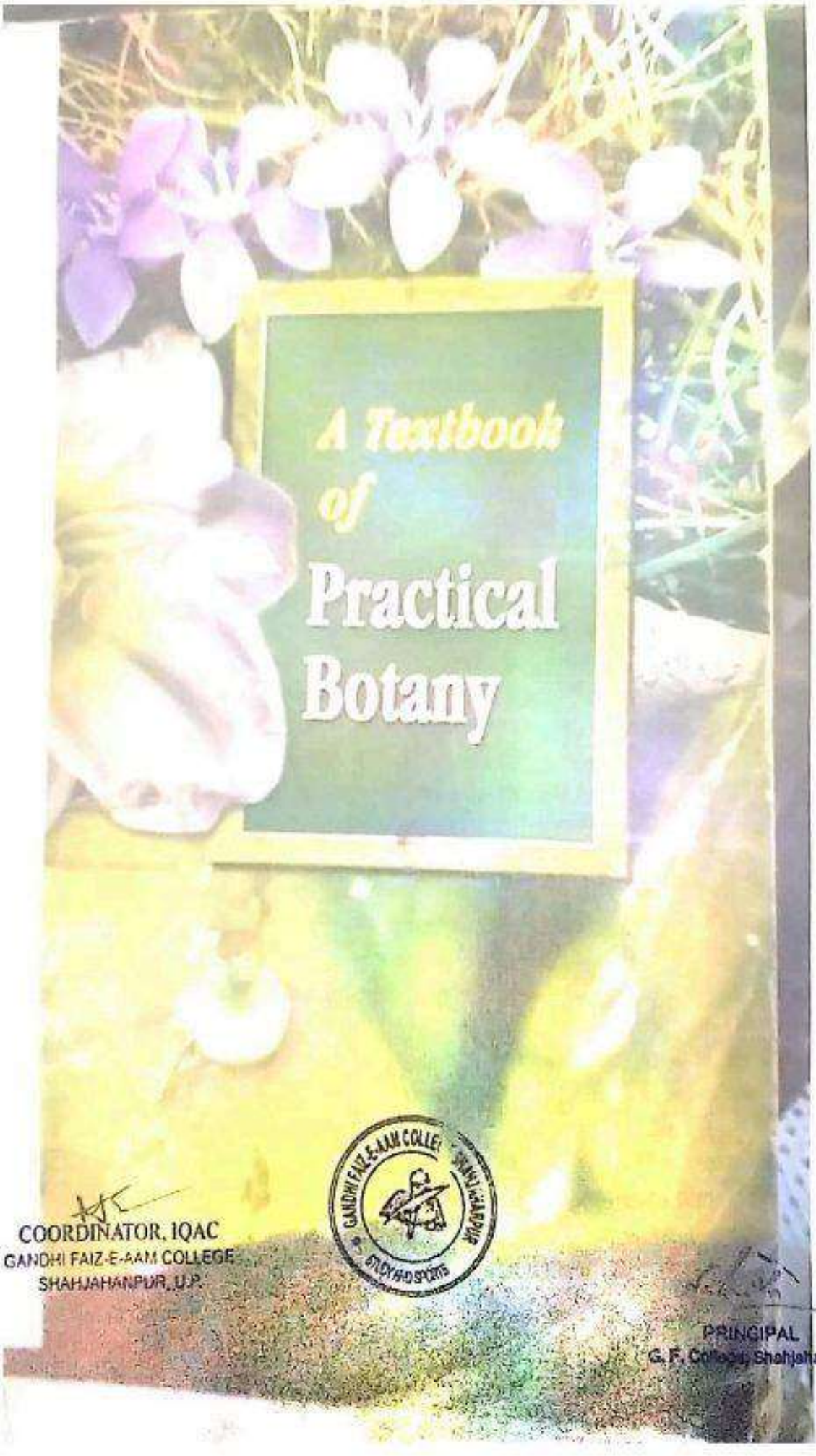

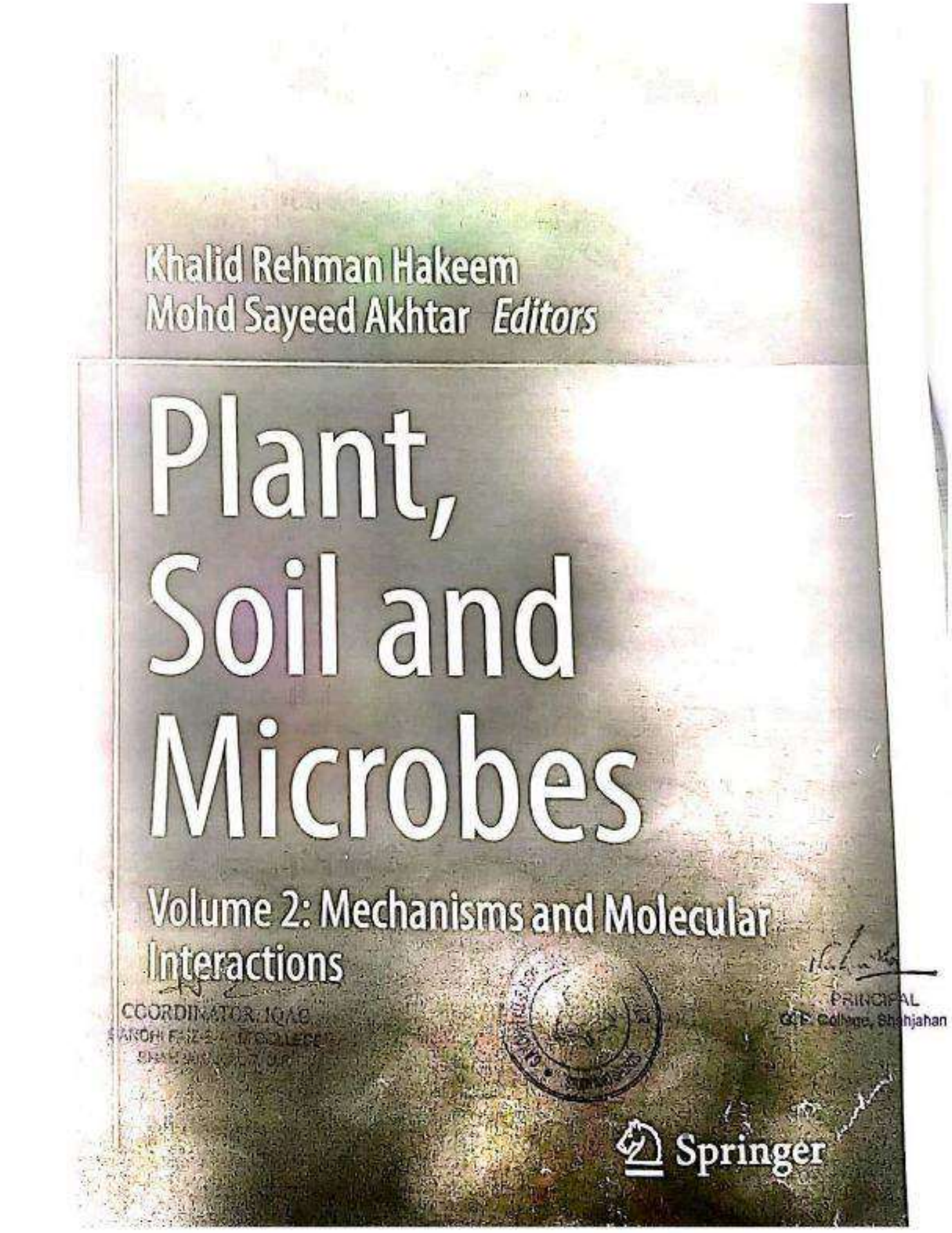

Root Exudates and Their Molecular Interactions with Rhizospheric Microbes

Mallappa Kumara Swamy, Mohd. Sayeed Akhtar, and Uma Rani Sinniah

Abstract Biologically important plant-microbe interactions are mediated by a wide array of signal compounds rhizodeposited from both plant and microbial species. Root exudates are some of the potentially important low molecular weight compounds secreted from plant roots. They are involved in building a network of biointeractions through several physical, chemical, or biological interactions. Application of bioinoculums has significantly improved growth parameters and yield of many economically valued crops. Root exudates mediate the plant-microbe interactions by colonizing the roots and promoting root growth. Also, root exudates improve chemical and physical characteristics of the rhizospheric soil. Some of the beneficial plant-microbe associations include nitrogen fixation by rhizobium, symbiotic biointeractions with AM (arbuscular mycorrhizal) fungi, and PGPR (plant-growth-promoting *Rhizobacteria*). These interactions improve plant growth and quality, stress tolerance, and plant defense responses. Root exudates constitute a wide variety of secondary metabolite constituents that help plants to guard against microbial infections, insects, or herbivore attack. Root exudates secreted by plants act as antimicrobial agents to curb various harmful rhizospheric pathogens. In this chapter, we provide a summary of literatures on the significance of plant-microbe interactions in the improvement of plant morphological and biochemical features. Further, detailed information on various types of root exudates and their role in mediating plant-microbe interactions and possible exploration of root exudates as a novel antimicrobial compounds are also discussed.

Keywords Soil microbes • PGPR • Mycorrhizae • Signal molecules • Antimicrobials

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Response of PGPR and AM Fungi Toward Growth and Secondary Metabolite Production in Medicinal and Aromatic Plants

Mallappa Kumara Swamy, Mohd Sayeed Akhtar, and Uma Rani Sinniah

Abstract Plant growth-promoting rhizobacteria (PGPRs) are a group of naturally occurring beneficial soil bacteria that colonize with the plant root system and promote growth by triggering the production of growth-regulating substances and facilitate the plants in the uptake of essential nutrients from the surrounding environments. Similarly, arbuscular mycorrhizal (AM) fungi also enhanced the growth, water and nutrient uptake, and especially available phosphate through their specialized hyphae. In addition, PGPR and AM fungi are known to stimulate the accumulation of secondary metabolites in plants. For several years, they are commonly employed to increase the plant yield and productivity especially in agricultural practices. The medicinal and aromatic plants are gaining popularity worldwide due to high therapeutic properties with negligible toxic side effects. To fulfill the global demand and supply gap for medicinal and aromatic plants and their products, farmers are encouraged to cultivate these plants on a large scale. However, there is a need to understand and implement a better cultivation practices in order to improve the quality of medicinal and aromatic plants. In this regard, the utilization of PGPRs and AM fungi as biofertilizers instead of chemical fertilizers could be a promising approach to the development of medicinal and aromatic plants under the sustainable production system. The aim of this chapter is to describe the potentiality of PGPRs and AM fungi to improve growth and development of medicinal and aromatic plants and accumulation of secondary metabolites having high therapeutic worth and also pave a way in the development of new biotechnological products as biofertilizers.

Keywords Plant metabolites • Rhizobacteria • Bioinoculants • Crop productivity • Signal molecules

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Occurrence, Distribution, and Molecular Identification of Phytoplasma-associated Diseases in Ornamental Plants

Akil Ahmad Khan, Shoeb Ahmad, and Mohd Sayeed Akhtar

Abstract Phytoplasma is recognized as the serious constraints for the many economically ornamental plants all around the world. It may reduce the quality and yield of ornamental plants and is recognized internationally because of its unspecific symptoms, severe losses, and diverse epidemiology. The epidemics of these diseases have compelled the withdrawal of many ornamental plant species such as gladiolus, lily, chrysanthemum, and rose from cultivation. So far, more than 42 ornamental plant species were reported as infected by phytoplasma. The general symptom includes flower malformation, growth abnormalities, yellowing or decline of leaves, elongation and etiolation of internodes, witches' broom, stunting, little leaf, and virescence. The knowledge on the diversity and identification of phytoplasma has been explored with the molecular tools and techniques showing that phytoplasma infecting the ornamental plant *Candidatus* Phytoplasma asteris belongs to a major 16SrI group. The other known groups of phytoplasmas are 16SrII, 16SrIII, 16SrV, 16SrVI, 16SrVII, 16SrIX, 16SrX, 16SrXII, 16SrXIII, and 16SrXV. For the detection of phytoplasma in the infected plant parts or tissues, the 16S rRNA gene fragments were amplified using phytoplasma universal primer pairs P1/P7 in a polymerase chain reaction (PCR) followed by primer pairs R16F2n/R16R2 in the nested PCR. Nevertheless, for the finer detection of phytoplasma-related *Candidatus* Phytoplasma asteris, DNA samples were used to extend the *RP* and *Tuf* gene fragments by PCR using aster yellows group-specific primer pairs RP(I)F1A/RP(I)R1A and fTufAy/rTufAy, respectively. However, the restriction fragment length polymorphism (RFLP) analysis of *RP* gene fragments digested with AluI, MseI, and Tsp5091 restriction enzymes indicates the presence of aster yellows group. The aim of the present chapter is to provide an overview of the phytoplasma-associated diseases in ornamental plants, their mode of transmission, and the molecular techniques employed to detect the phytoplasma in the infected plant parts or tissues.

Keywords *Candidatus* • PCR • RFLP • Transmission • Aster yellows disease

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Isolation and Identification of Allelochemicals from Ascocarp of *Tuber* Species

Paola Angelini, Emma Bricchi, Mohd. Sayeed Akhtar, Alessandro Properzi, Jeri-Lynn Elizabeth Fleming, Bruno Tirillini, and Roberto Venanzoni

Abstract Truffles (*Tuber* spp.) belong to the fruiting bodies of certain hypogeous ascomycetes, which may grow in ectomycorrhizal symbioses with specified shrub and tree species. Some truffles, notably *Tuber melanosporum* and *T. aestivum*, form 'burnt' area, also known as 'burn' or 'brûlé' around their symbiotic hosts. Increasingly focused interest has been centred on an in-depth research and study of truffle methanolic extracts and their fatty acid allelochemicals. These metabolites have been recognised as biochemical and have great influence in the burnt formation. This present chapter contributes the knowledge of truffle methanolic extracts and fatty acids regarding allelopathic activity to understand the applicability and sustainability of truffles in agricultural practices for the management of weed and plant pathogens. However, it will also be helpful to the companies specialising in the processing of truffle and the recovery and reinsertion of waste truffles through the production process for the isolation of important allelopathic compounds.

Keywords Bioassay • Fatty acids • LC/MS analysis • *Tuber aestivum* • *T. borchii* • *T. magnatum* • *T. melanosporum*

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Potential of *Bacillus thuringiensis* in the Management of Pernicious Lepidopteran Pests

Md. Aslam Khan, Bishwajeet Paul, Wasim Ahmad, Sangeeta Paul, Chetana Aggarwal, Zehra Khan, and Mohd. Sayeed Akhtar

Abstract Microbial products have a long history of safe use and most of the microbial agents are compatible with other methods of pest control. A number of microbial biopesticides have been registered for field application on various vegetables, fruits, and other crops of agricultural, horticultural, and forest importance. During sporulation phase, *Bacillus thuringiensis* accumulates certain insecticidal crystal proteins which are pathogenic to a number of insect orders. Thousands of toxicogenic strains of *B. thuringiensis* exist and each strain produces its own unique well-known insecticidal crystal protein. *B. thuringiensis* is biodegradable and safe to nontarget organisms as the conditions required for complex steps in the mode of action do not exist in mammals or most of invertebrates. Development of agricultural crop varieties that contain *B. thuringiensis* proteins provides a safe alternative to the use of chemical insecticides. Tobacco and tomato were the first transgenic plants encoding for *B. thuringiensis* insecticidal crystal protein. The development of resistance to *B. thuringiensis* toxins is, however, particularly unfortunate. Thousands of *B. thuringiensis* isolates are available around the world, and fortunately almost all the major insect pests are susceptible to these strains. Moreover synthetic insecticides in combination with biopesticides are economic,

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Biotechnology : A Tool to Cope with Climate Change

*Dr. Swapanil Yadav**

Abstract

In the last few years, there is a growing concern about the increasing threats to agricultural biodiversity. There is a deep connection between biodiversity and human well-being, that climate changes are destabilizing the global food supply. Climate change is caused by the concentration of green house gases (Carbon dioxide, methane, nitrous oxide etc.) in the atmosphere which trap heat and warm the environment. Climate change is potentially impacting food production and security, sustained water supply, biodiversity of forests and other natural ecosystems, human health and settlement. Climate change is often manifested in extreme events of precipitation, sea-level rise and temperature increase, leading to drought, floods, disease and pest cycle, forest fires and desertification. The impact of climate change is likely to have great influence on the agriculture and water sectors and eventually on the food security and livelihoods of a large section of rural population. India would be worst hit by climate-induced adverse impacts and disasters because of lack of capacity, vulnerability of people and weak resilience mechanisms. In the last decade biotechnology attracted scientists as a tool to solve many agricultural problems. Biotechnology has created an array of tools to improve agricultural productivity, efficiency and nutrition over the last decade, from tissue culture to marker-assisted selection to genetic engineering. Biotechnology offers great potential to help developing

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Role of Agriculture in the Development of Rural India: Its challenges and possibilities in 21st century

Dr. Puneet kr. Srivastava[*], *Suraj Sharma*[†]
Dr. Rajeev K. Agarwal[‡]

The history of **agriculture in India** dates back to the Rig-Veda. Today, India ranks second worldwide in farm output. Agriculture and allied sectors like forestry and fisheries accounted for 13.7% of the GDP (gross domestic product) in 2013, about 50% of the workforce. The economic contribution of agriculture to India's GDP is steadily declining with the country's broad-based economic growth. Still, agriculture is demographically the broadest economic sector and plays a significant role in the overall socio-economic fabric of India

In 2015, the National Crime Records Bureau of India reported 17,794 farmer suicides. Farmer suicides account for 11.2% of all suicides in India. Activists and scholars have offered a number of conflicting reasons for farmer suicides, such as monsoon failure, high debt burdens, genetically modified crops, government policies, public mental health, personal issues and family problems.

To put it in a somewhat stylized manner: India will grow between 6 to 8% annual and will become the third or fifth largest economy of the World in this period.(For a model based on which these projections are derived after some modifications taking into account recent experience, see V. Pundit, 2004 and Y.K. Alight,

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जलवायु परिवर्तन एवं संपोषणीय कृषि

विजय अग्रवाल*, डा. पुनीत कुमार श्रीवास्तव 'मनीषी'†

प्रस्तावना :

भारत में, जहां आजीविका का प्राथमिक स्रोत कृषि है, मध्य तापमान में प्रतिकूल परिवर्तन, वर्षा का आधिक्य अथवा कमी, अतिकारी मौसमी घटनाओं समेत मौसम का अनिश्चित व्यवहार, समुद्री जल स्तर में वृद्धि तथा बार-बार एवं गंभीर तटीय तूफान एवं सुनामी हमारे लिए विशेष चिंता के क्षेत्र हैं। सभी राष्ट्रों विशेषकर विकसित देशों द्वारा अभी तक की गई कार्यवाही से ऐसा प्रतीत होता है कि इस शताब्दी के अंत तक माध्य तापमान तीन डिग्री सेल्सियस तक बढ़ जाएगा। इसी घटनाक्रम पर विचार विमर्श करने के लिए संयुक्त राष्ट्र ने अपने सदस्य राष्ट्रों के मध्य गहन मन्त्रणा कर 17 लक्ष्य प्रतिपादित किए ताकि वे जलवायु परिवर्तन एवं प्रभावों से लड़ने के लिए स्वयं को तैयार कर सकें और सम्भावित जनहानि को रोकने में समर्थ हो सकें। अपने प्रयासों को अमली जामा पहनाने के लिए राष्ट्रों ने सम्मेलन कर ऐसा प्रारूप सभी के सम्मुख रखा कि वे स्वयं को बचाते हुए सम्पूर्ण मानव जगत के हित साधक बन सकें।

माध्य तापमान में 2 से 3 डिग्री सेल्सियस वृद्धि होने से उत्तर भारत में गेहूं की फसल अवधि में कमी आएगी और परिणामस्वरूप प्रतिवर्ष 60 से 70 लाख टन गेहूं बर्बाद होगा। साइबेरिया और उत्तर कनाडा जैसे कुछ क्षेत्रों को तापमान में आंशिक वृद्धि से लाभ होगा, क्योंकि इससे उनकी फसल की अवधि बढ़ जाएगी। इस प्रकार जलवायु परिवर्तन के साझे प्रभाव भी होंगे और भिन्न प्रभाव भी होंगे। ग्रीनहाउस गैस उत्सर्जन में पारस्परिक सहमति वाली कमी करने में सहयोग की अपनी नीति को ध्यान में रखते हुए भारत सरकार ने 1 अक्टूबर, 2015 को निम्नलिखित दो बड़े निर्णय लिए-

1- 2030 तक जी0डी0पी0 की उत्सर्जन तीव्रता में 2005 के स्तर की अपेक्षा 32 से 35 प्रतिशत तक कमी लाना।

2- 2030 तक लगभग 40 प्रतिशत बिजली का उत्पादन अजीवाश्मीय ईंधन आधारित स्रोतों जैसे परमाणु, सौर, पवन, बायोमास एवं बायोगैस से करना।

माध्य तापमान में वृद्धि एवं समुद्र के जल स्तर में संभावित वृद्धि हमारे देश के लिए विशेष चिंता के क्षेत्र हैं। हमें विशेष रूप से प्रतिकूल जलवायु के प्रतिकूल प्रभावों के खतरे वाले क्षेत्रों में जीवन एवं आजीविका की रक्षा हेतु

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Economics Factors Affecting Happiness

Saumya Gupta*, Dr. Puneet Kumar Srivastava** and Rachit Kumar Agarwal***

Introduction

Happiness is a mental or emotional state of well being defined by positive or pleasant emotions ranging from contentment to intense joy. A variety of biological psychological, religious & philosophical approaches have striven to define happiness & identify its sources.

Philosphers & religious thinkers often define happiness in terms of living a good life or flashing, rather than simply as an emotion. Happiness of virtue to the virtue of happiness is been a transition over a time.

Happiness is a fuzzy concept & can mean many different things to many people.

"The seed of suffering in you may be strong, but don't wait until you have no more suffering before allowing yourself to be happy".

Happiness & Economics

The economics of happiness or happiness economics is the quantitative & theoretical study of happiness, positive & negative effect, well being, and quality of life, life satisfaction & related concepts, typically combining economics with other fields such as psychology, health & sociology. It typically treats such happiness related matters/measures, rather than wealth, income or profit, as something to be maximized. The field has been grown substantially since the late 20th century , for ex by the development of methods, surveys & indices to measure happiness & related concepts, its findings have been described as a challenge to the economics profession.

Happiness is typically measured using subjective measures eg:- Self reported surveys – and/or objective measures. One concern has always been the accuracy & reliability of people's response to happiness surveys.

Lifespan, income, education are objective measures often used as well as instead of subjectively reported happiness, through this assumes that they generally produce happiness which while plausible may not necessarily be the case.

The terms quality of life or well being are often used to encompass these more objective measures.

Some scientist claim that happiness can be measured both subjectively & objectively the joy center of brain lit up with advance imaging, although this raises philosophical issues, for ex about weather this

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Economic Happiness and Recent Development in Economics of Happiness

Swati Sharma*, Dr. Puneet Kumar Srivastava** and Vijay Aagarwal***

Abstract

What makes people happy in life? This is a crucial question that has the potential to shake up economics. In recent years, the dissatisfaction with the understanding of welfare in economics together with the new opportunities to empirically study people's subjective wellbeing have spurred impressive and stimulating new research in the often called dismal science. The economics of happiness has emerged as one of the most thriving areas in current economic research. This introductory chapter refers to important contributions to the economics of happiness that characterize the recent developments in the area. First, we refer to reviews of the literature, the measurement and the relationship of happiness research to welfare economics. Second, we emphasize four factors from the large literature on the determinants of happiness in economics, i.e. income, employment, social capital and health. In fact, the main body of research in this new area is on the preconditions or covariates of high individual well-being. Third, important studies applying the so-called Life Satisfaction Approach as an alternative valuation approach are discussed. Fourth, we point to contributions that elaborate on the understanding of utility in terms of people's adaptation to circumstances and their difficulties in predicting future utility. Fifth, we provide references to the controversial question regarding the policy consequences of this new development.

Keywords: Happiness, individual welfare, Life Satisfaction Approach, subjective well-being.

Introduction

What makes people happy in life? This is a crucial question that has the potential to shake up economics. In recent years, the dissatisfaction with the understanding of welfare in economics together with the new opportunities to empirically study people's subjective well-being have spurred impressive and stimulating new research in the often called dismal science. The economics of happiness has emerged as one of the most thriving areas in current economic research. This volume presents a collection of important contributions to the economics of happiness that characterize the recent developments in the area. The papers build on an early literature that has been documented in Richard Easterlin's collection

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Consumer Well-Being and Happiness by Consumer Protection

Malika Mahira Khan*, Dr. Puneet Manishi** and Mr. Vijay Agarwal***

"Every Man is a Consumer and Ought to be a Producer. He is by Constitution Expensive, and Need to be Rich"

– Ralf Emerson

Introduction

Consumer protection refers to protecting the interest of consumers. An analysis of marketing management has made it clear that consumer is a king pin in the market. The producer should produce goods keeping in mind the requirements of consumers and satisfy the consumer but it is observed that this obligation is neglected by some businessmen and they are involved in the unfair practices such as supply of substandard quality, adulteration etc. So there is need for consumer protection. Hence consumer protection means protecting the interest of consumer.

What is Consumer?

As we all use lot of different types of goods for a reason. These goods are both tangible (goods) and non-tangible (services). Together goods and services are known as satisfaction of wants. The process of using various goods and services to satisfy a want is known as consumption. When we pay a price for a goods and services to satisfy wants, than we became a consumer.

Ways and Means of Consumer Protection

In India large number of consumers are living below poverty line and large number are illiterate and unaware of their rights so consumer protection movement cannot be the same as followed by developed countries. In India it has to be a social movement wherein people of all walks of life have to play their role. Following are some ways and means of consumer protection followed in India:

- Consumer Organizations
- Self Regulation by Business
- Business Associations
- Consumer Awareness
- Government

Importance of Consumer Protection

Consumer protection is very wide. It includes rights, responsibilities and various remedies available to consumers. It is not only beneficial for consumer but it is equally important for businessmen also-

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Role of Education in Human Happiness

Sandeep Singh*, Dr. Puneet Kr. Shrivastava** and Inderpreet Kaur***

Introduction:

Judging from the title of the conference, it appears that we are gathered to examine the science and involved in happiness studies, and to assess its significance for making public policy. Some of the invited speakers have devoted much of their life's work to addressing precisely these two broad topics and their views, sympathies and bases are well known to people working in the trade.

Judging from the proposed titles of contributions, it appears that we are proceeding from relatively broad overviews of happiness studies to more detailed discussions. In my case, the focus is supposed to be on the particular role of education in influencing happiness and what significance, if any that might have for public policy. I will give a brief summary of my understanding of the basic questions and my answers now, and a more detailed investigation afterward.

Give a great variety of research scenarios that may be constructed from our three essential variables, one should expect plenty of different answers to the basic political question of this session. What public policies one ought to adopt and Implement regarding the influence of education on happiness depends minimally on which of the great variety of research scenarios one adopt to maximally on lots of other things as well e.g., what is politically possible, technically possible ,morally possible and so on. There are good reasons for people pursuing the first and last of the minimum eight scenarios. My personal preference is for the last, but I have done quite a bit of work with the first too. Compared to the scenario, the first is far easier to manage. The last scenario costs a lot more in many ways then the first and, as usual, it costs more because it is worth more in the long run. It promises to deliver much more value in many more senses of this world than the first, minimal research scenario. There is good evidence that most of the governments of most countries of the world perceive and have endorsed a political agenda that pretty clearly follows from those robust definitions.

Education as learning

If the distinguishing feature of anything regarded as education is the fact that learning occurs, then it is a gross oversimplification define 'education' as merely formal education leading to some kind of certification. If the difference between knowledge and mere opinion or belief is the knowledge requires that one's opinions or beliefs must be true in the first place and well- warranted in the second place then probably much of what one learns formally, non-formally and informally as characterized earlier is not knowledge.

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बाल साहित्य और मानवीय प्रसन्नता

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बाल-साहित्य

बाल साहित्य के अन्तर्गत वह शिक्षाप्रद साहित्य आता है जिसका लेखन बच्चों के मानसिक स्तर को ध्यान में रखकर किया गया हो बाल साहित्य में रोचक शिक्षाप्रद बाल कहानियाँ, बाल गीत व कविताएँ प्रमुख है। हिन्दी साहित्य में बाल साहित्य की परम्परा बहुत समृद्ध है। पंचतंत्र की कथाएँ बाल साहित्य का एक महत्वपूर्ण स्त्रोत है। हिन्दी बाल साहित्य लेखन की परम्परा अत्यन्त प्राचीन है पंचतंत्र, हितोपदेश, अमर कथाएँ अत्यन्त प्राचीन है। व अकबर बीरबल के किस्से बच्चों के साहित्य में पशु-पक्षियों को माध्यम बनाकर बच्चों को बडी शिक्षाप्रद प्रेरणा दी गई। बाल साहित्य के अन्तर्गत बाल कथाऐं, बाल कहानियाँ, बाल कविताएँ आदि सम्मिलित किए जाते है।

सामान्य साहित्य/बनाम बाल साहित्य

सामान्य साहित्य हो या बाल साहित्य, दोनों का उद्देश्य और प्रयोजन समान है। बच्चों का स्वतंत्र व्यक्तित्व होता है। उनकी रूचि और मनोवृत्ति को ध्यान में रखकर लिखा गया साहित्य ही बाल साहित्य कहलाता है। एक ऐसा साहित्य जो उनमें बोये हुए अंकुरों को पुष्ट करता है और उन्हें अपनी छोटी समझ-बूझ के आधार पर जीवन पथ पर आती जाती हर क्रिया को पहचानने में मदद करता है। साथ-साथ उन्हें ये भी ज्ञान देता है कि ये भले और बुरे की पहचान कर सकें।

बाल साहित्य का विकास युग

बाल साहित्य के लेखक का यह भी फर्ज बनता है कि बाल साहित्य के माध्यम से बच्चों की सोच को सकारात्मक रूप देने का प्रयास करें। साहित्य को रूचिकर बनाये। विविध क्षेत्रों की जानकारी अत्यंत सरल तथा सहज भाषा में उनके लिए प्रस्तुत करें, जिसमें बालक की चाह बनी रहे और जिज्ञासा भी उत्पन्न होती रहे। इससे उनमें संवेदनशीलता और मानवीय संबंधों में मधुरता बढेगी।

बच्चे का मानसिक विकास कुछ ऐसा है कि यह आजादी का कायल रहता है- बंधन मुक्त। अगर कोई उनसे कहे कि यह आग है, जला देती है, तो उसका मन विद्रोही होकर उस तथ्य को जानने, पहचानने और महसूस करने की कोशिश में खुद को कभी-कभी हानि भी पहुँचा सकता है बालक के मन में सवालों का ताँता लगा रहता है, क्यों हुआ और कैसे हुआ? और अपनी बुद्धि अनुसार काल्पनिक आकृतियाँ खींचता है और अपनी सोच से भी अनेक जाल बुनता रहता है।

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मानवीय सुख बनाम मानवीय प्रसन्नता

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प्रस्तावना

मानव सम्पूर्ण ब्रह्माण्ड में ईश्वर की अनुपम, अतुलनीय व सर्वश्रेष्ठ कृति है। इसीलिए परमात्मा ने उसे दिव्य-दिव्यांग, भाव-भावना, बुद्धि, तर्क करने की क्षमता जैसी अद्वितीय क्षमताओं से युक्त किया है।

मानव सुख-दुख, राग-द्वेष, अपने-पराये, जय-पराजय, लोभ-लालच, उपकार-अपकार के माया जाल में फंस कर सम्पूर्ण जीवन में नर्तन करता रहता है और अंत तक इच्छाओं के मकड़जाल में फंसाकर इस संसार से विदा ले लेता है।

सुख का अर्थ

प्रकृति के सद्भावों से स्वयं को बचाने के लिए एकत्रित की गई वस्तुओं तथा सुख को उत्पन्न करने वाले वातावरण निर्मित करने से उत्पन्न आनन्द या अहं की संतुष्टि होने के बाद जो भाव बनता है, उसी को कोष से सुख उपजता है। यह अत्यन्त अल्पकालिक या एकांगी होता है व ग्राह्य वस्तुओं पर निर्भर करता है। अधिकांशतः सुख को प्राप्त करने के लिए धन खर्च किया जाता है। सुख एक प्रकार की अनुकूल संवेदना है, जो सदा पराश्रित, स्थान, वस्तु अथवा व्यक्ति सापेक्ष होता है। दूसरे शब्दों में मन की अनुकूल दशा ही मानवीय सुख है। स्वयं से स्वयं में संतुष्टि ही आनंद है, इसे 'आत्यंतिक सुख' भी कहते हैं। इसमें निरपेक्षता का भाव होता है। यह एक द्वंद्वातीत स्थिति है, जिसका कोई विकल्प नहीं है।

प्रसन्नता का अर्थ

अपने आत्मीय जनों की सफलता की सूचना मात्र से ही अन्तस से जो आनन्द की लहर उठती है, उससे प्रसन्नता का भाव उत्पन्न होता है। यह अनमोल होता है और इसके संचरण से शरीर का रोम-रोम पुलकित होता है। यह बांटा नहीं जा सकता है, यह पूर्णतः आन्तरिक होता है।

सुख का असली स्वरूप

प्रदर्शन की होड़ ने आज मानव को अन्धा बना दिया है। वह अपने को सर्वश्रेष्ठ सिद्ध करने के लिए ओछे से ओछे हथकंडे अपना कर धन या शक्ति को एकत्र कर नकली सुख को प्राप्त करने वाला दंभी हो रहा है। निरन्तर बढ़ती आवश्यकताओं को पूरा करने के लिए उसने अपने घर को एक विशाल गोदाम का रूप दे दिया है। जिस सुख को प्राप्त करने के लिए वह यह सब कर रहा है। यही उसके लिए कालान्तर

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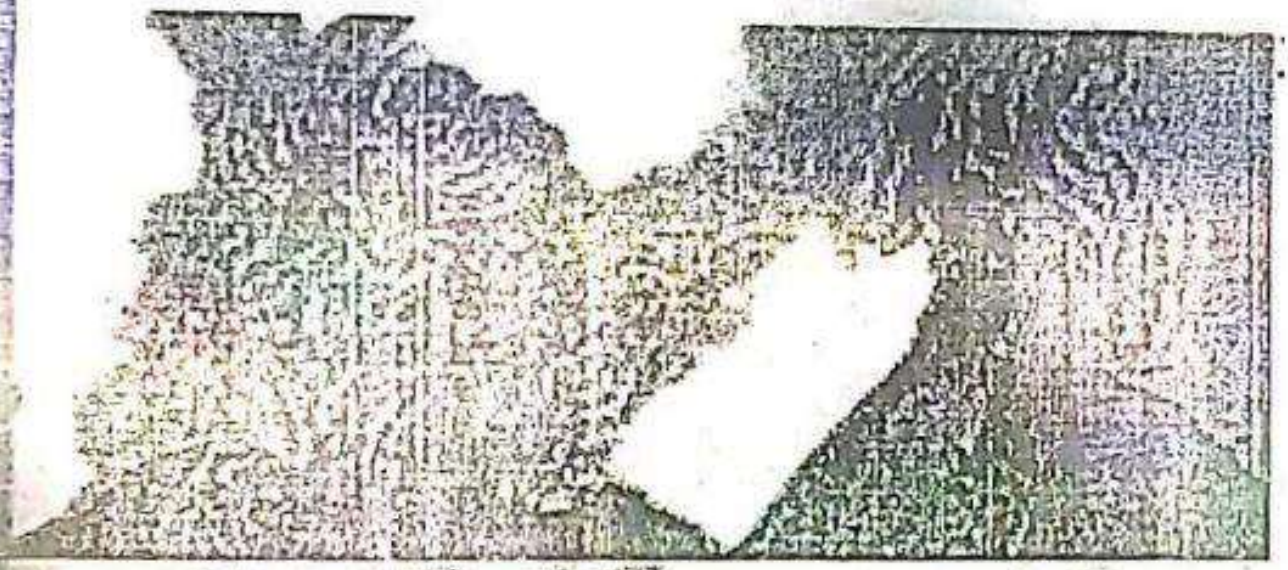
Tennyson's Historical Verse Plays : A Study



Ayesha Laby

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machines, which are used for various tooling kits. The spreadness of current technologies to change the rural masses into developed ones. Science has extended the frontiers of our knowledge in various ways and various directions for rural development in our country. It has enabled us to fight natural calamities and removal of deficit of technologies in Rural India. Now a days, there are some areas of serious shortages power, water, health facilities, roads, etc, these are known and recognised. However, the role of science and technology in solving these and other problems is probably available soon. The importance of science and technology for rural India give rise new dimensions of Science for Villages, advanced institutions of education, science and technology turned their attention in last few decades.. The most well known of these efforts was from the Indian Institute of Science with its programme for the application of science and technology to rural areas. Current scenario representing a model of science-technology interactions in a "rural society" economically deprived majority living primarily in rural areas. The model showed that programme would be required to develop technologies to address the normal needs of the rural population., it also had several shortcomings that are described. An attempt has been made in this paper to indicate some directions alongwith representations for the" digital rural India".

KAMLA MARKANDAYA'S NECTAR IN A SIEVE: A DEPICTION OF RURAL INDIA

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ABSTRACT

Indian English literature has gained a unique position for combining its native perceptions with external influences in to its theme as well as techniques. Kamala Markandaya is the finest example of such a mingling, in spirit as well as in essence. No doubt she stands as one of the most outstanding Indian novelist writing in English, the range is very large. One can easily recognize in all novels the variety of themes——political, economic, cultural, artistic, social, moral, and spiritual and so on dealt with in a competent manner. For her graphic presentation of the "Indian social – economic scenario, she is known as one of the major novelists on the commonwealth scene." The present research article highlights the vision of rural life in her first novel Nectar In a Sieve (1954) This novel portrays how the wind of Industrialization blows across rural India and causes the dislocation of tradition.

Key words: Indian English literature, graphic presentation, rural India, industrialization, disintegration, hunger, degradation..

Kamla Markandaya was an indo Anglican novelist with an International reputation commanding a vast concourse of readers both at home and abroad. She was not only the earliest women novelist of repute but also the most gifted and one of the outstanding writers in the galaxy of Indo Anglican novelists. She wrote ten novels She uses fiction as the vehicle for communicating her vision of life When she started writing novels, she has provided variety and vividness to these themes . Kamala was genuinely concerned with the problems of rural India before Independence .Markandaya was genuinely concerned with the problems of rural India before Independence .Among many ailments hunger and degradation were the most torturing and disgusting. Her social vision found its best expression in her novels which she filled with her social concerns. In this novel Kamala throws light on the despair of the farmers realistically. They are desperate because of the rampant hunger, vagaries of natural calamities, ruthless machines and heartless men.This novel is a fervent cry of protest against social injustice, hunger and degradation which were the common factors of the countless villages in India before Independence. The novel is a powerful presentation of patience in the face of suffering. It was also a glaring example of labour when there was no hope. Kamla Markandaya has depicted the misery and problems of the Indian peasants as well as the sorrows and sufferings of total Indian village so vividly and successfully in her first novel "Nectar in a Sieve" that it has become a landmore epic of Indian village life . Kamala derives the title "Nectar in a Sieve" from the poem "Work without hope" by S.T. Coleridge, because a couplet written by him expresses the theme of the novel.

