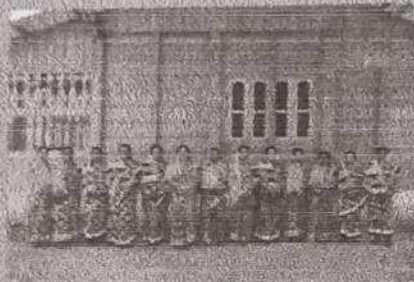


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WOMEN IN ECO-TOURISM

Reflection of Sustainable Livelihood in Odisha

Aliva Mohanty



The Women Press

Delhi - 110 052

Emerging Health Issues of Elderly Women of India

Alvira Mohanty

Associate Professor, Rama Devi Women's University, Bhubaneswar, Odisha

Abstract

In traditional Indian society, elderly women are treated as liability. With their growing age, their role in family decreases up to the negligible extent. It is when women need stronger security cover, instead their support infrastructure, emotional connects, and security cover gets thinner by every passing day. Their family members don't understand their own responsibilities towards old women and their presence in the family/society is often ignored, they invariably become redundant for all concerned. Many older women suffer destitution of loneliness and heartfelt sense of redundancy. At this juncture, they have no option but to adjust themselves in whatever circumstances. In these adverse circumstances, older women want to remain useful within the four walls of their own families till the last breath. For the sake of a peaceful and respectful life, they have to compromise with all odd situations and never complaint about anything. But now with fast growing elderly population, increased life expectancy and higher percentage of elderly women in Indian elderly population, issues concerning elderly women cannot be ignored any longer. With this backdrop attempt has been made in the present paper to study the various challenges faced by elderly women of India and to give special attention to this vulnerable section of society to reduce their vulnerability and to provide them all round support and cooperation

Keywords: Redundant, Opportunities, Security, Destitution, Compromise

1. Introduction

Population ageing is defined as the process by which the proportion of elderly persons in the population increases as a result of continuous decline in fertility and mortality over the years. In 1990, the proportion of population over 60

Membrane bioreactor (MBR) as an advanced wastewater treatment technology for removal of synthetic microplastics

Sunanda Mishra^a, Rojalin Priyadarshini Singh^a, Prasant Kumar Rout^b,
Alok Prasad Das^a

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3.1 Introduction

Synthetic microplastics are particles smaller than 5 mm in size and have been identified in different environmental samples worldwide. Environmental pollution caused by these micro debris symbolize a universal trouble that, due to the undeviating effect on the ecosystem (Bouwmeester et al., 2015). Microfibers are mainly consists of Rayon, nylon, and polypropylene (Gago et al., 2018). The resilience and sluggish time of degradability make these micro fibers, to resist the marine atmosphere for hundreds of years (Song et al., 2014), and signify a potential menace for aquatic life (Rochman et al., 2013, Yang et al., 2015). Synthetic microplastics are identified from different sources, including laundering of synthetic fabric, degraded debris of larger plastics like bottles, fishing nets, vehicle rubber abrasives, or cosmetics including micro beads (Napper et al., 2015). It has been also investigated that these micropollutants can also be produced from our daily activities such as by opening of plastics baggage. The quantity is reliant on the circumstances such as rigidity, width, concentration of synthetic polymers and their dimension. Microplastic can be distinguished into two types as "primary" and "secondary" to differentiate on the basis of their sources (Arthur et al. 2009). The microplastics that are released into the direct use or abrasions of cleaning products produced as microbeads from cosmetics (Costa et al. 2010). Microplastics which are produced by the disintegration of larger plastic materials are generally regarded as secondary (Cole et al. 2011). On the basis of our present technology, microplastic sources can be categorized into 4 types: (i) larger plastic waste particles, (ii) personal care products, (iii) pharmaceutical products, and (iv) synthetic

CHANGING LANDSCAPE OF NEWS MEDIA & ENTERTAINMENT

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Lakecity Publishing
A Unit of Ignited Intellectual Private Limited

Published in India by
Ignited Intellectual

37, Rivera Township, Mata Mandir, Bhopal, M.P. 462003, India

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First Published in 2022

Designed By :
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ISBN 978-93-5628-588-0

Copy Right Challenges In Courseware Production

22

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Introduction

Before going into the depth of this issue, to talk about effective education, a popular story can be told here to understand the concept of effective education in a clear manner. Once a highly learned priest was crossing the river through a boat. At the mid of the river suddenly he asked the sailor "Do you know philosophy? The sailor replied "No". The priest laughed at him and told "Okay then you have wasted 20% of your life". Then he asked the sailor "Do you know science"? The sailor replied "No sir I do not know anything about science". Then the priest told "Okay more 20% of your life is wasted. So total 40% of your life is spoiled". Then he asked again "Do you know anything about literature"? Then the sailor replied "No". Then the priest said "Okay, more 20% of your life is wasted which means 60% of your life is already spoiled" . Before the priest proceeds further, there appeared black clouds and suddenly wind started blowing heavily. The boat became imbalanced and started sinking. The sailor now asked "Dear Priest do you know swimming"? The priest replied "No". The sailor then told to the priest "Dear priest your total life is going to be spoiled. Save yourself with your knowledge". Then he jumped out of the boat leaving the priest helpless. This old story here in a very tactful way explains us the concept of meaningful education. While discussing the concept of meaningful education, in a layman's way we can say it that, "Education, which teaches the skills of life, is called as meaningful education." However, to understand it in a better way

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ISSN 2367-3370 ISSN 2367-3389 (electronic)
Lecture Notes in Networks and Systems
ISBN 978-981-16-2093-5 ISBN 978-981-16-2094-2 (eBook)
<https://doi.org/10.1007/978-981-16-2094-2>

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Image Encryption Using RSA Algorithm



Aradhana Sahoo, Pratyasha Mohanty, and Purna Chandra Sethi

Abstract In the current covid pandemic situation, secure online transmission of data has the highest precedence over other activities. For providing computational hardness that is for making tough to break the key for finding the unique message, there are various algorithms are present. For secure data transmission, many researchers have applied different cryptography algorithms and in order to improve the level of information security, different hybrid cryptography algorithms have been proposed. In cryptography algorithm implementation, key management plays a major role. For this reason, we have applied an image encryption technique in which a random image is considered as the key. Using the random image as a key, we have encrypted another image as information using the RSA algorithm. The comparison of the proposed method is done with the traditional approach and concluded that the cryptography algorithm implemented using an image as key provides more security in terms of encryption and decryption time.

Keywords Image encryption · Image as key · Performance enhancement · RSA algorithm

1 Introduction

Information is represented in various form such as text, image, audio, and video. The security and authentication are becoming major issue during data transmission over Internet. Hence, large-size key is used by various researchers during different cryptography algorithms implementation for increasing the level of data security. Though larger size key increases the level of data confidentiality, but the key management is becoming a tedious task. As an alternative to large-size key, image as key will lead to easier key management along with better information security.

Encryption technique is widely used for achieving information security. Encryption of image is the process that convert real image to a secure format with various

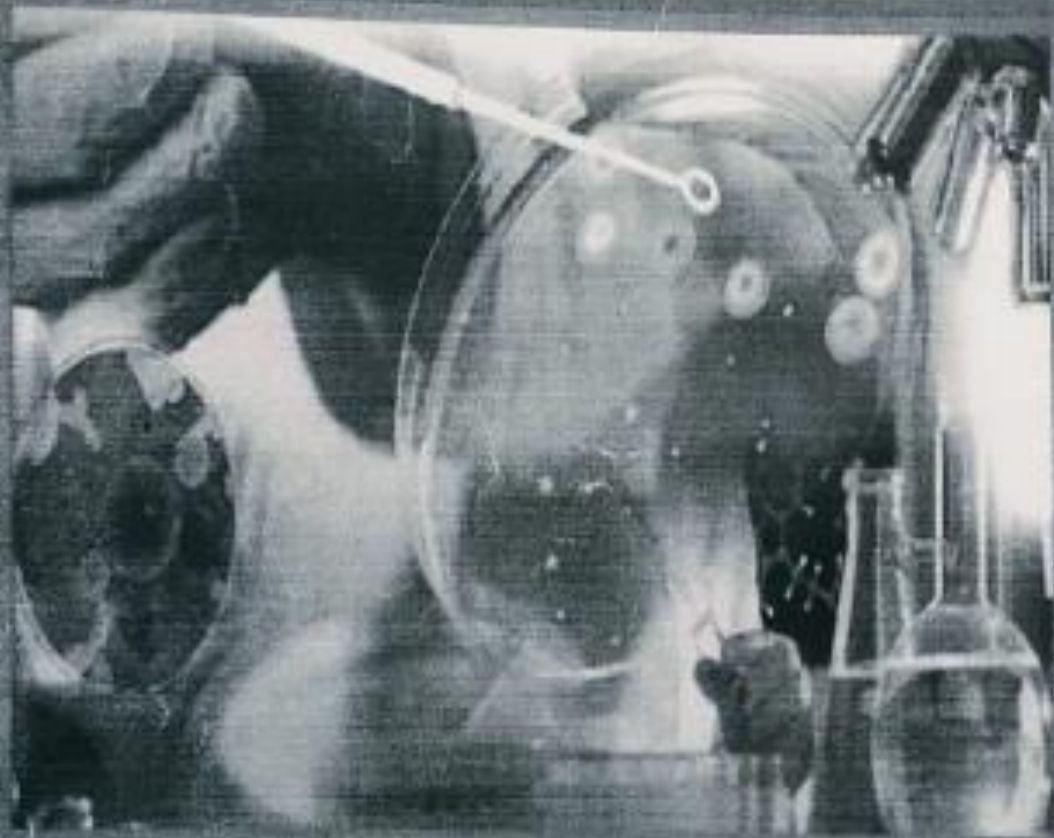
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Advances and applications of biofiber polymer composites in regenerative medicine

