata, India. Apart from her numerous publications and achievements in the field of Biological Anthropology, she is also the recipient of ISCA Young Scientist Award and President Gold Medal award from the government of India





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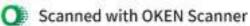
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### American Transcendentalism and Ralph Waldo Emerson: Transcending Ordinary Boundaries

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### Dr. Ketaki Datta

This article posits "Self Reliance" and "Oversoul" by Emerson in the light of his concept of Transcendentalism, which is way different from the run-of-the-mill one. This has nothing to do with any mailance structures but an understanding of Spirituality which mains intertwined with our daily existence. And this unassuming memory leads on to a wholesome comprehension of existence and This is no religious explanation of existence, no difficult togeths of a newfangled idea, not even a new conceptual twist to an detaily cauting one. But this is creating a bridge between our drab mountee and the presence of God in a meaningful way.

### Concept and Ideology

American Transcendentalism might have remained as an apposible idea locked between the covers of a book or the folds of a americanistic concept or belief if Ralph Waldo Emerson had not to think out of the box and add a different dimension to it. We as arguinted with the basic tenets of American Transcendentalism

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## Reassessing BANKIM CHANDRA CHATTERJEE The Novelist

Editor Pradip Ranjan Sengupta



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## Oral Stories of the Totos

By Ketaki Datta

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Kataki Datta (h. 1984) Telinor

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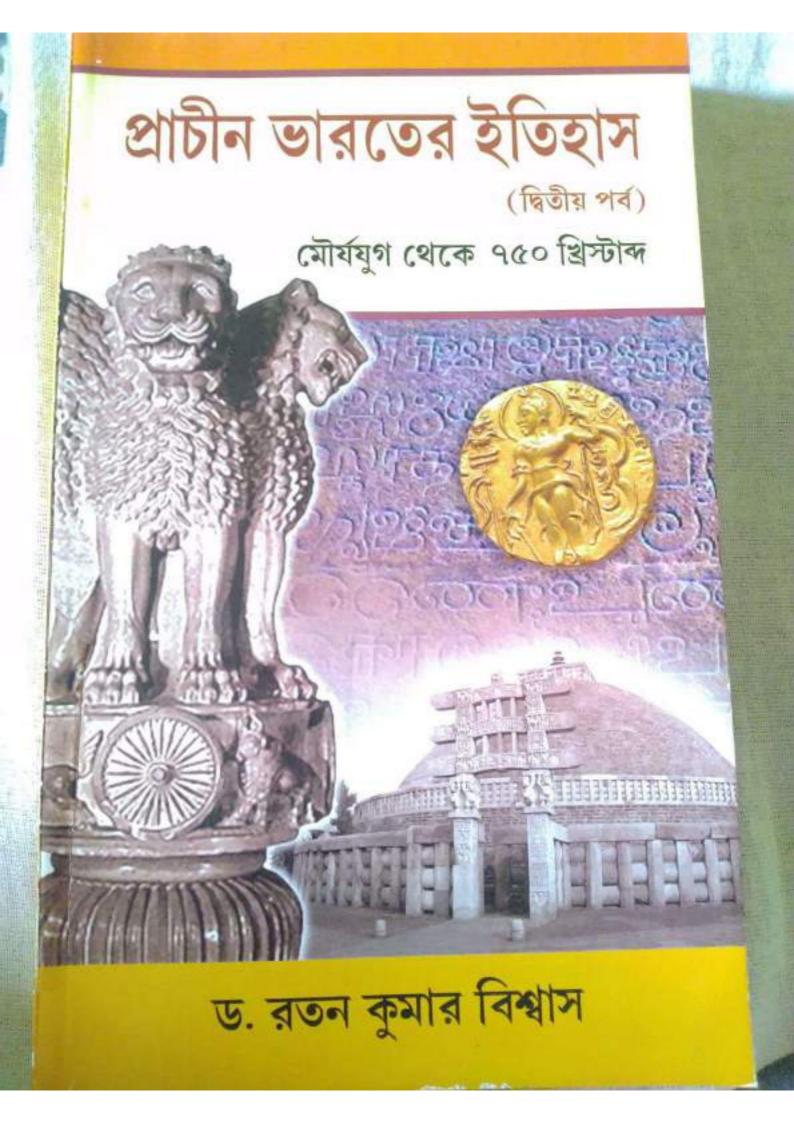
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### ABOUT THE BOOK