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राजेन्द्र यादव और स्त्री चेतना

डॉ. मो. अरशद खान

राजेन्द्र यादव हिंदी के संभवतः अकेले ऐसे रचनाकार हैं, जिन्होंने जितनी प्रशंसा पाई, उससे कहीं अधिक आलोचनाओं का सामना किया। जितने मित्र बटोरे, उससे कहीं अधिक विरोधियों की फौज खड़ी की। कहीं तो उन्हें 'जिंदादिली का दूसरा नाम', 'सही में इंद्र समान' और 'यारबाश हरफनमौला' कहा गया और उनमें 'सुकरात की-सी संवेदना' तलाशी गई, तो दूसरी ओर 'शताब्दी का महाखलनायक', 'साहित्य का यौनाचार्य' और 'साहित्य का राखी सावंत' जैसी उपाधियों-पदवियों भी समय-समय पर नाम से जुड़ती रहीं। वास्तव में उनका साहित्यिक जीवन **'विरूद्धों के सामंजस्य'** का अद्भुत और सटीक उदाहरण कहा जा सकता है।

राजेन्द्र यादव के व्यक्तित्व को दो विरोधी छोरों में विभाजित कर देने के परिणाम जो भी रहे हों, यह नुकसान जरूर हुआ कि उनका साहित्यिक मूल्यांकन एक ओर तो चरण-वंदन तक सीमित रह गया तो दूसरी ओर व्यक्तिगत दुराग्रहों और आरोपों-प्रत्यारोपों की गोलंदाजी का आख्यान मात्र। लेकिन इस बात पर अगर दूसरे कोण से विचार किया जाए तो यह भी निष्कर्ष निकाला जा सकता है कि राजेन्द्र यादव के व्यक्तित्व का विस्तार इतना है कि लोग अंधे के साथी की तरह उसके वजूद की पूरी सच्चाई पा सकने में असमर्थ रहे। बहरहाल, राजेन्द्र यादव को चाहे जिस रूप में देखा जाए उनके साहित्यकार और पत्रकार रूप के महत्व से इंकार नहीं किया जा सकता। यह अलग बात है कि उनका पत्रकार रूप उनके साहित्यिक व्यक्तित्व पर हावी रहा है। अगस्त 1986 से हंस का पुनर्प्रकाशन उनके साहित्यिक व्यक्तित्व का सबसे चर्चित और चकाचौंध कर देने

वाला पहलू है। 'हंस' के संपादन के बाद से उन्होंने सर्जनात्मक लेखन यदा-कदा ही किया। जो उल्लेखनीय लिखा, वह 'हंस' के संपादकीय के रूप में। जुलाई 2011 के हंस में उन्होंने लिखा था– *''रचनात्मक लेखन एकदम छूट गया है और रह गया है सिर्फ महीने भर झक मारकर लिखा जाने वाला संपादकीय। लेखन का ताम-झाम कुछ इस कदर हावी है कि लोग यह भी भूल गए हैं कि मैंने कुछ रचनात्मक भी लिखा था-शायद बहुत बुरा नहीं लिखा था।'* राजेन्द्र यादव ही नहीं आलोचक भी यह महसूस करने लगे थे- *''पाठकों की यह राय बहुत पहले कायम हो गई थी कि उनका कथाकार तथाकथित वैचारिकी के बोझ के तले दम तोड़ चुका है।''* (निर्मला जैन एक साक्षात्कार में, 'पाखी' सितंबर 2011)

वास्तव में, हंस के इसी ताम-झाम और चकाचौंध ने उनके आस-पास एक ऐसा आभावृत रचा कि लोग उनके संपादक-रूप के आगे सब कुछ भूल गए। पर इस बात से इंकार नहीं किया जाना चाहिए कि हंस के संपादन के दौरान उन्होंने हिंदी साहित्य को कुछ ऐसे क्षेत्रों से परिचित कराया, जिससे हिंदी-समाज अपरिचित तो नहीं था, पर उसकी गरिमा का स्वीकार भाव भी उसमें नहीं था। स्त्री और दलित-चिंता को विमर्श का रूप देने का श्रेय हंस को [illegible] खुद राजेन्द्र यादव भी अपने एक साक्षात्कार में 'हंस' को इस भूमिका [illegible] हुए कहते हैं- *''इसकी शुरुआत उषा प्रियंवदा, मन्नू भंडारी और [illegible] सोचा ने की और हंस ने उसे एक सुसंबद्ध विस्तार और विकास दिया।'* (पाखी सितंबर 2011) अशोक वाजपेयी कहते हैं- *''दरअसल 'हंस' को [illegible] पत्रिका नहीं, व्यापक सामाजिक अर्थों में एक साहित्यिक-सामाजिक आंदोलन के रूप में देखना चाहिए। उसने लगातार बहुत सारे नए मुद्दे विचार और विश्लेषण के लिए उठाए हैं और पुराने मुद्दों पर नए ढंग से सोचने का उपक्रम और उसके लिए मंच विकसित किया है। अगर इधर हिंदी साहित्य को सामाजिकता और विचारशीलता का विस्तार हुआ है और जब-तब ताज़गी भरा उद्वेलन दीख पड़ता है तो इसका कुछ श्रेय हंस को देना होगा।''* (हंस, अगस्त 2011) इस बात को आगे स्पष्ट करते हुए प्रियदर्शन कहते हैं- *''वर्चस्व की राजनीति के दौर में हंस ने सत्ता और वर्चस्व के विभिन्न रूपों को चुनौती देने का साहस दिखाया है। जब हमारी सारी वैचारिकता बाज़ार को समर्पित है, जब [illegible] उपक्रम सत्ता के मुखापेक्षी हुए जा रहे हैं, तब प्रतिरोध की अपनी [illegible] विकसित करता हंस उन बहुत सारे लोगों का शरण्य बनता है जो खुद को [illegible] व्यवस्था में पीछे छूटा हुआ पाते हैं। राजेंद्र यादव अपनी प्रतिरोधी मुद्रा के [illegible]*

Linear Momentum Transfer Effect on Incomplete Fusion Process at Energy ≈ 88 MeV

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Introduction

The incomplete fusion (ICF) features were first pointed out by Britt and Quinton [1] at lower projectile energies with break-up of projectiles like ^{12}C, ^{14}N, and ^{16}O into α-clusters. Inamura *et al.* strengthen the study of ICF and provided the additional but concrete information regarding ICF from the γ-multiplicity measurements [2]. This study also showed that ICF involves ℓ values more than ℓ_{crit} as for occurrence of complete fusion (CF). Due to complex nature of incomplete mass transfer mechanism, investigation of ICF reaction dynamics is still an active area of research, also these reactions are governed by the entrance channel dynamics or by the properties of the composite system is not clearly established. Existing studies reveal that linear momentum transfer (LMT) plays an important role in the study of heavy ion induced nuclear reactions below 8 MeV/nucleon energies [3, 4]. One may differentiate the CF and ICF processes on the basis of recoil range, which is associated with the various degrees of linear momentum transfer (LMT) from projectile to the target. The LMT has the proportionality with the fused fragment mass; thereby maximum LMT may give rise to maximum recoil velocity to the populated residues. For a different LMT, the residues may have different recoil ranges in the stopping medium. As entire mass is transferred from projectile to the target, thereby the compound fusion (CF) product traverses a larger range in the stopping medium. On the other hand, ICF product is formed via fractional mass transfer from projectile to target nucleus. Thus, the ICF product follows a smaller range in the stopping medium as that of CF product. In order to disentangle the contribution of various fusion components, we have measured the forward recoil range distributions (FRRDs) of reaction products produced in the interaction of ^{12}C beam with ^{175}Lu target at ~ 88 MeV energy. FRRDs measurement gives the direct signature of ICF i.e. various fusion components (fusion of ^{7}Be and ^{4}He in case of ^{12}C projectile), which are interpreted in terms on CF and ICF reactions.

Experimental Procedure

The experimental facilities of 15UD Pelletron at IUAC Inter University Accelerator Centre (IUAC), New Delhi was used for the measurement of Forward Recoil Range Distributions (FRRDs) of evaporation residues populated in ^{12}C + ^{175}Lu system. ^{175}Lu Target having thickness ~ 950 μg/cm^2 was prepared by rolling machine and followed by a stream of thin Al-catcher foils having the thickness lying between 35-50 μg/cm^2. The target-catcher assembly was irradiated by using ^{12}C ion-beam for about 12 hrs in the General Purpose Scattering Chamber (GPSC) at ~ 88 MeV energy. The thicknesses of the Al-catchers were chosen such that recoiling residues produced via CF and/or ICF may get trapped at various catcher foil thicknesses. The induced gamma-rays activities trapped in different catcher foils were recorded by using a pre-calibrated, 100 cc HPGe detector coupled to a CAMAC based [illegible] FREEDOM.

Competition between Complete and Incomplete Fusion Reaction Mechanism below 8 MeV/nucleon energies

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Introduction

Fewer studies are available to study the effect of entrance channel parameters on the onset of incomplete fusion (ICF) reaction dynamics induced by light-heavy-ion (Z ≤ 10) with heavier targets (A ≥ 150) below 8 MeV/nucleon energies. It is now well established that ICF process starts competing with complete fusion (CF) at projectile energies just above the Coulomb barrier and its influence increases with increasing the projectile energy [1-3]. Entire projectile amalgamation takes place in CF process with involvement of all nucleonic degrees of freedom, while projectile may breaks-up into two fragments near the target nuclear field in case of ICF. Only one of the fragments fuses with the target to form the less massive incompletely fused composite system and the remnant moves as spectator in the forward direction with projectile velocity. Being related to the projectile energy, the impact parameter may also be used as a tool to understand the terminology of CF and ICF reactions. ICF processes are found to occur at relatively larger impact parameter window as that of CF process, where CF gradually gives way to ICF and the projectile break-up may takes place on continuous increase of impact parameter. Inamura *et al.* [4] facilitated that ICF involves ℓ values more than ℓ_{crit} i.e. ICF products are found to be carried the angular momentum $\geq \ell_{crit}$ as for CF products. The available theoretical models are not applicable to reproduce the experimentally measured ICF data below 8 MeV/nucleon energies, thereby more and [illegible] experimental data are required to reach on some explicit inference regarding the effects of various parameters like projectile structure, energy, mass asymmetry of interacting partners and alpha Q-value of projectiles. In order to strengthen the study of ICF dominance on CF, we have measured and analyzed the excitation functions of evaporation residues produced in ^{16}O + ^{175}Lu reactions at energies ranging from 4-6 MeV/nucleon, which in turn may be helpful for developing the theoretical model below 8 MeV/nucleon energies.

Experimental Procedure

15UD Pelletron Accelerator facilities of the Inter University Accelerator Centre (IUAC), New Delhi have been used to perform the excitation function (EF) measurements. ^{16}O ion-beam delivered from the Pelletron Accelerator was used for the irradiation of ^{175}Lu targets of thickness ranges 1.0-1.5 mg/cm^2. Al-catcher foils of thickness ranging from 1.5-2.0 mg/cm^2 were placed after each target so that the recoiled residues may get trap in the respective catcher foil thickness. The ^{175}Lu targets and Al-catcher foils were prepared by rolling machine. To have the energy range from 70-100 MeV, three stacks of target-catcher assembly were irradiated by ^{16}O ion-beam for about 7-10 hours in the General Purpose Scattering Chamber (GPSC). The activities induced in each target-catcher [illegible]mbly were recorded using pre-calibrated and [illegible] resolution HPGe γ-ray spectrometer [illegible] coupled [illegible] CAMAC based CANDLE software.

Investigation of Incomplete Fusion Dynamics from the Measurement of Angular Distributions at E = 88 MeV

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Introduction

The reaction mechanism other than compound nucleus formation via entire projectile amalgamation with the target nucleus has attracted considerable interest in heavy-ion (HI) induced reactions at projectile energies below 10 MeV/nucleon. These reactions are termed as incomplete fusion (ICF) or massive transfer reactions in which only one of the two fragments merges with the target nucleus and remainder moves in the forward direction with approximately the beam velocity. Earlier reported studies reveal that ICF has the significant contribution along with CF in the respective energy regime [1-5]. Since, the existing theoretical models are not applicable to reproduce the experimental ICF data satisfactorily in the energy region below 10 MeV/nucleon; thereby the study of ICF is still an active area of investigations and a topic of interest for exploring the nuclear structure and reaction dynamics. As, the Coulomb barrier is high in case of heavier target nuclei, the evaporation of α-particle from the composite system has the less probability and ICF fraction is observed to be dominating as that of CF fraction in α-particles emission products. There are fewer studies with heavier targets (A ≥ 150) at lower projectile energies below 10 MeV/nucleon. In most of the experiments, the properties like charge, mass, energy, angular distribution etc., of light particles and or γ-rays emitted in such reactions are measured. Keeping in view the recent observations, the present work has been carried out to provide some [illegible] conclusions regarding ICF reaction dynamics below 10 MeV/nucleon energies. We have measured the angular distributions of evaporated residues produced in $^{12}C + {}^{175}Lu$ system at ~ 88 MeV energy. Moreover, this work is aimed to provide the new experimental data on angular distributions, which is not available in the literature to the best of our knowledge. This is a complementary experiment to support and strengthen the findings of Excitation Functions and Recoil Range Distribution measurements.

Experimental Procedure

Experiment for the measurement of angular distributions of produced evaporation residues in $^{12}C + {}^{175}Lu$ system was performed at Inter University Accelerator Centre (IUAC), New Delhi. Self supporting target of ^{175}Lu (thickness ~ 1.5 mg/cm^2) was followed by a stack of five annular concentric Al-catcher foils of thickness ranging from 0.4-0.5 mm, which was placed at about 2.0 cm from the target to trap the recoiling residues in different annular Al-catcher foils at different angles lying between 0° and 50°. Recoil catcher technique followed by the Off-Line gamma-ray spectroscopy was used for the measurement of produced evaporation residues. Target was bombarded with ^{12}C-ion beam of energy ~ 88 MeV for about 5 hours in the General Purpose Scattering Chamber (GPSC). A pre-calibrated 100 cc HPGe γ-ray detector of high resolution coupled to CAMAC based [illegible]EEDOM software at IUAC, New Delhi was used for the recording of induced γ-ray activities

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Probing of Incomplete Fusion from the Measurement of Recoil Range Distributions

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Introduction

The study of incomplete fusion (ICF) reaction dynamics has been the topic of keen interest due to the dependence of ICF on various entrance channel parameters like projectile structure, projectile energy, driving angular momentum, mass asymmetry of interacting partners and alpha Q-value of projectiles. In last few years, much interest has risen to study the competition between complete fusion (CF) and ICF at energies below 8 MeV/nucleon [1-3]. In case of ICF reaction mechanism, the incident projectile breaks-up into two fragments in the vicinity of target nuclear field. Only one part of the projectile which fuses with the target nucleus leading to the formation of incompletely fused composite system, while the remaining part moves as a spectator in forward direction with incident projectile velocity. It has also been reported that the projectile break-up probability or ICF influence on CF also increases with increasing the projectile energy [3]. Since, there is no theoretical model available which can reproduce the experimental ICF process cross-section satisfactorily below 8 MeV/nucleon energies, the investigation of ICF reaction mechanism is still an active research field. Britt and Quinton [4] firstly observed the ICF signatures in the break-up of projectiles like ^{12}C, ^{14}N, and ^{16}O into α-clusters. Additional informations were provided by Inamura et al. [5], which revitalized the ICF study. The transferred fractional mass i.e. transferred part of linear momentum leads the ICF product to be traversed in the stopping medium less thickness as compared to CF product. Being based on linear momentum transfer, forward recoil range distributions of evaporation residues provide a sensitive probe to study the ICF reaction dynamics and the effect of various fusion components on the onset of ICF. In order to have a clearer picture regarding the influence of various fusion components on ICF, forward recoil range distributions (FRRDs) measurement for ^{16}O – ^{175}Lu was carried out at ≈ 100 MeV energy.

Experimental techniques

The present experiment was carried out at Inter University Accelerator Centre (IUAC), New Delhi. Vacuum evaporation technique was adopted in the preparation of ^{175}Lu target, which was mounted onto the Al-backing foil facing the incident beam after Al-backing. ^{175}Lu target of thickness ≈ 850μg/cm² was followed by a stack of thin Al-catcher foils. In the measurement of forward recoil range distributions (FRRDs) of populated residues, the stack of Al-catchers (having thicknesses ranging ≈ 30-70 μg/cm²) was used as the stopping medium so that recoiling residues produced due to CF and/or ICF may get trap at their respective depths in Al-catcher foil thicknesses. The energy loss suffered by 5.49 MeV α- particle coming from ^{241}Am source, was used to determine the thickness of target-catcher foils assembly. The stack was irradiated for about 15 hours with $^{16}O^{7+}$ ion beam in General Purpose Scattering Chamber (GPSC), which has an in vacuum transfer facility. The Faraday cup was placed behind the target-catcher

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Probing of incomplete fusion dynamics by measurement of spin distribution in the $^{19}F + ^{154}Sm$ system

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Introduction

The study of incomplete fusion dynamics using heavy ions with different targets has been a growing interest at energies near and above the Coulomb barrier. It has been observed that at the projectile energies slightly above the Coulomb barrier, both the complete fusion (CF) and incomplete fusion (ICF) are considered as dominant reaction mechanisms. In case of CF, the projectile completely fuses with the target nucleus and the highly excited nuclear system decays by evaporating low energy nucleons and alpha particles at equilibrium stage. In the ICF, only a part of the projectile fuses with target nucleus, while remaining part moves as a spectator in the forward direction with unchanged velocity as that of the projectile with incomplete linear momentum transfer. The break-up of the projectiles ^{12}C, ^{14}N and ^{16}O into α-particle clusters in an interaction with the surface of target nuclei was first observed by Britt and Quinton [1] at energies above 10MeV/nucleon. However, major advances of this process referred to as ICF were made after the charged particle-γ coincidence measurements by Inamura et al. [2]. Several experimental studies have been carried out using alpha cluster structure projectile with different targets, but very small studies are available with non alpha cluster structure projectile. However, ICF dynamics studies by using non alpha cluster structure projectiles are very scarce. In the present work, spin distribution of the evaporation residues produced via complete and incomplete in the system $^{19}F + ^{154}Sm$ at projectile energy 100 MeV has been done. To the best of our knowledge spin distributions of the ERs produced through CF and ICF in the $^{19}F + ^{154}Sm$ system@100 MeV has been reported for the first time.

Experimental Details

The experiment was performed at the Inter-University Accelerator Centre (IUAC), New Delhi, India, using the 15UD Pelletron Accelerator. The gamma detector array (GDA) coupled with charged particle detector array (CPDA) has been used for the particle-gamma coincidence experiment. The γ-detector array (GDA) consists of 12 Compton-suppressed HPGe detectors at angles of 45°, 99°, and 153° with respect to the beam direction, with four detectors arranged at each of these angles along with a charged particle-detector array (CPDA) consisting of 14 Phoswich detectors housed in a small scattering chamber. All 14 detectors of the CPDA are divided into three angular zones: (i) Forward angle(F) 10°–60°, (ii) Backward angles (B) 120°–170° and (iii) Sideways"(S), 60°–120°. In the present experiment, two groups of α particles are expected to be detected by forward-angle CPDs: (i) the fusion-evaporation (CF) α particles of average energy $E_{\alpha,CF} \approx 18$ MeV and (ii) the ICF fast α particles of energy $E_{\alpha,ICF} \approx 25$ MeV. In front of the each four forward cone CPDs, aluminum absorbers of appropriate thickness were used to stop 'evaporation' α-particles (Eα-CF ≈18 MeV). Hence, only probability was 'fast' α-particles' with energy [illegible] than 7 MeV have been detected in the

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Investigation of incomplete fusion dynamics by measurement of excitation functions in the $^{20}Ne + ^{59}Co$ system

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Introduction

The study of heavy ion induced reaction in medium energy region has been a growing interest in nuclear physics from past few decades. It has been observed that the projectile energies above the Coulomb barrier of both complete fusion (CF) and incomplete fusion (ICF) may be considered as dominant reaction mechanisms. In case of CF reaction, the projectile completely fuses with the target nucleus and the highly excited compound nucleus decays by evaporating low energy nucleons and alpha particles at equilibrium stage. In the ICF reaction process, only a part of the projectile fuses with the target nucleus, while remaining part moves in the forward direction with almost same velocity of incident ion beam. The excited composite system may undergo de-excitation by emission of particles and /or γ-rays. The first experimental evidence of ICF reactions were given by Britt and Quinton [1], who observed the break-up of the incident projectiles like ^{12}C, ^{14}N and ^{16}O. Inamura et al. [2] observed incompletely fused α-particles peaked at forward angles in their particle-γ coincidence measurement.

In the present work, an attempt has been made to address some important aspects of CF and ICF dynamics for the system $^{20}Ne + ^{59}Co$ in the projectile energy range ≈ 62–150 MeV by using recoil catcher activation technique with the following off-line γ-ray spectroscopy. [illegible] Functions (EFs) for the following reactions: $^{59}Co(Ne, np4n)^{70}Ga$, $^{59}Co(Ne, 3\alpha p3n)^{67}Zn$, $^{59}Co(Ne, 3\alpha p4n)^{62}Zn$ and $^{59}Co(Ne, 4\alpha 3n)^{69}Cu$ have been measured. No precursor decay contribution has been observed for these measured evaporation residues. The measured values of total fusion cross-sections of the above evaporation residues have been compared with the theoretical total complete fusion cross-sections calculated by code PACE-2, which do not take into account ICF contribution.

Experimental Procedure

The experiment was carried out using Heavy Ion Accelerator Facilities at Variable Energy Cyclotron Centre (VECC) Kolkata, India. Targets for irradiations were made by depositing spec-pure ^{59}Co on aluminum backing of thickness ≈2 mg/cm^2 by a vacuum evaporation technique. The thickness of the each deposited target material on Al-backings was determined by weighing individual Al- backing foils before and after deposition of target ^{59}Co material using micro-balance as well as the α-particle transmission method. Two stacks consisting of five targets of each of ^{59}Co backed by≈2 mg/cm^2 thick aluminum foils were bombarded with a $^{20}Ne^{+7}$ beam energy of ≈150 and 110 MeV. Irradiations of the target were carried out to encompass the beam energy range from 62–150 MeV.

Results and Discussions

The Excitation Functions (EFs) for the following four reactions: $^{59}Co(Ne, np4n)^{70}Ga$,

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Linear Programming

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B.Sc. Part III, Paper IV(b)

By

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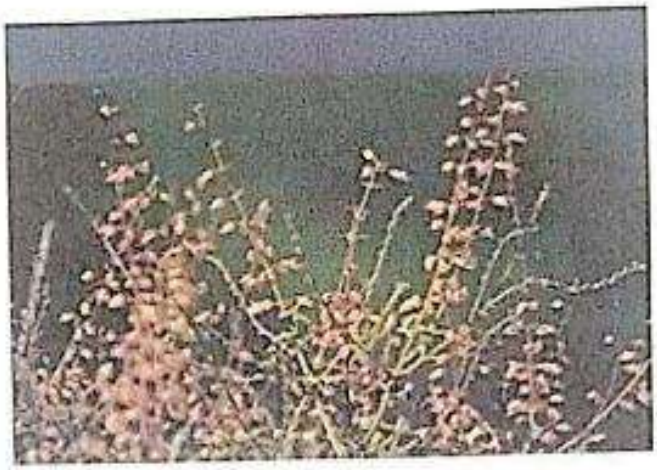
Students' Friends & Company

Raja Mandi, AGRA-2



Ocimum basilicum
L.Production,some agro
techniques

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Crop yield potential, pyridoxine priming

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Peanut Agriculture and Production Technology

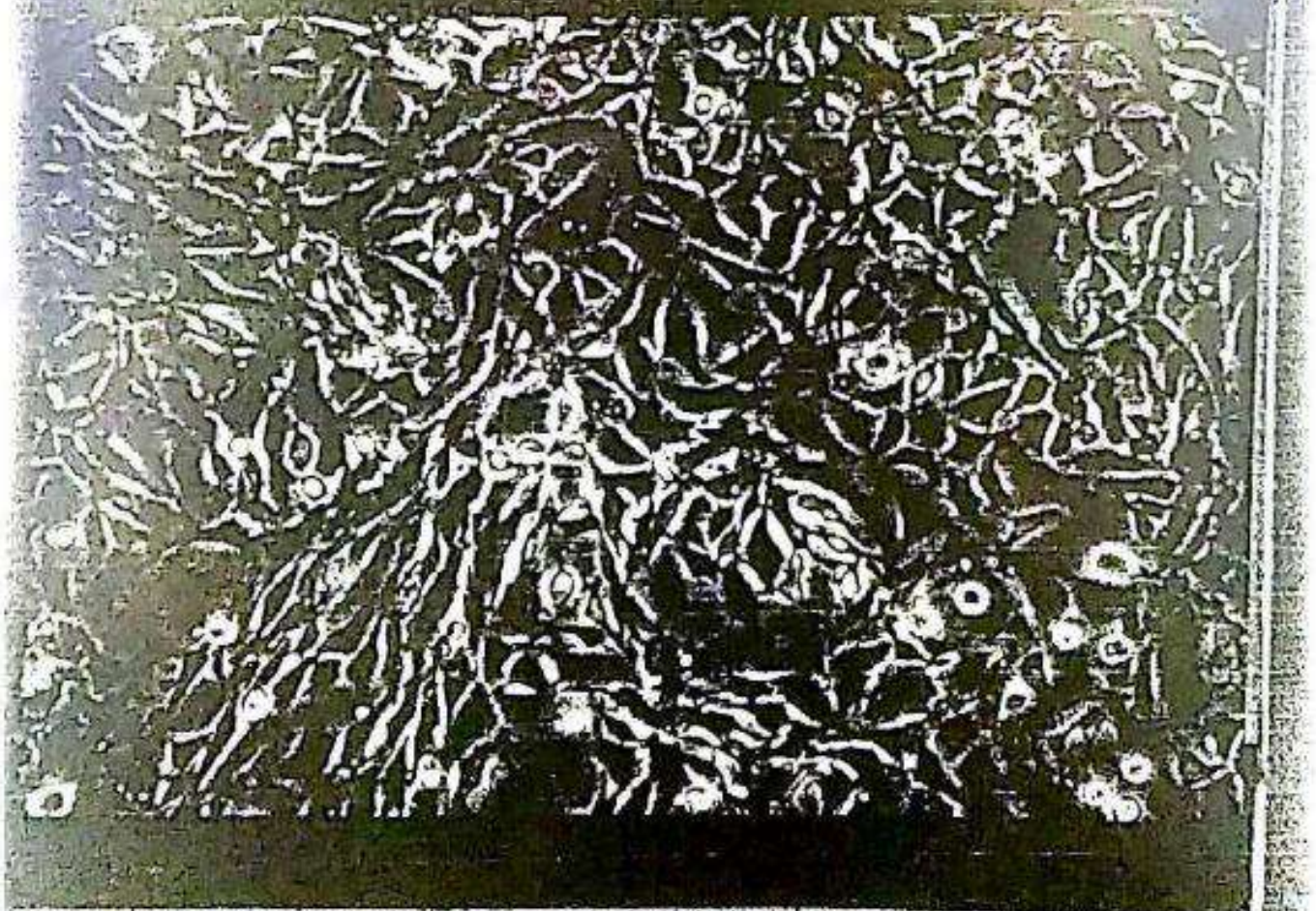
Integrated Nutrient Management

Zafar Abbas | Arvind Kumar | Anoop Kumar

APPLE
CRC Press

Cell

Structure and Function



SWAPANIL YADAV, VYUM SINGH

Scientific Publications and their Ethical Issues: An Overview

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Abstract

Ethical issues are very important in an each aspect of the scientific publications. The motive of this article is to describe the ethical issues that can been countered during the publication of scientific materials like research papers, reports, monograms and books, etc. The ethical problems occur in draft writing for publication including the fabrication of wrong data, incorrect information, plagiarism, failure to cite the correct literature sources, duplicate publication, conflict of interest,and authorship issuesas well as the responsibilities of the reviewers, editors and publishersfor publication in International repute journals. The suitable historical backgrounds, citation of applicable rules and edicts in a separate segment havebeendeliveredin brief. It is believed that the mentioned above divergences would be resolved by growing awareness of all ethical issues related to the scientific publications.

Introduction

Scientific publication is a team effort which helps scientists/ researchers/authors to communicate new findings for further progress in future.Therefore, we cannot allow the system to be more complicated because of the misbehaviour [1, 2].The word ethics derived from greek word 'ethikos',which means the branch of knowledge deals with moral principles or anaccurate system. Ethical conduct is crucial to any province of life.These are important to complete and reporting of a research data, reviewing of the research article for publication to the journal/book editors.The submission of an article for publication is a final stage of long planning, implementation of research, tiresome analysis and the preparation of the document[3]. One must be ensured at all stages that the reported data in the submitted paper is reliable. The fabrication of data, wrong information, plagiarism, failure to cite the correct literature sources, duplicate publication, the conflict of interest, authorship issues as well as the responsibilities of the reviewers, editors, and publishers for publication can be considered as a various types of

Ethical Considerations In Disaster Management

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Introduction

Communities are affected by an increasing number of natural and technological (man-made) disasters. Over the past three decades, there has been a rapid increase in the number of disasters occurring worldwide, affecting communities, households and individuals. It is estimated that there is a disaster occurring, somewhere in the world, every day. With this increased frequency of disasters worldwide, there has been a concomitant increase in interest in disaster research involving human subjects. Humans have suffered and endured disaster throughout history, but the scientific study of response to disaster is in many regards still in its infancy stages. Rigorous inquiry has been limited and is confounded by the chaos and extreme disruption inherent in disasters

Certainly, the issues of ethics in disasters have been raised in the past by researchers, but disaster research is a multidisciplinary field. This interdisciplinary results in many different academic fields and professions being involved in conducting disaster related research. Unlike social work, which is a field of professional practice, not all of the allied professions can rely on an established code of ethics to guide this research with vulnerable populations. We believe that there should be adherence to an ethical standard of practice when conducting disaster research, and we propose the implementation of a universal code of ethics when conducting disaster management with vulnerable populations.

Disaster management can be defined as the organization and management of resources and responsibilities for dealing with all humanitarian aspects of emergencies, in particular preparedness, response and recovery in order to lessen the impact of disasters. The word 'Disaster' derives from Middle French désastre and that from Old Italian disastro, which in turn comes from the Greek pejorative prefix ???-, (dus-) "bad"+ ????? (aster), "star". The root of the word disaster ("bad star" in Greek and Latin) comes from an astrological theme in which the ancients used to refer to the destruction or deconstruction of a star as a disaster.

Disaster is an event or series of events, which gives rise to

Science and Ethical Values

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What is Science?

The word science comes from Latin word 'SCIENTIA' meaning knowledge. The word 'science' is sufficient to create a world of imaginary pictures in mind like equations and formulae on blackboard, white lab coat, boiling chemicals, microscope, thick textbooks, Einstein's questions, a person analyzing his topic and trying to find some conclusion. All of these images show some aspect of science but none of them is able to define 'the science' because science has so many facets. Contemporary science is mainly subdivided into natural science which deals with people and societies & the formal science like mathematics. The formal science is often excluded as they do not depend on emperical observations. Natural science is multidisciplinary like chemical science, biological science, aeronautical science, physics geological science etc[1]. A chemist analyzing the rate of chemical reactions, a biologist observing the functioning of digestive system, a physicist analyzing the working of an engine, an astronomer looking for a new galaxy etc., all workers are contributing in different fields which come under the title 'SCIENCE'. The systematic study of the behavior and structure of natural and physical world through observations and experiments is defined as Science[2]. Science is a combination of a body of knowledge and a process. Science is glue which helps in joining a large number of isolated facts to develop a comprehensive understanding of the natural world. Science is day to day becoming more refined and elaborating the knowledge of universe. Science is a path which started thousands year back and is leading towards more and more improved dimensions of knowledge moving through present and approaching towards future, sciencewill never be finished.

What is Technology?

Technology is a body of knowledge devoted to creating tools processing actions and extracting of materials[3].

We used technology to extend our abilities and that makes people as the most important part of any technological systems. Technology is also an application of science to solve a problem. We

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Role of Science & technology In countering terrorism

Dr. Shabana Sajid*

Introduction

Technology is central to both terrorism and counterterrorism, but each side views technology differently. Governments see technology as conferring a decisive advantage in the struggle against terrorism, and often treat it as an end itself. Terrorists, on the other hand, regard it as a means to an end. It matters not whether the technology is simple or sophisticated, but whether it can enable an effective attack to be carried out. Recent technological advances have given rise to horrific terrorism possibilities, which include biological, chemical, radiological and cyber attacks. These have the potential to do extraordinary harm and cause great disruption to our society. While the heart is real, it remains improbable due to the difficulty in obtaining the required materials or weapons. Conventional terrorism, involving the use of knives, guns and simple bombs, occurs far more frequently and has been the cause of most death and destruction in the history of terror attacks it will be argued that while technology has changed the way terrorism is carried out and fought against, it has not enabled either side to obtain an advantage. Terrorists can choose their target, timing, and method of attack. Although governments have a large array of technological resources at their disposal, they face a broader challenge as they must deter many possible actions. Ultimately, the winner will be determined by who has the superior strategy.

Object of Study

1. To know impact of science on terrorism
2. TO KNOW THE USE OF SCIENCE ON COUNTERING TERRORISM
3. TO GIVE SUGGESTIONS FOR USE OF SCIENCE IN COUNTERING SUGGESTIONS

HOW TERRORISM IS CHANGING

International terrorism is changing in ways that may make it more dangerous and difficult to combat. Despite the fall of the communist bloc, which once provided support to left-wing terrorists, and the resulting reduction in the number of states supporting terrorism, incidents reported around the world have not decreased. Moreover, terrorist attacks are becoming more lethal: according to a recent report to the US Congress, in the 1990s a terrorist incident was almost 20% more likely to result in death than an incident two decades ago. Although significant, this is not the only change occurring in international terrorism. Terrorist groups now have different motivations, organisation, structures and tools.

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7

Impact of Nanotechnology on Water Treatment: Carbon Nanotube and Graphene

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Abstract

Water pollution has massive impacts on the entire living systems. Water quality is shrinking constantly owing to many reason as growing population leading to demand of industrialization, domestic, agricultural, and other natural causes such as geological and environmental. All these authentic causes have lead water pollution as a serious issue in the current advances. Nanotechnology may deliver technical solution to the water crisis because it may lead to more effective means of filtration that not only remove additional impurities than traditional methods but also faster, more economically and more selective. Nanomaterials, with their unique chemical and physical properties, such as high porosity and surface area, can be used efficiently for removing toxic metal ions, disease causing microbes, and organic and inorganic solutes from water. Various classes of nanomaterials are also proved to be efficient for water treatment. This chapter will focus on threats to water treatment and recent advances on different nanomaterials with their application in water purification. The second phase of this chapter will focus on carbon nanotubes and graphene as effective material in water treatment. Lastly, this chapter also covers global impact of nanotechnology on human health.

Keywords: Nanomaterials, water treatment, purification, carbon nanotubes, graphene, nanotechnology

7.1 Introduction

In the current situation, clean water is the basic need for every human being and also a major global challenge for the whole world. The increase in global population and

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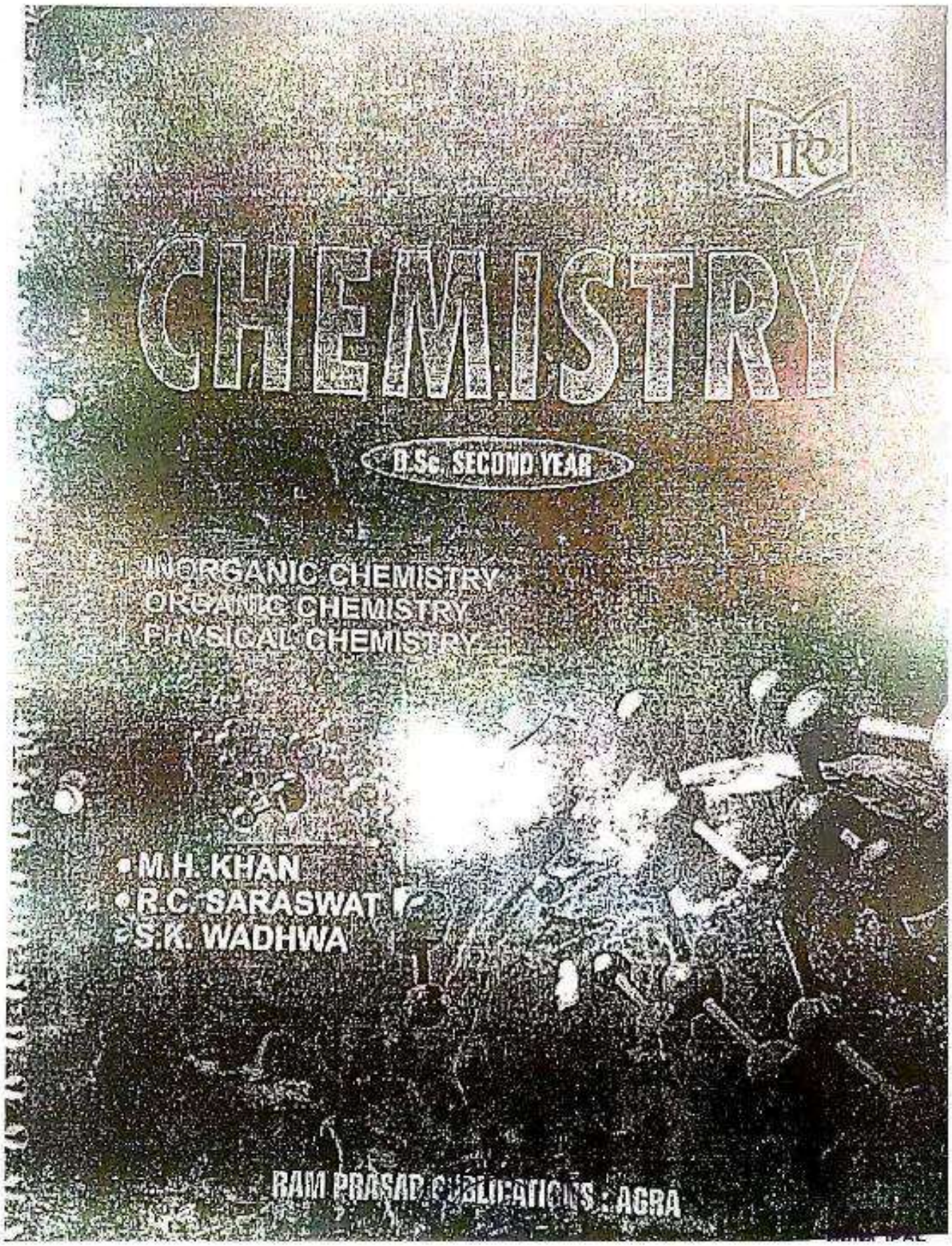

Gender And Other Sensitivities In Hospitality And Tourism

Dr Narendra Batra*, Dr. Punit Srivastav** and Dr. Rajiv K Agarwal***

Abstract

This paper has been aimed at sensitising you with gender issues in hospitality and tourism. Very often even reputed organisations are insensitive to women issues. For example an airline would ground its airhostesses to reduce weight, keep age limitations, don't allow them to marry, etc. Such anti-women measures are not going to be taken silently in any aware society. Besides defining certain managerial duties in relation to working conditions for women this Unit also familiarised you with what is termed as sexual I harassment at the place of work and the procedures that have to be followed to check it. All such issues of women harassment, child labour, human rights and consumer protection should form the curriculum of all training programmes for managers and employers in the organisations.

duction

Hospitality sector is one area where the employment rate of women is quite high, both in anised as well as the unorganised sector. Women are performing different jobs at both the erial as well as operations levels. Besides managerial jobs, the other job performed include those ceptionists, housekeepers, managing travel counters, guides, escorts, sales executives, etc. The ing number of working women in this area has also led to the problems of safety, security and ing a congenial working environment which is free from sexual harassment. It is the responsibility manager and employee in the organisation to ensure that such problems do not arise, but one does not have that attitude.