13

Dillip Kumar Bishi¹, Santosh S. Mathapati², Priyadarshini Padhi¹, K.S. Venkataprasanna², Hariharan Ezhilarasu³, Raghavendra Ramalingam³, Mohd Hasbi Ab. Rahim⁴ and Jayarama Reddy Venugopal^{3,4,5}

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13.1 Introduction

Nanobiotechnology is the emerging science of two powerful technologies biotechnology and nanotechnology, and it reflects science's growing ability to investigate beyond the molecular level in regenerative medicine (Venugopal, Molamma, Shayanti, Rajeswari, & Ramakrishna, 2012). In nanobiotechnology, nanoscale biofibers are used to develop highly functional biosensors, nanosized microchips, molecular switches and tissue analogous for skin, bones, cardiac muscles, nerves, vascular and other organs of the body. Nanobiotechnology plays a central role in the recent technological advances in the areas of disease diagnosis, drug design, and drug delivery. The nanobiotechnological applications for the treatment of disease, diagnosis, monitoring, and to the control of biological systems have been referred to as "nanomedicine." Several areas of nanomedicine are expected to revolutionize the disease diagnosis and treatment approaches soon to save patient life. Nanorobotics and nanomanipulation technologies will eventually allow moving and manipulating nanoscale materials and assemble them into nanosystems such as nanoscale robotics. Recently, tissue engineering mainly focused for the development of biomaterial that is novel which mimic the extracellular matrix (ECM) in a better way. Biomaterial used in tissue engineering of joining the natural capability of cells to wisdom their native environmental surrounding by cell to cell interaction, cell infiltration and congregate by self in to compound complexes to illuminate the regenerative behavior (Huebsch et al., 2010). Scope of tissue engineering is under

Advances in Bio-Based Fibre. DOI: <https://doi.org/10.1016/B978-0-12-824543-9.00012-8>
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ISBN: 9780128245439

Dillip Kumar Bishi



Computational Intelligence in Cancer Diagnosis

Progress and Challenges

Book • 2022

Edited by

Jaymenjoy Nayak, Danilo Pelusi, ... David Al. Dubois

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FEEDBACK

About the book

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Computational Intelligence in Cancer Diagnosis: Progress and Challenges provides insights into the current strength and weaknesses of different applica research findings on computational intelligence in cancer research. The book improves the exchange of ideas and coherence among various computa intelligence methods and enhances the relevance and exploitation of application areas for both experienced and novice end-users. Topics discussed in

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ISBN

978-0-323-85240-1

Language

English

Published

2022

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Imprint

Academic Press

DOI

<https://doi.org/10.1016/C2020-0-02257-7>

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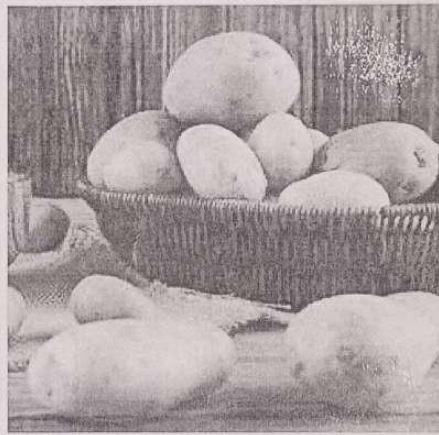
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AGRICULTURAL COMMODITY FUTURES MARKET



Gouri Prava Samal

Gouri Prava Samal

AGRICULTURAL COMMODITY FUTURES MARKET

Instability of commodity prices has always been a major concern of the farmers, processors, merchandisers as well as the consumers in an agriculture-dominated economy. Farmers' direct exposure to price fluctuations makes it too risky for them to invest in other wise profitable activities. There are various ways to cope with this problem. The agriculture commodity market is one of them. It serves a risk-shifting function and can be used to lock-in prices in advance instead of relying on uncertain price developments in future. Apart from being a vehicle for risk transfer among hedgers and from hedgers to speculators, these markets also play a major role in price discovery.

The primary objective of this book is to impart the basic knowledge of derivatives market, types of derivative markets, agriculture futures market, regulator of commodity market, commodity exchanges, price discovery in commodity market and awareness among various stakeholders of commodity market.



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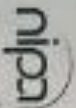
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Acknowledgement

At the very outset, I wish to express my heartest gratitude to all those who extended their help, guidance and suggestion and without their help it was not possible for me to complete this research work. I am deeply indebted to my Guide and mentor Dr. Anil Kumar Swain, Senior Reader, P.G. Department of Commerce, Utkal University, Bhubaneswar. His valuable and enlightened guidance as well as autonomy he had offered me had augmented this piece of work. His in-time interventions had always provided necessary guidance and direction for this work. I am thankful to Mr. Kaluash Charada Rout, GM, OSAM Board, Dr. S. N. Mishra, Field Officer, OULAT, BBSR, Dr. D. C. Pradhan Prof. Board, Dr. S. N. Mishra, Field Officer, OULAT, BBSR, Dr. A. K. Behera, Prof. OULAT, BBSR, R. Head, Agri Economics, OULAT, BBSR, Dr. A. K. Behera, Prof. OULAT, BBSR, who has facilitated me through their support and suggestions in various ways like constructing questionnaire, collection and analysis of data at various stages of the research work. I am also thankful to all the teachers of department of commerce specially Prof. Sampson Moharana, Prof. R. K. Bal, Prof. K. B. Das, Prof. P. K. Pradhan, Prof. J. K. Parida, Dr. P. K. Hota and Dr. M. Sahu for their constant inspiration to complete the work.

I would like to express my appreciation towards my friends (Miss. Smittha Mahapatra, Dr. Alok Behera and Dr. Dhananjaya Sahu), who helped me directly or indirectly in my endeavor for the accomplishment of this work.

My sincere thanks go to Mr. Saugat Ranjan Dhal, for his constant appreciation and motivation to realize my potential to achieve one of the most important milestones of my life.

At last, but not the least, I would like to show my commitment to my family members whose constant inspiration had made this work successful. I would like to dedicate this work of mine to E and Siva who has always blessed me with patience and perseverance to complete this task.

Author

Savitri Prava Sami

ISBN: 978103231547

Digitalization of Culture Through Technology

Edited by
Deepanjali Mishra and Sasmita Rani Samanta

ROUTLEDGE



Chapter 39

The Disappearance of River from Human Consciousness: A Reiteration of Poems along the Mahanadi River Line to Address Environmental Concerns

Itishri Sarangi

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Addressing the environmental issues is not only the responsibility of the government. The global environmental issues require a collective consciousness and responsibility as the effect and the responsibility is felt by all. A book of river poems and folktales are of course an opportunity to ponder about the congress between rivers and literary works. The present time being is a juncture, to evaluate the status about the status of the rivers, we desperately need to analyse the history of the human relation with the environment, with the fact that most of the life on earth depends on fresh water. The younger generation is least aware of the importance of river. They only witness the water of the river contaminated and not cause of all health hazards. The river is now limited to the text and ceased to reverberate before the eyes and yet were heard mingling with the living one another. Although we are far from our geographical roots, we

have lost our emotional connection. There is a need to revamp our culture, values, ethics and responsibilities to address environmental problems. In the present global scenario of climatic crisis, everything is uncanny. We exist in a different reality not in this physical world anymore. Literature is all about what we are going through. People of Odisha have a long relationship with the rivers. The poets have tried their best to make landscape alive. Their writing creates an imaginative space in the popular unconsciousness, probably by adding some extra dimensions to life. Language is not about words but the human experiences. The research is an attempt to rediscover and reiterate the poems along the Mahanadi river line. The study would further stress on the necessity for revamping the role of government and individual to mitigate measures at the basin level and incorporate hydrological consequence to the long-term climate change and environmental degradation. The paper would serve as a new dimension for water sustainability.

James N. Furze · Saeid Eslamian
Safanah M. Raafat · Kelly Swing *Editors*

Earth Systems Protection and Sustainability

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Chapter 5

Orchid Diversity, Conservation, and Sustainability in Northeastern India

Sanjeet Kumar, Rajkumari Supriya Devi, Rikina Choudhury,
Manisha Mahapatra, Susanta Kumar Biswal, Navneet Kaur, Jamuna Tudu,
and Sakti Kanta Rath

Abstract The northeastern region (NER) of India is bestowed by the great Himalayan landscapes and their unique bioresources. Among the bioresources, orchid species are revered and well-known indicators of climatic change. Orchids are monocotyledonous plants known for their sui generis and alluring flowers. About 1484 orchid species are reported to be in India including 856 in the NER. Environmental sustainability requires an understanding of climatic change; hence conservation of orchid bioresources has heightened importance. Consequently, an attempt has been made to gather information of orchid species present in the NER of India from extensive field survey and available secondary sources. New additions, bar coding, and mass propagation protocols of orchid species available in the region are discussed.

The survey results revealed that 249 common species are enumerated by primary and secondary sources of the NER of the country. Among these, a number of species were found to be sensitive to microclimatic change. In the study period, many species (including *Bulbophyllum hookeri*, *Vanda coerulea*, *Renanthera imschootiana*) were observed in different threatened categories of the International Union for Conservation Nature (IUCN). Through vegetative propagation, selected species were reintroduced.