Due to recent transformations in the present societal situations, emergence of concepts like Globalization, Modernization, and Technological Innovations have brought significant changes in the Indian Education system also. Different socioeconomic, psychological, political issues have contributed to give a new direction to Indian Education system. Areas like population explosion, knowledge explosion, explosion of expectations, environmental education, women empowerment etc. attract the attention of educational planners and policy makers of our country to plan, organize, direct and coordinate the entire education system. This book Emerging Issues in Indian Education is an effort from the part of the editors to highlight the problems and prospects of the contemporary Indian Education System with a hope to contribute in the development of Modern Indian Education System.

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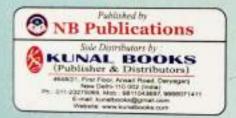
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INDIAN EDUCATION

Sudipla Chakraborty Associate Editor Mr. Suman Atta

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# EMERGING ISSUES **INDIAN EDUCATION**

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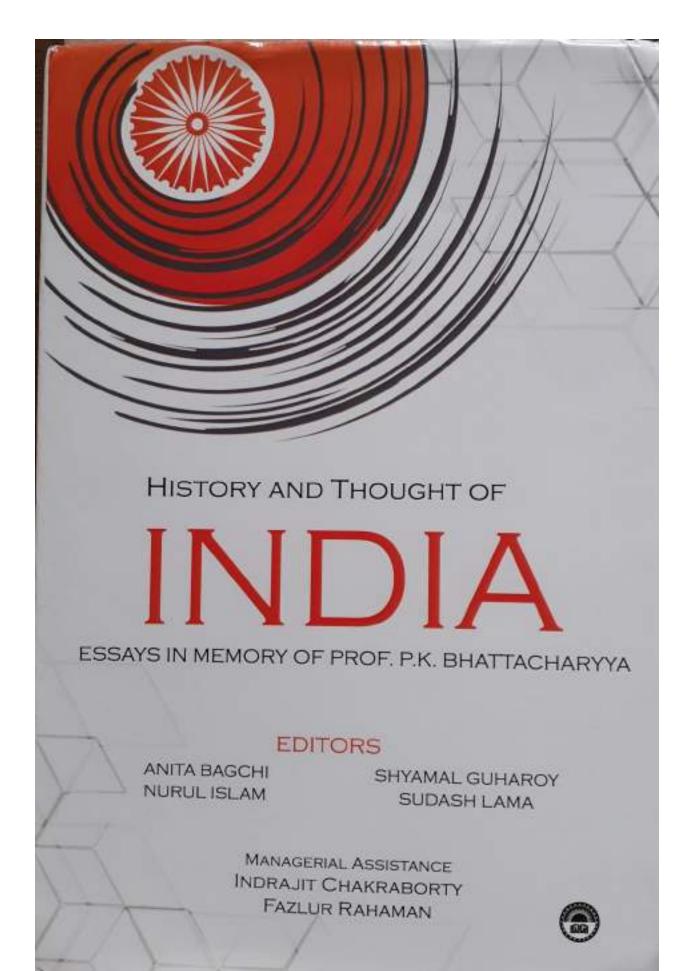
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IN INDIA

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## Position of Women of the Koch Kingdom during the Colonial Period