Hence, it is necessary that the issues of gender sensitivity are treated as a part of creating awareness are taken up through various training programmes within the organisation. Besides a code of for workplace in relation to women issues, there is also a need to make your managers and aware of other important issues like child labour, human rights and consumer protection.

on of Women In Hospitality And Tourism

Here, we are not entering into a development debate and the controversial issues related to

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Humanism in the Novel Untouchable by Mulk Raj Anand

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Indian society has always remained divided on caste basis, indeed manmade, which has never borne any positive fruit. This biased approach has always draws attention of our sensitive writers who are the torch bearers of humanism and morality. Indian English Literature has witnessed several phases in thematic concerns in the last hundred years. Before partition Indian English novelist Mulk Raj Anand focussed his concern for freedom of man from the social malpractices and maintenance of human dignity in the conservative outlook. He criticised Indian social setup for its outdated and irrelevant set patterns of moral and social behaviour, prescribed for human beings.

In Untouchable, Anand has pointed very vividly and forcefully the mental anguish that Bakha a sensitive sweeper boy, the hero of the novel, feels at the treatment mated out to him by the upper caste Hindus. In this novel, the happenings of one particular day in the life of the sweeper boy are shown. The events are mostly psychological in nature and they bring out the poignancy of Bakha's mental a gony on this particular day.

Mulk Raj Anand's first novel Untouchable, published on 1st May, 1935 was welcomed by a few but criticized by many. Several news papers in London criticised it as a "dirty work." E.M. Forster anticipated such criticism in his Preface to Untouchable, he writes.

"It seems to me indescribably clean and I hesitate for words in which this can be conveyed. Avoiding the rhetoric and circumlocution, it has gone straight to the heart of its subject and purified it". (Untouchable)

The novel gained popularity among the western readers slowly but surely. The preface written by E.M. Forster made them perceive its aesthetic value. Later it became so popular that it was translated into more than twenty languages.

This is the story of the life of an 18 years old Bakha, who lives in the pre independence Era, as a Bhangi, one who cleans the toilets. Bakha is not weak, where as he is 'strong and able bodied'. He is all

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Pedagogic Grammar: An Applied and Peer Learning Approach

Dr. Nasim Akhtar

MOTHER TONGUE INFLUENCE AS A HINDRANCE IN ENGLISH LANGUAGE TEACHING IN RURAL AREA

Dr. Nasim Akhtar
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ABSTRACT

With the world turning into a global village and English becoming more or less a universal language. English is used by a large number of people for a variety of purposes and functions. legal, educational, business, finance, communications, and many others. English is now an indispensable instrument necessary for the socio-economic development of the country. It occupies a prominent place among the languages used in India for several reasons. As stated above, it is a library language and much of the literature pertaining to developments in science and communication, arts, social sciences, philosophy etc. are reported in English. Gupta and Kapoor (1991:19) refer Moreover, it is recognized as an essential component of formal education, and as the preferred medium of learning, with specialized education, and as the preferred medium of education; it is recognized and upheld as a mark of education, culture, and prestige. The polity and society confer great value on the learning of English knowing bi-multi-linguals.1 English is an universal, global and an International language. When we start speaking in second language (i.e. English), we start with sounds, words from our mother-tongue. Thus, we may say that most of the second language learners have mother-tongue influence (M.T.I) to start with. We have inherited this quality from environment because we live with our mother-tongue in the major portion of the time while we spend little time in learning or speaking second language. For example we pronounce school /sku:l/ as /isku:l/.This is a mother tongue influence by an Urdu language speaker. The speaker adds vowel sound/i/ at the initial level of the word school/sku:l/ . After many practices of listening, practicing and speaking of real English sounds or original English sounds, we can correct our mistakes and replace mother tongue sounds with original sounds of English. After many research, we have discovered forty four (44) sounds in English. IPA (International Phonetic Alphabet) which deals with symbols of vowels and consonants while RP-is concerned exclusively with pronunciation, whereas "Standard English". If we follow these models, we can resolve the issues related to pronunciation and mother-tongue influence The aim of this article is to discuss mother-tongue influence as a hindrance in learning or speaking second language and how one can resolve the issues confronted by a learner of English. This problem is not existing in urban area but rural too. Mother-tongue influence can be resolved by practice drills, more and more practice of speaking, listening and by correcting mistakes.

Key Words: ELT-English Language Teaching, Sounds, IPA- International Phonetic Alphabets, RP- Received Pronunciation, MTI-Mother –Tongue influence, Universal, Global, Second Language Learner, real and original sounds, etc.

INTRODUCTION

Language is a means of communication by which we convey our thoughts, feelings, emotions and so on. In another word, we can say that it is a means of communication between humans. If A is passing message for B and B is giving positive response then we can say that it is an effective communication.

With the world turning into a global village and English becoming more or less a universal language. English is used by a large number of people for a variety of purposes and functions. legal, educational, business, finance, communications, and many others. English is now an indispensable instrument necessary for the socio-economic development of the country. It occupies a prominent place among the languages used in India for several reasons. As stated above, it is a library language and much of the literature pertaining to developments in science and communication, arts, social sciences, philosophy etc. are reported in English. Gupta and Kapoor (1991:19) refer Moreover, it is recognized as an essential component of formal education, and as the preferred

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'When Mr. Pirzada Came to Dine' by Jhumpa Lahiri: A Study of Human Relationships and Humanity

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The story 'When Mr. Pirzada came to Dine' is one of the short stories written by Jhumpa Lahiri, the Pulitzer Prize winning author in her book 'The Interpreter of Maladies'. The present paper is an analysis of human relationships among the various characters and how humanity plays a binding role. Humanity has no barriers, no religion and it even transcends partition between countries. The story is narrated through a young girl, Lilia, a second generation Indian expatriate living in America, as JhumpaLahiri herself was. She does not find any difference between Mr.Pirzada, a Pakistani Muslim and her parents who are Hindus from India. Their language, food and manners seem to her the same. Even their hospitality and love impresses Mr.Pirzada. He is upset with the ongoing war in Pakistan as his family lives in Dacca. Lilia's parents are concerned about his family in the same way as he is. They share food, watch television together.Not only her parents, Mr. Pirzada but even Lilia as a child understands the human bond and pray for the safety of his family. When he is gone she misses him.

Jhumpa Lahiri is an Indian Bengali American author. Her first collection of stories is 'The Interpreter of Maladies'. The stories deal with the lives of Indians or Indian immigrants. This story has an autobiographical element. Talking about it in an exclusive interview with Elizabeth Farnsworth of Pulitzer Fiction Jhumpa says:

This story is based on a gentleman from Bangladesh who used to come to my parents house in 1971. I heard from my parents what his predicament was. And when I learned about his situation, which was that he was in United State during the Pakistani civil war and his family was back in Dacca, I was so overwhelmed by this information that I wrote this story.(The theme of displacement...)

The background of this story is the time of civil war in Pakistan in 1971, after which its Eastern part was divided into Bangladesh. It is this war which has united all the characters in the story together in spite of their religious, though not the racial differences. The narrator

Moral Values and Chetan Bhagat

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Value and Ethics have remained and shall remain of paramount importance for any age, society and for any time, in the 21st century they are more required than they were in the past, since issues like intolerance, conversion, corruption, hatred have gained currency in the present time to achieve political power and material gains. Our sufis and saints have always preached and nurtured moral values through love, compassion, religious tolerance, sacrifice, charity to name only a few of them, before going ahead I wish to include the definition of moral and value to have a clear cut idea about them.

Oxford Advanced Learner's Dictionary defines moral as, concerned with principles of right and wrong behavior, and ethics (PI) as moral principles that control or influences a person's behavior. The speaking Tree column of the Time of India, writing about moral and ethics says, values morals and ethics are what we learned from childhood; the 'stuff' we acquired from our parents and immediate surroundings. Ethics, on the other hand, are how we actually do behave in the face of difficult situation that test our moral fiber. With such ideas in mind, if we go through the novels of Chetan Bhagat, a prolific Indian author of 21th century we note that though his novels are based on youth and there issues, there runs a strong under-tone of morality and ethics. Up to now he has produced six novels, "Half Girlfriend" (2014) being his latest one. Very artistically and beautifully he has presented aspirations, hope and desire, love, higher education and critical moments in the life of youth. Bhagat has an insight for the contemporary issues. He has a best seller tag with his name. His novels, once hit the market, are bought online and offline both up. Looking his novels at a glance one can find that they have a contemporary relevance and a tone of morality.

The novel under consideration is One Night @ the Call Centre (2005). In this novel there are six characters namely Shyam, Priyanka, Varun, Esha, Radhika and Military Uncle. The novel highlights the crisis, these characters are passing through. The hero of the novel is Shyam. His problem has a contemporary relevance. Other members of his family

...as a medium for plant growth, would be affected in several other ways (for details see chapter by ...d Soubbotch).

...ased temperatures may lead to more decomposition of soil organic matter;

...ased plant growth due to the CO2 fertilization effect may cause other plant nutrients such as N and ...become in short supply. However, CO2 increase would stimulate mycorrhizal activity (making soil ...phorus more easily available), and also biological nitrogen fixation (whether or not symbiotic). ...igh increased root growth there would be extra weathering of the substratum, hence a fresh supply ...tassium and micronutrients;

...CO2 anti-transpirant' effect would stimulate plant growth in dryland areas, and more soil protection ...en and lower topsoil temperatures, leading to an 'anti-desertification effect.

...IONS

...bal climate change, if it occurs, will definitely affect agriculture. Most mechanisms, and two-way ...between agriculture and climate, are known, even if not always well understood.

...evident that the relationship between climate change and agriculture is still very much a matter of ...th many uncertainties (see also Rosenzweig and Hillel, 1993); it remains largely a conundrum.

...r uncertainties affect both the Global Circulation Models (GCMs) and the response of agriculture, ...by differences among models, especially as regards effects at the national and subregional levels. ...any of the models do not take into consideration CO2 fertilization and improved water-use efficiency, ...cloud cover (on both climate and photosynthesis), or the transient nature of climate change.

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TEACHING ENGLISH IN RURAL AREAS

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ABSTRACT

In a global world the role of English is as important as our own existence. Hence learning English is mandatory for all of us whether we are urban or rural. The problem with rural areas in learning English is the unavailability of the resources, which, fortunately are accessible to the Urban population. This paper indicates in short some innovative ways of English language learning for rural areas.

Keywords:- Rural India, e-Pathshala, Mobile apps. Language learning.

INTRODUCTION

In a world where small is big, where knowing is everything, where science and advancement in technology has created a world which is just a swipe away from our existence depend on our extensive use of English the language of opportunity the link language. Whereas when population does not have much problem with the use of English because of the availability of the sources to them, rural areas lack the skills to converse in English, as it is an acceptable fact in Indian context that the development of India mean the development of its villages. In this paper an attempt has been made to resolve the problem of English language learning for the rural areas, particularly those for off area which are not directly connected with the cities either through roads or railways. Here are some suggestions:-

E- PATHSHALA

The digital India campaign has promoted extensive use of ICTs in the teaching learning process. The E-Pathshala is a joint initiative of ministry of Human Resources Dept. (MHRD), Government of India and National Counsel of Education Research and Training (NCERT). In rural India where there is a paucity of 'Real' English Medium School, further parents, due to their limited sources of income, who can not afford 'Fat' fee of English Medium Schools, E-Pathshala can be a better source of educating English to children and adult as well. Students-teachers (who are willing to learn English, in fact in some cases teachers themselves are not well versed in language proficiency) and parents can access e-books through mobile phones, tablets (as a pub) and from the web through laptops and desktops (as flipbook) E-pathshala mobile app. is available through net. Students, teachers, learner can install E- Pathshala app in their mobile, this app. is available in many languages including Hindi and Urdu. In E-pathshala you can enroll as students, Teachers, parents or educators.

NATIONAL SERVICE SCHEME (N.S.S)

National Service Scheme is an integral part of college life, almost all school and colleges leave until/ units of N.S.S. students. This N.S.S./organizes camps in rural areas. Where students stay in a particular locality. N.S.S. volunteer under the guidance of their co-ordinator may arrange a contact programme with parents and tell them the importance of English in the present society. For example volunteers may advised their that if they know little English they may not be cheated by shopkeers, on railway counter, in E-marketting, Big Bazzar, mart etc. Volunteers will suggest that recruitment process of companies today is also on the basis of the knowledge of English. Application writing also require good English. Knowledge of English is also mandatory for e-banking, e-bazar etc. Needless to say rural people will be convince by their suggestions.

with the emerging concept of smart cities that cultural heritage must not be disappeared. communication is an essential part of Indian culture. Soirees, gossips, mutual co operation and discussions on various spheres of life were the very characteristics of Indian culture which are now removed from the existing scenario in the wake of smart cities. The general interaction is now done like the small coffee shop which is known as coffee house culture, the small smart library will knowledge broker engaged in locating qualified sources of critical knowledge to solve a particular It should be noted down that these services may function effectively only in participatory We should keep in mind when forming a layout of a smart city that the concept should be smart people and the most vital aspect of it is the citizens who live and work must be integral implementation process too. As cities are both the subjects and objects of creative activity which an audience and a market for artists and their works, they are the examples of creative activity right.

The sentence "Education makes one civilized or decent" may has contradictions but literature

Smart Cities: A Challenge for Women Safety

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Smart city has become the buzzword today. There is great variation in what is being seen as a smart city. In some programs there is a focus on technology whereas in others there is a clear vision of the changes it will bring about. Smart city agenda include looking at a range of many aspects of the dwelling place including water, electricity, sanitation, housing, health, education and safety. One aspect of smart cities is in finding new solutions to these problems which build on technological innovations and improve performance. The concept of Smart city gained importance in the last years as a means of ennobling services and applications available to the citizens companies and authorities that are of a city system. It aims at increasing citizens' quality of life and improving the efficiency and quality of the services provided by govt. entities. This perspective requires an integrated vision of a city and of its infrastructures in all its components. It has to incorporate a number of dimensions that are not related to technology i.e. the social and political ones. As critical infrastructure elements of a future society, smart city requires the highest level of security. A comprehensive architecture with security built in from the beginning is necessary. In order to achieve user consent, trust in and acceptance of smart cities, integration of security and privacy preserving mechanisms must be the key concern of future research. How things might go wrong, how things might be tackled and the question of accountability is needed in this human system. Essentially a smarter perspective on what affects security in a new paradigm is needed. One of the areas where technological innovations have come up in the past few years has been in addressing women's safety in cities after the nirbhaya's case in 2012, we have seen many mobile apps in the market. How effective are these in enhancing gender safety is a question that comes to our mind.

It is essential to create a dialogue between smarter and safer cities. Safety can not only be about cctv cameras and greater surveillance. It must focus on how people can be safer and how they are able to feel more ownership and engagement with urban processes. Citizen participation in governance is often mentioned in urban city documents and this must be realized as a two way process of engagement. Smart cities should be constructed on the idea that technology must enrich safety and the lives of people in ways that are practical.

PRINCIPAL

कार्य में मानवीय संबंध

मोहम्मद तारिक
अर्थशास्त्र विभाग
गाँधी फैज़-ए-आम कॉलेज, शाहजहाँपुर

उद्योग में मानवीय संबंधों (Human Relation) अर्थात् व्यक्ति का व्यक्ति से, व्यक्ति का मशीन एवं कार्य से संबंधों का अत्याधिक महत्व है, किंतु हम देखते हैं कि मशीन युग में मानवता का कोई स्थान नहीं था। उद्योगों में प्रचलित इस प्रकार की विचारधारा को यांत्रिक विचारधारा (Mechanical School) कहते हैं। श्रमिकों की स्थिति एवं कार्यों के बारे में फ्रांसीसी मनोवैज्ञानिक डुपिन (Dupin) ने 1829 में लिखा था कि हम मशीनों और उपकरणों की उन्नति में लगे रहे और श्रमिकों की उन्नति के लिए कोई प्रयास नहीं कर सके। यदि उसे (श्रमिकों को) एक उपकरण (Tool) ही मान लिया जाये तो उसकी गणना अच्छी मशीन से होगी क्योंकि वह एक ऐसा यंत्र है जो अपनी बुद्धि की प्रेरणा से कार्य करता है और स्वयं सोचकर अपने को पूर्ण बना लेता है।"[1]

तकनीकी भाषा में मानवीय संबंधों का अर्थ संगठन के उद्देश्यों और कर्मचारियों के हितों का एकीकरण करना है, सामान्यतः उद्योग में कर्मचारियों के साथ मानवता का व्यवहार करना, उनकी योग्यता का विकास करना, कार्य के प्रति उनकी इच्छा जाग्रत करना, प्रबंधक और कर्मचारियों के मध्य समन्वय स्थापित करके उत्पादकता में वृद्धि करना एवं लक्ष्यों की प्राप्ति करना ही मानवीय संबंध है। इसलिए कीथ डेविस (Keith Devis) का कथन उपयुक्त लगता है–

"प्रबंध व्यवहार के क्षेत्र में मानवीय संबंध व्यक्तियों का कार्य के साथ समन्वय है, जो उन्हें उत्पादकीय ढंग से, सहकारिता से आर्थिक, मनोवैज्ञानिक एवं सामाजिक संतुष्टि से कार्य के लिए प्रोत्साहित करता है।"[2] अर्थात् हम कह सकते हैं कि मानवीय संबंध एक ऐसी प्रक्रिया है जिसके माध्यम से कार्यरत व्यक्तियों की मानसिक, शारीरिक और सामाजिक आवश्यकताओं को संतुष्ट किया जाता है तथा कार्य करने के लिए अभिप्रेरित किया जाता है जिससे संस्था अपने उद्देश्यों को प्राप्त करने में सक्षम हो सके। Scott के अनुसार "प्रबंध मानवी संबंध का प्रयोग व्यवसाय में मानवीय संतुष्टि और मानवीय संघर्ष की असुलझी हुई समस्याओं के समाधान के लिए करता है।"[3]

वैज्ञानिक प्रबंध– वैज्ञानिक प्रबंध की विचारधारा जो संयुक्त राष्ट्र अमेरिका में चालू शताब्दी के प्रारंभ में ही विकसित की गयी, इस विचारधारा के जनक फेड्रिक विस्लोटैलर (Fedric wislow Taylor, (1865-1915) थे। उन्होंने इस्पात के कारखानों में अध्ययन और प्रयोग के बाद कुछ पुस्तकें प्रकाशित करवाई जो हैं:–

नई सदी, नैतिकता का बदलता पाठ और बालसाहित्य

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विगत सदी का अंतिम दशक तमाम उतार–चढ़ावों से भरा रहा है। इस दशक के आरम्भ जो परिवर्तन हुए, और जिस तेजी से हुए, आजादी के बाद वह और किसी दौर में नहीं दिखे। स्वतंत्रता के पश्चात् भारतीय समाज के विभिन्न क्षेत्रों में तमाम प्रत्यक्ष–अप्रत्यक्ष परिवर्तन हुए। पुरातनपंथी दृष्टिकोण के स्थान पर नवीन इहलौकिक दृष्टिकोण का उदय हुआ। अंग्रेजों के जाने के बाद भी पाश्चात्य संस्कृति का प्रभाव न केवल बना रहा, बल्कि और गाढ़ा हुआ। नए मूल्य निर्मित हुए। संयुक्त परिवार टूटकर, एकल परिवार बने। औद्योगीकरण आरम्भ हुआ तो सामंती मूल्य टूटे और जनतांत्रिक भावनाओं का उदय हुआ। बड़ी संख्या में रोजगार की तलाश में शहरों में आबादी का केन्द्रीकरण शुरू हुआ। अनेक सकारात्मक–नकारात्मक परिवर्तन सामने आए। कुल मिलाकर सम्पूर्ण भारतीय समाज परिवर्तन की इस प्रक्रिया की धीमी–धीमी आँच पर पकता रहा। किंतु अंतिम दशक में परिवर्तन की यह प्रक्रिया बहुत तेजी से हुई। प्रत्यक्ष रूप में भले ही हमें इतने ज्यादा परिवर्तन न दीखते हों, पर अप्रत्यक्ष रूप में जो परिवर्तन हुए वे इतने क्षिप्र और गतिशील थे कि उन्होंने हमारे जीवन मूल्यों को आमूल परिवर्तित कर दिया।

90 के दशक में सबसे प्रभावकारी और महत्वपूर्ण घटना हुई, वह थी तत्कालीन वित्त मंत्री मनमोहन सिंह द्वारा उदारीकरण, निजीकरण और भूमंडलीकरण की नवीन आर्थिक नीति। इस नीति ने परंपरागत भारतीय समाज पर दूरगामी प्रभाव डाला। बहुराष्ट्रीय कंपनियों का निर्बाध प्रवेश, निजीकरण को बढ़ावा और संचार क्रान्ति ने जहाँ एक ओर आर्थिक रूप से भारत को प्रभावित किया, वहीं सामाजिक क्षेत्र में तीव्र परिवर्तन किया। आर्थिक विकास के मॉडल में समाजवाद का सिकुड़ता दायरा और निजीकरण की शक्ल में बढ़ते पूँजीवाद ने एक नया समाज विकसित किया। विज्ञापनवादी उपभोक्तावाद, संवेदनहीनता और स्वार्थ परस्त वातावरण में जीवन मूल्य अपनी प्रासंगिकता तलाशते–तलाशते अपना रूप बदल बैठे। बाजार हमारे जीवन के बीच आ बैठा। अधिक उपभोग हमारी स्तरीयता का मानक बन गया। बाजार ने समाज में छद्म जरूरतें पैदा कर दी। भीतर से खोखला जीवन उपरी चमक–दमक और विज्ञापनी आदर्शों को लेकर जीने लगा।

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पर्यावरण की चिंताएँ और हिंदी बाल कहानियाँ

डॉ० मोहम्मद अरशद ख़ान

हमारी सदी की सबसे बड़ी समस्या पर्यावरण संतुलन को बचाए रखने की है। बिगड़ते पर्यावरण के ख़तरे आज वैश्विक स्तर पर भयावह रूप में सामने आने लगे हैं। बाढ़, सूखा, सुनामी, समुद्र की सतह का ऊपर उठते जाना, ओज़ोन परत का क्षरण, प्रदूषण–जनित बीमारियों का बढ़ना आदि समस्याएँ आज पूरे विश्व में चिंता का विषय हैं।

"आज हम जिस वातावरण में रह रहे हैं, वह कितना दूषित हो गया है यह बात अब किसी से छिपी नहीं है। हम जिस हवा में साँस ले रहे हैं, वह दूषित हो रही है। जो पानी पीते हैं, वह भी दूषित हो रहा है। जो अन्न खाते हैं वह भी अब पहले जैसा नहीं रहा। धरती के भीतर जो भी खनिज पदार्थ थे–लोहा, कोयला, पेट्रोल आदि ये भी सब कम होते जा रहे हैं। ज़रा हम सोचें पहले हमारे पास कितने वन थे, बाग़–बगीचे थे। कितने सारे पशु–पक्षी थे। ये सब अब धीरे– धीरे कम होते जा रहे हैं। आबादी के बढ़ने से घर, ज़मीन, स्कूल, अस्पताल, आने–जाने के साधन सब के सब कम पड़ते जा रहे हैं। रोज़ भीड़–भाड़, शोर–शराबा इतना बढ़ता जा रहा है कि एक–दूसरे की बात को सुनना–समझना मुश्किल होता जा रहा है। ये सब क्यों हो रहा है? अगर हम ग़ौर से देखें तो पाएँगे कि यह सब पर्यावरण–संतुलन पर ध्यान न देने के कारण हो रहा है।"[1]

"मनुष्य की प्रकृति पर विजय की महत्वाकांक्षा ने पर्यावरण को बहुत हानि पहुँचाई है। उसने अपने को प्रकृति के सम्मुख भस्मासुर की भूमिका में खड़ा कर लिया है और आज उसका दुष्परिणाम भोगने को बाध्य है। उसने पेड़ों को अंधाधुंध काटना शुरू किया, खनिजों का अंधाधुंध दोहन किया, कल–कारखानों एवं वाहनों के अतिशय धुएँ से वायुमंडल को दूषित किया। जल, मिट्टी, हवा आदि सब कुछ दूषित होता चला गया। आज जो स्थिति है वह भयावह है। समय रहते मनुष्य ने पर्यावरण संरक्षण हेतु उपाय नहीं किए तो समूची सृष्टि के लिए भयंकर संकट उपस्थित होने वाला है, इसमें संदेह नहीं।"[2]

पर्यावरण की रक्षा और उसके संतुलन को बरक़रार रखने की कोशिशें आज विश्व स्तर पर देखी जा सकती हैं। वैज्ञानिक, पर्यावरणविद् आदि अपने स्तर पर समस्या के कारणों को समझने और निवारण तलाशने में लगे हैं, तो साहित्यकार

डॉ. मोहम्मद माजिद ख़ान

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'आग का दरिया' के प्रतीकात्मक पात्र

डॉ. दरख़्शाँ ग़नी

कुर्रतुल ऐन हैदर ने अपने उपन्यासों में पश्चिमी उपन्यासों की नई तकनीक के सफ़ल प्रयोग किए हैं। उनके यहाँ चरित्र-चित्रण की पारंपरिक कल्पना नहीं मिलती है। किसी भी उपन्यास में पात्रों के बग़ैर कहानी की कल्पना नहीं की जा सकती और पात्र ही कहानी को जन्म देते हैं। इसलिए उनके उपन्यासों में इस तत्त्व का प्रयोग एक विशेष रचनात्मक ढंग से किया गया है। यही तत्त्व 'आग का दरिया' में भी दिखाई देता है। प्रोफ़ेसर वक़ार अज़ीम 'दास्तान से अफ़साने तक' में उनके उपन्यास लेखन के संबंध में लिखते हैं, "उर्दू के उपन्यासकारों में कुर्रतुल ऐन हैदर ने तकनीक के पश्चिमी ढंग को अपनाया और उसके तत्त्वों को बड़ी ख़ूबी से पूर्वी परंपरा में समोया है।"[1] कुर्रतुलऐन हैदर ने 'आग का दरिया' में जिन पात्रों की रचना की है, वह अधिकतर प्रतीकात्मक हैं। गौतम नीलांबर प्राचीन हिंदुस्तान के आश्रम का ब्रह्मचारी विद्यार्थी है। हरिशंकर की भी यही स्थिति है। दोनों का आमना-सामना आरंभ से अंत तक कई बार होता है।

कुर्रतुल ऐन हैदर ने अपने अधिकतर उपन्यासों में फ़्लैशबैक और शऊर की रौ की तकनीक को अपनाया है। इसलिए उनके पात्र भी इसी तकनीक के साँचे में ढलकर सामने आते हैं। वह अपनी सोच के द्वारा अपनी पहचान बनाते हैं। 'आग का दरिया' में उपन्यासकार ने हिंदुस्तानी संस्कृति के इतिहास को विभिन्न पात्रों की सहायता से प्रस्तुत किया है। हर युग में दुख-दर्द, वेदना मौजूद है।

'आग का दरिया' उपन्यास में प्रमुख पात्र कुल पाँच हैं-गौतम, हरिशंकर, चंपा, कमाल और सरल ऐश्ले। यह पात्र नामों के थोड़े से अंतर के साथ विभिन्न युगों में रूप बदलकर उपमहाद्वीप की ऐतिहासिक व सांस्कृतिक कहानी को [illegible] प्रदान करते हैं और पाठक के मन पर एक अलग छाप छोड़ते हैं। गौतम और हरिशंकर को अपने समय' के आईने में लहरों के नीचे छिपा हुआ है। यह लहर समय के हर युग की विभिन्न स्थितियों और अवस्थाओं की व्याख्या करती हैं। कुर्रतुल ऐन हैदर ने इस उपन्यास में इतिहास को कहानी में बदलने का प्रयास किया है। इसके लिए उन्होंने बहुत से दार्शनिक विचारों का प्रयोग किया है और उन्हीं विचारों से कुछ चिह्न बनाए, कुछ प्रतीक बनाए हैं। इस उपन्यास का पात्र नीलांबर हिंदुस्तानी संस्कृति का प्रतीक बनकर सामने आता है। उसके

[illegible] ने दर्शन भी है। वह एक ऐसा हिंदुस्ता
[illegible] ई धर्म से प्रभावित होता है। "गौ
[illegible] था..., उसने शिव की पूजा की
[illegible] पर उसने बहुत सी किताबें लि
[illegible] अध्ययन किया, जिसने ब्राह्मणों
[illegible] पर सोच विचार किया था। हरि
[illegible] से दिलचस्पी पैदा हो चुकी थी।"
[illegible] न्यास के प्रारंभ में गौतम नीलां
[illegible] दिशा में हाथ पाँव मारता दिखाई
[illegible] दृश्य मान सकते हैं और प्रतीका
[illegible] पर मारने शुरू कर दिए मगर पा
[illegible] में उसे एक चट्टान ऐसी दिखा
[illegible] ती से पकड़ लिया लेकिन उसमें
[illegible] पर से ज़्यादा पत्थर को अपनी
[illegible] लांबर के ऊपर से गुज़रती बह
[illegible] तम नीलांबर अनादिकालीन मान
[illegible] उसकी पत्थर पर पकड़ मनुष्य
[illegible] नुष्य के जीवन में आनेवाली बाध
[illegible] गौतम नीलांबर के ऊपर से गु
[illegible] ने की कहानी दर्शता है। 'सम
[illegible] आगे बढ़ जाना सच्चाई है।
[illegible] शंकर बौद्ध धर्म का प्रतिनि
[illegible] जो अपनी को समझने के
[illegible] और गौतम की सांसारिक मो
[illegible] उपयोगी
[illegible] है और बीसवीं शताब्द
[illegible] को इतिहासकार बनने
[illegible] लिए नियुक्त कर रखा है
[illegible] स्वदेश त्यागना पड़
[illegible] कर पाकिस्तानी है,
[illegible] कमाल रज़ा हैदर

प्रेमचंद की कहानियों में चित्रित मानव मूल्य

बरख़शाँ बी ग़नी
हिन्दी विभाग
गाँधी फ़ैज़-ए-आम कॉलेज, शाहजहाँपुर

मूल्यों की अवधारणा के संबंध में यह तथ्य सर्वविदित है कि मूल्यों का संबंध समय, समाज तथा परिवेश से है। 'मूल्य न ही व्यक्ति और न वस्तु में होता है बल्कि इन दोनों के योग से ही इसका निर्णय किया जाता है। इस दृष्टि के अन्तर्गत मूल्य समाज सापेक्ष होते हैं।"

समय परिवर्तनशील है अतः सर्वव्यापक तथा सर्वसम्मत मूल्यों का निर्धारण करना आसान नहीं है क्योंकि समय के साथ–साथ विचार, संस्कार एवं मान्यताएँ परिवर्तित होती रहती हैं लेकिन फिर भी सत्य, न्याय, परोपकार, प्रेम, करूणा, दयाभाव, त्याग, क्षमा, सेवाभाव, आत्मसंयम तथा संतोष इत्यादि अनेक नैतिक मूल्य हैं, जिनको समय, समाज अथवा परिवेश की सीमा में बाँधना मुश्किल है।

मानव–मूल्यों का संबंध व्यक्ति तथा समाज से है और समाज साहित्य में प्रतिबिंबित होता है। अतः साहित्य में ये मानव–मूल्य किन रूपों में प्रतिबिंबित हुए हैं, इस दृष्टि से, प्रस्तुत शोध–पत्र में, प्रेमचंद की प्रमुख कहानियों–ईदगाह, नमक का दारोगा, बड़े घर की बेटी, तथा पंच–परमेश्वर, का विश्लेषणात्मक अध्ययन किया गया है।

प्रेमचंद की कहानियों में मानव–मूल्यों की स्थापना, पात्रों की चारित्रिक क्रियाओं के द्वारा व्यक्तिगत तथा सामाजिक रूप में हुई है तथा मूल्यों की अभिव्यक्ति प्रेम, त्याग, परोपकार, क्षमा, दयाभाव एवं सत्य के रूप में दिखाई देती है। मानव की व्यथा, सुख–दुख, उसकी सामाजिक एवं आर्थिक स्थिति के वर्णन द्वारा भी प्रेमचंद परोक्ष रूप में, मानव–मूल्यों को स्थापित करते हुए प्रतीत होते हैं। इस प्रकार का लेखन निस्संदेह प्रेमचंद की मानवीय चेतना का परिणाम है।

प्रेमचंद की कहानियाँ सोद्देश्य रची गयी हैं, जिनसे प्रेमचंद ने आदर्शों या नैतिक विचारों को पाठकों के सम्मुख प्रस्तुत किया है। उनकी कहानियों में प्रेम, त्याग, क्षमा, दयाभाव तथा न्याय और ईमानदारी जैसे मूल्यों पर अधिक बल दिया गया है।

'ईदगाह' कहानी में प्रेमचंद ने हामिद का मनोवैज्ञानिक अध्ययन किया है कि किस प्रकार पाँच साल का बच्चा अपनी दादी के प्रेम में पूरी दौलत तीन पैसे के रूप में लुटाकर अपनी दादी के लिए चिमटा खरीद लेता है। उसके दोस्त महँगे–महँगे खिलौने खरीदते हैं। वह अपनी इच्छाओं को दबा लेता है क्योंकि उसके पास कुल तीन पैसे है, इतने महँगे खिलौने वह कैसे ले–'हामिद खिलौने की निंदा करता

आधुनिक बाल कविताओं में नैतिकता

मोहम्मद साजिद ख़ान
हिंदी विभाग
गाँधी फैज़-ए-आम कॉलेज, शाहजहाँपुर

वर्तमान समय विघटनकारी शक्तियों के उभार का है। देश–दुनिया एक नई सज–धज के साथ हमारे सामने है। फेस–बुक, व्हाट्स एप और ट्वीट जैसे मैसेंजर्स ने विश्व–ग्राम की संकल्पना को मूर्त कर दिया है। अब राम–रहीम के किस्से प्राचीन समय की बात लगती है। इस बदलते परिदृश्य में अचानक बड़े बनने और येनकेन प्रकारेण वज़ीर से बादशाह तक की कुर्सी पाने के बेरहम सपनों ने हमारे खान–पान, रहन–सहन, तीज–त्योहारों के समूचे 'पैटर्न' को बदला ही नहीं, अपितु हमारी 'कल्चर' ही बदल डाली है। गोया कि हम न तो डार्विन के सिद्धान्तानुसार पशु (वानर) से पैदा हैं और न ही 'मनुष्य' ही रह गए, बल्कि कुछ और ही बन गए हैं। यह तीव्र बदलाव हमारे लिए घातक सिद्ध न होता, यदि उसने हमारी संस्कृति पर हमला न किया होता। यह चिंतनीय है, मंथन करने योग्य है। फिर ऐसे समय में इसके उपाय क्या हों? वस्तुतः बालक सृष्टि–नियंता की वह कोमल रचना है, जो कलुष रहित है और पुष्पों की भाँति सुवासित है। अतः उस पर इन कुसंस्कारित परिस्थियों का अनिष्टकारी प्रभाव न पड़े, इसलिए उसे आरम्भ से ही संरक्षित–संस्कारित करना होगा, ताकि वह मानवीय ऐक्य, पशु–पक्षी, प्रकृति, पर्यावरण के प्रति प्रेम ही नहीं करे, बल्कि सृष्टि के कण–कण से संवेदनात्मक रूप से जुड़ भी सके। यह महार्घ बाल–साहित्य के द्वारा ही सम्भव है। बाल–साहित्य के द्वारा उसे ऐसे संस्कारों से सींचा जा सकता है, जो उसके लिए आवश्यक है। कहना न होगा, आज यही देश–समाज के लिए अत्यंत आवश्य है और कल्याणकारी भी, क्योंकि बालक ही भविष्य के कर्णधार हैं। आधुनिक समय में नए–पुराने ऐसे बहुत से बाल–साहित्यकार हैं, जो वर्तमान की चुनौतियों के बीच अपनी कविताओं के माध्यम से बालकों के चरित्र–निर्माण और नैतिक–मूल्यों की औषधीय आवश्यकताओं की पूर्ति में सक्रिय हैं। इस प्रयास में–डॉ0 रोहिताश्व अस्थाना, डॉ0 सूर्यकुमार पाण्डेय, डॉ0 चक्रधर नलिन, प्रकाश मनु, डॉ0 दिविक रमेश, डॉ0 रामनिवास 'मानव', डॉ0 राकेश 'चक्र', डॉ0 शकुन्तला कालरा, डॉ0 मोहम्मद साजिद ख़ान, डॉ0 मोहम्मद अरशद खान, डॉ0 मो0 फहीम, डॉ0 नागेश पाण्डेय 'संजय', रावेंद्र कुमार 'रवि', शादाब आलम, अशोक अंजुम, इत्यादि कतिपय नाम प्रथम दृष्टया लिए जा सकते हैं।

समय का महत्त्व न कभी कम हुआ है, न होगा। हमारे अभिभावकों ने सदैव समय के महत्त्व को बालकों को बताया है। डॉ0 सरोजनी कुलश्रेष्ठ अपने एक बाल–गीत–'समय

"पर्यावरण मानव–जीवन का अभिन्न अंग है। मानव पर्यावरण का अनिवार्य घटक है। मानव को चारों ओर से आवृत करता हुआ भौतिक जगत का जो परि आवरण है, वही पर्यावरण है। मानव के साथ–साथ विविध प्रकार की वनस्पतियाँ और जीव–जन्तु तथा प्राकृतिक सम्पदा इसमें सम्मिलित है। पर्यावरण की सुरक्षा, सुधार एवं संवर्द्धन मानव मात्र की समृद्धि और भविष्य की पीढ़ियों के कल्याण के लिए अनिवार्य है।"

नई सदी में विज्ञान और तकनीक के विकास ने जहाँ सम्भावनाओं के नए द्वार खोले हैं और सामान्य व्यक्ति के लिए आवश्यक सुविधाएँ मुहैया कराई हैं, वहीं उसके अवशिष्ट ने नई समस्याओं और संकटों का दरवाजा ही नहीं खटखटाया वरन् समस्याएँ घर में सीधे प्रवेश कर गई है। विभिन्न प्रकार के रासायनिक पदार्थ और मनुष्य द्वारा प्रकृति से अनावश्यक छेड़छाड़ के चलते बहुत सारी समस्याएँ देश से बढ़कर दुनिया में फैल गई हैं।

"हमारी जन्मजात पर्यावरण संचेतना के बाद भी आज हर स्तर पर पर्यावरण का जबरदस्त ह्रास दिखाई दे रहा है। विश्व के अग्रणी एवं विकसित राष्ट्र के रूप में समझे जाने वाले अमेरिका, जर्मनी, फ्रांस और बेल्जियम आदि में भी पर्यावरण के प्रति भय का वातावरण व्याप्त है, क्योंकि विकास एवं प्रगति के नए प्रतिमान नित्य गढ़ने के लालच में इन राष्ट्रों ने प्रकृति एवं पर्यावरण की खूब अनदेखी की। इस विकासवादी सोच एवं महत्वाकांक्षा ने उनके पर्यावरण–बोध को कमजोर कर दिया। माया के आवरण ने संज्ञान और सुबोध को आवृत कर लिया, जिससे जलवायु, धरती, आकाश में सभी कुछ प्रदूषित एवं विषाक्त हो गया। उद्योगों का विकास हुआ। अतिशय वन–विनाश हुआ। जीवन-आधारी तत्वों का इतना दोहन और दमन हुआ कि मानुषी अस्तित्व के लिए भी खतरा उत्पन्न हो गया।"[4]

इसी प्रकार जल का दुरुपयोग आज उसकी कमी का विश्व–संकट बनता जा रहा है। जबकि यह निश्चित है कि "प्राकृतिक पर्यावरण के पोषक स्रोतों के असंतुलन को बिगाड़ने का अर्थ अपना भविष्य अंधकारमय करना है। खननीकरण के

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नीतिशास्त्र और अशोक के अभिलेख

तनवीर हुसैन
इतिहास विभाग
गाँधी फैज़-ए-आम कॉलेज, शाहजहाँपुर

नीतिशास्त्र को नैतिक दर्शन या 'मॉरल फिलॉसफी' भी कहा जाता है। यह मानव–व्यवहार का विज्ञान है। यह मन की आंतरिक वृत्ति है। इसकी अभिव्यक्ति अभ्यासजन्य व्यवहार में होती है। इस प्रकार नीतिशास्त्र आदतों एवं चरित्र का विज्ञान है। इसे आचार शास्त्र भी कहा जाता है।[1] नीतिशास्त्र अच्छे अथवा बुरे व्यवहार में अभिव्यक्त मानव चरित्र का विज्ञान है, किन्तु अच्छाई और बुराई उस परम हित की ओर संकेत करते हैं जो मानव जीवन का आदर्श है। अतः नीतिशास्त्र उच्चतम कल्याण का विज्ञान है।[2] यह हमें यह सिखाने का प्रयास करता है कि हम किस प्रकार मनुष्यों की आदतों अथवा चरित्र के विषय में सम्यक नैतिक निर्णय दें, तथा किस प्रकार उसको मानव जीवन के महत्तम आदर्श की तुलना में उचित अथवा अनुचित, सत् अथवा असत् समझें। नीति–शास्त्र का सम्बन्ध मानव व्यवहार के स्वाभाविक रूप से न होकर उस रूप से है जैसा कि मानव व्यवहार को होना चाहिए। यह एक प्रकार से मनुष्य के परम–मंगल का विज्ञान है। इस परम–मंगल या उच्चतम कल्याण के आदर्श को इतिहास में खोजना दुष्कर है क्योंकि इतिहास के अधिकतर पन्ने रक्तरंजित है। किन्तु भारतीय इतिहास में ऐसे अनेक चरित्र हुए हैं जिन्होंने इतिहास की धारा को मोड़ने का प्रयत्न किया है और मनुष्य के परम–मंगल अथवा उच्चतम कल्याण के लिए प्रयास किए हैं, उन्हीं में से अशोक महान एक है।

अशोक के अभिलेख किसी भी ऐतिहासिक महत्व के प्राचीनतम विद्यमान भारतीय लिखित प्रमाण हैं। सम्पूर्ण भारत में दूर–दूर तक बिखरे हुए स्तम्भों और शिलाओं पर उत्कीर्ण राजकीय घोषणाओं की एक श्रृंखला है जो सम्पूर्ण नीतिशास्त्र को अपने आप में समेटे हुए है। ये घोषणाएँ नीति सम्बन्धी राजाज्ञाओं तथा अपने अधिकारियों एवं प्रजा के निमित्त आदेशों के रूप में हैं।

अशोक की दृष्टि में सारी प्रजा उसकी संतान थी।[3] राजा का कर्त्तव्य लोकहित और पराक्रम था।[4] उसने जनता से सम्पर्क करने के लिए दौरा करना आरम्भ किया था।[5] वह स्वयं बौद्ध धर्म का अनुयायी था किन्तु सार्वजनिक रूप से उसने इन अभिलेखों में जनता को जिस धर्म का उपदेश दिया है और प्रचार किया है वह किसी धर्म विशेष से सम्बद्ध नहीं है, उसमें बौद्ध धर्म की विशेषताओं के साथ–साथ अन्य धर्मों की भी विशेषताएँ निहित हैं। उसने जो कुछ कहा है उसे सभी धर्मों के सार की संज्ञा दी जा सकती है। अशोक ने अपने विभिन्न अभिलेखों में धर्म की परिभाषा इस प्रकार

5

ABDUL SAMI KHAN NAK-HAT
A Great Orientalist Scholar of Twentieth Century

M. IFZAL-UR-RAHMAN KHAN

A number of scholars live and die unknown or only a few people, in a limited circle, know about them. Scholar dies but scholarship never dies. In the present paper an attempt has been made to introduce a great orientalist Persian Scholar who, after 1947, lived a secluded life in his small home town Shahjahanpur. Had he been in Iran, he would have become an international figure. Besides being an expert of Persian and Urdu, he was well-versed in English too. His writings reveal that he was well read in History too, as he often quotes European Scholars. He has also written a booklet entitled *"Benaqab Napolean"*[1] (Napolean unveiled) and two books on Islamic history.