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J. N. Furze et al. (eds.), *Earth Systems Protection and Sustainability*,
https://doi.org/10.1007/978-3-030-85829-2_5

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ISBN 978-3-030-85828-5 ISBN 978-3-030-85829-2 (eBook)
<https://doi.org/10.1007/978-3-030-85829-2>

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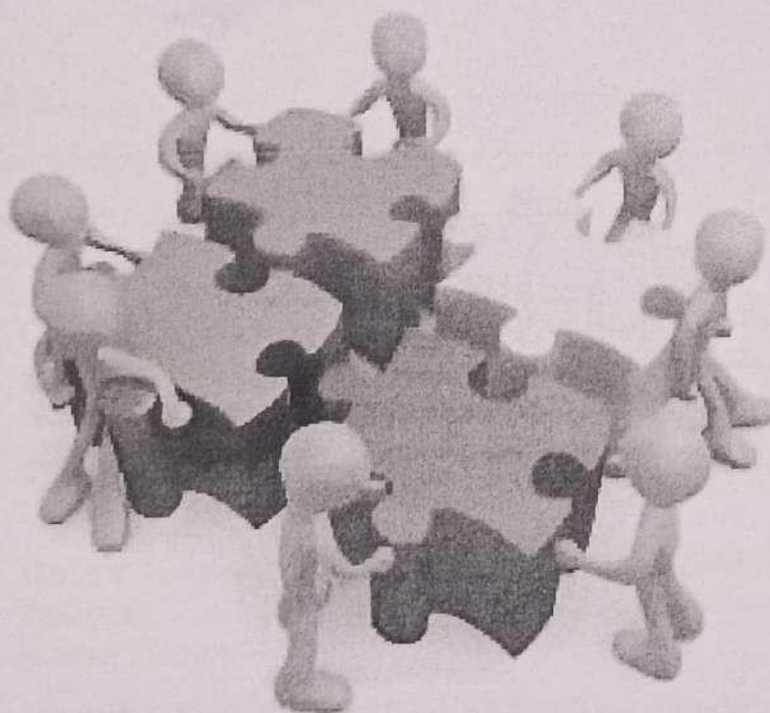
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statistics in Home Science
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ISBN - 976-93-91844-48



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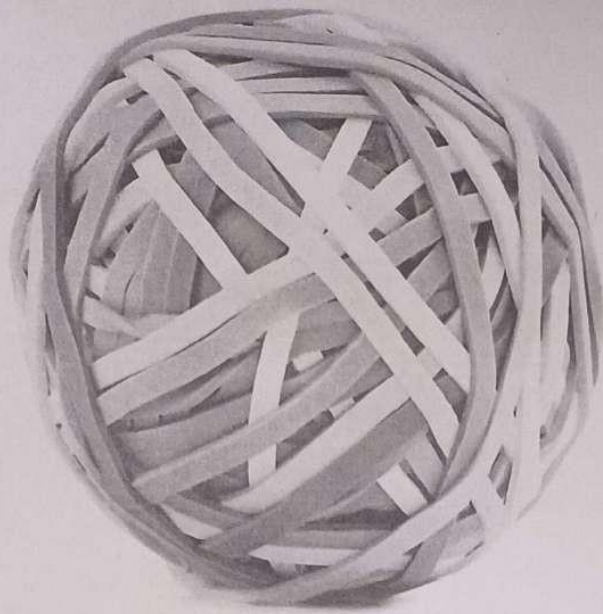
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Chapter 3

The Role of New Media in Democracy and Politics

Manas Behera

3.1. INTRODUCTION

Media has dominated not only the discourses of development but also the discourses of democracy in our times. Everyone from the left to the right, from the centre to the periphery, from developed to developing and underdeveloped, from democrats to dictators and from conservatives to radicals accepts media as a means of their dominance and struggle for dominance. The rise of media in the past decades, encompassing almost all aspects of human life, is increasing. However, the association of media with democracy and development without any qualifications makes it complex and problematic. The association of communication with democracy is obvious, as it lies at the centre of democratic politics. Media, particularly the 'new media', is the most powerful and effective channel of communication for the political actors and leaders today. This makes media decisive for democratic politics. Yet media in itself is not neutral or independent, though it is perceived to be by many and is part of the power structure and power struggle. While analysing the role of media, it should be seen from the larger context of its political economy and it is necessary to understand the role of media in the society and how it influences governance, democracy, development and justice. Media systems and media content are not natural or inevitable, but they are the results of crucial political decisions. These political decisions are not made on a blank canvas or a level playing field; they are strongly shaped by the historical

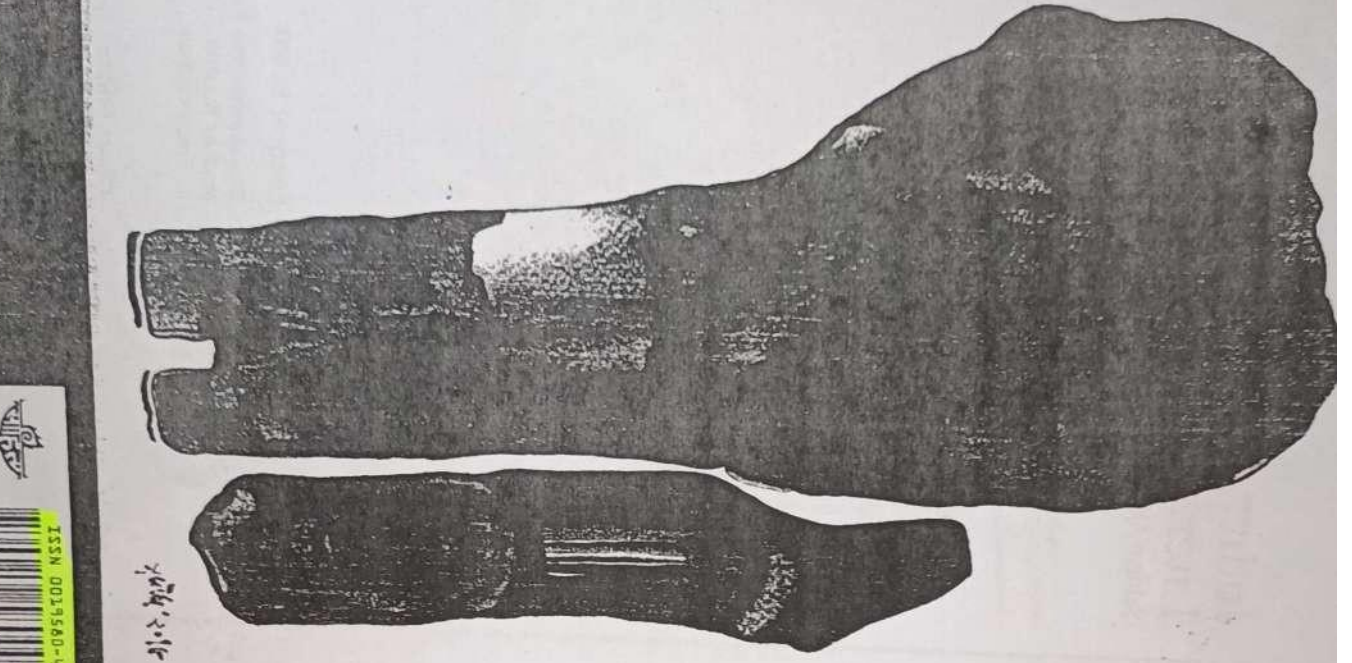


Indian Literature

Sahitya Akademi's Bimonthly Journal

July-August 2022 # 330

INDIAN LITERATURE



सहित्य' ३०१४



ISSN 0013560-4



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Recd. No. 790/57



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7 Hostlands, Homelands and the Odia Diaspora

From *Boyita* to *Biman*¹

Madhusmita Pati

Introduction

The term "Indian Diaspora" has become a generic category used to describe the movement of population from territories that are currently within the borders of the Indian nation-state to new and possibly far-off places. The "new" and the "old" worldview of the Indian Diaspora has undergone a tremendous change, and the new paradigm can be paraphrased under three different categories. Those who left under colonial rule and remain scattered in distant places like the Caribbean, Africa and Fiji, constitute the first category; to date, they continue to face significant social difficulties from the indigenous population. The highly skilled migrants residing in industrialized Western countries form the second, while labourers moving temporarily to the oil-rich countries are the third category. The evinced change has been shaped by a complex interplay of internal, external, objective, and subjective factors at the epistemological level, along with the paradigm shift that took place in the different strata of public life.

This chapter with its specific reference to Odia diaspora "old" and "new" posits that the Indian diaspora has a long history. Torn and frayed between spaces, cultures, and language (the latter, more often than not), the writers of the Odia diaspora have navigated new literary spaces that feed their splintered self with a hunger to write. The multicultural ethos of the immigrants, and an understanding of socio-cultural and economic realities around them, mitigates their fear psychosis, and engenders a successful transformation of the experiences of migrant writers into the written word.