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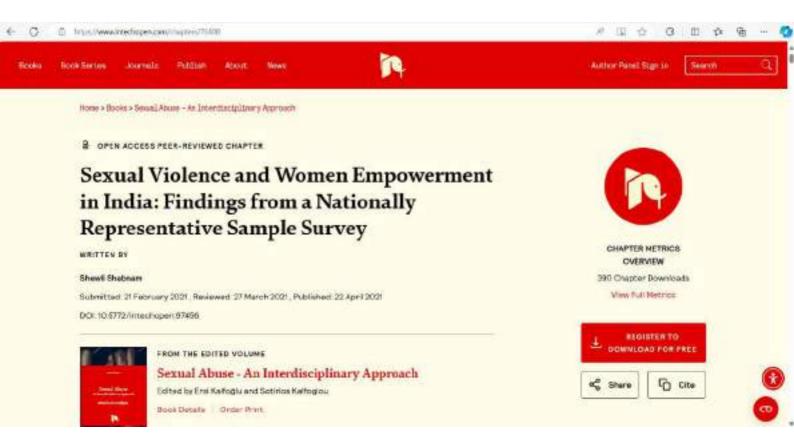
The dynamics of the study on the Koches from the perspectives at their transformation from a tribe to a ruling class, their initiation to *Hinduism*<sup>1</sup> and finally the establishment of a kingdom that stretched from the river Karatoya in the west to the Brahmaputra in the east and from the Himalaya in the north to the coastal region of Tista-Brahmaputra in the south<sup>2</sup>, unfold the reality of the historical phenomena that have been evolving in this secluded northern part of Bengal since long time past. However, it is admitted on all hands that after the establishment of the Koch state, the rulers adopted Hinduism. As said earlier, the rulers were not only Hinduised, but they were very much influenced by the prevailing cults of Tantricism, Saktism, Neo-Vaishnavism. They were also well acquainted with astronomy, astrology, etc.

While talking about the position of women in the Koch kingdom, the statement of Harendra Narayan Chaudhri, the high ranking officer of the state is worth mentioning. He narrates,

"The women arrange the house, husk paddy, gather and cut fuel, fetch water, prepare the meals, sometimes weave the cloth, do the marketing, wash the clothes, nurse the children, and attend upon sick and invalid, not forgetting all the while the last but not least important function of women generally, namely, gossiping and quarrelling, and speaking ill of neighbour's good things."<sup>3</sup>

The above statement proves that the women of the Koch state spread their wings of power in all corner of the society. But *Gayatri Devi*, the Maharani of Jaipur state and daughter of the Koch Bihar ruling family is her autobiography mentioned that the Koch women lived 'almost the medieval lives'.<sup>4</sup> Although the royal women enjoyed some political power the limited participation of Koch women in polity degraded their position and further lack of goodwill in implementing the state policies to develop

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# A BOOK ON EDUCATIONAL PSYCHOLOGY

DR. SUDIPTA CHAKRABORTY, SUMAN ATTA

### A BOOK ON EDUCATIONAL PSYCHOLOGY

by: Dr. Sudipta Chakraborty, Suman Atta

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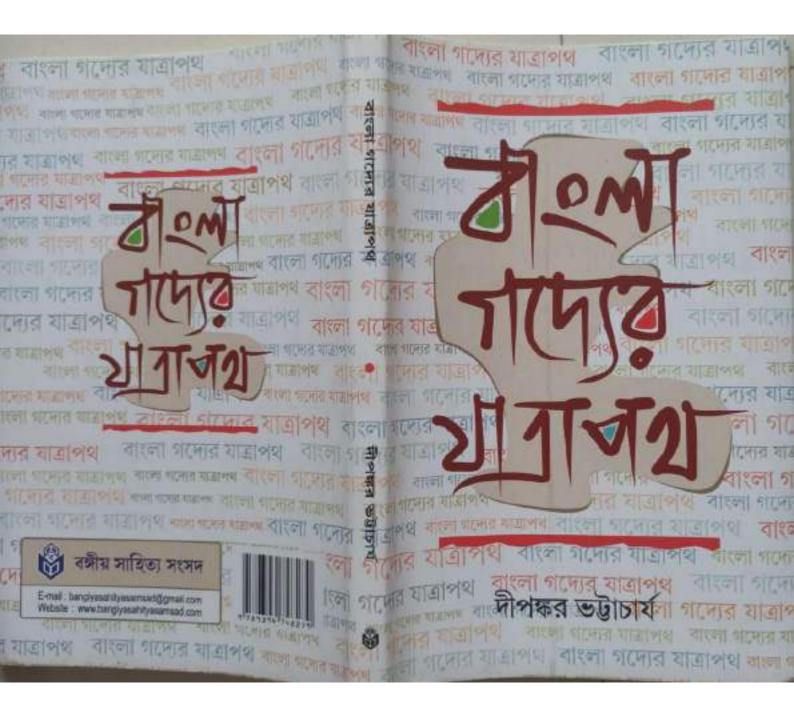
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এই পাট-পংকলংগর পর্বনা হয় লেতানি পুতার মুক্ত বিশ্বনিয়ালয়ের মাজ সংগ্রহিত। বিশ্বনিয়াল কর্ত্বশাক্ষের লিমির অনুমতি হায়া এর কোনো আলের পুনর্মুলা বা কোনোভারে উপুতি দশপুর্ব নিরিবন।