Abdul Sami Khan Nak-hat (1900 - 1983), an expert of Persian and Urdu was a prolific author. He was both a poet and prose writer. He was a creative writer concerned with reform in society. He wrote with the objective of reforming the society. Apart from exclusively the religious works, other writings of Abdul Sami Khan (Nak-hat Shahjahanpuri) also include religious issues e.g. praise of Almighty Allah, importance of Holy Quran and homage to prophet Muhammad (Peace be upon him) etc. Even the literature has the colour of religion. For him literature was religion and the religion was literature.[2] This bent of mind of Abdul Sami Khan was due to the fact that he was a Muslim Scholar (*Alim*) having

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उत्तर प्रदेश में पत्रकारिता और राष्ट्रीय संघर्ष 1920–30 (दैनिक 'आज' के विशेष सन्दर्भ में)

डॉ0 गु0 इफ़्ज़ालुर्रहमान खाँ*

जनचेतना जागृत करने और किसी भी आन्दोलन से लोगों को जोड़ने में पत्र-पत्रिकाओं और पत्रकारों की विशेष भूमिका होती है। निःसंदेह गाँधी युगीन पत्रकार सामान्यतः निष्पक्ष और ईमानदार थे तथा स्वतन्त्र रुप से निष्ठापूर्वक लिखने वाले थे। पत्रकारिता भी इतिहास का एक स्रोत है मगर यह ज़रुरी नहीं है कि समाचार पत्रों और पत्रिकाओं द्वारा दी गयी जानकारी पूर्ण रुप से सत्य हो, इतिहास के मानक पर उसे परखना आवश्यक है। उर्दू हिन्दी पत्रकारिता के माध्यम से स्वाधीनता संघर्ष को समझने में इतिहास की कुछ नई परतें खुलती है। गाँध ी युगीन हिन्दी पत्रकारिता[1] से राष्ट्रीय संघर्ष के इतिहास का एक नया अध्याय आरम्भ होता है। आधुनिक युग को तरह संचार साधन सुलभ न होने के बावजूद, गाँधी युगीन प्रमुख समाचार पत्रों ने देश के कोने-कोने से समाचार छापकर देश के लोगों को राष्ट्रीय एकता और स्वतन्त्रता में बाँधने का प्रशंसनीय कार्य किया। भारतीय राजनीति में 17 से गाँधी युग का सूर्योदय हुआ[2]। मुख्य घटनायें जिनसे पत्रकारिता को सामान्य रुप से और हिन्दी पत्रकारिता को विशेष रुप से बढ़ावा मिला वह थी-असहयोग आन्दोलन (1920-21), खिलाफ़त आन्दोलन (1921), विधान परिषद और विधान सभा के चुनाव (1927, 1935) और कांग्रेस आन्दोलन (1930, 1932)। लेकिन साथ में यह भी उल्लेखनीय है कि हिन्दी पत्र-पत्रिकाओं का गाँधी युग में हुए स्वाधीनता संघर्ष से जुड़े आन्दोलनों को उत्तर प्रदेश और अन्य हिन्दी भाषी क्षेत्रों में लोकप्रिय और जन आन्दोलन बनाने में विशेष योगदान रहा है, हिन्दी पत्रकारिता और स्वाधीनता संघर्ष दोनों एक दूसरे से जुड़े हुए है तथा एक दूसरे के ऋणी है।

1919 में कांग्रेस ने हिन्दी को राष्ट्र भाषा के रुप में अपना लिया था। इससे राजनैतिक पत्रकारिता को बल मिला। इसी क्रम में 05 सितम्बर 1920 को श्री शिव प्रसाद गुप्ता ने बनारस से हिन्दी दैनिक 'आज' की स्थापना की।[4] जन साधारण के आर्थिक रुप से सम्पन्न न होने के कारण इस समचार पत्र का मूल्य आधा आना रखा गया।[5] 1920 में कानपुर से 'वर्तमान' दैनिक भी निकलना शुरु हो गया।[6] उस समय जब हिन्दी पत्र पत्रिकाओं की संख्या अधिक नहीं थी, इन दोनों पत्रों 'आज' और 'वर्तमान' की 1920-21 के असहयोग आन्दोलन में विशेष भूमिका रही है। 'आज' ने स्थापना के समय से ही लिखा, "हमारा उद्देश्य देश के लिए सर्व प्रकार से स्वतन्त्र उपार्जन है।[7] इसी उद्देश्य से आज के मुख्य पृष्ठ पर 'रामचरित मानस' की यह अर्द्धाली छपती थी[8], 'पराधीन सपनेहु सुख नाहिं'।

पत्रकारिता केवल पत्र-पत्रिकाओं तक ही सीमित नहीं होती, कुछ पुस्तकें भी पत्रकारिता का अंग बनती है। ऐसी ही एक पुस्तक पण्डित मदन मोहन मालवीय के स्वराज सम्बन्धी विचारों पर 'प्रताप' कार्यालय कानपुर द्वारा 1917 में प्रकाशित हुई, इसका शीर्षक था "स्वराज्य पर मालवीय जी"। इसके मुख्य पृष्ठ पर एक कविता छपी थी जो इस प्रकार है[9]-

दबा हुआ यह देश अब नहीं दब सकता है,
बन कर रहना दीन किसे अब फब सकता है।
प्राप्त करेंगे स्वत्व, विश्व में होड़ बदेंगे,
ले लेंगे अधिकार कभी हम छोड़ न देंगे।

15 अक्टूबर 1920 को लखनऊ में भाषण देते हुए गाँधी जी ने भी स्वराज की व्याख्या करते हुए कहा था, "स्वराज का मतलब है कि जो भी हम करना चाहते है, जैसे भी देश में करके कारगर साबित कर सकें। स्वराज का मतलब है हम जो करना चाहते है इसे खुलकर कर सकें, उस पर किसी प्रकार की बन्दिश न हो, हम तीस करोड़ हिन्दुस्तानी और वह गोरे सिर्फ एक लाख, फिर भी हम उनका सामना नहीं कर पाते। हिन्दुओं और मुसलमानों को दृढ़ संकल्प करना है और इस असहयोग आन्दोलन को कारगर साबित करना है।[10]

*असोसिएट प्रोफेसर एवं अध्यक्ष इतिहास विभाग, गाँधी फ़ैज़-ए-आम कॉलेज शाहजहाँपुर।

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'चाँद' की 'फाँसी' और स्वाधीनता संघर्ष

डॉ. तनवीर दुर्रानी*

[illegible] संपादन के क्षेत्र में [illegible] ... उन्होंने अपने लेखन के माध्यम से [illegible] ...

नवम्बर 1922 में प्रयाग से रामरखसिंह सहगल ने मूलतः स्त्रियों के सर्वांगीण उत्थान पर केन्द्रित पत्रिका 'चाँद' का प्रकाशन [illegible] ... 'चाँद' की पृष्ठ संख्या सामान्यतः 80 [illegible] ... इसकी ग्राहक संख्या 15,000 तक पहुँच गई थी। [illegible] ... 1926 में [illegible] 1927 में [illegible] 1929 में [illegible] ... 'माधुरी' ने टिप्पणी लिखी- ''[illegible] 'चाँद' ने हिन्दी जगत में [illegible] ... भारतीय भाषा के लिए गौरव की बात है।'' [illegible]

[illegible] 'फाँसी अंक' नवम्बर 1928 में [illegible] ... ''फाँसी अंक की [illegible] ...''

''[illegible] ... 22 करोड़ [illegible] ... 27 [illegible] ...''

[illegible] 'चाँद' के फाँसी अंक में [illegible] ब्रिटिश सरकार [illegible] ... 'फाँसी अंक' [illegible] ... 'चाँद' [illegible] ... ''[illegible] 'फाँसी अंक' [illegible] 'भारत में अंग्रेजी राज' जैसी [illegible] ... सरकार ने 'चाँद' का नाम स्कूल-कालिजों के लिए स्वीकृत पत्रों की सूची से काट [illegible] ... सी.पी. सरकार ने भी अपनी शिक्षण संस्थाओं से इसका बहिष्कार कर दिया। [illegible] ... शिक्षा-संस्थाओं में उसका प्रवेश न हो।''

फाँसी अंक में भारत के क्रांतिकारियों और शहीदों की गाथाएँ, देश-विदेश में राजनीतिक दृष्टिकोण से दी गई फाँसी [illegible] ... 1857 की क्रांति, [illegible] ... क्रांति और [illegible] ... एक प्रकार से 'चाँद' का फाँसी अंक [illegible]

इस अंक में फाँसी पर चढ़ाए गए शहीद [illegible] ... 1857 का विद्रोह, [illegible] ... इस अंक का ऐतिहासिक महत्व इसलिए भी [illegible] ... 'प्रताप' आदि [illegible] ... आधुनिकता और [illegible] ... इस अंक का मूल स्वर है। [illegible]

इस अंक के संपादक के रूप में आचार्य चतुरसेन शास्त्री लिखते हैं- ''क्रांति एक [illegible] ...'' [illegible]

*असिस्टेंट प्रोफेसर, हिन्दी विभाग, गांधी फ़ैज़-ए-आम कॉलेज, शाहजहाँपुर

Comprehension of Incomplete Fusion Dynamics from Excitation Function Measurements

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Introduction

Efforts have been put forth in understanding the competition between complete fusion (CF) and incomplete fusion (ICF) dynamics at intermediate energies [1,2]. In the ICF process, the projectile may break-up into two parts near the target nuclear field. One of the parts fuses with target nucleus leading to the formation of less massive composite system in comparison to the CF process where entire projectile amalgamation takes place with the target nucleus. The proposed theoretical models are unable to reproduce the experimental ICF data satisfactorily below 10 MeV/nucleon and ICF dependence on various entrance channel parameters is not well understood in this energy region. Thereby, the study of ICF dynamics is still an area of resurgent interest for many nuclear physicists. Britt and Quinton [3] firstly perceived the ICF signature in the break-up of projectiles like ^{12}C, ^{14}N and ^{16}O into α-clusters. A sharp cutoff approximation was approached to explain the ICF process, where the ICF probability is assumed to be zero for $\ell \leq \ell_{cr}$ and likely to be occurred for $\ell > \ell_{cr}$ [4]. However, some researchers [1, 5] found the ICF existence for $\ell \leq \ell_{cr}$. Recently, conflict with Morgenstern *et al.* [6] suggestions is observed and projectile structure in terms of alpha Q-value is also found to affect the onset of ICF [7]. In the present work, an attempt has been made to understand the ICF dependence on projectile structure along with mass-asymmetry from the excitation functions (EFs) measurement of evaporation residues for ^{11}C + ^{165}Ho system at energies ≈ 4-7 MeV/nucleon. This study may also be helpful to have a better picture of ℓ_{cr} window.

Experimental Procedure

Present experiment work was carried out at Inter University Accelerator Centre (IUAC), New Delhi. ^{165}Ho target foils of thickness ranging ≈ 1.0-1.5 mg/cm^2 and Al-foils having thickness ranging ≈ 1.5-2.0 mg/cm^2 were fabricated by using the rolling technique and thickness was measured by applying the α-transmission method. Al- foils were used as catchers as well as energy degraders. Two stacks each having four ^{165}Ho target foils backed by Al-foils was irradiated for about 7 hours using ^{12}C ion-beam in General Purpose Scattering Chamber (GPSC) to cover the energy range ≈ 56-88 MeV. Total charge collected at Faraday cup during the irradiation was used for beam flux calculation. The activities induced in each target-catcher foil were recorded by using a pre-calibrated (100cc) High Purity Germanium (HPGe) Detector coupled to CAMAC-based CANDLE software. The geometry-dependent efficiencies of the HPGe detector at various source detector positions were obtained by using the standard ^{152}Eu source.

Results and Discussion

The EFs of several evaporation residues [illegible], ^{174}Ta[4n], ^{172}Hf(p4n), ^{172}Lu(α2n), [illegible], etc. have been measured in the interaction of ^{12}C with ^{165}Ho target in the present [illegible] dependent cross-sections have been

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Effect of projectile structure on angular distribution of recoiling residues

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Introduction

A considerable amount of work has been done to study the complex nature of incomplete fusion reactions at energy 1-8 MeV/A [1–5]. However, the role of incomplete fusion mass transfer in heavy-ion induced reactions is still an open area of research. The existing theoretical models are not appropriate for reproduction of experimental incomplete fusion data satisfactory at energies below 10 MeV/A. Recently various systems have been studied using the α-cluster projectiles like ^{12}C, ^{16}O and ^{20}Ne etc, on targets of moderate mass (A≤150) and fewer studies were available with heavier mass targets (A≥150) bombarded by non α-cluster structured projectiles like ^{13}C, ^{18}O and ^{19}F etc. One of the characteristic features of the ICF reactions is the outgoing alpha particle as a spectator, carries the most probable energy corresponding to the beam velocity. In incomplete fusion reactions, outgoing α-particles escape at forward angles carrying a significant part of the kinetic energy and angular momentum of the projectile while the remaining part fuses with the target. However, the influence of the projectile breakup on fusion is not yet well understood. therefore, to understand the effect of α and non-α clustered structure of projectile on the recoiling residues, we have measured angular distribution(AD) of residues produced in $^{13}C + ^{175}Lu$ and $^{12}C + ^{175}Lu$ systems at ≈ 88 MeV energy. In order to find out some systematics on projectile structure, a comparison have been carried out in between the residues produced in both the systems.

Experimental Details

For the measurement of AD's of recoiling residues the experiment was performed at Inter University Accelerator Center (IUAC), New Delhi. Recoil catcher technique followed by the OFF-Line γ-ray spectroscopy was used for the measurement of produced evaporation residues. Self supporting target of ^{175}Lu (≈ 1.4 mg/cm^2) was followed by a stack of six annular concentric Al- catcher rings of appropriate thickness (≈ 0.5mm). The Al-catcher stack was placed at ≈ 2cm behind the target ladder to trap the recoiling residues at different angles ranging between 0° – 55°. ^{12}C and ^{13}C-ion beams of energy ≈ 88 MeV was bombarded on the ^{175}Lu target for about 5-7 hours in the General Purpose Scattering Chamber (GPSC). A pre-calibrated 100cc HPGe γ-ray detector of high resolution coupled to CAMAC based software CANDLE at IUAC, New Delhi was used for the recording of induced γ-ray activities in each annular catcher ring. The evaporated residues are then identified by using characteristic γ-rays and following their half-lives.

Results and Discussion

In the present work, AD's of several residues such as $^{184,182}Ir$, $^{183,182}Os$ and $^{183-181,179}Re$ [illegible] measured for $^{12}C + ^{175}Lu$ and [illegible] $^{13}C + ^{175}Lu$ systems. To suppress the effect of solid angle, measured cross-sections were nor-

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Complete and incomplete fusion dynamics in $^{20}Ne + ^{165}Ho$ system

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Introduction

The study of Complete Fusion (CF) and Incomplete Fusion (ICF) dynamics in heavy ion (HI) induced reactions has been resurgent interest in past few decades at energies above the Coulomb barrier. Enough evidences are available in the literature [1-2] to believe that CF and ICF are the only dominant reaction modes at projectile energies below 8 MeV/nucleon. In the complete fusion process, the incident projectile totally fuses with the target nucleus and the highly excited nuclear system decays by evaporating low energy nucleons and alpha particles at equilibrium stage. In this process, entire linear momentum of the projectile transferred to the compound nucleus. In the incomplete fusion process, only a part of the projectile fuses with target nucleus, while remaining part of the projectile moves as a spectator in the forward direction with unchanged velocity as that of the incident projectile with incomplete linear momentum transfer.

Most of the ICF reaction studies available in the literatures [3-4] are confined to medium mass target nuclei, very few studies are available with heavier mass (A>150) target nuclei. In the case of low and medium mass target nuclei, the ICF cross-section is a small fraction of the total fusion cross-section of the evaporation residues (ERs). In the present work, an attempt has been made to address some of the important aspects of CF and ICF dynamics for the system $^{20}Ne + ^{165}Ho$ in the projectile energy range 4-8 MeV/nucleon by employing the recoil catcher technique followed by off-line γ-ray spectroscopy. The excitation functions (EFs) of the two ERs ^{171}Ta and ^{168}Hf have been measured [illegible] In the present measurement no precursor decay contributions has been measured.

Experimental Details

The present experiment for the measurement of EFs was carried out at Variable Energy Cyclotron Centre (VECC) Kolkata, India. Self-supporting natural ^{165}Ho targets of desired thickness with purity better than (99.9%) were prepared by rolling machine. The thickness of each target foils was determined using micro-balance as well as by α-particle transmission method. Two stacks of target-catcher assemblies were bombarded with the ^{20}Ne-ion beam in a vacuum chamber. The targets in the stack along with catcher foils were arranged in such a way that target material faced by the beam, so that the recoiled residues may be trapped in the aluminium catchers. Two stacks consisting of six rolled holmium foils each of ^{165}Ho backed by thick aluminum foils were bombarded with $^{20}Ne^{+7}$-beam energy = 165 and 132 MeV. Two independent irradiations were carried out to cover the beam energy ranging between ~ 4-8 MeV/nucleon. The irradiations have been carried out for ~ 8 hours duration for each stack. More information of the experimental details is given in [5].

Results and Discussions

The EFs of the two reaction channels $^{165}Ho(^{20}Ne, 2n6n)^{171}Ta$ and $^{165}Ho(^{20}Ne, 2αp8n)^{168}Hf$ produced in the interaction of ^{20}Ne with ^{165}Ho have been measured between projectile energy range ~ 4-8 MeV/nucleon. The experimentally [illegible] excitation functions have been [illegible] with the CE-4 predictions as shown in [illegible] It can be seen from fig. 1(a) that

Alpha Q-value effect on incomplete fusion dynamics below 8 MeV/nucleon energies

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Introduction

Incomplete fusion (ICF) or massive transfer reactions have been studied extensively at lower projectile energies in recent years [1-4]. The complex nature of ICF dynamics is still a dilemma and the role of entrance channel parameters effect like: projectile energy, projectile structure, mass-asymmetry and alpha Q-value on ICF could not be established explicitly below 8 MeV/nucleon energies. Most of the studies on ICF were centered to α-cluster structured projectiles like ^{12}C, ^{16}O and ^{20}Ne etc. with heavier target nuclei ($A \geq 150$) but reactions involving non α-cluster structured projectiles like ^{11}B, ^{13}C, ^{14}N and ^{19}O have also shown the significant ICF contribution to the total cross-section. Britt and Quinton [5] first observed the ICF features in the break-up of projectiles into α-clusters at lower projectile energies. Inamura *et al.* [6] provided the most unambiguous informations regarding ICF dynamics. Non availability of any theoretical model to fit the experimental ICF data below 8 MeV/ nucleon energies adds complexity in the study of ICF dynamics. Thereby, more refined experimental studies are required in the better understanding of ICF in this region.

Morgenstern *et al.* [7] observed that projectile-target mass-asymmetry governs the ICF probability (F_{ICF}), which was further supported by Refs. [1-2]. In recent studies, the projectile structure effect on ICF by using α- and non α-cluster structured projectiles is also observed along with the mass asymmetry of interacting partners, which is interpreted in terms of alpha Q-value of the projectiles [4,8]. The detailed information regarding the alpha Q-value effects on ICF probability is still limited for a very few studies and needs to be further investigated to reach on any definite inference in this regard. Hence, to provide more strength to the aspect of alpha *Q*-value effect on the onset of ICF the present work was carried out. The present work is based on excitation functions (EFs) measurement of residues produced in ^{12}C induced reactions with ^{175}Lu target below 8 MeV/nucleon energies. This work may be useful to develop a theoretical model for ICF studies which is still a relevant problem in this energy region.

Experimental Details

The experiment was performed using the 15UD Pelletron Accelerator facilities at Inter University Accelerator Centre (IUAC), New Delhi. Stacked foil activation technique has been adopted for the EFs measurement of residues evaporated in the interaction of ^{12}C ion-beam with ^{175}Lu target. Two ^{175}Lu target stacks of thickness ranges ≈ 1.0-1.5 mg/cm^2 were followed by Al-degrader foils having thickness ranges ≈ 1.4-2.0 mg/cm^2. Targets as well as Al-catcher foils were prepared using the rolling technique and the energy loss suffered by 5.49 MeV α-particle obtained from ^{241}Am source used for the thicknesses measurement of target and Al-catcher foils. Both stacks were irradiated using ^{12}C ion-beam at 88 and 72 MeV energies respectively, in the General Purpose Scattering [illegible] (GPSC) for about 7-10 hrs. The

Investigation of Incomplete Fusion Dynamics from the Measurement of Angular Distributions at E ≈ 88 MeV

Siddharth Parashari[1*], Harish Kumar[1], M. Afzal Ansari[1**], D. Singh[2], Rahbar Ali[3], Suhail A Tali[1], Asif Ali[1], Kamal Kumar[1], N. P. M. Sathik[4], R. Dubey[5], Indu Bala[5], R. P. Singh[5], S. Muralithar[5] and Rakesh Kumar[5]

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Introduction

The reaction mechanism other than compound nucleus formation via entire projectile amalgamation with the target nucleus has attracted considerable interest in heavy-ion (HI) induced reactions at projectile energies below 10 MeV/nucleon. These reactions are termed as incomplete fusion (ICF) or massive transfer reactions in which only one of the two fragments merges with the target nucleus and remainder moves in the forward direction with approximately the beam velocity. Earlier reported studies reveal that ICF has the significant contribution along with CF in the respective energy regime [1-5]. Since, the existing theoretical models are not applicable to reproduce the experimental ICF data satisfactorily in the energy region below 10 MeV/nucleon; thereby the study of ICF is still an active area of investigations and a topic of interest for exploring the nuclear structure and reaction dynamics. As, the Coulomb barrier is high in case of heavier target nuclei, the evaporation of α-particle from the composite system has the less probability and ICF fraction is observed to be dominating as that of CF fraction in α-particles emission products. There are fewer studies with heavier targets (A ≥ 159) at lower projectile energies below 10 MeV/nucleon. In most of the experiments, the properties like charge, mass, energy, angular distribution etc., of light particles and/or γ-rays emitted in such reactions are measured. Keeping in view the recent observations, the present work has been carried out to provide some definite conclusions regarding ICF reaction dynamics below 10 MeV/nucleon energies. We have measured the angular distributions of evaporated residues produced in $^{12}C + {}^{175}Lu$ system at ≈ 88 MeV energy. Moreover, this work is aimed to provide the new experimental data on angular distributions, which is not available in the literature to the best of our knowledge. This is a complementary experiment to support and strengthen the findings of Excitation Functions and Recoil Range Distribution measurements.

Experimental Procedure

The experiment for the measurement of angular distribution of recoil produced evaporation residues in $^{12}C + {}^{175}Lu$ system was performed at Inter University Accelerator Centre (IUAC), New Delhi. A self supporting target of ^{175}Lu (thickness ≈ 1.0 mg/cm²) was followed by a stack of five annular concentric Al-catcher foils of thickness ranging from 0.1-0.5 mm, which was placed at about 3 cm from the target to trap the recoiling residues. Each annular Al-catcher foils at different angles between 0° and 50°. Recoil catcher technique followed by the OFF-Line gamma ray spectroscopy was used for the measurement of produced evaporation residues. Target was bombarded with ^{12}C-ion beam of energy ≈ 88 MeV for about 5 hours in the General Purpose Scattering Chamber (GPSC). A pre-calibrated HPGe γ-ray detector of coupled to CAMAC based DAQ at IUAC, New Delhi was used to record the induced γ-ray activities

Role of Science in Environmental Ethics and Human Values

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Abstract

Environmental ethics take into consideration the moral obligations human beings have concerning the environment.Ethics are a broad way of thinking about what constitutes a good life and how to live one. They address questions of right and wrong, making good decisions, and the character or attributes necessary to live a good life. Applied ethics address these issues with a special emphasis on how they can be lived out in a practical manner. Environmental ethics apply ethical thinking to the natural world and the relationship between humans and the earth. Environmental ethics are a key feature of environmental studies, but they have application in many other fields such as in human society grapples in a more meaningful way with pollution, resource degradation, the threat of extinction, and global climate disruption. In a more restricted sense, science refers to information gathered using the scientific method, a systematic approach to gathering empirical (observable and measurable) data and determining facts about nature or society.The scientific method attempts to determine knowledge by eliminating, so far as possible, the potential for our own interests and desires to influence the results. This has increased the sophistication of our understanding of how the plants, animals, nutrients and energy are related in the environment.

Key Words: Environmental ethics, science, human society, human values, ecology

Introduction

Science is a powerful way of knowing that has transformed the relationship between human society and the natural world. Drawn from the Latin word for knowledge, in the broadest sense, science means a systematic way of gathering information and drawing conclusions. In a more restricted sense, science refers to information gathered using the scientific method, a systematic approach to gathering empirical (observable and measurable) data and determining facts about nature or society. A scientific approach to studying the natural or social

Krishna's

TEXT BOOK

ठोस अवस्था एवं नाभिकीय भौतिकी

(Solid State and Nuclear Physics)

बी०एससी० तृतीय वर्ष द्वितीय प्रश्न-पत्र

(बी०एससी० भौतिक विज्ञान, तृतीय वर्ष के विद्यार्थियों के लिए सर्वोत्तम उपयोगी पुस्तक)

यू० पी० यूनिफाइड पाठ्यक्रमानुसार

द्वारा

मनोज कुमार तिवारी
एम०एससी०, गेट, नेट, पी०एच०डी०
सहायक आचार्य
भास्कराचार्य कॉलिज ऑफ एप्लाइड साइन्स
दिल्ली विश्वविद्यालय
(नई दिल्ली)

अविनाश कुमार शर्मा
एम०एससी०, पी०एच०डी०
सहायक आचार्य
जे०एल०पी०जी० कॉलिज, हसनपुर
जे०पी० नगर (उ०प्र०)

मौ० सलीम अहमद खान
एम०एससी०, पी०एच०डी०, स्लेट, गेट
सहायक आचार्य एवं विभागाध्यक्ष,
भौतिक विज्ञान विभाग
जी०एफ० (पी०जी०) कॉलिज
शाहजहाँपुर

कृष्णा प्रकाशन मीडिया (प्रा०) लिमिटेड
कृष्णा हाउस 11, शिवाजी रोड, मेरठ-250001

PROMOTION OF ETHICS and HUMAN VALUES

Editor

Dr. Mohammad Tayyab

Promotion Of Ethics
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Ethics in Science and Society

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The relation between science and Society will certainly influence the directions and practices of science in the 21st Century. In order to strengthen science for the betterment of society, Scientist should come forward to the changing requirements and needs of the society and society is supposed to understand and support the positive role of science. As the move towards a global knowledge economy gathers momentum, with an increasing premium on scientific knowledge and high technology, the time is ripe for new international initiatives that will advance the welfare of science as well as society.

In recent decades very significantly the relationship between science and society has changed. Societies have changed overtime and consequently so have science. To elaborate it further we can cite the example of the first half of the 20th century when the world saw many wars and the focus of the governments was on to pursue research on wartime applications[1].The flow of funds and science progressed in that direction unlocking the mysteries of nuclear technology. On the other hand modern corporations devoted the resources to increase their income through medical treatment, drug production and agriculture with the help of research in biotechnology, yielding breakthroughs in genomic sequencing and genetic engineering. .Science is not static, it changes overtime, reflecting shifts in the larger societies in which it is embedded.

When Gregor Mendel, father of genetics, began his experiments on plant genetics in 1800s working on pea plants. About one hundred fifty years later modern plant genetics laboratories look a lot more diverse and employ the latest technique on DNA sequencing .Science has come a long way since then. We now have more powerful data analysis techniques, more sophisticated equipments for making observations and running experiments and a much greater breadth and depth of scientific knowledge[2]. Science will always look for explanations for what goes on the natural world and test those explanations. Science is deeply interwoven with society.

Science works in the larger interest of the society and choose topics that needs a societal need or likely to gather the attention of society is picked up as research topic than an obscure question with

Ethics in Mathematics Teaching and Learning: An overview

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Mathematics is a key subject in the syllabus and in the recent and upcoming survives of students. Like science, mathematics is often linked with the financial growth of nation[1]. It is acceptable that mathematics opens door to careers and further study in various courses.An ethical approach for mathematics teaching and learning changes a focus of interaction between teachers and students.Usually, colleges and classrooms are controlled from outside due to increasing demands of the systems[2]. The quality of mathematics teaching and learning is not as measured by a discipline itself, but also by the power of mathematics to enable students more active members in their present and future life.

Teacher excellence is an important moderating factor, which is liable for variations occurred in the performance of students within colleges or schools[3]. An educationally fit teacher establishes and maintains a positive inclusive and safe learning environment where student beliefs, confidence, skills and values can be nurtured and industrialized[4].

A teacher who used specific teaching tactics, such as providing the challenging tasks of thinking and appropriate feedback.The teachers who have high expectations from their students and create positive teacher-student relations have the mentioned above average effects on student success and thus, these could be more suitably considered quality of the teachers. As a teacher, he always looks to me that the most potential teaching and learning familiarities within a class is time when the entire class move directly for discussions among the students. Each mathematics teacher at one or other time has faced typical question from an upset student in a class.

Teaching may be considered as a profession of its own choice and however, it also requires its own code of ethics, which can be expressed in the set of ethical principles[3].

11 Aquatic Plant Biodiversity: A Biological Indicator for the Monitoring and Assessment of Water Quality

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Abstract

The present chapter [illegible] water pollution [illegible] on plant diversity of an aquatic ecosystem. An [illegible] in the diversity of plants and the disappearance of [illegible] plants has been noted in the majority of the world's water bodies as a result of water pollution. In polluted aquatic ecosystems, plant diversity [illegible] as a strong bioindicator of water quality. Numerous studies on phytoplankton and aquatic macrophytes have been incorporated in this chapter as an indicator of water pollution. Water pollution leads to changes in species composition [illegible] of macrophytes with the loss of rare and uncommon species. A perturbation in aquatic ecosystems causes [illegible] complete loss of submerged vegetation and dominance of phytoplankton and weeds. Monitoring, assessment and measurement of plant diversity through density, frequency, abundance and diversity indices are also integrated in this chapter.

11.1 Introduction

Aquatic ecosystems are very rich sources of biodiversity. Macrophyte richness is a vital parameter directly related to altitude, nutritional status and water quality (Murphy, 2002). Mechanisms regulating species diversity in aquatic ecosystems have been studied very little compared to terrestrial and benthic ecosystems. The species diversity of various water bodies has been explored, where the water quality parameters showed a direct impact on the dynamics of plant diversity (Murphy *et al.*, 2003). Anthropogenic forcing supports a higher diversity of non-indigenous species as compared to the indigenous species (Occhipinti and Savini, 200[illegible]).

When there is degradation of an ecosystem by pollution or overexploitation, the dominant species are eliminated or debilitated, which shows a causal connection between loss in biodiversity and changes in ecosystem structure and function (Grime, 1998). Signs of biodiversity change were reported from the Undasa wetlands of Ujjain (India) as a result of excessive industrial pollution (Shrivastava *et al.*, 2003). The anthropogenic stresses and open water habitat increase the abundance of exotic species and lead to vegetation removal and plant invasion, causing perturbation in the aquatic ecosystem (Dyembeck *et al.*, 1999).

Many physical processes like nutrient cycling, [illegible] in temperature, pH, dissolved oxygen,

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Genomic Data Resources and Data Mining

Mohd Sayeed Akhtar, Mallappa Kumara Swamy, Ibrahim A. Alaraidh, and Jitendra Panwar

Contents

1 Introduction

The cell is regarded as the smallest unit that performs the essential life processes like metabolism, reproduction, and mutations. It is usually comprising of a series of cell organelles, namely, nucleus, nuclear envelop, endoplasmic reticulum, golgi complex, mitochondria, ribosomes, etc. These organelles are surrounded by a thin transparent membrane known as plasma membrane, which is filled by cytoplasmic matrix. Therefore, the plasma membrane may serve as a boundary between the cytoplasm and outer environment. Every cell organelle could also serve as the

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Mohd Sayeed Akhtar
Mallappa Kumara Swamy *Editors*

Anticancer Plants: Properties and Application

Volume 1

Springer

Chapter 4
Potentiality of Anticancer Plant-Derived Compounds of North-East India

Mohan Lal, Nibir Ranjan Parasar, Anil Kumar Singh, and Mohd Sayeed Akhtar

4.1 Introduction

Cancer is a severe metabolic syndrome and the leading cause of mortality and morbidity worldwide with the number of cases increasing every year (Sharma et al. 2014; ACS 2016). In developed nations, this disease ranks second in death cases after cardiovascular disorders (Mbaveng et al. 2011; Siegel et al. 2016). The incidence of mortality and prevalence from major types of cancer as estimated by International Agency for Research on Cancer of 184 countries of the world revealed that there were 8.2 million cancer deaths, and 14.1 million new cancer cases, worldwide and it is projected that by 2030 there will be 26 million new cancer cases and 17 million cancer deaths per year (Thun and De Lancey 2010). Cancer is characterized by uncontrolled proliferation and dedifferentiation of normal cell. A typical cancer cell has marked attributes, viz. sends signals of proliferation and differentiation and is capable to sustain proliferation; they have the power of invasion and angiogenesis, and they overcome apoptosis (Sharma et al. 2014). Transformation from normal cell to malignant cell involves a sequence of alterations producing genetic instabilities which accumulate in a cell. Alterations such as mutation in DNA repair genes, oncogenes, apoptotic genes, tumour suppressor genes and gene involved in cell growth and differentiation are prominent (Sharma et al. 2014).