Salman Rushdie's observation seems pertinent here:

It may be that writers in my position, exiles or emigrants or expatriates, are haunted by some sense of loss, some urge to reclaim, to look back, even at the risk of being mutated into pillars of salt. But if we do look back, we must also do so in the knowledge which gives rise to profound uncertainties that our physical alienation from India almost inevitably means that we will not be capable of redeeming precisely the thing that

Relevance of Life Writing in Odisha

Sarbani Sarbashree Mohanty and Madhusmita Pati

"Life writing" is a recent term coined mostly in the late twentieth-century, as the Oxford Research Encyclopedia believes. It is used as an umbrella term for any kind of writing devoted to the enquiry, expression, introspection, communication of the self. It includes biographies, autobiographies, diaries, journals, memoirs, letters, microblogging, videos and other such activities on and off the Internet. Marlene Kadar argues that life writing is a term used before biography and autobiography came into existence, validating it as a more inclusive term to represent life narratives of different kinds. But the term has come into frequent use only after the 'critical intervention' by poststructuralists and postmodernists in the late 1970's. The versatility of this genre has now made it a credible source of research in fields like anthropology, psychology, indigenous studies, political science and even medicine apart from literature in general.

Versatile to the extent of being ubiquitous, life writing like other genres of literature is a western invention. Especially biographies and autobiographies have existed since 5th century BCE onwards with Ion of Chios writing brief sketches about his contemporaries Pericles and Sophocles and St Augustine's *Confessions* in 5th century CE respectively. As time progressed, the writings of self became secularized. After Renaissance, we find the *Lives of Poets* (1779 - 1781) by Samuel Johnson, deepening a hold on the personal life of poets, rather than kings or saints. Tolstoy's *My Confession* (1884) shares his religious and philosophical thoughts while his *Childhood, Boyhood and Youth* (1852 - 1856) is his fictionalised tribute to his personal life. On similar veins, Maxim Gorky's series of autobiographies: *My Childhood, In the World and My Universities* (1913 - 1923) is another example of secularization and realistic portrayal of one's life story. With the experimentation in structuralism, deconstruction and psychology, the life writing genre rose

Amitav Ghosh's Culture Chromosome Anthropology, Epistemology, Ethics, Space

An Indian Bengali by birth, Amitav Ghosh has established himself as a major voice in what is often called world literature, addressing issues such as the post-colonial and neo-colonial predicaments, the plight of the subalterns, the origin of globalisation and capitalism, and lately ecology and migration. The volume is therefore divided according

to the four domains that lie at the heart of Ghosh's writing practice: anthropology, epistemology, ethics and space. In this collection, a number of scholars from all over the world have come together to shed new light on the works and poetics of Amitav Ghosh according to the epistemic frameworks that form the bedrock of his fiction.

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COVER IMAGE
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ISBN-978-90-04-40431-1



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Cover illustration: part of a Patachitra scroll by Kalpana Chitrakar, 2020.

Library of Congress Cataloging-in-Publication Data

Names: De, Asis, editor. | Vescovi, Alessandro, 1968- editor.

Title: Amitav Ghosh's culture chromosome : anthropology, epistemology, ethics, space / edited by Asis De and Alessandro Vescovi.

Description: Leiden ; Boston : Brill, [2022] | Series: Cross/cultures, 0924-1426 ; vol. 216 | Includes index.

Identifiers: LCCN 2021042069 (print) | LCCN 2021042070 (ebook) |

ISBN 9789004404311 (hardback ; acid-free paper) | ISBN 9789004360341 (ebook)

Subjects: LCSH: Ghosh, Amitav, 1956—Criticism and interpretation.

Classification: LCC PR9499.3.G536 Z55 2022 (print) |

LCC PR9499.3.G536 (ebook) | DDC 823/.914—dc23

LC record available at <https://lcn.loc.gov/2021042069>

LC ebook record available at <https://lcn.loc.gov/2021042070>

Typeface for the Latin, Greek, and Cyrillic scripts: "Brill". See and download: brill.com/brill-typeface.

ISSN 0924-1426

ISBN 978-90-04-40431-1 (hardback)

ISBN 978-90-04-36034-1 (e-book)

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Printed by Printforce, the Netherlands

Ruptured Boundaries and Cosmopolitan Space

The Spatial Imagination of Amitav Ghosh in The Shadow Lines

Sambit Panigrahi and Madhusmita Pati

Abstract

Amitav Ghosh's *The Shadow Lines* (1988) has become a classic exposition of the postmodern notion of the fluidity of space. The novel, through its overt transnational character, explores the idea of the dissolution of space through its conceptual dismantlement of national boundaries across the globe. Through various events and episodes that occur in the text, its characters continually transit across national borders, thereby breaching spatial confinements, and unleash themselves into the limitless arena of a transnational space that is fluid, unstable, and categorically transversal. The novel, whose plot spans across the pre- and post-independent times in the subcontinent, overtly exemplifies how the postmodern space defies all notions of structuration, stability, and territorial confinement; it is fluid, indeterminate and fluctuating in nature. This article analyses the fickle and indeterminate nature of the fluid space that permeates Amitav Ghosh's award-winning novel *The Shadow Lines*.

Amitav Ghosh's Sahitya Akademi award-winning novel *The Shadow Lines* challenges the idea that a nation is a confined space; or in other words, it espouses what critical geographer David Harvey would term "the collapse of spatial distinctiveness."¹ The text, through its repeated engagement with many transnational events and episodes, however, focuses on a fundamental irony embedded in the subcontinent's unique and sharply divided topography: the irony lies in its failure to curb increasing cross-cultural interactions between the divided nations notwithstanding the presence of rigid boundaries between them and their boastful promise for cultural impermeability. On this premise, the present article, while highlighting Amitav Ghosh's postmodernist rejection

¹ David Harvey, *The Condition of Postmodernity: An Enquiry into the Origins of Cultural Change* (Cambridge: Blackwell, 1989): 209.

ISBN: 9781774911075



Chapter

Production of Omega-3 Capsules from Fish Offal: Recycling of Resources for Sustainable Production and Consumption

By Bimal Prasanna Mohanty, Satabdi Ganguly, Arabinda Mahanty, Tandrma Mitra, **Sasmita Mohanty**, Basanta Kumar Das

Book Advances in Fish Processing Technologies

Edition	1st Edition
First Published	2023
Imprint	Apple Academic Press
Pages	10
eBook ISBN	9781003300595


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ABSTRACT

Fish is a superfood rich in quality animal proteins, heart-, and brain-friendly omega-3 polyunsaturated fatty acids and micronutrients. Fish is playing a big role and is going to play still a much bigger role in global food and nutritional security. Sustainable development and economic growth require minimization of ecological footprint by modifying the manner in which goods and resources are produced and consumed in a responsible manner. Food security, in simple terms, is a measure of the availability of food and individuals' ability to access it. Food security has been defined by the United Nations as a condition where "all people, at all times, have physical, social, and economic access to sufficient, safe, and nutritious food that meets their food preferences and dietary needs for an active and healthy life".

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Dynamic Network Traffic Management for Secure and Faster Data Transmission



Purna Chandra Sethi and Prafulla Kumar Behera

Abstract The evolution of a large number of network-related emerging technologies leads to the exponential growth in the number of users. Traditional to corporate activities are being done over online medium. Hence, the network administrators' job is becoming tedious. The overall performance of the network depends on various parameters among which network traffic plays a major role. All the network resources are equally shared among all the available users. Malicious activities within the network lead to less availability of network resources for the actual users. Due to this reason, dynamic network traffic monitoring and analysis are becoming essential for identification of the malicious activities in the network. In this paper, we have proposed a dynamic network traffic monitoring and management technique to identify malicious traffic and prioritize the activities in order to assign the bandwidth within the network for network QoS. Finally, the security algorithm is applied to achieve information security.

Keywords Network Traffic Monitoring · Dynamic Bandwidth Allocation · Generalized Frequent Common Gram (GFCG) · SeLeCT · Quality of Service (QoS)

1 Introduction

In the present COVID-19 pandemic situation, smaller to larger businesses are shifted from traditional to online mode over Internet. Organizations progressively depend on Internet for its fundamental tasks. Beside increment in the multifaceted nature of Internet administrations, there is a radical increment of content delivery networks (CDNs) for its versatile Internet utilization. As per Digital 2021 Global Statshot


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Genome Editing Technologies for Crop Improvement

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ISBN 978-981-19-0599-5 ISBN 978-981-19-0600-8 (eBook)
<https://doi.org/10.1007/978-981-19-0600-8>

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Chapter 11

Genome Editing Toward Rice Improvement



Kaijun Zhao, Rukmini Mishra, Raj Kumar Joshi, and Yao-Guang Liu

Abstract Rice (*Oryza sativa* L.) serves as the major food source feeding half of the world's population. In the past century, the pedigree-based conventional, radiation-based mutational and DNA marker-based molecular breeding approaches have contributed enormously toward enhancement of rice productivity. However, it is becoming hard and hard to increase rice yield further due to several factors including a possible ceiling of rice yield potential, the frequent pest and pathogen attack, climate change, and other environmental issues such as decreasing water resources. Since the human population is still growing which was projected to reach 9.7 billion by 2050, it is urgent to develop new breeding technology for better cultivars that can produce more rice grains in an era of global warming. Recently, rapid advances of genome editing technologies such as the engineered site-specific nucleases (SSNs) tools provide immense potentials to revolutionize the fields of plant science and agriculture. Among the genome editing technologies, the CRISPR/Cas systems are the most widely accepted due to its simplicity, robustness and high efficiency. Rice has been increasingly used to test the efficiency of various types of genome editing tools to demonstrate their potentials in genetic improvement. Recently developed CRISPR/Cas-derived genome editing technologies including base editors and prime

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K. Zhao et al. (eds.), *Genome Editing Technologies for Crop Improvement*,
https://doi.org/10.1007/978-981-19-0600-8_11

Chapter 8

Expanding the Scope of Base Editing in Crops Using Cas9 Variants



Rukmini Mishra, Muntazir Mushtaq, and **Raj Kumar Joshi**

Abstract Genome editing technologies hold tremendous possibilities towards crop improvement and food security for the future. Among others, base editors have developed as novel editing platforms that facilitates specific base modification minus the introduction of double stranded break or homologous recombination. Base editors typically consisted of non-functional CRISPR–Cas9 motif (Cas9 variants) fused with cytosine (CBEs) or adenosine deaminase (ABEs) protein. While the combinations of cytosine and adenine base editors can produce the four possible base transitions, the necessity of a specific protospacer adjacent motif (PAM) sequence restrict the number of genomic locations that could be altered by CBEs and ABEs. The recent surge in the development of new ABEs and CBEs with multiple Cas9 variants has meaningfully improved the effectiveness of inducing specific and targeted point mutation linked to important agronomic traits in many crops. In this chapter, we have presented a concise idea on the base editing platforms and focused on the application of new ABEs and CBEs with Cas9 variants in crop improvement.