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क्षमा मुझ्ल : सुलहि, 2022

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### From the Editor's Desk

And the people stayed home. And they mad hooks, and listened, and sexted, and exercised, and made art, and played somes, and learned new ways of being and were call. And they listened more deeply Some medicated some prayed, some danced. Some met their shadows. And the people began to think differently And the people healed And in the absence of people laring in quantum, dangerous, mindless, and heartless ways, the same began to heal. And when the danger passed and the people wined together again, they greezed they lesses, and made new choices, and dreamed new images, and seated new usays to lave and heal the earth halfs as they had been healed.

<sup>45</sup> These lines from Kitty O'Meara sums up what the world werit through during the pandemic. Two years of COVID lockdown. It represented two years cut out of our lives. Two years that cut a hole in our hears.

(53 and made us experience mortality like never before. It showed as that a pandemic is not merely a medical phenomenon. It affects every aspect of our lives, from the economy to the psyche. Self-solation is not the natural state of mankind. It was forced on us, and any kind of force is

106 detrimental to physical and mental health. But the world has bealed again, and so has our commuteent to study, to knowledge, to creation, and to education. As such, we have come back to Heterogensia, and our promote to its contributors and readers. And as to far Hereigensia is a

176 primed journal, not an e-sournal (though efforts are on to minate an ejournal version) we could not vemiare to go through the process of the publication of the lends usue during the two sears of lockdown. However,

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রতন কুমার বিশ্বাস

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# EXTREMOPHILES: DIVERSITY, ADAPTATION AND APPLICATIONS

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### **CHAPTER 9**

### **Radiation Resistant Microorganisms**

### Upal Das Ghosh<sup>1,\*</sup>

<sup>1</sup> Department of Microbiology, Bidhannagar College, Kolkata, India

**Abstract:** Starting from its formation as a cosmic particle, the earth is exposed to various types of radiation. With gradual cooling and environmental modifications, it started supporting life, first in the form of viruses and bacteria. So, radiation-resistant microorganisms are thought to be among the Earth's ancient life forms. But, however, it is relatively an unexplored arena of research today. Though the members are few, radiation-resistant bacteria belong to a phylogenetically diverse community and their degree of withstanding the dose of radiation is also diverse. In most of the cases, the resistance mechanism involved survival from DNA damage and protein oxidation. In this chapter, we will discuss the diversity of radiation-resistant bacteria explored so far with their generalized mechanisms of resistance, along with the basic concept of radiation and radiation-induced damages.

Keywords: : Radiation resistance, *Deinococcus*, Radiation induced DNA damage, DNA repair.

### **INTRODUCTION**

In 1920, Arthur Eddington first hypothesised that the source of solar energy is probably due to the fusion of hydrogen atoms into helium. After the discovery of the nuclear fusion reaction by Hans Bethe in 1930, the hypothesis received better support for its establishment. In the late 20<sup>th</sup> century, the exothermal fusion reaction of hydrogen atoms into helium has been established as the prime source of solar energy and temperature. This temperature is the source of shortwave electromagnetic radiation that comes into the earth in the form of light and heat. After absorption of solar energy, the ground hits up and emits back longwave radiation. So, the atmosphere may be considered as the dynamic equilibria of shortwave and longwave radiation. Now, following the equation  $E= hv/\lambda$ , the shortwave radiation has more energy that may affect the cellular structure, and integrity at the molecular level.

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# LINEAR ALGEBRA

# With Application to Statistics

DR. ARCHANA DAS ROY PROFESSOR DEBESH ROY

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