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Chapter 20
Anticancer Plants and Their Conservation Strategies: An Update

Vankayalapati Vijaya Kumar, Mallappa Kumara Swamy, and Mohd. Sayeed Akhtar

20.1 Introduction

Cancer is an abnormal growth of cells which divide irrepressibly by deviating the usual rules of the cell division. Normal cells obey the signals which direct them to undergo division and differentiation into new cells or decease. Cancerous cells advance to become independent from these signals and result to grow and proliferate relentlessly. Cancer disease involves several tempo-spatial deviations in the physiology of cells leading to precancerous (premalignant) or cancerous (malignant) state. The major cause for the disease condition and death in cancer patients is due to the invasion of tumor cell into the surrounding tissues and distant organs (Seyfried et al. 2014). According to Hanahan and Weinberg (2000), cancer cell genotypes are caused by the altered cellular physiology which as a group directs the tumor malignancy. These physiological variations include (i) self-sufficiency in signals produced for cell growth, (ii) insensitivity to signal molecules that inhibit cell growth, (iii) evasion of apoptosis (programmed cell death) mechanism, (iv) ability to multiply rapidly, (v) a continuous process of angiogenesis, and (vi) spread to other tissues (metastasis). Attainment of the above physiological variations or unusual competences reached at some point of the tumor progression signifies the success of violating tumor defensive mechanisms of a cell.

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Chapter 22
Botany, Chemistry, and Pharmaceutical Significance of *Sida cordifolia*: A Traditional Medicinal Plant

Hassan Ahmed, Abdul Shukor Juraimi, Mallappa Kumara Swamy, Muhammad Saiful Ahmad-Hamdani, Dzolkifli Omar, Mohd Yusop Rafii, Uma Rani Sinniah, and Mohd Sayeed Akhtar

22.1 Introduction

The use of plants for the treatment of various human ailments is not new and known for the past several centuries. Herbal formulations were used by early human days to the modern era for the remedy against many forms of diseases. Plants have been recognized as a curative agent since from many ancient civilizations such as Indians, Chinese, Egyptians, Romans, and Greeks (Gaidahani et al. 2009; Kumara et al. 2012; Mohanty et al. 2017). Plant products in the form of extracts or dry powder are chiefly employed in Ayurveda, Chinese medicine, homeopathy, naturopathy, Native American, Siddha, Tibetan, and Unani medicines (Erok 2013; Mohanty et al. 2015; Atanasov et al. 2015; Swamy et al. 2015; Arumugam et al. 2016). According to the assessment report of the World Health Organization (WHO), around 80% of the global population mainly rely upon herb-based medicines to meet their basic health-care needs

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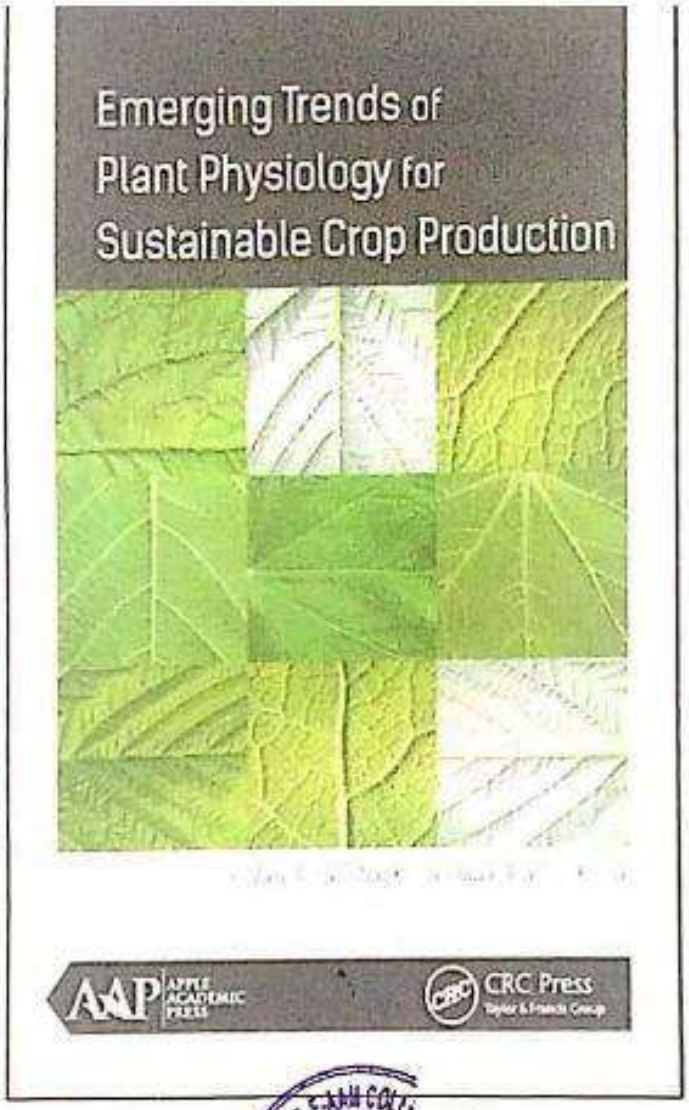

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Biomass-based composites from different sources: Properties, characterization, and transforming biomass with ionic liquids

4

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Abbreviation

AFM	atomic-force microscopy
ACCs	all-cellulose composites
BCF	bisphenol-C-formaldehyde
BSGRP	banana/glass hybrid composites
DTG	thermogravimetric analysis
DTA	differential thermal analysis
DSC	differential scanning calorimetry
ELV	end-of-life vehicle
MAPP	maleic anhydride-grafted polypropylene
PF	phenol formaldehyde
TGA	thermogravimetric analysis
XPS	X-ray photoelectron spectroscopy
$[C_4SO_3Hmim][CH_3SO_3]$	1-(4-Sulfonic acid)butyl-3-methylimidazolium methyl sulfate
$[C_2mim][dep]$	1-Ethyl-3-methylimidazolium
$[C_2mim][Ac]$	1-Ethyl-3-methylimidazolium acetate
[Ch][Ac]	choline acetate
$[C_2mim][Cl]$	1-ethyl-3-methylimidazolium chloride
$[C_4mim][Cl]$	1-butyl-3-methylimidazolium chloride
$[C_4mim][Ac]$	1-butyl-3-methylimidazolium acetate
$[C_4mim][OTF]$	1-butyl-3-methylimidazolium trifluoromethanesulfonate
$[C_4mim][BF_4]$	1-butyl-3-methylimidazolium tetrafluoroborate
$[P_{666,14}][N(CN)_2]$	trihexyltetradecylphosphonium dicyanamide
$[(CH_2)_3SO_3HVIm][HSO_4]$	1-(3-sulfonic group) propyl-3-vinylimidazolium hydrosulfate
$[C_4H_8SO_3Hmim][HSO_4]$	1-(4-sulfobutyl)-3-methyl imidazolium hydrosulfate
$[C_4mim][PF_6]$	1-butyl-3-methylimidazolium hexaphosphate
$[C_4mim][HSO_4]$	1-butyl-3-methylimidazolium hydrogensulfate

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Lignocellulosic Fibers and Biomass-Based Composite Materials, https://doi.org/10.1016/B978-0-08-100959-8.00004-4

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Fabrication of composites reinforced with lignocellulosic materials from agricultural biomass

10

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10.1 Introduction

Multiple problems such as excessive CO_2 emissions, the uncertainty of future fossil fuel reserves, fluctuating feedstock costs, and instability of carbon feedstock supply lead to the research activities to find alternatives to fossil-based fuels [1,2]. Bio-based technologies may be an appropriate replacement for fossil-based technologies in the future due to several advantages. Some abundant and cheap bioresources that have been identified include lignocellulosic woody biomass and its waste and agricultural residues. Due to its high abundance and wide availability, lignocellulosic biomass has been proposed for utilization in biorefineries for the production of thermal/electric energy, liquid fuels, and a chemical building block such as 5-hydroxymethyl furfural and its different derivatives [3]. Lignocellulosic biomass comprises 35–50 wt% cellulose, 25 wt% hemicelluloses, and the rest being mostly lignin derivatives (Fig. 10.1), giving an excellent balance for integrated energy, fuels, chemicals, and materials production.

Cellulose is the linear polysaccharide having a β-1,4-glycosidic linkage in the repeating unit. Cellulose is one of nature's most abundant renewable biopolymer gifts to human being at an annual rate of 0.1^{15}–1.0^{15} kg [4]. Its striking properties such as high stability, in-build crystallinity, tunable functionality, potential mechanical strength, and environment-friendly nature are an extra asset, which makes them a valuable alternative material in textile, paper, and pharmaceutical industries [5]. For decades, cellulose has been utilized as a building block, dietary fiber, to produce fiber materials in the textile industries, paper industries, explosives, cellophane films, plastic-based composites, and in many other applications [6]. Other than these primary applications, cellulose has been also used for energy-based material design, for example, supercapacitors, nanofibrillated and nanocrystalline cellulose-based nanocomposites, and advanced materials for biomedical applications [7]. It has been estimated that one-third of the industrially produced polymers are directly or indirectly connected to cellulose [8]. Despite innumerable properties and applications of biomass, one of the main issues is a dependency on woody trees and food crops as a source. Limited forest reserve, deforestation, and "food-fuel" conflicts are big challenge worldwide and thus the cellulose source.

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Biomass nanofibrillar cellulose in nanocomposites

13

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13.1 Introduction

Cellulose is a natural homopolymer present in the cell walls of many plants. Industrially it has been utilized mostly for manufacture of cardboard and paper but in recent times it has also gained attention as a major resource of biofuel production. Lignocellulosic materials in forests are considered the primary source of cellulose on earth, having wood as the chief source. The rest of the materials having cellulose comprise agriculture residues, grasses, water plants, and other plant matters. Along with cellulose, they also possess hemicelluloses and lignin. Industrial production of cellulose depends mostly on harvested resources like wood or on naturally clean resources, for instance, cotton. The structure and orientation of cellulose in the cubicle walls of straw have been described [1]. The field of nanocellulose fibers as a loading phase in nanocomposites was initiated two decades ago [2]. Since then, a vast amount of literature has been created on nanocellulose fibers, and it is gradually becoming a more relevant issue. Crystalline rod-like nanoparticles have been termed "whiskers," while the designation "nanofibrils" refers to elongated elastic nanoparticles having discontinuous crystalline and amorphous filaments.

Cellulose fibers possess an exclusive hierarchy structure developed biologically. They contain nanofiber bunches of diameter 2–20 nm, and of length higher than only a few micrometers. In effect, the main reason to employ nanocellulose fibers in composite materials is to potentially develop greater hardness of the cellulose crystal for loading. This can be completed by reducing the hierarchical structure of the plant into single nanofibers of high crystallinity, thus bringing down the quantity of amorphous material. The hierarchical fibers make them able to do this; therefore, because of their aspect ratio (length/diameter) loading abilities are highly favorable for composite materials. The purpose of this chapter is to present current research in the field of nanocellulose fibrils and their application through illustrations. Also, it has been investigated that cellulose as a naturally manufactured product relates to the polymers that showed an extraordinary future ability for elementary facts and for large-scale synthesis in numerous applications [3].

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Table of Contents

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Editor(s)

ग्रामीण भारत में कृषि आधारित उद्योगों की भूमिका

उर्वशी श्रीवास्तव*, डा. पुनीत कुमार श्रीवास्तव 'मनीषी'†, इन्द्रपीत कौर‡

प्रस्तावना

भारतीय अर्थव्यवस्था हो या भारतीय जनजीवन सभी कृषि के इर्द–गिर्द ही चक्कर काटते नजर आते हैं। वर्ष 1958 में कृषि के महत्व को रेखांकित करते हुए कृषि प्रशासनिक समिति ने कहा था "कृषि ही सभी उद्योगों की जननी है और मनुष्य को जीवन प्रदान करने वाली है।" कृषि और उद्योगों की पूरकता के सम्बंध में नेहरू जी ने भी लिखा था "हमें यह बात समझनी होगी कि कृषि की उन्नति एवं प्रगति के बिना औद्योगिक प्रगति प्राप्त नहीं की जा सकती है। वस्तुस्थिति तो यह है कि इन दोनों को अलग नहीं किया जा सकता।"

भारत की पहचान एक कृषि प्रधान देश के रूप में है और देश की 70 प्रतिशत आबादी अभी भी गांवों में बसती है। जीविका का मुख्य साधन कृषि, पशुपालन और कृषि से जुड़े अन्य व्यवसाय हैं। हमारी अर्थव्यवस्था के निर्धारण में आज भी कृषि महत्वपूर्ण भूमिका निभा रही है। हालांकि औद्योगिकीकरण एवं अन्य वाणिज्यिक गतिविधियों के बढ़ने के कारण सकल देशीय उत्पाद में कृषि क्षेत्र का योगदान कम हुआ है। इसके बावजूद देश की अर्थव्यवस्था में कृषि की महत्वपूर्ण भूमिका बनी हुई है। वैसे तो भारतीय अर्थव्यवस्था अति प्राचीनकाल से कृषि आधारित रही है। कृषि और पशुधन हमारी अर्थव्यवस्था की रीढ़ थे। भारत की ग्रामीण जनसंख्या का एक बड़ा हिस्सा रोजगार के लिए कृषि पर ही निर्भर है। आज भी भारत में कृषि कुल श्रमशक्ति के 57 प्रतिशत को रोजगार उपलब्ध करवाती है।

कृषि आधारित प्रमुख उद्योग :

सूती वस्त्र उद्योग :

वर्ष 2002–03, 2003–04, 2004–05, 2005–06 तथा 2006–07 में देश में क्रमशः 41973, 42383, 45378, 49577 तथा 53389 मिलियन वर्ग मीटर टेक्सटाइल फैब्रिक्स का उत्पादन हुआ है। वर्ष 2006–07 में देश में 26238 मिलियन वर्ग मीटर सूती कपड़ा, 10882 मिलियल वर्ग मीटर मिश्रित कपड़ा

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भारत में बढ़ता साइबर अपराध व सुरक्षा की स्थिति

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प्रस्तावना

साइबर स्पेस शब्द का प्रयोग सबसे पहले विलियम गिब्सन ने वर्ष 1984 में अपनी पुस्तक 'न्यू रोमांसर' में किया था। यह एक ऐसी आभासी दुनिया है, जहाँ बहुत सारी ऐसी गतिविधियां हैं, जो आप देख नहीं सकते और यदि कुछ आप देख भी सकते हैं, पर उसे छू नहीं सकते, लेकिन इस आभासी दुनिया ने वास्तविक जगत को जबरदस्त ढंग से प्रभावित किया है, इसमें अकूत क्षमतायें हैं, अपार सम्भावनायें हैं, ऐसा प्रतीत होता है कि इंटरनेट और कम्प्यूटर के बिना रहा ही नहीं जा सकता।

लगभग 90 के दशक के मध्य का दौर दुनिया भर में तेजी से बदते भूमण्डलीकरण और कम्प्यूटीकरण का दौर रहा है। हर क्षेत्र में इसका विस्तार बहुत तेजी से हो रहा है, चाहे वह व्यापार, शासन प्रणाली, शिक्षा, स्वास्थ्य या अन्य कोई भी क्षेत्र हो साइबर स्पेस के दायरे में आ चुका है। इलेक्ट्रानिक संचार और सॉफ्ट कॉपी जैसे माध्यमों का प्रयोग बढ़ा है, संचार नेटवर्किंग, सक्रियता और मनोरंजन जैसी कई नई सम्भावनायें इंटरनेट के जरिये बहुत ही आसान तथा सम्भव हुई है। इंटरनेट और कम्प्यूटर के माध्यम से विकास की गति तो तेज हुई है परन्तु पिछले दशकों से इस आभासी दुनिया में अपराध भी बढ़े हैं जो बहुत ही व्यापक और विध्वंसकारी सिद्ध हो रहे हैं इसे आमतौर पर साइबर क्राइम अथवा साइबर अपराध के नाम से जाना जाता है।

साइबर अपराध का स्वरूप :-

"संगणक अपराध या साइबर अपराध का सन्दर्भ उस अपराध से है जिसमें एक संगणक की संलिप्तता होती है, भले ही अपराध होने में संगणकों की कोई महत्वपूर्ण भूमिका रही हो या नहीं" अथवा "संगणक के इस्तेमाल से की गई गैर कानूनी गतिविधि जिसमें संगणक से सम्बन्धित फिरौती, धोखाधड़ी और जालसाजी तथा आकड़ों तक अप्राधिकृत प्रवेशिता तथा आकडों के साथ छेड़-छाड़ शामिल है।"

इक्कीसवीं शताब्दी में साइबर क्राइम विश्वव्यापी समस्या के रूप में उभरा है। ज्ञातव्य है कि 90 के दशक के मध्य से विकसित और विकासशील सभी देशों में भूमण्डलीकरण के साथ-साथ कम्प्यूटीकरण का विस्तार हुआ है। नई जीवन पद्धति में हमारी निर्भरता कम्प्यूटर और इंटरनेट पर बढ़ी है। वर्तमान में भारत इंटरनेट प्रयोग के मामले में एशियाई देशों में 11वें स्थान पर है। साइबर क्राइम सूचना एवं तकनीकी का प्रयोग करने वाले बहुत बड़े परिक्षेत्र को प्रभावित करता है।

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एलियन प्लैनेट

21 बाल कहानियाँ

डॉ. मोहम्मद अरशद ख़ान

यश पब्लिशर्स एंड डिस्ट्रीब्यूटर्स

बरसा ख़ूब झमाझम पानी

डॉ० मोहम्मद अरशद खान

21वीं सदी में संतगुरु रविदास की प्रासंगिकता

परवेज़ मुहम्मद

हम जिस युग में जी रहे हैं, वह इक्कीसवीं सदी का ऐसा वैज्ञानिक युग है जिसमें चीजें बहुत तेजी से परिवर्तित हो रही हैं। इस भौतिकवादी युग में आधुनिक तकनीक के द्वारा रोजाना अनेक सुविधाजनक वस्तुएं बाजार में आती हैं और पुरानी चीज या वस्तुओं की उपयोगिता पर प्रश्नचिह्न लगा देती हैं। उदाहरण के लिए, जैसे टेलीविजन के आविष्कार ने रेडियो को, टेलीफोन एवं मोबाइल ने चिट्ठियों एवं पत्रों की उपयोगिता एवं आवश्यकता ही खत्म कर दी। इसका ताजा उदाहरण लगभग डेढ़ सौ वर्ष पूर्व शुरू की गई तार सेवा का भारत सरकार द्वारा अभी हाल में बन्द कर देना है, क्योंकि इस मोबाइल युग ने उसकी जरूरत ही खत्म कर दी है।

आज सवाल यह है कि कुछ लोगों ने इस भौतिकवादी बाजारीकरण के युग में सुविधाजन्य वैज्ञानिक उपकरणों की प्रासंगिकता और अप्रासंगिकता के साथ-साथ हमारे कवियों और साहित्यकारों के सम्बन्ध में इस प्रकार के प्रश्न उठाने की आवश्यकता नहीं है, क्योंकि समय के साथ-साथ रूप, शैली रूप और काव्य रूप तो बदल सकते हैं परन्तु महान कवियों और साहित्यकारों का कथ्य और वर्ण्य जिन तथ्यों, समस्याओं एवं सत्य को दर्शाता है उनकी प्रासंगिकता कभी समाप्त नहीं हो सकती, क्योंकि यह सत्य मानव-जीवन के मूलभूत सत्य होते हैं। क्या रामायण और महाभारत कभी अप्रासंगिक हो सकते हैं? इनके रचनाकारों ने मानव जीवन के जिन आदर्शों का स्वप्न देखा है उनको प्राप्त करने में अभी मानव जीवन को न जाने कितने युग इंतजार करना पड़ेगा। इसी प्रकार इक्कीसवीं सदी में भी मध्य युग के सन्त रैदास की प्रासंगिकता आज भी बनी हुई है। सन्त रैदास हिंदी के महानतम कवियों में से एक हैं। मध्यकालीन सन्त-काव्य परम्परा के कवियों में कबीरदास जी के बाद सन्त रैदास जी का नाम सम्मान के साथ लिया जाता है। यहां तक कि इनके समकालीन "धन्ना और मीराबाई ने रैदास का उल्लेख आदरपूर्वक किया है। यह भी कहा जाता है कि मीराबाई सन्त रैदास की शिष्या थीं।"[1] रैदास का जन्म अनुमानतः संवत् 1433 की माघ पूर्णिमा के दिन हुआ था। यह ऐसा समय था जब भारत में हिन्दू-मुस्लिम धर्म और सूफी संतों के बीच विचारों का आदान-प्रदान हो रहा था। विचारों के इस आदान-प्रदान से दोनों ही सम्प्रदायों के मध्य कई जगह सामंजस्य स्थापित हुआ। लेकिन कई [illegible] की स्थिति भी बनी। भारतीय समाज पहले से ही चली आ रही रूढ़ियों, वर्ण [illegible] और [illegible] जैसी समस्याओं से जूझ रहा था, दूसरी ओर हिन्दू-मुस्लिम वैमनस्य के [illegible] भी झेलने लगा। अतः उस समय के [illegible] छुआछूत, वर्ण व्यवस्था [illegible] धार्मिक उन्माद आदि देखने को मिलता था

पर्यावरण संरक्षण एवं बौद्ध धम्म

—डॉ. समन ज़हरा नक़वी

गौतम बुद्ध के जीवन एवं दर्शन से बहुत कुछ सीखा जा सकता है। उन्होंने जीव-जीवन तथा सभी प्राणियों को करीब से देखा तथा सभी के कल्याण के लिए नियमों की स्थापना की। बुद्ध ने आज से ढाई हज़ार साल पहले कहा था कि—'पेड़ों में भी जीवन है।' 'वे लोग मूर्ख हैं, जो पेड़-पौधे काटते हैं।' लोग नए ताड़ वृक्षों को काटकर उसके पत्तों से चटाइयाँ बनाते हैं। बुद्ध ने उसे रोका और दूषित कृत्य बताया, क्योंकि पेड़ काटने से जीव हिंसा होती है। 'इस प्रकार बुद्ध ने वृक्षों में मानव की ही भाँति जीवन माना।'

पर्यावरण शब्द परि+आवरण दो शब्दों से मिलकर बना है, जिसका अर्थ है, हमारे आस-पास का सम्पूर्ण आवरण। अतः मानव को पर्यावरण से पृथक रूप में नहीं समझा जा सकता। घर, परिवार, समाज, राष्ट्र और सारी पृथ्वी सभी एक वृहत, पर्यावरण के ही रूप है। प्रकृति इन सभी मानवीय घटकों में सर्वोपरि है।'

गौतम बुद्ध के उपदेशों में कृषि, वन और वृक्ष के उदाहरण भरे पड़े है। धम्मपद के 423 उपदेशों में से लगभग 250 उपदेश पशु-पक्षी, वृक्ष और प्रकृति को आधार बना कर ही कहे गये है। उनके अनुसार—'यदि भोजन के बाद भोजन बच जाए तो उसे हरियाली पर ना डाला जाए, क्योंकि इससे हरियाली नष्ट हो जाती है।' यह भी कहा गया कि उसे ऐसी जगह ही डाला जाए जहाँ जमीन हरियाली रहित तथा जीव रहित हो।' उन्होंने यह भी नियम बना दिया कि खुटी ऐसे स्थान पर ही बनायी जाए, जहाँ किसी जीव पर हिंसा ना हो और जहाँ लोग आसानी से पहुँच सके।' महात्मा बुद्ध ने दैनिक क्रियाओं के सम्बन्ध में भी भिक्षुओं को उपदेश देते हुए कहा कि भिक्षु को ऐसे स्थान पर मल-मूत्र करना चाहिए, जहाँ हरियाली ना हो, पानी न हो आदि।'

गौतम बुद्ध ने सदैव पेड़-पौधों से अभिन्नता रखी। यह बड़ा विचित्र संयोग ही है कि उनका जन्म लुम्बिनी वन में हुआ। उन्हें वृक्ष के नीचे ही ज्ञान प्राप्त हुआ। सारनाथ के जंगल ऋषिपत्तन मृगदाव में प्रथम उपदेश दिया तथा अन्त में कुशीनगर के सखन वन (शालवन) में शरीर त्याग दिया। शायद ही सम्पूर्ण विश्व में ऐसा कोई

Study of incomplete fusion sensitivity to projectile structure from forward recoil range distribution measurement

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Introduction

In recent years, continuous efforts have been put forth in the understanding of fusion like reactions, where the projectile break-up may takes place and one of the two fragments fuses with the target nucleus at low incident energies around 4-8 MeV/nucleon [1-3]. Such reactions are termed as incomplete fusion (ICF) or massive transfer reactions. Non availability of any theoretical model below 10 MeV/nucleon energies and nature of transferred mass makes the ICF study still a resurgent field of interest. The ICF behavior with various entrance channel parameters especially mass-asymmetry, projectile structure, projectile α-Q-value and Coulomb effect (Z_pZ_t) could also not be established explicitly. Existing studies based on excitation functions (EFs), forward recoil range distribution (FRRD) and spin distribution measurements show that ICF contributes significantly along with complete fusion (CF). The FRRDs measurement being a sensitive probe to differentiate the CF and ICF processes on the basis of recoil ranges gives the direct measure of full and/or partial linear momentum transferred (LMT) from the projectile to the target nucleus [2,3]. As in case of ICF, the partial amalgamation of projectile with target nucleus takes place, thereby the partial LMT leads the ICF products to be trapped at shorter depth in the stopping medium as that of CF products.

Recently, the projectile structure is also found to affect the ICF process by using [illegible] non-α-cluster structured projectiles [illegible] explored in terms of projectile α-Q [illegible] [3,4]. [illegible] and is still limited only for a very few systems. Keeping in view the recent aspects especially the projectile structure effect on ICF, the present work is carried out in the series of experiment by using α- and non-α-cluster structured projectiles. Presently, the FRRDs of evaporation residues (ERs) produced in ^{11}C + ^{175}Lu system have been measured at ~ 88 MeV energy. In this work, an attempt has been made to have a better knowledge of projectile α-Q-value effect on ICF.

Experimental Procedure

The present experiment for the FRRDs measurement of ERs populated in ^{11}C + ^{175}Lu system was performed at IUAC Inter University Accelerator Centre (IUAC), New Delhi. The target of ^{175}Lu prepared by rolling technique was followed by a stream of thin Al-catcher foils of thickness lying between ~ 24 - 45 $\mu g/cm^2$. The vacuum evaporation method was adopted for thin Al-catcher foils preparation, which served as the stopping medium. The Al-foils of proper thickness were chosen such that the recoiling residues produced via CF and/or ICF may get trapped completely at their respective catcher foil thicknesses. The irradiation of target-catcher assembly with ^{11}C ion-beam at energy ~ 88 MeV was carried out in the General Purpose Scattering Chamber (GPSC) for about 16 hrs. The beam flux estimation was done from the total charge collected in the Faraday cup, placed behind the irradiated samples and a pre-calibrated 100cc HPGe detector coupled to a CAMAC based software FREEDOM was used for the recording of [illegible] activities build-up in each catcher foil.

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Projectile structure effect in low energy incomplete fusion reaction dynamics

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Introduction

Efforts are being made to comprehend the dynamics of incomplete fusion (ICF) reactions below 10 MeV/nucleon energies. Even though many theoretical and experimental studies have been carried out in this field, but there are many questions yet to be answered. The current interest in ICF reaction dynamics has its roots in the quest to understand how ICF depends on (a) incident projectile energy (b) projectile-target mass-asymmetry (c) projectile structure (α-cluster and non α-cluster) (d) Coulomb repulsion (Z_PZ_T) and to search some new entrance channel parameters on which ICF process may depend. At low impact parameter or smaller angular momentum values, incident projectile completely fuses with the target nucleus. On the other hand, at higher impact parameter or larger angular momentum values, the incident projectile breaks-up into its fragments in the locale of target nuclear field, one of the fragments fuses with the target nucleus and the remnant moves in the forward direction as an onlooker. Subsequently, the probability for other processes like (a) non capture break-up (b) sequential complete fusion (CF) of break-up fragments may also occur. The incompletely fused composite system formed in case of ICF has less charge, excitation energy and mass compared to compound nucleus formed via CF process. So far, various theoretical models have been proposed to explain the ICF reaction dynamics, but none of them is able to reproduce the experimentally measured ICF data satisfactorily below 10 MeV/[illegible] energies [1,2]. The present work is significant in the development of theoretical model in low energy ICF reaction dynamics, which is still a problem of keen interest. Hence, in order to investigate the ICF dependence on various entrance channel parameters, the excitation functions (EFs) of evaporation residues (ERs) produced in $^{12}C + {}^{165}Ho$ system have been measured at energies = 4-7 MeV/nucleon.

Experimental Details

The experiment was carried out at Inter-University Accelerator Centre (IUAC) New Delhi. The thin uniform ^{165}Ho target foils of thickness = 1.0 - 1.5 mg/cm^2 backed by Al-catcher foils were fabricated by employing the rolling technique. The thickness of both target and catcher foils was measured by using the micro-balance as well as by α-transmission method. Two stacks each comprised of four target-catcher foils assembly were irradiated separately by ^{12}C ion beam at ≈ 88 MeV and ≈ 71 MeV in the General Purpose Scattering Chamber (GPSC). Keeping the half-lives of radio nuclides into consideration, both the stacks were irradiated for about 7 hours. After the irradiation, the target-catcher assembly was dismantled using the in-vacuum transfer facility (ITF), which reduces the time lapse between stop of irradiation and start of counting. The activities induced in the irradiated samples were recorded by using the pre-calibrated HPGe detector coupled to a CAMAC based data acquisition system CANDLE.

Mass distribution of fission-like fragments formed in $^{20}Ne + ^{165}Ho$ system at $E_{lab} \approx 8.2$ MeV/A

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Introduction

Nuclear fission is a dominant reaction mechanism in heavy ion interaction at moderate excitation energies [1, 2]. Recent experimental data has indicated the presence of nuclear fission in heavy mass targets using heavy ion projectiles at low energies. The study of the interplay of fusion-fission processes with the Coulomb factor (Z_PZ_T=700) has been an active field of investigation from past few decades. There are two important observable in nuclear fission such as charge and mass distributions. The charge and mass are directly related to the collective dynamics of the fission process. The data on mass and charge distributions also provide a testing ground for various theoretical models. Through the experimental studies, it has been observed that depending upon the excitation energy, angular momentum, mass asymmetry of the entrance channel and other parameters [3, 4], the composite system formed as a result of HI collision either forms an equilibrated compound nucleus or undergoes fission before equilibration. Fusion-fission gives important information about the dynamics of the heavy ion induced reactions. Further, fission like fragments may also arise due to the partial linear momentum transfer (termed as incomplete fusion-fission (IFF) fragments) and/or by the full linear momentum transfer (termed as complete fusion-fission (CFF) fragments). In such heavy ion reactions, the excitation energy and angular momentum imparted in the system are relatively high, such the process of fission is also a dominant mode of reaction above the coulomb [illegible] of the heavier system. In the present [illegible] attempt has been made to study CFF and IFF in $^{20}Ne + ^{165}Ho$ system at projectile energy = 8.2 MeV/A. Twelve fission like fragments (FLF) produced through CFF and/or IFF in the present system have been identified. The production cross-sections of identified fission like fragments have been measured and study the mass distribution of fission like fragments along with earlier work [5].

Experimental Details

The present experiment for the study of CFF and IFF processes in $^{20}Ne + ^{165}Ho$ system at projectile energy = 8.2 MeV/A was performed using heavy ion experimental facility at Variable Energy Cyclotron Centre (VECC), Kolkata, India. Self-supporting natural ^{165}Ho targets of desired thickness with purity 99.9% were prepared by rolling technique. The thickness of each target foils was determined using micro-balance as well as by α-particle transmission method. A stack of target-catcher assemblies were bombarded with the ^{20}Ne-ion beam in a specially designed vacuum chamber. Stack consisting of rolled holmium foils each of ^{165}Ho backed by thick aluminum foils were bombarded with a ^{20}Ne-ion beam of energy = 8.2 MeV/A. The weighted average beam current of about ≈ 60 nA behind the target assembly was measured with an electron suppressed Faraday cup, using a current integrator device. The stack have been irradiation for ≈ 8 hours. The residual activities produced in various targets along with Al's aluminum catcher foils were recorded, [illegible] ation. The identification of fission like

Fractional momentum transfer in incomplete fusion dynamics by measurement of recoil range distributions in $^{20}Ne + ^{165}Ho$ system

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Introduction

The study of heavy ion (HI) fusion reactions around Coulomb barrier has been the subject of growing interest in experimental nuclear physics for the past few decades. Under the domain of semi-classical theory of heavy ion interactions, it has been found that at energies below 10 MeV/A the projectile interacts strongly with the target and the phenomena like complete fusion (CF) and incomplete fusion (ICF) may predominantly take place [1]. In case of complete fusion (CF), projectile completely fuses with the target nucleus and forms the excited compound nucleus from which particle and/or gamma rays emission take place. However, in case of incomplete fusion (ICF), projectile is supposed to be break up into fragments and one of the fragments fuses with the target nucleus while rest part of the projectile moves in the beam direction as that of the projectile velocity. The excited composite system formed as a result of the fusion of the fragments of the incident ion may also undergo de-excitation by emission of particles and/or gamma rays. In the recent years, CF and ICF reactions have been studied from the analysis of recoil range distribution (RRDs) of evaporation residues. The measurement of the RRDs of the residues is based on the momentum transfer from projectile to the target. In CF process, momentum of the projectile is completely transferred to the target nucleus hence entire momentum carried by the compound nucleus and hence travels large distance in the stopping medium. But, in case of ICF reaction, partial momentum transfer of the projectile takes place into the target nucleus, hence incompletely fused composite system of the projectile traverse shorter distance in the stopping medium. It is worth to note that most of the studies in ICF at low beam energies have been carried out with projectile ^{12}C and ^{16}O [2, 3]. These projectiles easily break into α-clusters, while one of the fragments fuses with the target nucleus. Incomplete fusion (ICF) reaction dynamics has been studied extensively with low-Z projectiles ($Z \leq 10$) interact with medium and heavy mass target. The experimental ICF studies using projectile ^{20}Ne with heavy mass target are scarcely available. More experimental data on recoil range distributions insight into the HI reaction mechanism that are involved at energies above Coulomb barrier. For the measurement of RRDs of evaporation residue stacked foil activation technique followed by off-line gamma spectroscopy has been used.

Experimental Details

The present experiment has been performed at Variable Energy Cyclotron Centre (VECC), Kolkata, India. The holmium target of thickness 1.265 mg/cm^2 was prepared by rolling machine at Saha Institute of Nuclear Physics (SINP), Kolkata. The target was mounted for irradiation in the specially designed chamber along with 15 aluminium catcher foils. The target and catcher assembly was bombarded with ^{20}Ne-ion beam for about 9 hours. Gamma-ray activities induced in each catcher foils were recorded by 60 cc high purity germanium (HPGe) detector and PC based data acquisition system. The populated evaporation residues have been identified by

Dependence of Pc4 Occurrence on Kp values at Low Latitudes in India

M.T. Khan*, M.A. Khan** and R. Ali***

Abstract

A recent study has been undertaken for Pc4 geomagnetic pulsations (in 6.7--22.2 mHz frequency range) at three very low latitude stations, viz.Pondicherry (PON) (geomagnetic latitude 2.5°N, geomagnetic longitude 151.97° E), Nagpur (NAG) (geomagnetic latitude 11.72°N, geomagnetic longitude 151.93° E), Hanley (HAN) (geomagnetic latitude 23.38°N, geomagnetic longitude 151.89° E) in India employing three axis fluxgate magnetometers, established and operated by the Indian Institute of Geomagnetism (IIG), Navi Mumbai. Digital Dynamic Spectra (DDS) for the north-south (X), east-west (Y) and vertical (Z) components of the recorded data were constructed for each day for one year (January 1 to December 31, 2005). The X- and Y-components of these DDS were investigated for carrying out statistical study of the dependence of diurnal and seasonal variations of occurrence of Pc4 events on Kp.

The monthly variation of Pc4 occurrence has a Kp dependence range of 0 to 9-. However the yearly Pc4 occurrence was found to be evenly distributed with magnetic activity over the Kp = 2- to 4 range at all the three stations with the peak occurrence recorded at Kp = 3-. The magnitudes of durations of Pc4 occurrence decreased in the station order PON, HAN and NAG respectively. The prominent peaks in the seasonal Pc4 occurrence were observed at Kp = 3-, 3 for all the seasons. However additional peaks were observed at Kp = 1-, 1 and 1+ for the autumn season. It is also worth noting that Pc4 in winter was observed during intense magnetic activity when 5+ < Kp < 8+.

Key words: Pc4 geomagnetic pulsations, MHD waves and instabilities, Solar wind – Magnetospheric interactions

Introduction

Naturally occurring ultra low frequency (sinusi-sinusoidal variations (1-1000 mHz) in the earth's magnetic field, termed as geomagnetic pulsations have been studied extensively in the past (Jacobs, 1970). Continuous pulsations in the 7 to 22 mHz frequency range are termed as Pc4 pulsations. Observations of geomagnetic pulsations at low latitudes (L<3) indicate that significant hydromagnetic wave energy penetrates deep into the magnetosphere and the plasmasphere (Orr, 1973). Vero and Holo (1983) have studied a summary of results on the comparison of pulsation data from the satellite ATS-6 and the surface station Nagycent for a year and found that in spite of the difference in L-value, strong similarities were observed. Vero et al. (1991) have reported that at low latitude, the pulsation

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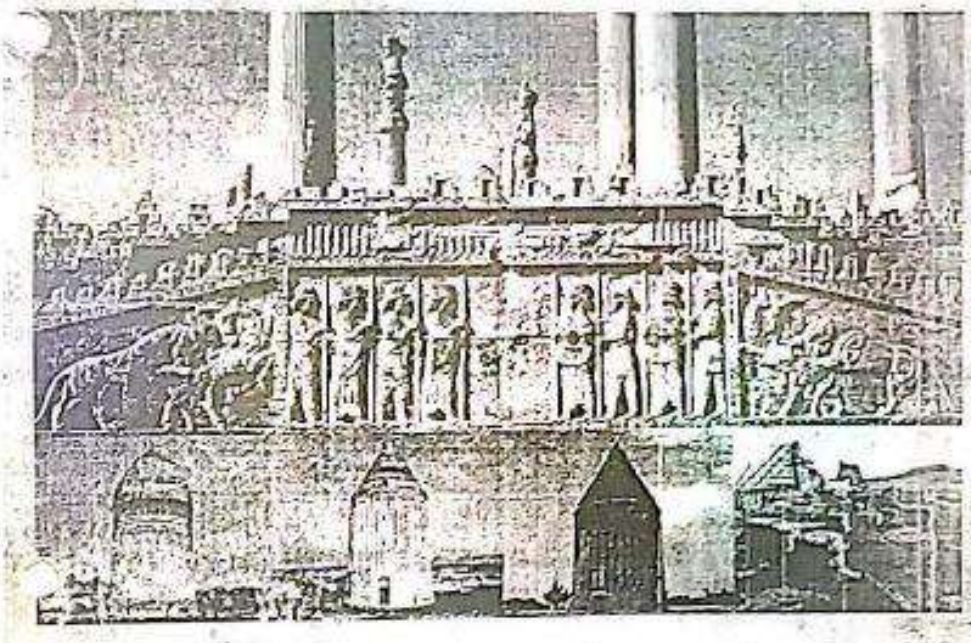
फारसी पुस्तकों का हिन्दी अनुवाद परियोजना : प्रथम कृति

किताब-ए-ईरान

ईरान का इतिहास

रज़ा शाबानी



संम्पादकः प्रो० अभय कुमार सिंह
अनुवादकः डॉ गुलाम अशरफ कादरी
सहअनुवादकः मो0 इशरत सगीर

Thus, there have been several terrorists' attaks in India, resulting grievous loss of the lives and properties. The list of the terrorists' incidents mentioned above proves that terrorism has emerged as a major threat to the unity and integrity of our society and our country is suffering greatly due to it and there seems no end of these sufferings. Now, Pakistan and China are responsible for most of the terrorists' incidents in India. Both the countries don't want to see the people of India leading a peaceful and comfortable life.