Keywords Base editors · CRISPR · Cas12a · Cas12b · PAM · SpCas9

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K. Zhao et al. (eds.), *Genome Editing Technologies for Crop Improvement*,
https://doi.org/10.1007/978-981-19-0600-8_8

Chapter 1

Genome Editing Is Revolutionizing Crop Improvement



Rukmini Mishra, **Raj Kumar Joshi**, and Kaijun Zhao

Abstract The ever-increasing human population together with emerging environmental cues from climate change demand for novel innovations in plant breeding and agriculture. Targeted genome editing technologies especially the CRISPR/Cas systems have revolutionized basic research and crop breeding by enabling precise targeted modification of an organism's genome. Lately, genome editing has been widely utilized in myriads of plant species to evaluate gene functions and improve valued agronomic traits including pathogen resistance, abiotic tolerance, yield and quality. In this chapter, we provide a brief overview of genome editing technologies with a special focus on CRISPR/Cas systems. In addition, we discuss about novel innovations in CRISPR-based technologies and their subsequent usage in the development and commercialization of improved genome-edited crops. Further, we have also pointed out major challenges faced by plant genome editing and have predicted possible solutions for speeding of plant breeding and improving crop productivity.

Keywords Genome editing · CRISPR/Cas · Targeted mutagenesis · Plant breeding · Crop improvement · Base editing · Prime editing · Agronomic traits

Rukmini Mishra and Raj Kumar Joshi contributed equally with all other contributors.

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K. Zhao et al. (eds.), *Genome Editing Technologies for Crop Improvement*,
https://doi.org/10.1007/978-981-19-0600-8_1

Chapter 17

Genome Editing for the Improvement of Oilseed Crops



Ananya Sarkar, **Raj Kumar Joshi**, Urmila Basu, Habibur Rahman, and Nat N. V. Kav

Abstract Oilseed crops are an important source of dietary fats and proteins in humans and animals. They have significant economic importance being the major source of hydrocarbons for the manufacturing of biofuels and industrially relevant bioproducts. Conventional plant breeding methods along with molecular breeding and transgenic technologies has contributed significantly towards the development of high-yielding cultivars of crops, including oilseeds. However, while these methods are cumbersome and time consuming, the genetically modified (GM) crop cultivars are currently not widely accepted due to regulatory concerns. To satisfy the global demand of improved oilseed crops for the ever-growing population, it is essential that alternative approaches to crop improvement must be considered. Plant breeders are now increasingly inclined towards the recently available genome editing tools for the improvement of agriculturally important traits. Among the several gene-editing platforms, the clustered regularly interspaced short palindromic repeat-Cas (CRISPR-Cas) system has emerged as a revolutionary genome editing tool for its simplicity and wide acceptability to achieve transgene-free gene modifications. In this review, we focus on understanding the historical development of genome editing tools and molecular mechanism of CRISPR-Cas genome editing system followed by its application for the improvement of various desirable traits in oilseed crops.

Keywords Oilseed · Diet · Biofuels · Genetic engineering · Genome editing · CRISPR-Cas

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ଡକ୍ଟର ସଂଗମିତ୍ରା ଭଟ୍ଟା

ଆଦେଶର ଏକ ଭିନ୍ନ ସ୍ତର ହେଉଛି ଭାବ । ଭିନ୍ନଭେଦକୁ ଆହୁତ ଯେତେ ପ୍ରାଣକ୍ଷୟକୁ ଆର୍ତ୍ତ କରେ, ତୁଳନାରେ ଯେତେ ଭିନ୍ନଭେଦ ସୃଷ୍ଟି ହୁଏ, ସୂକ୍ଷ୍ମ ସୂକ୍ଷ୍ମତା ଅନୁଭବ ଯେତେ ଚକ୍ଷୁବୃଦ୍ଧିକୁ ସମ୍ଭବ କରାଏ, ତେଣୁ ତେଣୁ ଯେତେ ଶାନ୍ତରୂପର ସୂକ୍ଷ୍ମତା ହେଉଛି ଭାବ । ଭାବନାରେ ଯେତେ ଭାବନାକୁ ଗ୍ରହଣ କରାଯାଏ - ବିଦ୍ୟାପ୍ରସୂର୍ଯ୍ୟମାନଙ୍କୁ ଶବ୍ଦରେ ବାଣୀ, ଅନ୍ୟାନ୍ୟ-ପରମପୁରୁଷ ଶ୍ରୀ ଜଗନ୍ନାଥଙ୍କୁ ସମାଧାନ କରିଥିବା ଆଧୁନିକ ପାଠ୍ୟପୁସ୍ତକ କବି ହେଉଛନ୍ତି ରାଜକିଶୋର ପାଢ଼ୀ । ଜଗନ୍ନାଥ ସଂସ୍କୃତିର ସେ ଜଣେ ପୂଜନୀୟ- ଉଦ୍‌ଗାତା । ଆଧୁନିକ ଦୂରଦୃଷ୍ଟି କବିତା ପ୍ରକାରରୁ ସମାଧାନର ଦୃଶ୍ୟରେ ରହି, ବିଭିନ୍ନ ପୋଷାକ ସେହିମେଣ୍ଡକୁ ସ୍ୱତନ୍ତ୍ର ଶୈଳୀରେ ଅଭିବ୍ୟକ୍ତ କରିବାରେ ସେ ଅତ୍ୟନ୍ତ ସୃଷ୍ଟିକର୍ତ୍ତା ।

ମହାପୁରୁ ଶ୍ରୀଜଗନ୍ନାଥଙ୍କ ଭକ୍ତିରେ ନିମଗ୍ନ କବି ରାଜକିଶୋରଙ୍କ 'ସୁନାବେଶ' କବିତା ସଂକଳନ ତାଙ୍କ ଜଗନ୍ନାଥବାଦୀ ଦୃଷ୍ଟିକୋଣର ଏକ ନିର୍ମଳ କାବ୍ୟାତ୍ମକ ପରିପ୍ରକାଶ । ଏଥିରେ ସଂକଳିତ ୨୯ ଗୋଟି କ୍ଷୁଦ୍ର କବିତାରେ ମହାପୁରୁଙ୍କ ପ୍ରତି ତାଙ୍କର ଗଭୀର ଏକାଗ୍ରତା ଓ ଶ୍ରଦ୍ଧା ଅଭିବ୍ୟକ୍ତିତ ହୋଇଛି । ମହାପୁରୁଙ୍କ ପ୍ରତ୍ୟେକଟି ବାଣୀ-କାଣ୍ଡି ଏବଂ ପ୍ରତିକୁ ନେଇ 'ସୁନାବେଶ' ମାଧୁର୍ଯ୍ୟମୟ ହୋଇଉଠିଛି । ଶ୍ରୀଜଗନ୍ନାଥ ସବୁରି ଆଗାଧ ଦେବତା ତଥା କବିଙ୍କ ଦୃଶ୍ୟାନ୍ତରେ ଅଭିଷିକ୍ତ । କାବ୍ୟ ମନୋ ବାକ୍ୟରେ କବି ଜଗନ୍ନାଥାର୍ପିତ ହୋଇଥିବା ଯେଉଁ ମହାପୁରୁଙ୍କ ଉର୍ଦ୍ଧ୍ୱ 'ଅପସର'କୁ ଆପଣେଇ ନେବାକୁ ଚାହଁନ୍ତି । ପୁରୁଣା ଯେଉଁ ତ୍ୟାଗକରି ଦେଖା ପିନ୍ଧି ଆସାନ୍ତେ ଶୁକୁଳେ ନବକଳେବର ପାଏ ହୁଅନ୍ତି, ଅନୁରୂପ ଭାବେ କବି ମଧ୍ୟ ତହିଁ ତ୍ୟାଗକରି ସମସ୍ତ ପ୍ରାଣର ଜାଣିତାକୁ ଗାଧି ଦୂରର ଜାଣିତାକୁ ପ୍ରତିଷ୍ଠା ଦେବାକୁ ଚାହଁନ୍ତି ।

ଭକ୍ତ ସାଲକେଶ ଏକତା କାବି-କାବି ବାଣୀର ଉର୍ଦ୍ଧ୍ୱରେ ଜଗନ୍ନାଥଙ୍କ ରଥ ବସନ୍ତି ପାଶରେ ପଦକୁ ପାରିଥିଲା, କିନ୍ତୁ କବିଙ୍କ ମାଧ୍ୟମରେ ମହାପୁରୁଙ୍କ ରଥ ବସନ୍ତି ସର୍ବ

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ISBN : 978-1-64560-255-2 | ₹ 430



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ଦକ୍ଷ ପଦାଗିତ୍ର ଶେ

ଦର୍ପିଣ, ଡ଼ାଏ ଓ ପ୍ରଚର ଉପରା ସହ ଅନୁବାଚକରେ ବିଭିନ୍ନ ଶେଖା ପ୍ରକାଶିତ ଦର୍ପିଣିକା ଦେବୁ ଡା଼ାଗିତ୍ର ଡ଼ାଏ ସମ୍ପ୍ରତି ଚର୍ଚ୍ଚିତ ଉପଲେଖା ମଣିଷା ବିଶ୍ୱବିଦ୍ୟାଳୟରେ ଚର୍ଚ୍ଚିକା ଡ଼ାଏ-଼ାଣିକା ବିଭାଗରୁକା ଉପରେ ରଚିତା ବିର୍ଦ୍ଧିତ ଦକ୍ଷଣିକା । ଉପର ଦକ୍ଷଣିକା ପ୍ରଥା ପଦାଲୋକାପତ: ଏହ ପ୍ରଦର୍ଶିତକାରେ ଓ ଉପକ୍ରମିକା ପ୍ରଥା ପଦ୍ମକାଳପଦା ସିକା ମତାଏ ଡ଼ାଏ ପାଣିକାଳ ପ୍ରଚ ଉପାଦ ଉପଲେଖା ପ୍ରଚ୍ଚ । ଡ଼ାଏ ଅନୁବାଚ, ଉପଲେଖ, ଦିକା ଏ଼ା- ଚର୍ଚ୍ଚିକା ଉପିକାଳ ପ୍ରଦାନାଦୁତ ଅଧ୍ୟାୟାଗି ଶେଖରେ ମଧ୍ୟ ପ୍ରଚାଷ ପଣିକାଳ ଦୁର୍ଦ୍ଦି ଦର୍ପିକାଶିକାଟି । ଉପ ଉପରେ, ଚାଚେ ଦର୍ପିକାରେ ପ୍ରାଣିକା, ଚୋପିକାଶ୍ୟ ଚର୍ଚ୍ଚିକା ପ୍ରଚାଷ ପଦ ଦର୍ପିକାଶ୍ୟ ପ୍ରଚିକାଳ ଅନୁକା ବିକାଶେ । ମଧ୍ୟତ ଦେଶିକିକାଦ ଉପା ଶୁଦ୍ଧି ରପିକା ଓ ମାନବ ଉଦ୍ଧୱାଳ ଦପ୍ତରା ଚିକିତା ଉପା ମଦ୍ୟମିକାଳ ମଦ୍ଧୱାଳ ଓ ଉପର ପ୍ରଚା ଉପିକା ଅନୁଚିତ ଦୁର୍ଦ୍ଦି । ପ୍ରଥା ଦୁର୍ଦ୍ଦି ଓ ଅଧ୍ୟାୟା ପ୍ରଚାଷ, ଚର୍ଚ୍ଚିକା ଉପିକା: ପ୍ରଦୁକା ଓ ପ୍ରଦା, ଉପାଦ: ଦର୍ପିକା ଓ ପାଣିକା, ଚର୍ଚ୍ଚିକାଶିକା ଉପାଦ ଉପରେ ପ୍ରଦୁର୍ଦ୍ଦି ଉପର ଦକ୍ଷଣିକା, ପାଠକଦୁର୍ଦ୍ଦି ଏ଼ା ପାଣିକାଦୁର୍ଦ୍ଦି ଉପାଦାଳନା ପ୍ରଥା ।



ଦୀପ୍ତିମୟା ସାହୁ

ଦୀପ୍ତିମୟା ସାହୁ ଉପଲେଖା ମଣିଷା ବିଶ୍ୱବିଦ୍ୟାଳୟରୁ ପ୍ରଦତ୍ତକାରେ ଏ଼ା ଏ଼ା.ପି.ଏ ପିପ୍ରାପ୍ରାସ ଡ଼ାଏ ଦର୍ପିକାଳ ଉପଲେଖା ଉପିକା ଡ଼ାଏ ବିକାଶିକା ଡ଼ାଏ ଚର୍ଚ୍ଚିକା ପ୍ରଚା ବିଶ୍ୱବିଦ୍ୟାଳୟ ଓ ଉପଲେଖା ମଣିଷା ବିଶ୍ୱବିଦ୍ୟାଳୟରେ ଅଧିକି ଅଧ୍ୟାପିକା ଉପରେ ରଚିତା ଦକ୍ଷଣିକା । ସାଧ୍ୟାୟାଗିକା, ଉପା, ବିଶ୍ୱ ଉପିକା ଉପରେ ଡ଼ାଏ ପ୍ରଦର୍ପିକା । ମନାଶ୍ୟ ଉପକ୍ରମାଳ ଉପର ପ୍ରଚାଷ ବିକିକା ଉପର ଏ଼ା ଉପର ଉପାଦାଳନା ପ୍ରଥା । ଅନୁର୍ଦ୍ଦି ଦୁର୍ଦ୍ଦିକା: ବିଶ୍ୱ ବିଶ୍ୱ ଉପାଦା ବିଶ୍ୱ ଉପା ଉପାଦାଳନା ଏ଼ା ପ୍ରଚର ପ୍ରାଣିକା । ଉପର ଦକ୍ଷ ଅନୁକ୍ରମ ବିଶ୍ୱ ଉପଲେଖା ମଣିଷା ଉପାଦା ବିଶ୍ୱ ଉପର ବିକାଶିକା ପ୍ରାଣିକା ।



'ପ୍ରାଚୀନ କାବ୍ୟ ବିତାନ' ପ୍ରାଚୀନ କାବ୍ୟ-ଦର୍ପିକାଗୁଡ଼ିକୁ ନେଇ ଏହି ଉପଲେଖାଳ କାବ୍ୟ ସଂକଳନ । ଏଥିରେ ପ୍ରାଚ୍ ଦାରଦା, ଦାଉକା, ପଞ୍ଚଦଶା ପଞ୍ଚା ମଧ୍ୟଯୁଗର ଦିଶିଷି କାବ୍ୟ-ଦର୍ପିକା ସଂଗୃହୀତ ହୋଇଛି । ପ୍ରାଚୀନ ଚର୍ଚ୍ଚିକା ଉପା-଼ାଣିକାଳ ଦୁର୍ଦ୍ଦିକା କାବ୍ୟ-ଦର୍ପିକାଗୁଡ଼ିକୁ ଗୋଟିଏ ସଂକଳନା ରିକରେ ଛୋଟି ପାଦକାଳ ଏ଼ା ଏ଼ା ଅଧିକର ପ୍ରାଣାସ । ଆଶ୍ୟ ନଗୁଛୁ, ସଂକଳନରୁ କାବ୍ୟ-ଦର୍ପିକା ଗୁଡ଼ିକ ଖୁବ୍ ଉପକାରେ ପାଠକାଳ ଆଦୁର୍ପିକାଳ କରିପାରିବ ।

ISBN : 978-1-64560-288-0 | ₹ 600



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ପ୍ରାଚୀନ କାବ୍ୟ ବିତାନ

(ଏସ୍.ଏସ୍.ବି. ପରୀକ୍ଷାର୍ଥୀ ସମେତ କିଛିାସୁ ଗବେଷକ ଓ ବିଦ୍ୟାର୍ଥୀମାନଙ୍କ ନିମନ୍ତେ)



ସଂକଳିକା:
 ଚକ୍ରୁର ସଂଘମିତ୍ରା ଭଞ୍ଜା
 ଦୀପ୍ତିମୟା ସାହୁ

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କିଛି ଅନୁଭବର ସୌନ୍ଦର୍ଯ୍ୟ : ଚିହ୍ନା ଚିହ୍ନା ଚେନାଏ ଚିତ୍ର