Kill innocents
Bomb countries
Destroy lives
Kidnap strangers
Abuse human rights
Disregard the Quran
But do it in the name of Allah. (1-7)

Every sensible person knows very well that life is the greatest gift given by God and no one has any right to snatch this gift from any person. In fact, terrorists kill humans and terrorism ends humanity. All the beings of the universe have a right to the love and compassion of one another because "trailing clouds of glory do we come/From God, who is our home."

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Realistic Delineation of the Horrors of Terrorism in John Hoyer Updike's Varieties of Religious Experience and Terrorist

Dr. Reefaqat Husain*

The catastrophe of 9/11 terroristic event left ineffaceable shocking marks on every person living in any corner of the world. In the years following this tragic event, a good deal of writers tried their hands to write works in reaction to the terrorist attacks. But John Hoyer Updike is the among well known writers, who gave a quick response to the calamity of September 11 by writing his short story "Varieties of Religious Experience" (first published in *The Atlantic Magazine* in its November issue, 2002 and finally posthumously published in the short story collection, *My Father's Tears and Other Stories*, 2009). In this short story John Updike has given a realistic deliration of the incident from the survivor's perspective. The subject matter incorporated in this story clearly makes us realize that Updike was greatly overwhelmed by the horrors of unfortunate occurrence. The subject matter dealt in this short story may be said to have prepared Updike adequately for a comprehensive and sustained treatment of the same horrible theme in his novel *Terrorist* (2006), which deals with the terroristic attacks on the World Trade Centre. Like McEwan's *Saturday* (2005), and DeLillo's *Falling Man* (2007), Updike's *Terrorist* too deals with the real menace and reveals the reality that al- Qaeda started a war against the U.S and its allies on September 11, 2001. This novel *Terrorist* revolves around the story of an Arab-American youth conscripted by a radical group of fundamentalists to blast the Lincoln Tunnel.

John Updike's short story "Varieties of Religious Experience" deals with the horrible experience of Dan Kellogg, a sixty-four-year old Cincinnati lawyer during his visit to his daughter's family in New York at the time of the 9/11 occurrence. The apartment in which Dan Kellogg's daughter lives is situated in Brooklyn Heights. It is barely at two kilometers distance away from the World Trade Center (WTC) where this unfortunate calamity occurred. The very scene of the [illegible] smoke [illegible] from the Twin Towers" from the balcony of his daughter's apartment [illegible] Dan Kellogg [illegible] that the question regarding the existence of God arises in his mind: "TH[illegible] the revelation came to Dan Kellogg in the instant that he saw the World Trade Cent[illegible]" (Updike, "Varieties of Religious Experience" 82). Seeing the collapse of WTC he is thunderstruck. He is unable to understand how such a big debacle is possible. Lost in his mediation over the incident, Dan Kellogg becomes more skeptical about his faith in the Creator: "The event was small beneath the calm dome of sky. No hand of God had intervened because there was none. God had no hands, no eyes, no heart, no anything" (Updike, "Varieties of Religious Experience" 83). Equally his granddaughter Victoria disturbs him through her series of questions regarding the occurrence. Consequently his spiritual faith and moral values are further shattered. Only five years old tender girl Victoria [illegible] Dan Kellogg when she denounces those terrorists who have attacked the Twin Towers. She is greatly aggrieved to see the debris of those towers telecasted through various television channels: "[illegible] ... bad men going to knock down *all* the buildings!" (Updike, "Varieties of Religious Experience" 83). Dan Kellogg is traumatized and tensed. His mind is perturbed at the thought that how somebody can be involved in such a monstrous act which is condemned by a little child like Victoria. Dan Kellogg tries to give

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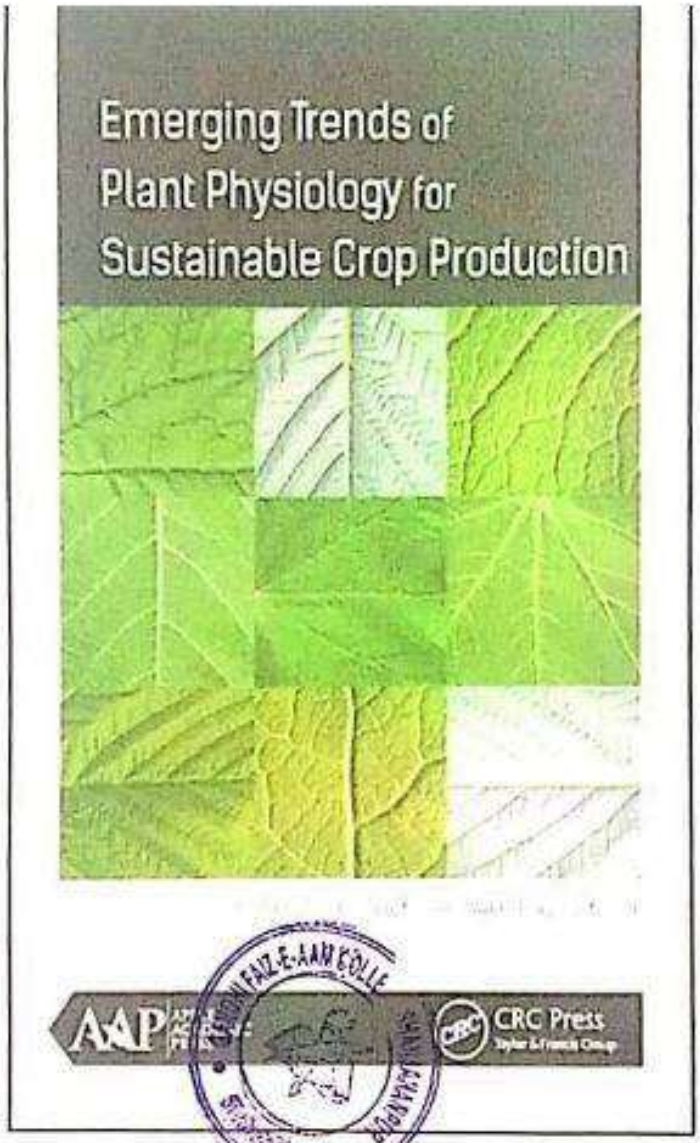

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Essential Oil with Anticancer Activity: An Overview

9

Paola Angelini, Bruno Tirillini, Mohd Sayeed Akhtar, Luminita Dimitriu, Emma Bricchi, Gianluigi Bertuzzi, and Roberto Venanzoni

Abstract

An increased interest by consumers toward pharmacologically active plant-derived natural products as alternatives to synthetic drugs has increased the attention of global scientists. Among the various plant-derived natural products, essential oils have gained popularity because of its use in food, cosmetics, and pharmaceutical industries. Constituting an array of many lipophilic and highly volatile components, derived from a wide range of different chemical classes, essential oils are characterized by a wide range of biological activities, such as antiseptic, anti-inflammatory, spasmolytic, sedative, analgesic, and anesthetic. A growing interest has recently focused on the potential of essential oils as an anti-cancer treatment to overcome the development of multidrug resistance and important side effects associated with the currently used antitumor drugs. The anticancer potential of essential oils has been widely explored till date. A recent Medline survey on PubMed for "essential oil and cancer" retrieves 926 results with a remarkable surge in publications over the last 16 years (688 out of 926

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Xylooligosaccharides and Their Anticancer Potential: An Update

11

Praveen Kumar Gupta, Pushpa Agrawal, Prabha Hedge, and Mohd Sayeed Akhtar

Abstract

Xylooligosaccharides (XOS), which are sugar oligomers that consist of 2–10 units of xylose, are non-digestible food ingredients produced mainly by the hydrolysis of xylan. The production of XOS from agricultural residues serves as a good source of products for the nutraceutical and pharmaceutical industries. XOS have a characteristic prebiotic effect, promoting the growth of probiotic organisms. XOS affect various physiological functions, such as reducing cholesterol levels, maintaining gastrointestinal health, and improving immunity. XOS are also used as potential anticancer agents, mainly for breast cancer and colon cancer. In this chapter we highlight the role of XOS as prebiotics, as well as their role in the suppression of carcinoma cells.

Keywords

XOS · HCT-116 cells · IC_{50} · MCF-7 · MTT assay · Nutraceuticals · Prebiotics · Xylan

11.1 Introduction

During the period 36–100 BC, there was a famous hypocrite opinion in the form of a Chinese proverb "Let food be thy medicine and medicine be thy food" which implies, "Whatsoever was the father of disease, an ill diet was the mother"

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Micropropagation and Conservation of Selected Endangered Anticancer Medicinal Plants from the Western Ghats of India

20

Mallappa Kumara Swamy, Sukanya Paramashivaiah, Lingayya Hiremath, Mohd Sayeed Akhtar, and Uma Rani Sinniah

Abstract

Globally, cancer is a constant battle which severely affects the human population. The major limitations of the anticancer drugs are the deleterious side effects on the quality of life. Plants play a vital role in curing many diseases with minimal or no side effects. Phytocompounds derived from various medicinal plants serve as the best source of drugs to treat cancer. The global demand for phytomedicines is mostly reached by the medicinal herbs from the tropical nations of the world even though many plant species are threatened with extinction. India is one of the mega diverse countries of the world due to its ecological habitats, latitudinal variation, and diverse climatic range. Western Ghats of India is one of the most important depositories of endemic herbs. It is found along the stretch of south western part of India and constitutes rain forest with more than 4000 diverse medicinal plant species. In recent times, many of these therapeutically valued herbs have become endangered and are being included under the red-listed plant category in this region. Due to a sharp rise in the demand for plant-based

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Biotechnological Intervention Through Tissue Culture in *Hedychium coronarium*: A Potential Anticancer Plant

23

Shashikanta Behera, Saktikanta Rath,
Mohd Sayeed Akhtar, and Soumendra K. Naik

Abstract

Hedychium coronarium is a valuable medicinal plant and commonly known as butterfly ginger, belonging to family Zingiberaceae. It has enormous medicinal values in traditional system of medicine and also has the potential to be used in modern medicine. A number of bioactive compounds with different pharmaceutical properties including anticancer activity have already been isolated from this plant. Realizing its medicinal potential, there is an increasing demand for this plant species. This has exposed the plant to unsustainable harvesting. Thus the species requires conservation-friendly approaches in its use. Regeneration of plants with uniform biochemical and genetic makeup through plant tissue culture is vital for conservation of such plant species and sustainable development. Till date several tissue culture-mediated plant regeneration protocols and assessment of biochemical and clonal fidelity of the regenerated plants have been reported on *H. coronarium*. The aim of this chapter is to present a comprehensive account of the tissue culture-mediated biotechnological intervention in *H. coronarium* and also to summarize the different works on genetic diversity of this plant species for its conservation strategies.

Keywords

Anticancer properties · *In vitro* propagation · Medicinal plant · Regeneration · Somatic embryogenesis

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Chapter 9
Organosulfur Compounds of Garlic as Potent Chemotherapeutic Agents Against Cancer

Irfan Ahmad Ansari, Imran Khan, Mohd Salman Khan, and Mohd Sayeed Akhtar

Abstract Experimental and epidemiological studies over the past few decades have provided ample evidences with regard to the association amid plant food consumption and decreased cancer risk. Many phytochemicals have proved their anticancer potential to be used as therapeutics against cancer. Among them garlic (*Allium sativum*) has been of much interest, mostly due to the epidemiological reports, which linked the increased garlic consumption with reduced prevalence of many human diseases. Garlic and their constituent organosulfur compounds (OSCs) have been attributed to several medicinal properties like hypocholesterolemic, fibrinolytic, immunostimulatory, antimicrobial, antiviral, antifungal, and anticancer effects. The OSCs have been shown to have strong anticarcinogenic property against a variety of chemical carcinogens in different preclinical animal model studies. Extensive researches are still being carried out to elucidate the molecular mechanism of action of OSCs. The main focus of the present chapter is to give an overview of the past and present studies undergoing on organosulfur compounds for exploring their potential as an adjunct in cancer chemotherapeutics and research.

Keywords Allicin · Carcinogenesis · Chemoprevention · Organosulfur compounds · Phytochemicals

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Chapter 6
Anticancer Potential of Andrographolide, a Diterpenoid Lactone from *Andrographis paniculata*: A Nature's Treasure for Chemoprevention and Therapeutics

Imran Khan, Mohd Aslam Yusuf, Irfan Ahmad Ansari, and Mohd Sayeed Akhtar

Abstract Cancer is one of the major causes of mortality in human population worldwide. The conventional drugs are known to be accompanied with severe side effects. Thus, the recent research is focused to find out the new chemotherapeutic agents of natural origin (plants derived) against cancer, which have the least side effects. In this regard, andrographolide, a major bioactive compound of a traditional medicinal plant, *Andrographis paniculata* has drawn much attention. It has shown a strong anticancer potential in several *in vitro* and *in vivo* studies against different cancers because of its ability to inhibit cell cycle progression in cancer cells. Moreover, it has also shown antimetastatic and antiangiogenic properties in different cancer cells through various underlying molecular mechanism of action. Recently, the roles of andrographolide in cancer progression via cellular developmental pathways have gained attention. Thus, the aim of this chapter is to summarize the anticancer potential of andrographolide and provide an insight in identifying new molecular targets for developing new cancer treatment strategies.

Keywords Andrographolide · Anticancer plants · Bioactive compound · Herbal medicine · Signaling pathways

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Chapter 8
Metabolomic Study of Chemo-preventive Phytochemicals and Their Therapeutic Prospects

Nibir Ranjan Parasar, Channakeshavaiah Chikkaputtaiah, Mohan Lal, and Mohd Sayeed Akhtar

Abstract The survival rates of cancer patients are decreasing over the years which are possibly due to selection of poor conventional anti-cancer drugs. At present complementary and alternate medicines (CAM) are high on demand as they show few or rather zero side-effects. Metabolomic analysis is considered to be a complex as well as efficient bridge between CAM and plants and its therapeutic possibilities as optimized and subscribed medicines. Metabolomics, considered to be the smallest domain comprises approximately 5000 metabolites, is chemically and physically more complex as compared to genomics (30,000 genes) and proteomics (100,000 or more proteins) associated with anti-cancer properties as it involves diverse groups of biological molecules. Stress on the cellular activity is inflicted directly by changes in the metabolome of an organism which underlines the importance of metabolomics in disease diagnosis and drug discovery. The present chapter focuses on the recent progresses in metabolomics which have transformed it to become a robust systems biology tool in studying both chemical and biochemical events that contribute to the cancer prevention activities of plant preparations or their bioactive components. Variations in the metabolome of cancer cell lines on treatment with plant extracts are also discussed. The current status of metabolic engineering efforts is highlighted for *in vitro* production of different chemo-preveative compounds viz. paclitaxel, geraniol, methyl cinnamate, Δ^9-tetrahydrocannabinol, etc. in their respective medicinal plants. The aim of present chapter is to explore the feasibility of metabolomic analysis of potent anticancer

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IDENTIFICATION AND CHARACTERIZATION OF *AGERATUM ENATION VIRUS* ASSOCIATED WITH YELLOW MOSAIC AND LEAF CURLING DISEAS OF *AGERATUM CONYZOIDES* IN UP, INDIA

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Yellow mosaic and leaf curling symptoms were observed on *Ageratum conyzoides* plants survey made during 2014–15 at Shahjahanpur and nearby locations. The incident of disease significantly high with severe symptoms. Due to presence of whiteflies in the field, begomovi infection was suspected. Therefore, polymerase chain reaction (PCR) was performed with begomovi specific primers (TLCV-CP). Total genomic DNA was isolated from infected as well as healthy samples. In gel electrophoresis an ~800 bpamplicon was obtained in diseased leaf samples as expec while no amplicon was found in healthy plants. Amplicons obtained were directly sequenced use BLASTn search. Based on the highest nucleotide sequence similarity (98%), amino acid simila and close relationship with isolates of *Ageratum enation virus*, the present isolate was considere an isolate of *Ageratum enation virus*.

Ageratum conyzoides commonly known as chick weed or white weed, belongs tothe fa *Asteraceae*. The plant is often used as a medicinal plant in tribal cultures sinceancient times *conyzoides* has been used in various parts ofAfrica, Asia and South America for curing various dise Githens (1948) listed the uses of the plant as apurgative, febrifuge, antiophthalmic, colic for treat of ulcers, and as a wound dressing. The antiallergic and the antipyretic properties of the plant w reviewed by Kerharo and Adam (1974). In India, it is used in the treatment of leprosy and as a lotion for purulentophthalmia (Katsuri et al., 1973). Begomoviruses are a hastily emerging grou plant viruses that cause huge economic losses to food and fiber crops worldwide, mainly in tro and subtropical parts of the world (Varma andMalathi, 2003; Tiwari et al., 2008a). They belong t family *Geminiviridae* and are transmitted by the whitefly vector *Bemisiatabaci*. *Ageratum conyz* has been reported to be the host of many viruses, which affect its population. There areseveral re on the occurrence of different begomoviruses on *A. conyzoides*, e.g. *Ageratum yellow vein v* (Haider, 1996; Tan and Wong, 1993), *Ageratum yellow vein Taiwanvirus* (Fauquet et al., 2 *Ageratum yellow vein China virus* (Xiong et al., 2007), *Ageratum yellow vein Java virus* (Kon 2007), *Ageratum yellow vein Singapore virus*(Wong et al., 1993), *Ageratum enation virus* (Brid al., 2002), *Biden mottle virus* (Logan et al., 1984), *Tomato spotted wilt virus* (Parella et al., 2 *Malvestrum virus* (Jiangand Zhou, 2004), *Tobacco leaf curl virus* (Storey, 1931) and *Hibiscus curl virus* (Rajeshwariet al., 2005, etc.).

In the survey made during 2007–09 at different locations of Shahjahanpur, India, a se yellow mosaic disease was observed on a number of *A. conyzoides* plants. The incident of the di was significant and symptoms consisted of severe yellowmosaic accompanied with vein clearin the leaves. In this communication, the associationof *Ageratum enation virus* (AEV) with yellow mo disease of *A. conyzoides* has been reported based on PCR detection methods using begomo specific (CP gene-based) primers and sequence analysis of a ~800 bpamplicon obtained from infe samples of *A. conyzoides*.

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POTENTIALITY OF MEDICINAL PLANTS IN CURE AND TREATMENT OF DIABETES: AN OVERVIEW

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Medicinal plants serve as a source of potential bioactive compounds and play a prominent role in the cure of various health related issues of the worldwide populations. These compounds have proved their worth in prevention of chronic diseases like diabetes, cancers, heart diseases and many others. In Indian traditional practices, these medicinal plants and their derived bioactive compounds have been used to treat and manage the diabetes since time of immemorial. At present, World Health Organizations WHO recommended and also encouraged the scientific community for the assessment of the hypoglycemic properties of these medicinal plant species. Diabetes mellitus (DM) is a metabolic disorder related with the deficiency in insulin production or resistance to insulin action resulted in increased level of glucose in the blood. This may be the major cause of hyperglycemia and on prolongation causes severe complications in various metabolic activities. Thus, the aim of this chapter is to provide an overview on the different plant species and their derived constituents, which may overcome the ill effect of hyperglycemia by restoring proper insulin level in blood stream.

Diabetes mellitus (DM) is the name used to describe a severe metabolic disorder having higher than normal blood sugar levels in the blood this is happened due to inefficiency in insulin production and its action or both which resulted in hyperglycemia. If untreated can lead to several diabetic complications such as diabetic neuropathy, kidney problems, heart problems, retinopathy and many other disorders. At advanced stages, diabetes can cause kidney failure, amputation, blindness and stroke (Patanjali et al. 2018). In 2015, about 1.6 million deaths were directly caused by diabetes. The number of people with diabetes has risen from 108 million in 1980 to 422 million in 2014. The world wide occurrence of diabetes among the population over 18 years of age has risen from 4.7% in 1980 to 8.5% in 2014 (WHO, 2017).

Classification

Diabetes mellitus can be classified into two major types; type-1 and type-2. Type-1 diabetes (insulin dependent) is a disease that destroys pancreatic cells leading to no insulin production. In this case, patients require insulin treatment for survival. Type-2 diabetes (non-insulin dependent diabetes) is the most common form of diabetes over the age of 40 and accounts for about 90%-95% of all diabetes cases. Patients of type-2 diabetes are unable to produce enough insulin, and sugar builds up in the bloodstream. Type-2 diabetes can be controlled through diet and exercise, although it is common for people to have medications such as tablets or injections which help them to keep their blood sugar levels within the normal range. The occurrence of type-2 diabetes has increased dramatically in recent decades worldwide. Type-2 diabetes is a silent disease and many patients are unaware of their situation (Ahmadi, 2016). It is related to abnormality in insulin secretion and its resistance. The most common causes of it may be obesity and less body activity, but it may also be inherited (Tripathi, 2009). Moreover, there is another type of temporary diabetes known as gestational diabetes (GD) mellitus which is generally happened during the period of pregnancy (Bastaki A. 2005).

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Plant Pathogens

Detection and Management for Sustainable Agriculture

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CHAPTER 19

Authentication and Traceability of Rice

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CONTENTS

19.1 INTRODUCTION

Rice is one of the most important staple food crops in the world with a rich genetic diversity. The increased growth of the world population has enhanced the demand for rice. In Asia, 90% of the population considers rice as its main source of calories. The price of rice in the world market is not homogenous because of the differences in quality, variety, and processing (Nagaraju et al. 2002). Unscrupulous traders are involved in adulteration of rice with low grade, low cost, and low nutritional grains to gain more profits with less efforts. It has been reported that after the green revolution in 1960 thousands of varieties of rice have been introduced worldwide (Shariq et al. 2012). The term adulteration means addition of low standard additional substances to a food item in order to increase the quantity. It is a widespread practice for almost all agricultural food products,

CHAPTER 20

Fingerprinting Techniques in Food Authentication and Traceability of Marine Species

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CONTENTS

20.1 INTRODUCTION

The authentication of food is growing in importance because of the increasing awareness about the quality and safety of food. Authentication of food deals with the process which verifies that the label descriptions on a food are in compliance with safety regulations. Because of the globalization of food markets, consumers have become keenly interested in the geographical origins and also in the genuineness/quality of food and drinks. Since ancient times, authenticity of food has been a critical concern for producers, regulators,

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UTILIZATION OF VEGETABLE OILS IN THE DEVELOPMENT OF BIO-POLYMER FOR BIOMEDICAL APPLICATIONS

Kahkashan Begum*

Biopolymers are the type of polymers produced by living organism. Bio based polymers are developed by bacterial fermentation processes by synthesizing the building blocks from renewable sources including lengocelluosic biomass like starch, cellulose, fatty acids and organic wastes. A material that can be used for biomedical application like wound healing, drug delivery and tissue engineering should possess certain properties such as biocompatibility, biodegradation to non toxic products, high bioactivity, ability to support cell growth and appropriate mechanical strength. Through technical innovation in synthetic chemistry, biosciences and engineering it is possible to design the required and improved biomaterials useful from medical point of view. Bio-based polymers are attracting increased attention due to its enormous potential utility. Bio-based polymers not only replace existing polymers in a number of applications but also provide new combination of properties for new applications. Vegetable oil obtained from seed s of various plants are well known for their excellent bio-medical credentials sine ancient period. Vegetable oils are abundant throughout the world. The presence of different functional groups like double bonds esters, oxiranes hydroxyl groups etc enable to architect valuable polymeric materials from seed oil. These biopolymers have been utilized in biomedical such as surgical sealant, glues, drug career and many more.

Organic polymers have received the profound position in the present industrial scenario and replaced metals in diverse field of life, due to their credential and unique properties like light weight, easy molding in any design, non-sensitivity towards corrosion. However, major drawback of polymeric materials is their non-biodegradability, especially those derived from petrochemicals [1]. Utilization of petrochemicals largely pollutes the environment with the increase in green house gases and heaping of non-biodegradable waste on earth [2]. There are eventual demands throughout the world to replace petroleum derived raw materials with renewable ones that have inbuilt biodegradability too.

Now-a- days tremendous efforts have been made to search eco-friendly specialty chemicals from the spectrum of natural renewable resource [3]. Numerous renewable resources such as starch, lignin, protein, wool fiber, vegetable oils and many others have utilized for the syntheses of polymeric materials [4]. These polymeric materials find enormous applications such as plasticizer, adhesives, biodegradable packaging materials, coating materials and biomedical engineering. Among different renewable resources vegetable oil obtained from the various seeds play vital role in the synthesis of polymers. Seed oils are eco-friendly, biodegradable and abundantly available throughout the world at cheaper cost [5]. They bear functional groups like carboxyl's, ester, double bonds, active methylene, hydroxyls, oxiranes, and many others [6]. Consequently seed oils have attracted the attention as a potential source of raw materials at laboratory and industrial scale both. The present article efforts have been made over view role of biopolymers derived from different seed oils in making vegetable polymers to provide readers an insight of the recent development including the application of these polymers in the biomedical and pharmaceuticals.

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IMPACT OF WESTERNIZATION ON INDIAN CULTURE

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India is land of Diversity. Our country has various languages, religion, culture, tradition etc. various elements of Indian culture such as Indian books on philosophy, Indian cusine, yoga etc have created an impact all over the world. Western culture is also called European civilization. Western civilization or Western lifestyle. It is based on certain belief systems, traditional customs moral and ethical values. The term not only applies to European countries but to places where we see spread of European culture.

"The American culture promotes personal responsibility, the dignity of work, the value of education, the merit of service, devotion to a purpose greater than self, and at the foundation, the preeminence of family." -Mitt Romney

The effect of western culture is greatly seen in our customs, tradition, social and moral behaviour, our love and respect for others. These days a person loves to live in freedom, he does not want to bind themselves in Indian customs and traditions. Day by day we see breaking of joint family and more and more development of nuclear family.

Westernization has greatly affected our traditions, customs, our family and our respect and love for others. The concept of joint families is fastly decreasing everyone wants to remain aloof from others. No body now bother about others and only cares about himself who is totally contradictory to our Indian culture which teaches to be a part of each other Joy's and Sorrows to celebrate the moments together and share the grief together. Slowly all our value for which India has the pride is vanishing & western culture is taking its place. People are blindly following the western culture without knowing its consequences.

DISCUSSION

Westernization has given rise to single families. Marriages are fastly breaking & our tolerance and patience has given the answer. The most effected are our new blooms, which have sprouted they find themselves stressed and isolated in this new atmosphere as there is no one to take care of them. They will not get the care and love of their Grandparents and they find themselves in crèches were some others will take care of them. It is very unfortunate that the new sprouts remain untouched and cut off from our moral values and samskaras. In today's Scenario were both husband & wife are working there is no one at home to look after them to inherit the samskaras in them as our elders who gives these samskaras to their grandchildren are not with them. In many cases it is not deliberate but in majority of case the children prefers to remain away from their parents which is very unfortunate.

There's no harm in taking good things from western but this does not mean that we should completely adopt it and pretend to be western and misrepresent our identity. It is understandable that India is growing in every field and there is necessity of knowing all the cultures and their traditions. To some extent it is fine but we should not pretend that we dislike the Indian values and likes only western culture. We have to preserve our identity. One thing should be always kept in mind that western world is looking India for its honesty and its rich Cultural heritage.

It is shocking to see that Indians are [illegible] their culture and western people are seeing India for obtaining salvation. They are coming here for seeking the true peace, which is total absent there. India has earned a good name in the field of Yoga and meditation were our gurus are giving teachings to western countries how to relax, [illegible] ways to keep themselves away from disease there in India it is contradictory to it. People are only [illegible] money as necessity and for the same they do anything, which is very shocking.

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IMPORTANCE OF SURFACTANTS IN LIFE AND THEIR IMPACT ON ENVIRONMENT

Riyaj Mohamma

Surfactant is an abbreviation for *surface-active-agent*, which literally means active at a surfa In other words, a surfactant is characterized by its tendency to adsorb at surfaces or interfaces, and altering to marked degree the surface or interfacial free energy of those surfaces. Surfactants fi application in almost every chemical industry, including detergents, paints, dyestuffs, cosmeti pharmaceuticals, agrochemicals, fibres, and plastics. Moreover, surfactants play a major role in t oil industry, for example, in enhanced and tertiary oil recovery. The surface and solution properti of cationic gemini surfactants (butanediyl-1, 4–bis(dimethylcetylammonium bromide) has been studi in the presence and absence of ethyleneamines. Parameters studied include *cmc* (critical micel concentration), C_{20} (the surfactant concentration required to reduce the surface tension of the solv by 20 mN.m^{-1}), $\tilde{A}_{max}$ (maximum surface excess), and A_{min} (minimum surface area per molecule). The parameters indicate mixed micellization between the surfactant and ethyleneamines, therefo surfactant-additive interaction parameters in mixed micelles and mixed monolayers, as well as activi coefficients are also calculated. A synergistic effect has been observed in all instances that were fou to be correlated with chain length of the ethylenamines.

A surfactant has two functional parts, namely, a hydrophilic (water soluble) or polar part, a a hydrophobic (oil soluble) or nonpolar part. Depending on the chemical structure of the hydrophob portion, the surfactant may be classed as a cationic, anionic, nonionic or ampholytic (zwitterioni Generally higher fatty acids and alcohols are used for the preparation of *surface-active-agen* Surfactants belonging to the latter class contain both an anionic and a cationic charge under norm conditions. One of the most exciting developments in the field of surfactant chemistry is the emergen of the gemini surfactants. The term gemini, coined by Menger [1], has become accepted in the surfact literature for describing dimeric surfactants, that is, surfactant molecules that have two hydrophi (chiefly ionic) groups and tails per surfactant molecule. These twin parts of the surfactants are link by a spacer group of varying length (most commonly a methylene spacer or an oxyethylene spacer have worked on gemini surfactants with additives (ethyleneamines) Gemini or dimeric surfactan are the surfactants that have two hydrophilic groups and two hydrophobic groups per molecu rather than the single hydrophilic and the single hydrophobic group of conventional surfactants (Figu 1). Their surface properties were first described by Mitsui Okahara of Osaka University and h colleagues, who synthesized them in their laboratories. Compared with conventional surfactan dimeric surfactants (gemini surfactants) are more efficient in lowering surface tension and have much lower critical micelle concentration (*CMC*) and better wetting properties. They possess speci rheological and some specific aggregation properties. Therefore, it is not surprising that today th are widely used as effective emulsifiers, bactericidal agents, dispersants, antifoaming agents, detergen etc. An important feature of these surfactants is durability to design their physicochemical properti supramolecular structure, and biodegradability by changing the nature and size of the spacer a alkyl chains.

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FUNCTIONALIZED GRAPHENE NANOCOMPOSITES FOR WATER TREATMENT

5

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1. INTRODUCTION

Graphene is a 2-D, one-atom-thick planner sheet of sp^2-hybridized carbon atoms densely arrayed in a honeycomb pattern. It is considered as a mother element of a few allotropes of carbon such as graphite, carbon nanotubes (CNTs), and fullerenes [1,2]. In 1940, graphene was theoretically established as a building block of graphite [3]. But later in 1962, Boehm and coworkers separated a thin lamellae of carbon from graphite oxide by heating and also with chemical reduction [4]. It is reported that until 2004, the single-layer graphene was believed to be thermodynamically unstable under ambient conditions [5,6]. The revolutionary discovery of single layers of graphene in a single tabletop experiment in 2004 has added a new dimension of research in the fields of physics, chemistry, biotechnology, etc. [7]. Graphene has attracted a tremendous amount of attention from academicians and industry because of excellent thermal conductivity, electrical conductivity, optical transparency, mechanical flexibility, and low coefficient of thermal expansion behavior [7–12]. Recently, polymer nanocomposites have been prepared by using graphene as an alternative material to carbon-based nanofiller [13–20]. In the near future, it is expected that graphene will play a vital role in the fabrication of various electronic devices [2]. Because of superior electrical conductivity and mechanical flexibility, it is able and efficient in replacing metal conductors form electrical and electronic devices [21–23]. Graphene as an electronic circuit material is potentially considered superior as compared to other carbon-based nanofillers [23–26]. The single-layer structure is responsible for the superior properties of graphene, but the fabrication of a single layer is difficult at ambient temperature. The graphene sheets, which are not well separated from each other with a high specific surface area, are able to form irreversible agglomerates or even restack through $\pi-\pi$ stacking and van der Waals interactions [25,26]. This aggregation can be decreased by the introduction of small molecules or polymers in the graphene sheets. For example, the aggregation of graphene sheets can be prevented by the presence of hydrophilic or hydrophobic groups due to their bulky size or by strong polar–polar interactions [26,27]. On the other hand, the use of pristine graphene is not suitable for transistor purposes because the bandgap is absent in pristine graphene, [illegible] in a condition in which transistors cannot be

Functionalized Graphene Nanocomposites and Their Derivatives

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CHAPTER 10

Nanostructured Biopolymers for Application as Drug-Delivery Vehicles

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10.1 Introduction

Biopolymers are naturally occurring materials. They are plentiful in nature and originate either from biological systems or by chemical modifications of biological building blocks. They are formed in nature during the life cycle of plants, animals, bacteria, and fungi. The polysaccharide-based biopolymers (such as cellulose and starch) and protein-based materials (such as silk, gelatin, and collage) have been extensively used in various biomedical applications, especially in drug delivery. Numerous biopolymers have been used for the delivery of various drugs because they can immobilize various biological and chemical entities. Biopolymers have received a great deal of attention in drug delivery because of their various advantages over synthetic polymers such as being biodegradable, biocompatible, nontoxic, and low cost [1]. Abundant resources of biopolymers are available in nature, such as cellulose and its derivatives [2,3], chitosan [4], alginate [5], albumin [6], gelatin [7,8], and starch [9] and starch derivatives including cyclodextrins and polylactides [10].

The plant-based materials have found specific functions in drug delivery and can function as drug-release modifiers, binders, etc. [11]. The biopolymers such as proteins and polysaccharides are greatly used in a diverse range of carrier systems appropriate for delivery of various biological and chemical compounds such as ω-3-rich oils, conjugated linoleic acid, oil-soluble vitamins, flavors, colors, and nutraceuticals [12]. These biopolymers can be used to avoid the adverse effects produced by synthetic materials [13].

A drug-delivery system is a supramolecu[illegible] encapsulating drugs for the treatment of any kind of disease. Drug-delivery sy[illegible]s are employed to overcome the drawbacks of

Nanostructured Polymer Composites for Biomedical Applications

POST-INDEPENDENCE SOCIAL MILIEU IN VIKRAM SETH'S NOVEL: THE SUITABLE BOY

Ayesha Zahir

VikramSeth's ,A Suitable Boy is set in post- independence Indian life of 1950s. Having gone through present work, we come across with Seth's opinion on secularism. Keeping his feet in the history, Seth has woven the texture of this novel from various perspectives like socio- political and historical. Seth has very exquisitely delved historical, political and social discerns embedded in the society. Bunch of burning and glaring questions inviting speculation are set forth before the reader. Under the social, political and historical problems of identity- personal, religious and national are discernible in this bulky work.

A Suitable Boy is considered a social satire and globally a social history. Mostly issues displayed in the novel are dealt with national Indian politics in the period leading up to the first post-independence national election of 1952, Hindu- Muslim animosity, the status of lower princes and landlords, empowerment of Muslim women, academic affairs etc. The social nature of the novel's vision is revealed in the first and second part, questions the validity of the contrast through which this vision is revealed. With these more burning and glaring questions inviting speculation are raised here than answered.

Secularism, Connoisseur,Stampede, .Zamindarisystem, feudalism,Postcolonial Literature,secularism.

Vikram Seth's A Suitable Boy assumes nation as an encompassing conceptual assertion that moves beyond the spatial to inherently embrace the transition from the self to the locality to state and disembark the nation. What Vikram Seth envisions in his extensive narrative is an organic notion of India. Seth formulates an imaginary state in Purva Pradesh placed in North India and Brahmpur becomes the microcosm of India. Moreover, he brings in an assortment of cultures from North Indian cities like Delhi, Lucknow, Agra, Benares, Patna and Ayodhya. Seth's specific creation of North Indian locality recollects the procedure in which nationforming becomes part of the making of nationhood. Idealization of historical episodes, religions, and linguistic traditions are the basis to for an organic ideology of nationhood that mirrors the representativeness of a nation or national claim. Narratives in the novel mark the realities of India with secular intent. Set against one of the key periods in Indian history, the novel reflects the various challenges and issues that the process of decolonization, nationhood and nationalism encountered. 1950s was crucial to the making of India as a nation and the configuration of the Indian identity. When the nationalist struggles saw their close, India as a nation-state began to establish itself in the making. Seth examines significant national issues with political coloring in the post independent era, the effects of the partition, the persistence of old traditions, the issue of land reform and the anticipated progress as a nation. A Suitable Boy is a postcolonial narrative swathes the socio-political issues that covers the post-colonial India. This paper is an attempt to read Vikram Seth's A Suitable Boy as a (postcolonial) national narrative of the making of India as a nation and its varied ramifications at the socio-political realm.

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THE IMPACT OF SANSKRIT GRAMMAR ON THE WEST

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This Paper highlights the Impact of Sanskrit grammar on the West. Sanskrit grammar [illegible] been written during 5th to 6th century by the Indian grammarian Panini. These works gave [illegible] Classical Sanskrit grammar. Around 4000 *sutras* have been evolved in Vedic Religion. Panini [illegible] his work in eight chapters beyond defining Morphology and Syntax of Sanskrit language. [illegible] this *Ashtadhyayi* made a distinction between usage for spoken language and usage for [illegible] Aristotle favoured Prescriptive grammar while Panini discovered Sanskrit Grammar which [illegible] descriptive as well as generative grammar. An attempt has been made to discuss the impact of Sanskrit grammar on the West. The first attempt to study grammar began in about 5th century B.C. [illegible] dialogue *Cratylus* and in 4th century B.C in India with Panini's grammar of Sanskrit. Later the Romans approached the study of grammar for the study of their own language. At this stage grammar [illegible] mainly learnt and taught as a tool for the analysis of the languages used for producing and for analysing literatures, or even for deciphering the rules of ancient languages of the holy books. Grammar was initially studied as a part of philosophy, logic and rhetoric. This can be evidenced in the [illegible] discussion on the Greek masters and their followers among Romans and the Medieval grammarians until the 17th and the 18th centuries. In a nut-shell it reflects three phases of grammar studies: firstly study of grammar as a part of logic and philosophy which was initiated by the Greek masters; secondly the comparative and historical approach to grammar (the 17th and 18th century); finally the phase of descriptive linguistics which later developed into structural, functional and communicative grammar with the development of Modern Linguistics. It is the discovery of the long lost tradition of Sanskrit grammar by the Europeans in the 18th century that helped them find a path in the development of grammar of Latin and other European languages. Sanskrit, for the ancient India, was the language of religious rituals and thus the religious hymes of the Hindus were composed in Sanskrit for centuries. In the 18th century, most of the scholars wanted to form a standard language and for this they used grammar as a tool. This was the age of comparative linguistics, in which comparison was on the peak. This kind of a trend brought lots of changes in the study of language and its grammar. We can conclude that both the 18th and the 19th centuries were the followers of not descriptive approach to grammar but of prescriptive. These scholars convinced that the languages should be standardized. On the other hand grammarians needed to look for correct usage and establish it as a law-giver.