ସଂପାଦିତ୍ରା ଡଃକ

ପ୍ରଭୁର ଅନୁଭବ ହିଁ ଲେଖକଙ୍କୁ ସାମର୍ଥ୍ୟ ପ୍ରଦାନ କରିଥାଏ । ଶାଶିତ କଳାତ୍ମକ ଦୃଷ୍ଟିକୋଣ ଲେଖକଙ୍କ ଅନୁଭବର ମଧ୍ୟକୁ ସୌନ୍ଦର୍ଯ୍ୟ ପ୍ରଦାନ କରିଥାଏ । ଅନୁଭୂତ ଭାବରେ ସୁସାହିତ୍ୟିକା ଶରତ କୁମାରୀ ଆଚାର୍ଯ୍ୟଙ୍କ ଅନୁଭବର ମଧ୍ୟ କଥା ଅଛି ତାଙ୍କର ସୂଚି ଆଧାର ପଦ୍ମଭୂଷିନୀ ଫରୁଆ 'ଚିହ୍ନା ଚିହ୍ନା ଚେନାଏ ଚିତ୍ର'ରେ । ଜୀବନର ଚୁକ୍ତୁଡ଼ା ଚୁକ୍ତୁଡ଼ା ଅନୁଭବକୁ କାହା ସମ୍ମୁଖରେ ଖୋଲିଦେବାର ଅସହାୟତାକୁ ଲେଖକ ନିଜ କଲମ ଓ ସାହିତ୍ୟ ପୃଷ୍ଠାର ଆଶ୍ରୟ ଖୋଜେ । କାରଣ, କାହା ଆଗରେ ନିଜେ ହେଜିଥିବା ଦୁଃଖ, ଯନ୍ତ୍ରଣା, ନିରାଶା, ସଂଘାତ, ସଂଘର୍ଷକୁ କହିଦେଲେ ସେ ଆଶ୍ଚର୍ଯ୍ୟ ହୁଏ । ସବୁବେଳେ ସମଦର୍ଶୀ, ସମଭାବାପନ୍ନ ପାଠକଟିଏ ଖୋଜିଛନ୍ତି ଶରତକୁମାରୀ । ଯେ ତାଙ୍କୁ ବୁଝିବ, ତାଙ୍କ ଯନ୍ତ୍ରଣାରେ ପ୍ରସ୍ତପ୍ରସ୍ତ ଆସରଣ ଭିତରେ ନିଜକୁ ମଧ୍ୟ ଖୋଜିପାଇବ । ଏହି ଆବେଗପ୍ରସୂତ ଆକାଂକ୍ଷାରୁ ହିଁ ସମ୍ଭବତଃ ଅସଂଖ୍ୟ ଅସଂଖ୍ୟ ପ୍ରଶ୍ନା ନିଜ ଆତ୍ମକଥାକୁ ବଖାଣି ବାଣିବାକୁ ପ୍ରୟାସ କରିଥିବେ । ଯେହେତୁ ଆମେ ସାମାଜିକ ଜୀବନଟିଏ ବଞ୍ଚୁଥାଉ ଆମ ସୁଖ, ଦୁଃଖର ପ୍ରତ୍ୟେକଟି ଉପଲବ୍ଧିକୁ ଉନ୍ମୁକ୍ତ ଭାବରେ ଜଣାଇବା କ'ଣ ଭୁଲ ? ଏହା ଆତ୍ମପ୍ରଚାର ନୁହେଁ ବରଂ ଆତ୍ମମୁକ୍ତି ତଥା ଆତ୍ମଶୋଧନ । 'ଚିହ୍ନା ଚିହ୍ନା ଚେନାଏ ଚିତ୍ର'ରେ ଶରତ କୁମାରୀଙ୍କ ଆବାଲ୍ୟରୁ ବାର୍ତ୍ତମାନିକ ସ୍ଥିତି ପର୍ଯ୍ୟନ୍ତ ଉତ୍ତରୀତ ଫର୍ଦ୍ଦ ସଂଯୋଜିତ ଏକ ସୂଚିବିଭୋର ଗସ୍ତାହାର ରହିଛି । ଆଉଟା ଦୁଃଖ, କାନ୍ଦୁରା କ୍ଷତ, ଶୁଖିଲା ହସ, ଉଦ୍‌ବେଳିତ ଆବେଗ, ନିରାହ ଅସହାୟତା, ସବୁକୁ ସାଉଁଟି ଧରିଛି ତାଙ୍କର ଆତ୍ମଜୀବନୀ 'ଚିହ୍ନା ଚିହ୍ନା ଚେନାଏ ଚିତ୍ର' । ନିଜ ଆତ୍ମଜୀବନୀରେ କେତେ ନିଜକୁ ଉନ୍ମୁକ୍ତ କରିହେବ, କେତେ ମାପିରୁପି କରିହେବ, କେତେ ସଂଗୋପିତ କଥାକୁ ସାମାବଦ୍ଧ କରିହେବ ତା'ର ଅଯଥା କସରତ ନାହିଁ ।

ଯନ୍ତ୍ରଣା ମଣିଷକୁ ଲହୁଲୁହାଣ ହୋଇ ଆଗକୁ ଚାଲିବାକୁ ଶକ୍ତି ଯୋଗାଏ । ଆଦୁଶକ୍ତି ନୈରାଶ୍ୟର ଅନ୍ଧକାରରେ ଦିଗଭ୍ରାନ୍ତ ନୃଦୟକୁ ଆଲୋକିତ କରି ନବନ୍ୟାସ ଦିଏ । ଏମିତି ଦ୍ୱିବିଧ ସ୍ଥିତାବସ୍ଥା ଭିତରେ ଏକ ମଧ୍ୟବର୍ତ୍ତୀ ପଥକୁ ଆଶ୍ରୟ କରିଛନ୍ତି ଶ୍ରୀମତୀ ଆଚାର୍ଯ୍ୟ ।

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ଘଣ୍ଟିକଣ୍ଠି ତାରକ ସାରସ୍ୱତ କବିତା ଏବଂ ଆଲୋଚନାପୁସ୍ତକ ପ୍ରଥମ । ଏହିକଣ୍ଠ ସେହି ଚିନ୍ତା ସଂଗ୍ରହକୁ ପ୍ରଦର୍ଶନ କରନ୍ତି ଯେଉଁଠି ସେ କବିତା ଚଳାଣି ସହ ଘଣ୍ଟିକଣ୍ଠି ତାରକ ପ୍ରଥମ ଥର ପାଇଁ କବିତା ଲେଖନୀର ରୂପେ ପରିଚିତ ହୋଇଛନ୍ତି । ସାରସ୍ୱତ କବିତା ଘଣ୍ଟିକଣ୍ଠି ତାରକ ସ୍ୱତନ୍ତ୍ର ଭାବରେ ଲେଖିଛନ୍ତି । ଏହି କବିତା ସମେତ ସେହି ସମୟର ଅନ୍ୟ କବିତା ମଧ୍ୟ ଏହି କବିତା ସମେତ ଉପସ୍ଥାପନ କରାଯାଇଛି । ଏହି କବିତା ସମେତ ଉପସ୍ଥାପନ କରାଯାଇଛି । ଏହି କବିତା ସମେତ ଉପସ୍ଥାପନ କରାଯାଇଛି ।



ଡଃ ସଙ୍ଗମିତ୍ରା ଭଞ୍ଜ

ଘଣ୍ଟିକଣ୍ଠି ତାରକ ସାରସ୍ୱତ କବିତା ଏବଂ ଆଲୋଚନାପୁସ୍ତକ ପ୍ରଥମ । ଏହିକଣ୍ଠ ସେହି ଚିନ୍ତା ସଂଗ୍ରହକୁ ପ୍ରଦର୍ଶନ କରନ୍ତି ଯେଉଁଠି ସେ କବିତା ଚଳାଣି ସହ ଘଣ୍ଟିକଣ୍ଠି ତାରକ ପ୍ରଥମ ଥର ପାଇଁ କବିତା ଲେଖନୀର ରୂପେ ପରିଚିତ ହୋଇଛନ୍ତି । ସାରସ୍ୱତ କବିତା ଘଣ୍ଟିକଣ୍ଠି ତାରକ ସ୍ୱତନ୍ତ୍ର ଭାବରେ ଲେଖିଛନ୍ତି । ଏହି କବିତା ସମେତ ସେହି ସମୟର ଅନ୍ୟ କବିତା ମଧ୍ୟ ଏହି କବିତା ସମେତ ଉପସ୍ଥାପନ କରାଯାଇଛି ।



ଡଃ ଜ୍ୟୋତି ସାହୁ

ଘଣ୍ଟିକଣ୍ଠି ତାରକ ସାରସ୍ୱତ କବିତା ଏବଂ ଆଲୋଚନାପୁସ୍ତକ ପ୍ରଥମ । ଏହିକଣ୍ଠ ସେହି ଚିନ୍ତା ସଂଗ୍ରହକୁ ପ୍ରଦର୍ଶନ କରନ୍ତି ଯେଉଁଠି ସେ କବିତା ଚଳାଣି ସହ ଘଣ୍ଟିକଣ୍ଠି ତାରକ ପ୍ରଥମ ଥର ପାଇଁ କବିତା ଲେଖନୀର ରୂପେ ପରିଚିତ ହୋଇଛନ୍ତି ।



ଡଃ ଭାରତୀ ମୁଦାଲି

ଘଣ୍ଟିକଣ୍ଠି ତାରକ ସାରସ୍ୱତ କବିତା ଏବଂ ଆଲୋଚନାପୁସ୍ତକ ପ୍ରଥମ । ଏହିକଣ୍ଠ ସେହି ଚିନ୍ତା ସଂଗ୍ରହକୁ ପ୍ରଦର୍ଶନ କରନ୍ତି ଯେଉଁଠି ସେ କବିତା ଚଳାଣି ସହ ଘଣ୍ଟିକଣ୍ଠି ତାରକ ପ୍ରଥମ ଥର ପାଇଁ କବିତା ଲେଖନୀର ରୂପେ ପରିଚିତ ହୋଇଛନ୍ତି ।



ଡଃ ଜ୍ୟୋତି ସାହୁ

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ISBN: 978-1-64580-264-3 | ₹ 500



BLACK EAGLE BOOKS
www.blackaglebooks.org
 Delhi, USA • Bhubaneswar, India

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NEW MEDIA

(Media Content Production on Multiple Platforms)



Edited by

KRISHNA SANKAR KUSUMA

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Edited by : **Krishna Sankar Kusuma**

Edition : 2022
Price : ₹850/-
Printed by : H.S. Offset Printers, Delhi
Publisher : **arshia publications**
Title : Team arshia publications, Delhi
ISBN : 978-93-93998-60-6

Courtesy: Generated by AI Discord-Midjourney:
Prompt "Network of Networks" by Dr. K.S.Kusuma (2022)

arshia publications

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Chapter 9

Ethics in Digital Media: Plagiarism, Copyright and Attribution

Dr. Santosh Kumar Biswal

Abstract

The media industry has become complex and subtle which have invited numerous challenges to the formulation and execution of media policies in India. In a view of discussing ethics of digital media covering the aspects of plagiarism, copyright, and attribution, it is essential to deliberate on media laws in India. In addition, discussions on media regulations in the light of ethics in digital media platforms have been equally pivotal.