ELT - English Language Teaching, ESL - English as a Second Language, EFL - English as Foreign Language , LSRW - Listening Speaking Reading Writing, CLT - Communicative Language Teaching, GTM - Grammar Translation Method , TG - Transformational Grammar and GTM - Grammar Translation Method.

It was believed, like other classical languages that the language should be preserved in its original grammar and pronunciation. Therefore [illegible] Jindal (1998:37) state as Sanskrit grammar originated as an attempt to preserve the classical language of the sacred [illegible] This led to a comprehensive description of [illegible] the levels of phonetics, grammar and semantics. Thus a tradition of scholarship [illegible] was developed, which spanned several centuries.1

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CONTRIBUTION OF SOCIO-CULTURAL CHANGES AND HENRIK IBSEN TO THE UPLIFTMENT OF MODERN WOMEN

Dr. Reefaqat Hus

When Henrik Ibsen (1828-1906) started writing plays, the revolutionary socio-cultural cha were taking place in the structure of the society. Monarchy was being threatened by the rebe activities in many countries. Patriarchal system of society was undergoing drastic modifica Women's rights, which have hitherto been suppressed, were being realized. Society was mov towards its modernization. Ibsen and his contemporaries were deeply influenced by these revolut changes in the socio-cultural structure of society. Ibsen's writings also reflect the revolutionary cha which were taking place in the society. The formative influences on the new thought in m dramas and Henrik Ibsen came from the writings of August Comte (1798-1857), Charles Da (1809-1882) and Karl Marx (1818-1883) etc. and some of the revolutionary writings of fem writers like Mary Wollstonecraft's *A Vindication of the Rights of Women* (1792), John Stuart *The Subjection of Women* (1869), Friedrich Engels' *The Origin Of the Family* (1884). All these w brought about drastic changes in the society. August Comte, who is often considered to be the father of Sociology', argued that all knowledge should ultimately be used for the improvem society and he limited his observation to the contemporary social events. Darwin's scientific reinforced the idea of progress. According to him if a man has evolved from the primitive sta being to the complex creature, the greater improvement and inevitable progress is possible, if a con environment is created for him. Karl Marx advocated the equal distribution of wealth amo people of all classes. He thought that the capitalist class was the main cause of suppressio marginalization of the proletariat. The feminist writers argued that there should be equality bet man and woman regarding their privileges and rights. These innovative ideas brought about a rev in the modern society. Consequently, the dramatists began to think about the predicament of who had hitherto been suppressed and neglected and the problems of the poor and the women the front to be discussed threadbare. The short-lived Georg Buchner (1813-1837) focused a downtrodden and raised some difficult political questions in his three plays, *Danton' Death* *Leonce and Lena* (1836) and *Woyzeck* (left unfinished). Unfortunately his revolutionary zea not be appreciated at that time and his works were neglected until the beginning of the twe century when his innovative ideas found a proper atmosphere. In France Alexander Dumas fils 1895) novel *Camille* about a "kept woman," dramatized in 1849, and his "thesis plays" dea contemporary social life and its problems.

Throughout Europe there was a political unrest by 1848. Rebellions against roy aristocracy reached to the point of no return. People were emerging out of ignorance, and were their own individuality which had been crushed for long under the oppressive reign of royalty, mo aristocracy and patriarchy. Henrik Ibsen was a Norwegian playwright. He spent most of his his native place living in various European countries like Italy, Germany and Denmark etc provided him an opportunity to come into contact with various literary men, movements and ten

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NEW GENERATION'S ATTITUDE TOWARDS WESTERN CULTURE AND INDIAN CULTURE

Dr. Shahzad Ahmad*

The culture is the total range of activities and ideas of a group of people with shared traditions, which are transmitted from one generation to another and reinforced by members of the group. Besides it, culture is not a static concept but is rather very dynamic practice which changes according to the time and place. So far as Indian culture is concerned, it is one of the oldest and richest cultures.

Quoting professor Macdonell in his epoch making book *The Discovery of India* Pt. Nehru tells: "When the Greeks towards the end of the fourth century B.C. invaded the north-west, the Indians had already worked out a national culture of their own, unaffected by foreign influences. And in spite of successive waves of invasion and conquest by Persians, Greeks, Scythians, Muhammedans, the national development of the life and literature of the Indo-Aryan race remained practically unchecked and unmodified from without down to the era of British occupation. No other branch of the Indo-European stock has experienced an isolated evolution like this. No other country except China can trace back its language and literature, its religious belief and rites, its dramatic and social customs through an uninterrupted development of more than three thousand years." (63)

Components of culture are simply the parts that make up a culture. It is worth noting that these components look different in each culture.

(i) Survival (Food, Clothing, Defence, Shelter) (ii) Education (iii) Transportation (iv) Communication (v) Economy (vi) Technology (vii) Social Structure (viii) Beliefs and Traditions (ix) Rules and Regulations. No doubt, Indian culture has been remarkable for its old history and rich heritage, but in modern days it has become a great challenge for it to keep it working. It can be found out that the western culture is establishing its strong effect upon it and wiping it out slowly and gradually. It is well acknowleged that the western culture has made its presence in the metropolitan cities. Like the western big cities, the metropolitan cities of India have Bear-Bars and Coffee-Bars.

Our motives were concealed but clear,not the coffee but the Cuban dancer took us there.the naked Cuban dancer.On the dot she came and shook her breastsall over us and droppedthe thin transparent skirt she wore. (1-6)

Marriage is a pious relation as it is a union of two loving souls. In Indian culture marriage is regarded as a religious service. It is very much shocking that in modern days marriages are breaking fastly. The man seems to be saying "His marriage was the worst mistake of all." Besides it, live in relationship a new culture of the west has taken birth in India. The young generation is following the western culture blindly without knowing and understanding its consequences. It is also worth noting that flirting has become a new fashion among the people and moral values have decreased very much.

I myself, decorously,
press a thigh or two in sly innocence
The party is a great success. (13-15)

In India there has been a tradition of joint family in which many people live under the same roof. But now this old tradition has also gone under a sea-change.

"The forms and functions of family have undergone adaptive changes with changes in the technological and economic superstructure of society. One way to characterize this change is to associate conjugal or nuclear forms of families with rel[illegible]dernized or industrial society and extended or joint types of families with traditional agr[illegible]-industrial societies." (174)

Besides it, there are a lot of chan[illegible] of family. Today, both the husband and the wife are working and they don't have en[illegible]th each other or with their children. In this condition their offspring have to suf[illegible] they are left on the mercy of the servants.

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PROSPECTS OF CULTURAL TOURISM IN ERITREA

Dr.Masihulla Khan*

No doubt tourism is a multi-faceted and multi-billion industry that involves relationships and phenomena arising out of the journeys and temporary sojourns of people travelling primarily for leisure or recreational purposes, the development of this industry in Eritrea has over the years focused on a limited tourist resource base based on Historical sights. As a result, cultural tourism based on the local peoples rich and diverse material and non-material cultures has been negated or poorly developed, promoted and marketed to meet the diverse and changing consumption tastes and patterns of the tourists. Moreover, around the Massawa, concerted efforts have been geared towards developing and promoting Beaches, lagoons and green belts (Sammawit Italiare) tourism to meet the needs of mainly international tourists.

Whilst the efforts of the government of Eritrea in promoting and marketing tourism in general should be lauded, it should nonetheless be pointed out that the country's inability to recognize the changing demand and consumption patterns of tourists has resulted in promotion and marketing strategies being focussed on historical sites and beach tourism. Further, unlike in the West where cultural tourism has been institutionalized and culture is promoted and marketed as a unique tourist product, this tourism sub-sector remains undeveloped in Eritrea. Thus, apart from a few aspects of traditional cultures such as dances and traditional attire drawn from the Afar, Tigre and Saho cultures being used in promotional materials such as posters, brochures, post cards and documentary films, indigenous cultures of most ethnic communities remain untapped. The goals of cultural tourism have therefore remained an illusion amongst local communities.

The rebirth of interest in indigenous cultures as a unique tourist product coupled with the need to diversify and deconcentrate the tourism product in order to meet the changing needs and interests of tourists has in the recent years added a fresh thrust to the tourism sector. Based on the foregoing reasons, this paper uses the case of Coastal Eritrea and its environs to examine ways in which various aspects of the culture can be developed, promoted and marketed to enhance cultural tourism around the Coast. It is envisaged that the adoption of appropriate strategies will not only promote the cultural tourism sub-sector around the coast, but also enhance the touristic value of the entire tourism circuit.

The study area

Massawa and its surroundings (including islands) are located in Northern Red-sea zone (Map 1). As a tourist zone, it is located in the Eritrean Coastal tourism circuit. Massawa is the only best tourism destination. Because of its nature and geographical location, it is endowed with a unique diversity of flora, fauna and fauna. Among its tourist attractions are its unique and diverse plants, birds, primates, forest snakes and butterflies found in different Islands. It is these attractions that are the basis of nature-based tourism on the Coast and its environs

The people

Although the area surrounding Massawa including islands is inhabited by a [illegible] ethnic group in terms of settlement history [illegible] the study area have very rich magnetic is the Saho and Afar. The Saho, Tigre and [illegible] common salient features in their cultures can be discerned. culture. Despite their dialectal differences. It is this feature that constitutes the potential [illegible] resource base for this area.

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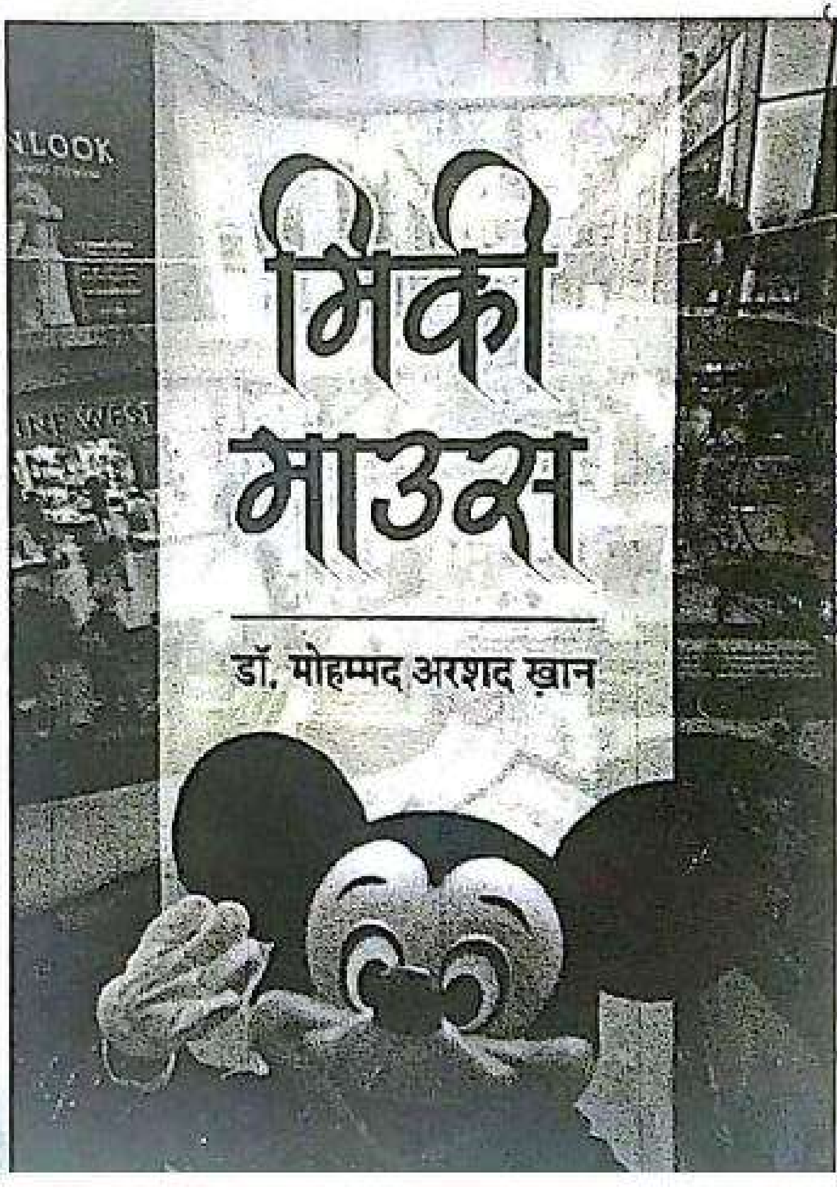

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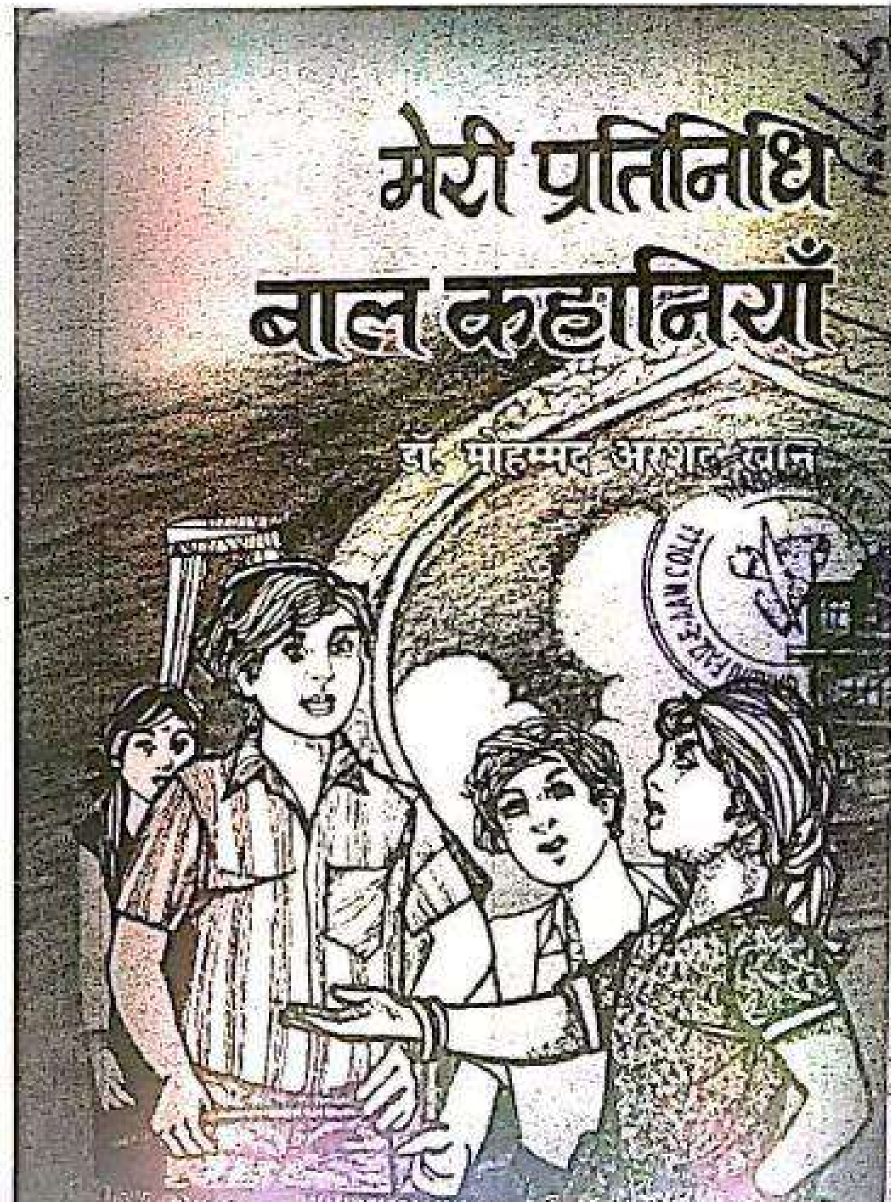

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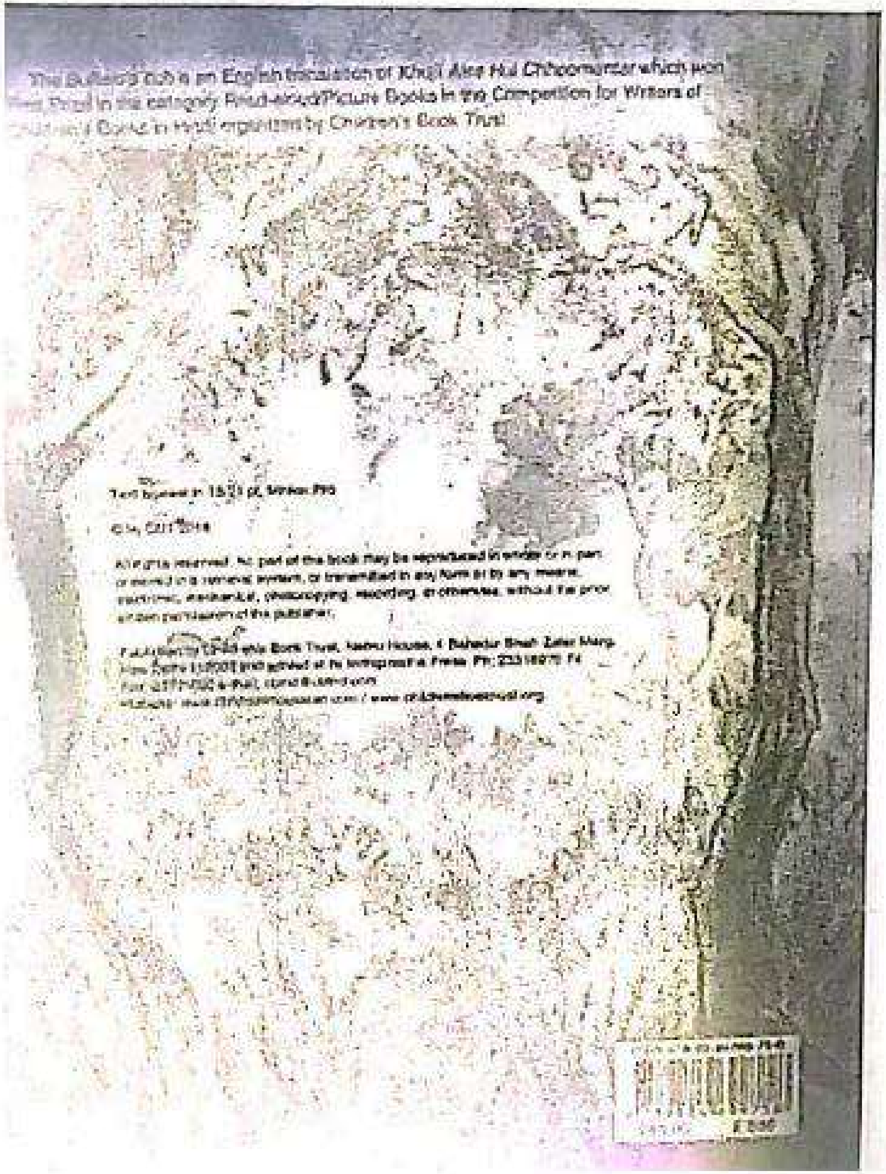

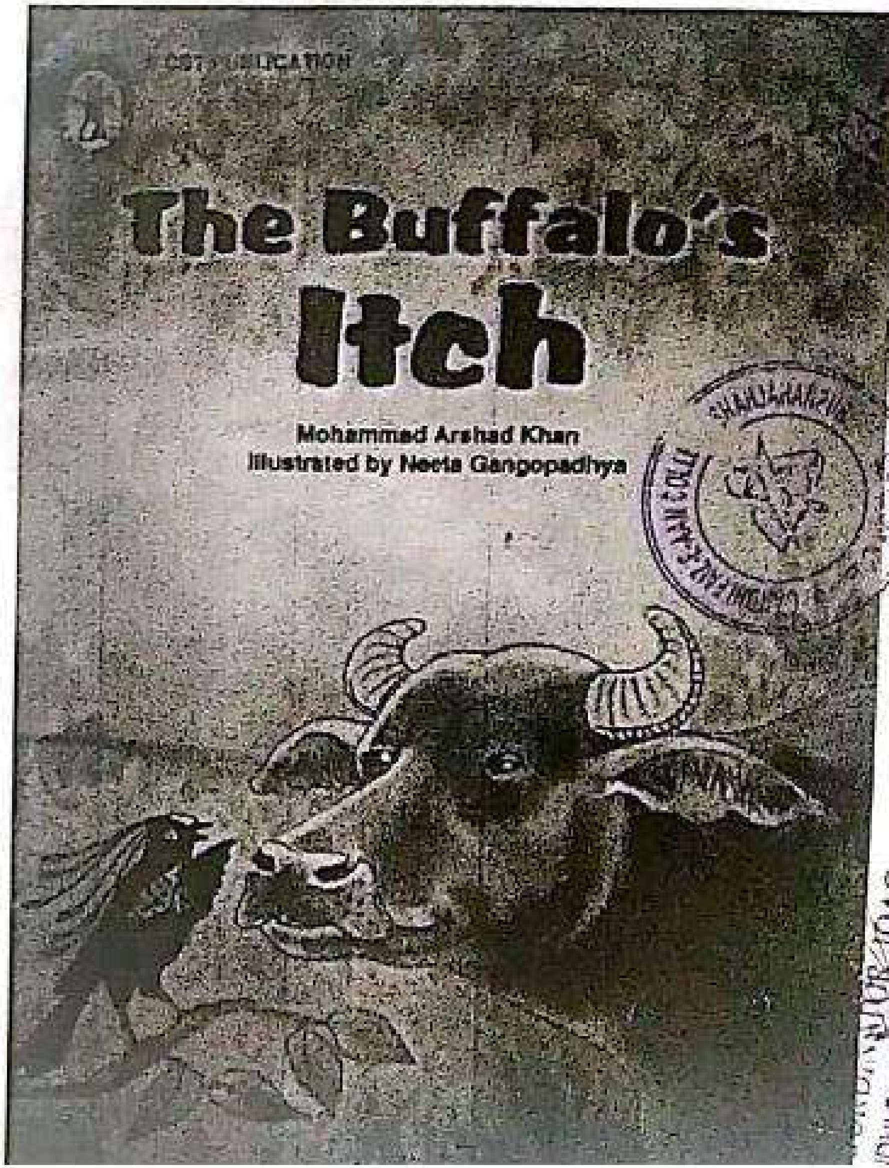

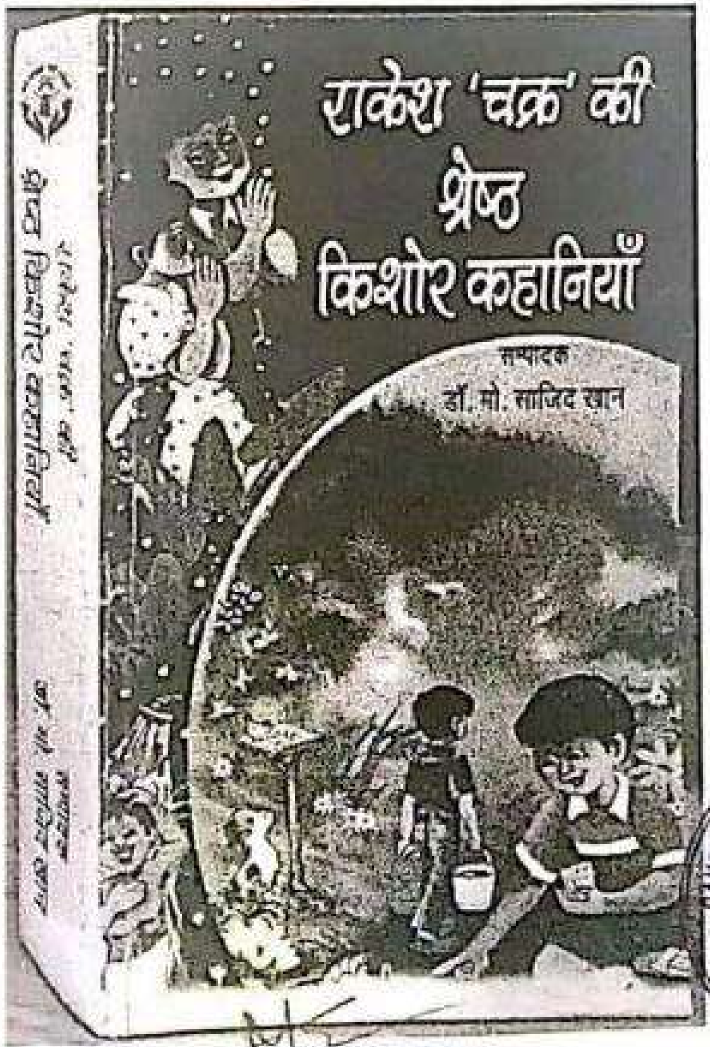

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राष्ट्रीयता हिंदी साहित्य के कवियों के लिए एक विरोत्तेजक शब्द है, जब-जब देश की अस्मिता पर प्रश्न-चिह्न लगा है तब-तब हिंदी साहित्य के कवियों ने अपने काव्य के माध्यम से आम-जनता को राष्ट्र के लिए अपना सर्वस्व न्यौछावर करने का मंत्र दिया। राष्ट्रीयता की झंकार जब मानव के कर्णों में पड़ती है तो उसकी आत्मा झंकृत हो जाती है और वह अपना सर्वस्व लुटाने के लिए तैयार हो जाता है। राष्ट्रकवि रामधारी सिंह 'दिनकर' ने इसी राष्ट्रीयता की गर्जना को अपने काव्य के माध्यम से व्यक्त किया वैसे तो हिंदी काव्य-जगत में कुछ कवियों को राष्ट्रकवि की ख्याति प्राप्त है परंतु 'दिनकर' उस श्रेणी में सबसे अग्रीण हैं और 'दिनकर' की कविता में राष्ट्रप्रेम उन्हें एक क्षैतिजीय धरातल प्रदान करती है। "हिंदी की राष्ट्रीय कविता की जो विशेषता सबसे ज़्यादा प्रभावित करती है, वह देशभक्ति का आवेश का विषय बन जाता, जैसे मध्ययुग में ईशभक्ति आवेश का विषय बन गई थी।"[1]

'दिनकर' ने राष्ट्रीयता की बात करके हिंदी कविता का रूप, उसकी अंतर्वस्तु और जनता से उसके संबंध को परिवर्तित कर दिया। यह कार्य अकेले 'दिनकर' ने नहीं किया हरिवंश राय बच्चन, नरेंद्र शर्मा, भगवतीशरण वर्मा आदि उनकी पीढ़ी के कवियों ने भी उनका साथ दिया और इन सब की कविता इतनी व्यावहारिक थी कि आम बोल-चाल की भाषा लगती थी। जिसका प्रभाव यह हुआ कि कविता समाज और राष्ट्र के साथ गहरा संबंध जुड़ गया। सन् 1962 में चीन ने भारतीय सीमा में अतिक्रमण किया जिसके परिणाम युद्ध के रूप में देखने को मिला तब 'दिनकर' ने आहत

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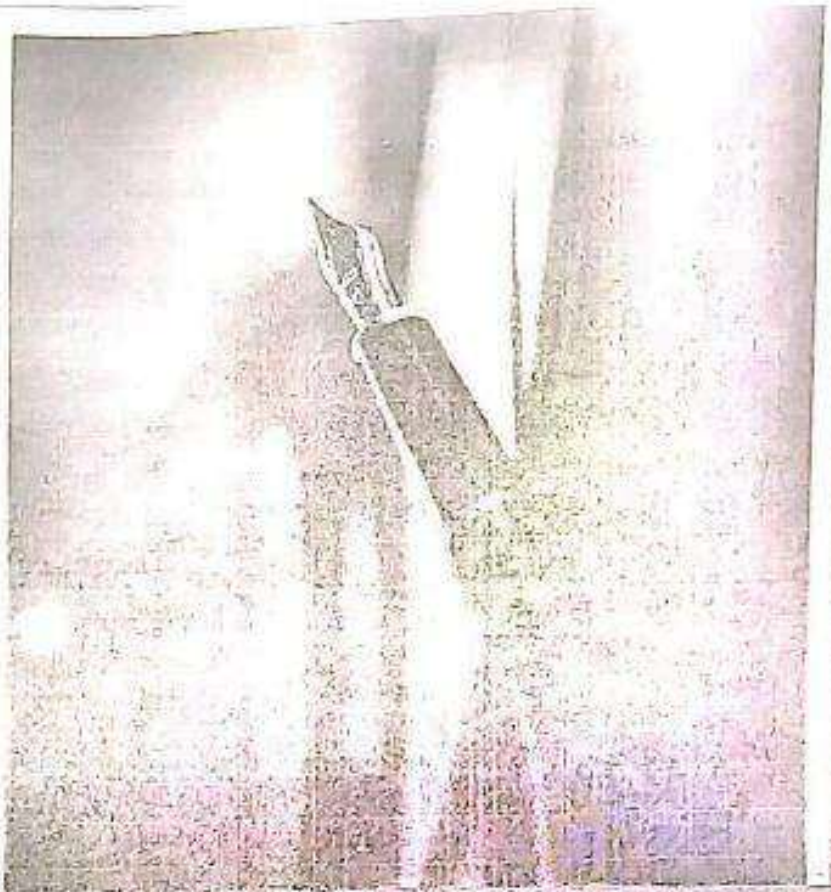

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नासिरा शर्मा की बाल कहानियाँ

डॉ. मोहम्मद अरशद खान

हिंदी में बाल साहित्य को उसका वास्तविक स्वरूप अंग्रेजों के आगमन के बाद आधुनिक काल में प्राप्त हुआ। बाल साहित्य का आरंभिक रूप अंग्रेजी शिक्षा पर आधारित स्कूलों की पाठ्य पुस्तकों के लेखन के रूप में विकसित हुआ। किंतु श्रीधर पाठक के 'मनोविनोद' (1917) के प्रकाशन के बाद से स्वतंत्र रूप से उत्कृष्ट बाल साहित्य सृजन की अबाध धारा आरंभ हो गई।

वास्तव में हिंदी प्रदेश में बाल साहित्य का उदय नवजागरण का परिणाम कहा जा सकता है। 1917 में प्रकाशित 'बालसखा' जिसे बाल साहित्य की [illegible] है, के प्रवेशांक में संपादकीय था "आजकल बहुत से नवयुवक [illegible] अपने धर्म से घृणा करते हैं तो वह उन्हें कुसंस्कारों का परिणाम है, जिनसे [illegible] की उनकी किशोरावस्था में कुछ भी कोशिश नहीं की गयी।" (बालसखा, सं. [illegible], जनवरी 1917) अतः बालसखा ने बालकों में "सत्य, तेज, और [illegible] प्रफुल्लता, भक्ति-प्रेम, आत्मगौरव आदि सद्भावों को जागृत करने" का जो [illegible] वह उसी नवजागरण का परिणाम था जिसका उद्देश्य देश की स्वतंत्रता के साथ-साथ अपनी कमियों की ओर दृष्टिपात करना भी था। जनतांत्रिक चेतना के विकास के साथ ही बच्चों के लिए अलग से साहित्य की माँग उठने लगी। आज बाल साहित्य अपना महत्त्व और अपनी सत्ता प्रमाणित कर चुका है। बाल साहित्यकारों के अतिरिक्त अन्य साहित्यकारों ने भी समय-समय पर बच्चों के लिए रचनाएँ कीं। चाहे प्रेमचंद हों या निराला, [illegible] हों या सर्वेश्वरदयाल सक्सेना, गुलज़ार हों या स्वयं प्रकाश, [illegible] हों या नासिरा शर्मा, लगभग हर साहित्यकार ने बच्चों के लिए कुछ-न-कुछ अवश्य लिखा है।

नासिरा शर्मा ने जिस अधिकार के साथ प्रौढ़ साहित्य लिखा है, उसी दक्षता के साथ बच्चों के लिए भी लिखा है। कहानी और उपन्यास उनकी बाल साहित्य लेखन की मुख्य

9

नासिरा शर्मा के बाल-उपन्यास

डॉ. मोहम्मद साजिद ख़ान

इलाहाबाद की भाषा और संस्कृति की गंगा-जमुनी विरासत में जन्मी नासिरा शर्मा ने अपनी पहली बाल-रचना तीसरी कक्षा में कहानी के रूप में लिखी थी। तब से अब तक प्रौढ़ों के साथ-साथ बाल-साहित्य में भी व्यापक रूप से सक्रिय लेखन करती आ रही हैं। 'पढ़ने का हक़', 'दादाजी की लाठी और अन्य कहानियाँ', 'गुल्लू', 'संसार अपने-अपने' जैसे बाल-कहानी-संग्रहों के अतिरिक्त [illegible] और फ़ारसी की लोक-कथाओं का अनुवाद भी किया। उन्होंने 'तुम्हें कहानी, लिखो कहानी' नाम से बालकों के बीच कहानी-लेखन और [illegible] का हुनर ही पैदा नहीं किया, बल्कि उनकी प्रेरणा से कई बालकों ने सुन्दर कहानियों का लेखन कर पुरस्कार भी प्राप्त किया। उन्होंने टेलीविज़न पर दिखाए जाने वाले बहुत से ग्रामीण बालकों को केंद्रित नाटक भी लिखे, जिनमें स्वयं अभिनय भी किया।

उपन्यास अपने 'कैनवस' में ही बड़ा होता ही है, उसके प्रश्न भी बड़े होते हैं। नासिरा शर्मा के कुल अभी तीन बाल-उपन्यास हैं, जिनमें— 'भूतों का मैकडोनल्ड' और 'दिल्लू दीमक' प्रकाशित तथा 'बदलू' अप्रकाशित है। उल्लेख्य है कि ये उपन्यास अपने सवालों और समस्याओं के स्तर पर बड़े हैं।

उनके उपन्यासों में अच्छी सादगी है। सभी चरित्र अपने वास्तविक परिवेश और वातावरण में विकास पाते हैं। उनमें कहीं असहजता नहीं दिखती। अपने उपन्यासों में बालकों की सोच, उनके बरताव, उत्सुकता भैया, उनकी संवेदनाओं, आकांक्षाओं, कुंठा-आग्रह, मनोविज्ञान तथा वर्तमान परिस्थितियों का उन पर प्रभाव आदि का वह बहुत बारीकी से ध्यान रखती हैं। उनके उपन्यासों की कथन-भंगिमा ऐसी है कि पाठक अपने कथाकार के साथ अंत तक कैसे पहुँच जाता है, पता ही नहीं चलता।

भूतों का मैकडोनल्ड

'भूतों का मैकडोनल्ड' को वर्तमान समय में अनायास आए आधुनिक और तकनीकी

नासिरा शर्मा का साहित्य

साझी विरासत की गूँज

सम्पादक
डॉ. शगुफ़्ता नियाज़

विकास प्रकाशन, कानपुर

एमएएचआई –204

इतिहास लेखन

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पाठ्यक्रम संयोजन एवं संपादन

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ब्लाक एक

इकाई एक इतिहास : अर्थ, महत्व एवं प्रकृति [illegible]

इकाई दो इतिहास का विषय क्षेत्र [illegible]

इकाई तीन ऐतिहासिक व्याख्या : अर्थ, प्रकृति, सिद्धान्त, प्रकार एवं विशेषताएँ [illegible]

ब्लाक दो

इकाई एक इतिहास में पूर्वाग्रह [illegible] इतिहास एवं संस्कृति विभाग, [illegible]

ब्लाक तीन

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इकाई तीन [illegible] इतिहास लेखन [illegible] इतिहास विभाग [illegible]

ब्लाक चार

इकाई एक आधुनिक इतिहास लेखन– [illegible]

इकाई दो आधुनिक इतिहास लेखन– [illegible]

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ब्लाक छह

इकाई एक इतिहास का दर्शन [illegible]

इकाई दो इतिहास का दर्शन [illegible]

इकाई तीन इतिहास का दर्शन [illegible]

ब्लाक सात

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भारतीय ज्योतिष और नक्षत्र विज्ञान : अलबरूनी की दृष्टि

डॉ. तनवीर हुसैन*

अलबरूनी, महमूद गजनवी के साथ भारत आया। उसने यहाँ संस्कृत भाषा, भारतीय दर्शन, ज्योतिष शास्त्र का अध्ययन किया। उसने अनेक विभिन्न ग्रंथों में भारत के विषय में लिखा जिसमें से 'तहकीक-ए-हिंद'[1] में दिए गए विवरण [illegible] प्रामाणिक माना गया है।[2] अबू रेहान मुहम्मद इब्न अहमद अलबरूनी की रचना 'तारीख-उल-हिन्द' मूल रूप से अरबी भाषा में है। अलबरूनी स्वयं एक यशस्वी गणितज्ञ और खगोलशास्त्री था। अलबरूनी ने भारतीय ज्योतिष शास्त्र एवं नक्षत्र विज्ञान सम्बन्धित ज्ञान का न केवल अरबी ज्ञान से साक्षात्कार कराया वरन् ज्ञान के इस क्षेत्र में नए आयाम भी गढ़े। [illegible] में अलबरूनी ने लम्बा काल गुजारा, इसी प्रवास के दौरान उसकी भारत में और भारतवासियों में रुचि प्रारम्भ हुई [illegible]। जैसे कि हमें ज्ञात है खगोल विज्ञान, गणित और आयुर्विज्ञान पर भारत में लिखे गए अनेक प्रमुख ग्रंथों का अरबी में अनुवाद बहुत पहले अब्बासी काल के आरम्भ में ही हो चुका था। इनमें से कुछ अलबरूनी के प्रवास भी रहे होंगे। यह बात [illegible] 'किताब-उल-हिंद' से स्पष्ट हो जाती है जिसमें अलबरूनी ने संस्कृत की उन पाण्डुलिपियों का, जो उसने देखी थीं और उनमें से कुछ [illegible] की गलतियों आदि का उल्लेख किया है। अलबरूनी का मत था कि ज्ञान सच्चे अर्थों में अन्तर्राष्ट्रीय होता है और विचारों तथा प्रमुख आविष्कारों का लाभ चाहे वे किसी ने किसी भी क्षेत्र में किए हों, सभी राष्ट्रों को पहुँचाता है। उसकी यह धारणा कि ज्ञान का प्रसार किसी व्यक्ति के अपने देश की सीमाओं से परे करना उपयोगी होता है, उसकी इस बात से स्पष्ट हो जाती है कि "मैं हिन्दुओं के लिए 'उक्लीदिस' और 'अलमजिस्ती' के अनुवाद में और [illegible] (एस्ट्रोलेब) के निर्माण पर एक निबन्ध लिखने में व्यस्त हूँ।"[3] उसका यह भी विश्वास था कि राजा-महाराजा ज्ञान-विज्ञान के अध्ययन को बढ़ावा देने में महत्वपूर्ण भूमिका का निर्वाह कर सकते हैं, क्योंकि वे ही ऐसे लोग हैं जो विद्वानों को भौतिक चिंताओं से मुक्त कर सकते हैं और उन्हें अपना अध्ययन कार्य पूरे संतोष और निष्ठा के साथ सम्पन्न करने में समर्थ बना सकते हैं। लेकिन अलबरूनी ने दुःख भरे स्वर में यह भी कहा कि 'वर्तमान युग' इस कार्य के लिए अनुकूल नहीं है। न तो राजा-महाराजाओं का संरक्षण सुलभ है और न ही 'जनता का रुझान विज्ञान की ओर है'। यही कारण है कि किसी 'नए विज्ञान' या 'नए प्रकार के अनुसंधान' का उभरना असंभव है। इस समय जो कुछ है भी वह 'बीते हुए अच्छे युग के अल्प अवशेष मात्र' हैं।

जहाँ तक हिंदू शास्त्रों का सम्बन्ध है अलबरूनी ने खगोलशास्त्र पर विशेष ध्यान दिया। इसका कारण यह था कि यही उनमें सबसे अधिक लोकप्रिय था और दूसरा यह कि स्वयं उसकी भी इसी में रुचि थी। ज्ञान की इस शाखा में भारतीयों की प्रशंसा करते हुए उसने दो सिद्धान्तों– 'सामान्य और वैज्ञानिक' के बीच सूक्ष्म भेद पर बल दिया है। दोनों समय के साथ एक-दूसरे से मिल गए थे और यही कारण था कि उनके गणित और खगोल शास्त्र विषयक साहित्य में यह देखा [illegible] है कि 'वैज्ञानिक प्रमेय', 'जनसाधारण की हास्यास्पद धारणाओं' के साथ गड्ड-मड्ड हो गए हैं।[4] मानो वह एक ऐसा [illegible] है जिसमें 'ठीकरियों में मिले हुए सीप या गोबर से लिपटे हुए मोती या कंकरियों में पड़े हुए रत्न' हों। यह भ्रम [illegible] था क्योंकि वे शुद्ध 'वैज्ञानिक निगमन' का प्रयोग नहीं करते थे। अलबरूनी ने इस प्रकार के दृष्टिकोण के लिए [illegible] कारकों का उल्लेख किया है जिनमें अपनी धारणा पर सुकरात की भाँति दृढ़ रहने के साहस की कमी, सामाजिक [illegible] का दबाव और सामाजिक निंदा का भय [illegible] और ऋतु के सम्बन्ध में सोचते-सोचते आदमी का ध्यान [illegible] की ओर गया होगा और उसे जंत्री, पंचांग या कैलेंडर जैसी चीज तैयार करने की बात सूझी होगी, जिससे अन्त में ज्योतिष का आविष्कार हुआ। गणितों में ज्योतिष [illegible] दिया है और ज्योतिष में फलित ज्योतिष ही पहले [illegible]।[5] वैदिक साहित्य के वेदांगों–प्रातिशाख्य [illegible] शिक्षा में से एक ज्योतिष था। इस प्राचीन प्रकार की ज्योतिष का मुख्य उद्देश्य समय-समय पर [illegible] काल का निर्णय करना था।[6] ज्योतिष एवं नक्षत्र [illegible] उत्पत्ति चाहे जैसे हुई हो, भारत में हुई हो [illegible], अलबरूनी ने इस क्षेत्र में ज्ञान का विस्तार दिया है इसमें

* [illegible] विभाग, गाँधी फ़ैज़-ए-आम कॉलेज, शाहजहाँपुर

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FECT OF WESTERNIZATION ON VARIOUS ASPECTS OF INDIAN SOCIETY

M. S. A. Khan*
Mohammad Tariq**

India is land of diversity. Our country has various languages, religion, culture, tradition etc. Culture, which is one of the oldest & richest cultures in the world with varied languages, ms, beliefs, ideas, taboos, codes, instructions, works of art, architecture, rituals, ceremonies etc. 's cultural history of several thousand years old and it shows a continuity and subtle change with g thread of continuity epitomised in the assimilative power of culture and unique display of in diversity'. With the conquest of European powers and subsequent British rule in India has profound effect of western culture on Indian society. Western culture has made its presence in s forms. Westernization is defined as incorporation of the norms, values and culture of the west ur culture. It has greatly affected our traditions, customs, our family and our respect and love for . The concept of joint families is fastly decreasing everyone wants to remain aloof from others s given rise to single families. Marriages are fast breaking down & our tolerance and patience given the answer. Sociologically, westernization is defined as "the changes brought about in society and culture as a result of over 150 years of British rule, the term subsuming changes ring at different levels say technology, institutions, ideology and values". The purpose of this e is to look the effect of westernization on various aspects impacts on Indian culture/society, rnization versus modernization, Characteristics of westernization, consequences of western re on Indian society, agents of westernization, influence of western culture on caste, impact of sh education, impact on women, impact on social structure, impact on marriage, influence on e, impact of western literature on Indian literature, religion, influence of western culture on , social mobility through westernisation

India is a secular country where the people have the freedom to practice any religion and also nvert into another religion of their choice. So, all the cultures are freely accepted and respected e Indians. It's an environment to cultivate or build oneself ethically, socially and in all other cts that lead an all over human development. Every culture is a combination of some good and atures. All in one, culture means 'a way of life'. Every geographical body has its own custom culture. People of different nations are recognized by their culture. One should be proud on its ressive traditions. It is the responsibility of all citizens to preserve their own ethnicity.