Keywords: *Media industry, Media policies, India, Ethics, Digital media*

To certain philosophers, ethics indicate certain concepts and rules which govern our behaviour. By the virtue of ethics, human morality can be shaped and reshaped. Moreover, moral philosophy is confined to the space of moral psychology, descriptive ethics, and value theory. Now-a-days, generally meta-ethics, normative ethics and applied ethics are studied (Moldovan, 2014). A narrative has become essential to understand and debate on ethics. Hence, there is an explicit connection between ethics and media laws.

Defining Media Ethics

Media ethics is applied to the norms and standards in media. It entails in fostering a universal respect for life and the rule of law and legality. It could be in the area of print, electronic and digital media. Immersive media is getting buzzed (Mehendale, 2019). Such domain remains without borders and range from journalism to soap operas and from films to modern business channels of communication. In the field of news coverage, media ethics checks and filters the layers of impartiality, objectivity, balance, privacy, proximity and the public interest. It also keeps an eye on stereotyping, obscenity, biasness, advertising practices

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EDUCATION DURING COVID-19 AND BEYOND

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Covid-19 has been the biggest disruption in education since the Second World War and will have long-lasting effects on students. It has hampered practically the whole education industry in more than 200+ countries. Closure of schools, institutions and other learning spaces have impacted more than 94 per cent of the world's student population (Pokhrel and Chhetri, 2021). According to UNICEF surveillance, 46 countries have national closures currently enforced and 27 countries are introducing local closures, affecting about 72.9 per cent of the student population worldwide (Nayak, 2021). Extended periods away from school can result in significant 'learning loss', particularly for disadvantaged pupils. The education sector has never been disrupted globally as it is today.

The national lockout strategy undertaken by the Government of India in March 2020, resulted in the closure of thousands of schools all over the country. These closures had the first effect on the system of schooling and learning, including methods of teaching and evaluation. With the rapid development of COVID-19 in the middle of 2020, many educational institutions have found online teaching as an alternative to face-to-face teaching.

A few private schools with high infrastructural facilities were able to implement the methods of teaching online. However, due to lack of access to e-learning solutions, low-income private and government schools couldn't adopt the online teaching strategy in a true sense. The higher education sector has also been severely disrupted by this pandemic. The transition from traditional face-to-face to online



Contemporary Medical Biotechnology Research for Human Health

Advances in Biotechnology and Bioengineering

2022, Pages 177-186

Chapter 19 - Cryopreservation of mesenchymal stem cells (MSCs) derived from bone marrow with carbohydrate additive sucrose and dimethyl sulfoxide (DMSO)

Seema Tripathy, Shikha Singh, Saroj Kumar Das

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Abstract

Effective cryopreservation strategies for mesenchymal stem cells (MSCs) are highly essential to be used in future "off-the-shelf" therapeutic purposes. The bone marrow-derived MSCs (BM-MSCs) are still considered as safest source for therapeutic intervention. However, the conventional cryoprotectant (CPA) dimethyl sulfoxide (DMSO) is known to have toxic side effects. So, it is always desirable to develop preservation medium for stem cells without or with reduced concentration of DMSO. In this study, we reduced the concentration of DMSO by addition of nontoxic CPA sucrose. Here, the combination of sucrose (0.015 M) and DMSO (7.5%) demonstrated better post-thaw survival rate ($86.078 \pm 0.001\%$) than DMSO at concentration 10% ($81.238 \pm 0.001\%$) and 7.5% (78.908 ± 0.001) for BM-MSCs after stored for 60 days. The population doubling time (PDT) of BM-MSCs cryopreserved along with 7.5% DMSO plus 0.015 M sucrose was found (33.244 ± 10.526) h similar to noncryopreserved BM-MSCs (30.08 ± 10.22) h. However, longer PDT was recorded when BM-MSCs were cryopreservation done in 10% DMSO (38.241 ± 11.908) h and 7.5% DMSO (43.102 ± 14.821) h. Our results indicate the post-thawed MSCs were able to generate MSC-like colonies, retain osteogenic and adipogenic differentiation capacity. In this report we develop a user friendly cryopreservation medium for long-term storage of BM-MSCs using sucrose that chiefly responsible to reduce the concentration of DMSO. So, that negative effect of DMSO can be minimized and post-transplantation complication may be evaded.

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Keywords

Cryopreservation; Dimethyl sulfoxide; Sucrose; Post-thaw survival rate

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हिन्दी ओड़िआ साहित्य का
तुलनात्मक परिदृश्य

प्रो. राधाकान्त मिश्र
डॉ. स्नेहलता दास

ISBN-978-81-930505-4-5

गुलनात्मक साहित्य तथा हिंदी ओडिआ साहित्य का गुलनात्मक परिदृश्य
प्रथम संस्करण-2021

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रुवि अभिसेट, कटक

मूल्य : 225.00

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Biotechnology of Anti-diabetic Medicinal Plants

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ISBN 978-981-16-3528-1

ISBN 978-981-16-3529-8 (eBook)

<https://doi.org/10.1007/978-981-16-3529-8>

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The registered company address is: 152 Beach Road, #21-01/04 Gateway East, Singapore 189721,
Singapore



Tissue-Culture-Mediated Biotechnological Intervention in *Centella asiatica*: A Potential Antidiabetic Plant

4

Priyanka Mohapatra, Asit Ray, I. Sriram Sandeep, Sanghamitra Nayak, and Sujata Mohanty

Abstract

Centella asiatica L. (Apiaceae) commonly known as Indian Pennywort is a medicinally important perennial herb widely used in traditional Indian and Chinese systems of medicine for treating various disorders. Bioactive compounds such as asiaticoside possess antidiabetic properties by regulating insulin sensitizer receptors responsible for the treatment of diabetic mellitus. The conventional mode of propagation of *C. asiatica* using stem cuttings is quite slow and is not sufficient to meet the increasing market demands. Therefore, micropropagation is being used as a reliable and alternative method for propagation. The success of any tissue culture depends on the survival of plantlets after transfer to field conditions. Another important factor that is vital for conservation is the regeneration of plants with uniform genetic makeup. This chapter provides a comprehensive analysis of the plant growth regulator combinations employed for culture initiation, proliferation, and eventual protocol optimization required for successful large-scale in vitro regeneration of *C. asiatica*. Besides, this chapter offers a detailed analysis of various acclimatization strategies used till date for successful establishment of in vitro regenerated *C. asiatica* plantlets under in vivo conditions. This chapter also summarizes the employment of different molecular, morphological, biochemical, and cytological markers used for assessing the clonal fidelity among donor plants and tissue-culture-derived plantlets of *C. asiatica*.

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S. Gantait et al. (eds.), *Biotechnology of Anti-diabetic Medicinal Plants*,
https://doi.org/10.1007/978-981-16-3529-8_4

Sujata

A MITTAL PUBLICATION

The Panorama of Odisha's Rural Culture

A Kaleidoscopic View



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Swayam Prava Mishra
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Cataloging in Publication Data—DK

Courtesy: D.K. Agencies (P) Ltd. <docinfo@dkagencies.com>

The panorama of Odisha's rural culture : a kaleidoscopic view /
editors, Navaneeta Rath [and three others].

pages cm

Contributed articles.

Includes bibliographical references and index.

ISBN 9789390692859

1. Country life--India--Odisha. 2. Odisha (India)--Rural
conditions. 3. Sociology, Rural--India--Odisha. I. Rath,
Navaneeta, 1965- editor.

LCC GT3471.I4P36 2022 | DDC 307.70954 23

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First Published 2022

© Navaneeta Rath, Swayam Prava Mishra,
Rashmita Sahoo & Adyasha Sahoo

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ISBN 978-93-90692-85-9

Published and printed by Krishan Mittal for Mittal Publications
4594/9, Daryaganj, New Delhi - 110002, India.
Phone: 23250398, Telefax: 91-11-41564398
e-mail : info@mittalbooks.com
Website : www.mittalbooks.com

INDIGENOUS RURAL GAMES OF WESTERN ODISHA: Heritage and Habits

SUPRIT PANIGRAHI

Introduction

Games and sports are not synonymous to each other. While games are basically recreational or played for fun, sports represent arrangements which is more formalized and institutional. Guttman (1988) distinguishes “between play, games, competitions, and sports. Play may be both spontaneous and planned. Non-competitive or competitive games are included in organised play (contests). Contests can be either intellectual or physical in nature (sports). Chess games can be thought of as intellectual competitions. It is frequently contested which activities should be categorised as sports” (Malkappagol et al.,2018). Play is seen in the lives of children as a natural and a spontaneous phenomenon. All children have a ‘Right to Play,’ or as the saying goes, ‘Play is Child’s Work.’ Babies’ recreational performances include free body movements, voices, and responses to adult stimuli. As kids become older, their acts become more coordinated and activity-oriented, such as running, jumping, or playing with toys. Later on, when engaging in basic games, youngsters learn to follow special regulations that are associated with them. Other types of play include finishing a half-told narrative, singing, creative