Indian culture is richly known in other parts of the world since the ancient age. Its multi- e flavour has been consistently unique in its very own way. Manners, traditions, living and ing patterns etc. are one of the graceful components of Indian culture. The most important feature ian culture is its values. These values are deeply rooted within the heart, mind, body and soul of ellers. But, the influence of western culture started in India during the 19th century when the established their colony in the country.

Western culture, considered as the most advanced culture on globe, has started surmounting our on Indian roots. Western culture has always shown its influence on Indian society. This e for the multiple reasons like fascination, dreamy autonomy etc., which are somehow absent ian culture. Western culture conveys and promotes the ideas and values of advanced civilization people of India. There are ample of good things found in the western culture, which every should proudly learn and adopt. But what about the negative influences of the western culture? package comes with pros and cons. Indians should definitely use the culture strain before diluted under the flow of any cultural influences. The leading reasons for such impact are of wealth and power of Western medi

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RENEWABLE ENERGY SOURCES AND THEIR MANAGEMENT SYSTEM IN ENVIRONMENT

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M. A. Khan*

Energy consumption increases day by day as more appliances used in today's home. Increasing energy demand and limitations of fossil fuels, time to use the renewable resources for energy generation in domestic areas. This paper proposes renewable energy management system architecture for smart homes in which energy consumption and generation simultaneously for efficient energy, minimization of cost and environment friendly. Microcontroller based energy management module with ZigBee is used to control and monitor the energy consumption of smart home. The propose system is used the solar and wind resources as these are not always available, also introduce water resources to generate the electricity. The charge controller, battery bank and battery level monitoring are used to provide stable energy module for smart home. Energy consumption should be minimized by users, can access home energy information through smart devices. The propose system save the limited fossil fuels, generated efficient energy and minimize energy consumption.

Today's energy crisis becomes global problem for the world. We need to reduce the wastage of electricity in day to day life. But the consumption of electricity increases year to year as more home appliances are installed. So, today's the energy saving becomes first priority. Because of the limited fossil fuels, these generations have started the use of different ways of electricity generation like using the renewable energy sources. Solar, wind and water sources are easily available anywhere on earth. Renewable Energy Sources (RES) as an important approach to meeting rural energy needs, reducing pollution, and promoting economic development. A Smart Home is a house that uses new technologies to monitor the in-house temperature, out-house climate changes, control and monitor the home appliances and communicates with the worldwide. Smart homes have the potential for increasing energy efficiency, decreasing costs of energy use, decreasing the carbon footprint by including renewable resources, and trans-forming the role of the occupant[1][2][3].This project proposes a novel model of smart homes for rural areas where reaching or 24*7 power supply is the big question till date.

Several projects have proposed to minimize the elctricity consumption using Home Energy Management System (HEMS). Efficient HEMS [5], [6] includes the support of automatic and manual scheduling and control of the devices, continuous monitoring and efficient notification. This work considers a device control module to handle networked home appliances; it does not consider the energy generation. A green HEMS that monitors, compares, and controls home appliances has been proposed [7], [8]. It does not consider generation of electricity as using renewable energies. The solar and wind power system are used, energy management systems have been studied to enhance smart home [9] [10] [11]. These works consider only renewable energies, not consider the energy consumption of the home.

This paper presents a design of the smart home energy management system using renewable energy sources. It is associated with user interface, home server, microcontroller interface and Renewable energy management system interface.

The report is organized as follows: Section 2 proposed the architecture of Renewable Energy Management System (REMS). Section 3 shows several hardware implementation and section 4 software implementation in detail and section 5 shows the results of the system. Finally, section 6 concludes and summarize the paper.

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EFFECT OF WESTERN CULTURE ON INDIAN CULTURE

Riya

Indian Culture is one of the oldest cultures in the world with different languages, custo beliefs, ideas, codes, instructions, works of art, architecture, ceremonies etc. The cultural histor Indiashows a continuity and subtle change with strong thread of continuity and it is of several thous years old. With the conquest of European powers and subsequent British rule in India has ha profound effect of western culture on Indian society. Western culture has made its presence in diffe forms. India is a rich country in its culture and heritage but we are seeing fading of culture of Indi various places of India.

Westernized culture is also called European civilization, Western lifestyle or Wes civilization which is based on certain belief systems, moral and ethical values, tradition. Westerni culture (or Westernization)is defined as incorporation of norms, values and western culture int culture. It has highly affected our customs, traditions and our love and respect for others. Marri are fast breaking down. India has different languages, culture, religion, tradition etc. Our count land of Diversity. Different elements of Indian culture such as yoga, Indian books on philosoph have created an influence all over the world. The concept of joint families is decreasing. Every wants to remain aloof from others and has given rise to single families.

Various Impacts of Westernized Culture on Indian society:

There were various types of westernization: one type refers to emergence of a western cultural pattern through a minority sections of Indians. They first came in contact with wes culture. This included the sub-culture of Indian intellectuals who not only adopted ways of thin ormany cognitive patterns and life styles, but also supported expansion of western culture. This influ of Western culture was mainly in urban areas. But urban areas are less westernized than some villag

Characteristics of Westernized culture:

Many good and bad things have come from the West. Westernization is a complex, wide multi-level concept and it includes all changes consequent upon technology and Science.

Modernization vs Westernization:

Modernization refers to in culture under the impact of technology, communications e Westernization is not the same as modernization. All western countries are not modern. Indeed I is a modernized country but by retaining its own culture. But modernization in India has been gene through Westernization.

Consequences of westernization on Indian society:

Westernization has introduced new ... like Christian missionaries, press etc affected joint families, caste, marriage and other social structures. Modern values like secul humanism have entered Indian value systems, criminal law in India has been reformed. Untouch abolished, Evil customs like sati ended. Many cultural and political movements emerged like move for eradication of caste.

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ROLE OF MATHEMATICS IN ENVIRONMENTAL CULTURE AND SCIENTIFIC PROGRESS: AN OVERVIEW

Musharraf Ali*

To analyze the role of Mathematics in the environmental culture and scientific progress, we ... different points in this paper. The history of Mathematics reveals that whenever a society ... weightage to the knowledge of Mathematics. Mathematics makes its contribution in the ... of science and Technology. Mathematics is the common heritage of mankind and it is ... exclusive property of any particular nation, race or country. When we go through history, we ... the contributions from Romans, Chinese, Japanese, Arabs and Indians to mathematics. ... careful study of the history will reveal the fact that ancient civilizations are very much ... the development of Mathematics. Mathematics is a branch of Science, which deals with ... their operations. It involves calculations, computations, solving of problems etc. It is ... systematic and a logical subject. Mathematics reveals hidden patterns that help us to ... the world around us. Now, much more than arithmetic and geometry, Mathematics today ... discipline that deals with data, measurements and observations from science, with inference, ... and proof; and with mathematical models of natural phenomena, of human behavior and ... systems. In a simple way we can say that mathematics has originated from numbers and ... is a special field of it, from which other branches of Mathematics are developed. It is ... organized and an exact branch of science. Mathematics is the study of quantity, structure, ... change; it has historical developed, through the use of abstraction and logical reasoning, ... calculation, measurements, and the study of the shapes and motions of physical objects. ... definitions of mathematics but no one definition of mathematics is universally accepted. ... to pierce "Mathematics is the science, which draws necessary conclusion". According to ... Mathematics is a way to settle in the mind of children a habit of reasoning".

... of Mathematics

The literal meaning of Mathematics is "things which can be counted" now you think that ... vital role in our daily life; Just imagine that there were no mathematics at all, how would ... for us to count members of the family, number of students in the class, rupees in the ... in a week or in a months or years? on a basic level you need to be able to count, add, ... multiply and divide Mathematics helps the man to give exact interpretation to his ideas and ... part of man's life and knowledge. It plays a predominant role in our everyday life and it ... an indispensable factor for the progress of our present day world. Even nature also embraces ... completely. We see so much of symmetry around us and have a deep sense of awareness ... of pattern. observe any natural thing and find out symmetry or pattern in it. Change ... night, summer into winter etc. In plants there are innumerable examples of symmetry, ... etc. such examples exist in animals in objects, in pictures and other things. Mathematics ... veins of natural sciences like physics and astronomy. According to Galileo the importance ... is given by "Mathematics is a language in which God has written the world".

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SOCIO-SCIENTIFIC APPROACH TO LEARN AND BURN POLLUTION

Dr Rais Ahmad

With the exponentially advancing era of new technology and culture we are facing ma problems related with environment. Being superficial among all creatures holds more responsibil then others but became as synonym of 'Destructive Beings'. This destruction is not only to environme but indirectly to us. For our conveniences, we are continuously utilising the world resources very f and hampering the environment and ecological systems. The air, water and land are of great importan and serve as natural reserves for our lives. The air, we breathe is polluted by high level of pollut and dust particles released by vehicles and industrial chimneys. Water, another life resource, contaminated by discharge of industrial waste and sewage system into rivers, streams, and there pollutes the oceans and seas. The concept of 'Deforestation' for developing the cities destroys fert soil. The high-speed flood water is also harmful to plants, mud and aquatic lives. Because of destructi of the forests, wild animals are also decreasing day by day and there is danger for their extinction. T Earth is the only planet where life exists and with us various types of plants and animals surv Though the man being an intelligent and powerful species, but does not have right to destroy the oth species of the world by its awful activities. In fact it is the need of the hour that we should utili available resources very carefully and cautiously. Nowadays scientists and intellectuals are very seri about the burning issues related to environmental degradation. Even politicians and policy makers a also pay attention on these matters. Of course this problem cannot be sorted out within a day. Her ethical participation of public is keenly required which is only possible by awareness. And th should have feelings to firmly engage in this movement.

Air Pollution

Air is the base of our life. Without this no life can survive on earth. But it is sad to say t man himself polluting this important natural resource. The smoke of industries and motor vehicles the one of the root cause of this pollution which makes air dreadful and poisonous. It makes o surroundings highly ruined. Even the blast of gases released by jets, train engines, diesel and petr vehicles, those are visible by naked eyes, are of great concern.

No doubt that these land and air means of transportation are made for our ease to save tim but we should minimise these utilities for our wellbeing. Instead of using private vehicles we can u public transport. We cannot deny the government policies regarding pollution crises in metropoli cities like; Odd-even number vehicles, use of CNG and LPG as fuel, eradicating diesel vehic having life more than 10 years. But question arise "Are these policies really working"? and "Are supporting the policies"? Instead of it we start making counter plans to escape such programs. countries like India, a heap of garbage or rubbish loitering around is commonly observed in pub places like picnic areas, parks, railway stations, hospitals, bus stands, etc. We just throw dirty ite and rubbish all over places. I want to ask "How many people throw rubbish at its right place"? T bacteria and viruses generally grope rubbish are transported and carried in air which infects a creates problem for us. Even people leave their trained animals like cows, buffaloes, goats, dogs o on roads in open or public places. These animals also act as carrier and make the atmosphere pollut These dead animals also become source of accident.

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THE ROLE OF SCIENTIFIC DEVELOPMENT TO MINIMIZE PROBLEMS OF DISABILITY

Jamil Ahmad Khan*

Use of technology as end users, the differently-abled person is not distinguished from normal one. All humans being are born same and no one has the ability to do everything by himself. Despite of this fact, there is a lot of distinction between normal and differently abled person. At present, advanced practices of barrier free environment are used to make the things valuable for differently-abled persons. Therefore, there is a need to develop a relation between these criteria's and make them equally useful for differently-abled person as the normal person in the society. Thus, the aim of this article is to assist the understanding the need of advance technologies for the benefit the differently-abled person and also focus on their significance for better life style.

Disability is a complex phenomenon, reflecting an interaction between features of a person's body and features of the society in which he or she lives. A disability may be physical, cognitive, mental, sensory, emotional, and developmental or some combination of these. Disability is an umbrella term, covering impairments, activity limitations, and participation restrictions. Impairment is a problem in body function or structure; an *activity limitation* is a difficulty encountered by an individual in executing a task or action; while a *participation restriction* is a problem experienced by an individual in involvement in life situations.

Classification of Disability:

International Classification of Impairment, disability and handicaps as per World Health Organization (WHO) is as follows:

Impairment: Impairment is any loss or abnormality of psychological, physiological or anatomic structure or function.

Disability: A disability is any restriction or lack (resulting from an impairment) of ability to perform an activity in the manner or within the range considered normal for a human being.

Handicap: A handicap is a disadvantage resulting from impairment or a disability that limits or prevents the fulfillment of a role that is normal (depending on age, sex and socio-cultural factors) for that individual.

Role of World Health Organization (WHO)

The Convention on the Rights of Persons with Disabilities (Articles 20 and 26), the World Health Assembly resolution WHA58.23 and the United Nations Standard Rules on the Equalization of Opportunities for Persons with Disabilities all highlight the importance of assistive devices. States are requested to promote access to assistive devices and technologies at an affordable cost and facilitate training for people with disabilities and professionals and staff working in habilitation and rehabilitation services. WHO, in partnership with collaborating centres and partners, is assisting these efforts by:

1. Developing normative guidelines
2. Organizing regional and country workshops, meetings and seminars to promote and facilitate access to assistive devices
3. Providing assistance for the development of national policies and programmes on assistive devices and technologies with a focus on human resource development
4. Creating a database on availability of appropriate assistive devices and technologies

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वैदिक साहित्य, भारतीय संस्कृति और भाषिक विविधता एवं वैज्ञानिक दृष्टिकोण

डा० नीलम [illegible]

संसार में जहाँ सभ्यता का सूर्य सर्वप्रथम उदय हुआ, जहाँ से ज्ञान विश्व के सभी देशों में [illegible] की सभ्यता और संस्कृति को ज्ञान द्वारा सिंचित पल्लवित पोषित करता रहा है। जिसने मानव समाज और [illegible] और समस्त विश्व को अद्भुत विद्याओं और तीसरे-कलाओं से प्रदीप्त किया वह यह पुण्यसलिला भारत भूमि [illegible] आर्यों की उत्पत्ति वैदिक काल से और सृष्टि के आरम्भ में सभी ब्रह्मज्ञानी ऋषियों, जिनमें ब्रह्मा [illegible] ऋषियों की संतानें से तथा मनु-शतरूपा से विकसित हुयी। परिणाम जगत जन अपने जननी जनक और आदि [illegible] से जुड़ रहा था उस समय भारत की संस्कृति अपने चरम विकास पर थी। गौतम बुद्ध, महावीर और [illegible] दीक्षा दी पर भारत वासियों ने आदिम वर्णव्यवस्था में प्रारम्भ से ही सृष्टि रक्षा हेतु-ब्राह्मण, क्षत्रिय, वैश्य और [illegible] के निमित्त हेतु न केवल निर्मित हुये बल्कि सुरक्षा, संरक्षा के कर्म से बड़े धर्म द्वारा क्षत्रिय वर्ग के लिए युद्ध [illegible] परिणाम दर्शित था।

लोकाचार और राजनीति के परम गुरु-**मनु और याज्ञवल्क्य** ने शांति पर्व के उपदेश भीष्म [illegible] युद्ध में अर्जुन-जयद्रथ को न मार सकने पर शस्त्र सहित चिता पर चढ़ते हुये, अर्थशास्त्र के प्रणेता, कौटिल्य [illegible] स्थापना के शासन के रूप में युद्ध को कभी वर्जित नहीं किया। अपितु यह सिखाया युद्ध कब और कैसे [illegible]

"अहिंसा परमो धर्मः, धर्म हिंसा तथैव च"

सृष्टि की रक्षा हेतु युद्ध कैवलिहित कर्म है।

गीता के अनुसार- मानवीय आचार का सार तत्व- **'निःस्वार्थ कर्म'** है। महाभारत युद्ध के मैदान में श्री [illegible] अर्जुन को उपदेश देते हैं "तुम्हारा अधिकार कर्म करने मात्र का है उनके परिणामों का कभी नहीं।"

कर्मण्येवाधिकारस्ते मा फलेषु कदाचन।।[1]

बृहदारण्यकोपनिषद के अनुसार- ब्रह्मा ने पहले देवताओं में चार वर्ण बनाये और उसके आधार पर मनुष्यों में [illegible] बनाये प्रत्येक वर्ण सामाजिक कल्याण के लिए बनाया गया। भृगु के अनुसार - आरम्भ में तो केवल द्विज वर्ण [illegible] अपने कर्मों और गुणों के अनुसार द्विज विभिन्न वर्णों में बंट गये।[2]

श्रीकृष्ण के अनुसार- चारों वर्णों की सृष्टि गुण और कर्म विभाग से निर्मित है।

चातुर्वर्ण्यमया सृष्टं गुण कर्म विभागशः[3]

राजर्षि पुरुषोत्तम दास टण्डन ने गुण कर्म का विभाग इस प्रकार दिया है - **गुण**-सत, रज, तम और कर्म शिक्षण रक्षण उत्पादन और सेवन। भारतीय सामाजिक संगठन का मुख्य आधार वर्णव्यवस्था, आश्रम व्यवस्था [illegible] का सिद्धान्त आदि पर आधारित था।

किसी भी देश की समृद्धि वहाँ के शासकों और प्रजा के नैतिक चारित्रिक उत्थान से जुड़ी है। [illegible] नियम, आचार विचार के रूप में पालन गुरु गृह से होता है जो ब्रह्मचर्य आश्रम में परिवार और शिक्षा के [illegible] को शिक्षा द्वारा देकर व्यक्ति का श्रेष्ठ विकास करने से था। वैदिक साहित्य के अध्ययन के अनुसार वैदिक [illegible] की स्थिति, आत्मविकास, शिक्षा, विवाह, सम्पत्ति के [illegible] पुरुषों के समान थे।

ऋग्वेद के मत में "पत्नी ही घर है" [illegible] के रूप में स्त्रियों की स्थिति उच्च थी। **महाभारत** में "घर घर नहीं अगर घर में पत्नी नहीं।" ऋग्वेद में [illegible] पुत्री के जन्म की प्रार्थना की गई, पर [illegible] दुर्व्यवहार का कोई उल्लेख नहीं मिलता है। वर्णों की व्यवस्था के अन्तर्गत आर्थिक समानता के अनुरूप [illegible]

[illegible] प्रवक्ता, संस्कृत विभागाध्यक्ष, जी०एफ० कॉलेज शाहजहांपुर [illegible]

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ANALYSIS OF LIFE TABLES FOR ECOLOGICAL POPULATION GROWTH OF AN ORGANISM

Arshad Ali

ABSTRACT

In ecology, life tables are prepared by taking information on different features of an organism. The age specific life table of an organism is generally constructed by using data of its survival and mortality from birth or zero day age to death. For the study of stage specific life table, whole life span is divided into different segments or stage according its development i.e. in case of *Pieris brassicae* the developmental stages considered as egg, larva (1, 2, 3, 4 & 5), prepupa, pupa and adult. By constructing stage specific life table different features viz., apparent mortality, survival fraction, mortality survivor ratio, indispensable mortality and generation mortality (k-values) can be calculated. Moreover, female fertility life table gives detailed account on potential fecundity, net reproductive rate, mean length of generation, intrinsic rate of increase, finite rate of increase, doubling time, annual rate of increase of an organism. Present chapter provide detailed information on different life tables constructed to determine survival, mortality and expectation of life of an organism.

Keywords: Annual rate of increase, Doubling time, Fecundity, Intrinsic rate of increase, Mortality, Reproductive rate, Survival

Introduction

Life table is one of the conceptual and analytical tools of ecological study, which generates simple and more informative statistics on description of survival, development and reproduction of the organisms for a known cohort (Kivan and Kilic, 2006). In another way, it also provides detailed information of population dynamics and generates simple but more informative statistics on comprehensive description on survivorship, mortality and reproduction in given area and time. Harcourt (1969) described ecological life-table as "one of the most useful tools in the study of population dynamics. These tables record a series of sequential measurements that reveal population change throughout the life cycle of a species in its environment. When these measurements are related to the several cause of mortality, the life-table forms a budget of successive processes that operate in a given population." Some authors have emphasized the role of abiotic and biotic factors in the abundance of organisms in a biotic community and calculated population in the form of life table (Huffaker et al., 1971 and Varley et al., 1973).

In ecology, Deevey (1947) first time introduced life table and stated that these table help to record a series of sequential changes in population size occur throughout life cycle of an organism. These tables, however, depends on numerous environmental [illegible] as, temperature, relative humidity, wind velocity, sunshine, evaporation and rainfall. [illegible] also in turn affect the mortality and natural population density of given organism (Ha[illegible] 1969). The [illegible]llection of life-table data at different trophic levels in a food chain is an impo[illegible] management strategies, which provides detailed information of various economic[illegible] (Devi et al., 1997) and their natural enemies in biological control system (Nara[illegible] [illegible]1 and C[illegible] Yang, 2003). Therefore, Vargas et al., (2002) believes that to identify the causes of [illegible] changes in age distribution, such as, birth, death and growth rate of various predator species is an [illegible] task to introduce them in biological control program. On the other hand, Resh and Carde (2009) believe that study of life tables are important to estimating how well and threatened or endangered species is doing. It can help to determine whether a population is able to maintain itself or whether individuals are dying and the species is going extinct.

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Chapter - 5

Naucoridae & Zoogeography Economic Importance in India

Dr. Mohammad Shoeb

Abstract

Naucoridae is small family of aquatic insect of sub order Heteroptera. The member of Family Naucoridae are easily distinguished due to broad, oval and flattened body. The study of Indian naucoridae is of a great impotence. The genus cheirochela is previously record by two species cheirochala-assamensis hope, 1841 and cheirochela feena, montand 1897. A new species of the genus are being for the first brought to the knowledge in present condition. The present work to the knowledge in present condition. The present work is an outcome of three and a half years continuous. Survey of these bugs from different part of India. During the course of study a large number of bugs were collected from ponds, Lakes, rivers, streams and water reservoirs of various part of India. Several field survey were under taken in Uttar Pradesh, Punjab, Haryana, Delhi, Assam and Rajasthan. The genital Propapation of the new Species was made and examined. The insect of this study were Preserved in 90% Alcohol. The Study was made under binoculars, Stereoscope and compound microscope, Camera Lucida were used for making the sketches and measurement taken with the help of micrometer.

Keywords: naucoridae, water bug in Uttar Pradesh

Introduction

India is being a vast [illegible] of ponds, lakes and water reservoirs possess in rich fauna of water bugs. Unfortunately very sincere efforts has been made to study the systematic naucoridae from India. The first real work of importance comes from efforts of [illegible] who between 1853 and 1910 in the serious of fauna of British India Rhynchota (Hemiptera) had put together all the know records.

Naucoridae

Insects comprises 75-80% of the total species that have been recorded on the earth or sphere or planet. They appeared in the Devonian period and have continued to evolve in large number of species on one hand (quality wise) and because of shorter life cycle, high fecundity and ability to [illegible] every type of niche, in huge population in other hand.

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Salt Stress, Microbes, and Plant Interactions: Causes and Solution

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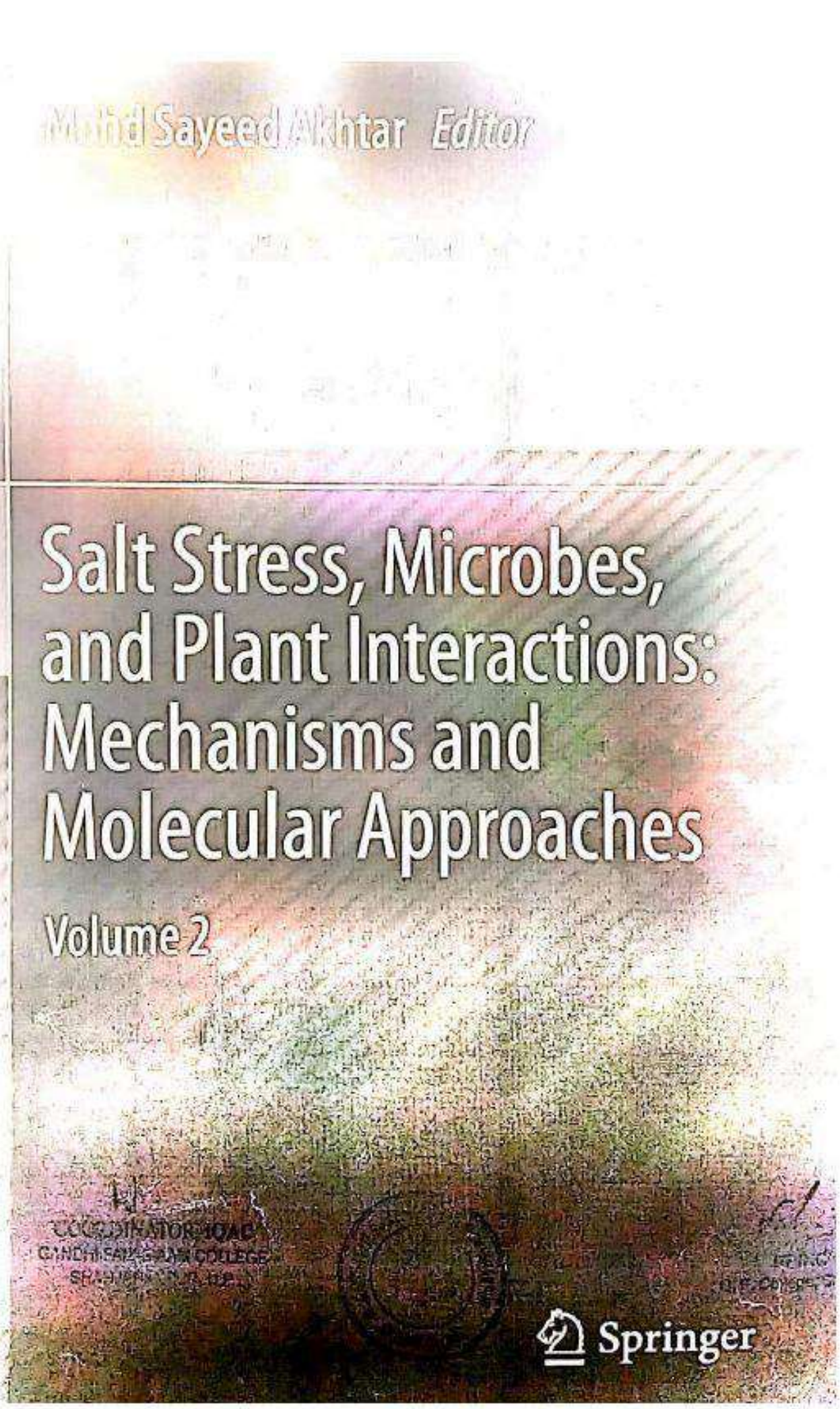

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Plant Metabolites and Pharmacological Activities of *Leptadenia pyrotechnica* (Forssk.) Decne

19

Sabahat Javid, Sunbal Khalil Chaudhari, Iqra Munir, Muhammad Shoaib Amjad, Khalid Farooq Akbar, Farhat Yasmeen, and Mohd Sayeed Akhtar

Contents

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Recent Insights on the Anticancer Properties of Flavonoids: Prospective Candidates for Cancer Chemoprevention and Therapy

13

Irfan A. Ansari and Mohd Sayeed Akhtar

Contents

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Natural Compounds Extracted from Medicinal Plants and Their Applications

7

Saboon, Sunbal Khalil Chaudhari, Sohaib Arshad, Muhammad Shoaib Amjad, and Mohd Sayeed Akhtar

Contents

Abstract

Plant natural products have played an important role in the lives of human beings for their use as a source of food and medicine. The medicinal properties in plants typically result from the different combinations of these natural compounds known as phytochemicals. Generally, these phytochemicals are classified into primary and secondary compounds. Primary compounds include chlorophyll,

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Current Insights on the Role of Terpenoids as Anticancer Agents: A Perspective on Cancer Prevention and Treatment

3

Irfan A. Ansari and Mohd Sayeed Akhtar

Contents

Abstract

Terpenoids are known to be a large family of secondary metabolites found ubiquitously in the plant kingdom and structurally composed of isoprenoid units. The diverse array of terpenoids has increased the interest in their commercial and pharmaceutical uses due to their antioxidative, anti-inflammation, and anticancer properties. Based on the structure, terpenoids are divided into six classes, namely monoterpenes, sesquiterpenes, diterpenes, triterpenes, tetraterpenes, and polyter-

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Therapeutic Potential of Rhizomatous Plants Used in Unani Medicare System

17

Mohd Afsahul Kalam, Ghufran Ahmad, Anwar Shahzad, Shaikh Ajij Ahmad Maqbul, and Mohd Sayeed Akhtar

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An Insight into Biotechnological Approaches Used for the Improvement of Secondary Metabolites from the Medicinal Aquatic Plant, Water Hyssop (*Bacopa monnieri* L.)

5

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Global Concern for Salinity on Various Agro-Ecosystems

1

Ghulam Mustafa, Mohd Sayeed Akhtar, and Rabia Abdullah

Abstract

Twenty-first century is marked by many challenges regarding agro-ecosystems, such as environmental pollutions, scarcity of water, and increased salinization of soil and water. Population bomb (increasing human population) and reduction in land available for cultivation are two threats to agricultural sustainability. In this situation, demand for cultivable land increases. However, environmental degradation factors such as erratic rainfall, extreme temperatures, drought and floods, high winds, and soil salinity have affected the production and cultivation of agricultural crops. Among these, soil salinity is one of the most devastating environmental stresses, which causes major reductions in cultivated land areas, crop productivity, and quality. Soil salinity further impacts the general public, particularly farmers, through its effect on agriculture. Therefore, it is necessary to find the causes of soil salinity and its impact (economic and environmental) on crop production in saline soils given the increasing farming costs. Thus, the main focus of the present chapter is to provide an overview of the past and present studies on salinity and its economic impact on the agricultural system.

Keywords

Agro-ecosystems · Economic analysis · Environmental impact · Salinization · Salt stress

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Heavy Metal Stress and Tolerance in Plants Mediated by Rhizospheric Microbes

8

Mallappa Kumara Swamy, Narasimhaswamy Nalina, Dasappa Nalina, Mohd Sayeed Akhtar, and Boregowda Purushotham

Abstract

The environmental contamination has become a serious issue in recent times due to human engagements, such as application of pesticides, chemical preservatives, mining, coal combustion, etc. These anthropogenic activities have imposed escalated heavy metal concentrations in water, soil, and air. Specifically, heavy metal pollution of soils causes numerous environmental complications and imparts detrimental effect on living organisms including microbes, plants, and animals. In order to adapt, tolerate, and survive in these adverse situations, plants have evolved with multifaceted molecular and biological mechanisms. Though plants possess many defensive mechanisms to overcome heavy metal intoxication, these strategies of tolerance may not be effective beyond certain limit. Hence, plants will be at the risk of survival. Some of the methods used for removing heavy metals from soil include soil washing with physical or chemical methods; excavation, i.e., the physical elimination from polluted sites; and in situ fixation, the addition of chemicals to stabilize and alter heavy metals to a state that cannot be absorbed by plants. Still, these chemical and physical techniques are not very efficient and the process is expensive. Alternatively, the biological ways of cleaning the contaminated areas have gained more importance in recent times. These

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Use of Nanoparticles in Alleviating Salt Stress

9

Irfan Ahmad and Mohd Sayeed Akhtar

Abstract

Soil salinity is one of the major causes of abiotic stress that limits crop productivity. It also affects nearly one-fifth of the worldwide cultivated lands. The negative effects of soil salinity in plants are related to the specific toxicity of ions, such as Na and Cl, as well as to the low osmotic potential of soil solution, which results in water deficiency in plant cells. These conditions make it difficult for a plant to absorb water from saline soils and/or lead to ionic effect resulting from accumulation of toxic salt ions which leads to the reduced growth rates and productivity. Recently, nanotechnology has gained the attentions of scientists in various disciplines of science and plays a vital role in medicine, industries, agriculture, electronics, energy, and environment. In agriculture, using nanoparticles is expected to improve the crop productivity by enhancing plant nutrition, precision farming, water use efficiency, crop protection against pest and diseases by molecular tools and techniques, and environmeatal protection. Thus, the aim of the chapter is to provide an update on the use of various types of nanoparticles for alleviating the salt stress and also to understand the mechanism behind it.

Keywords

Abiotic stress · Crop · Soil salinity · Nanoparticles · Nanotechnology

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Application of Microbial Biotechnology in Improving Salt Stress and Crop Productivity

7

Maneesh Kumar and Mohd Sayeed Akhtar

Abstract

Soil salinity is the principal detrimental abiotic stress that globally impedes crop yield. It affects a wide range of biochemical, morphological, physiological, and molecular changes and is responsible for inducing ion toxicity, hormonal disturbance, water uptake, homeostasis disturbance, and oxidative stress. To evade this abiotic stress, many genes are identified, and their mechanisms have been elucidated in *Arabidopsis thaliana* through the transgenic approaches and also in other plants like *Prunus cerasifera*, *Brassica juncea*, *Ipomoea batatas*, tobacco, etc. Modern tools revolutionized microbial biotechnology by providing a better choice for plant scientists to select or incorporate genes of interest into preferred species or cultivars. Transgenics may regulate the various metabolic pathways including biosynthesis of chlorophyll and osmolyte, ion exchange homeostasis, antioxidant defense mechanism, and additional frontier defense corridors against salinity stress. Exclusively using such gene manipulations, many genetically modified crop varieties like canola, cotton, maize, rice, and soybean are being developed. Many techniques have been introduced for establishing possible sustainability against soil salinity. Apart from this, it also incorporates some receptor genes in crop plants that may sense or escape any changes in soil salinity under environmental condition. Thus, the aim of this chapter is to enlighten the basic importance and modern application of microbial biotechnology to understand the behavior of transgenic crop plants in saline soil. The study also elaborates understanding of molecular machinery for healthy crop production.

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Crops and Methods to Control Soil Salinity

11

Ghulam Mustafa and Mohd Sayeed Akhtar

Abstract

Soil salinity can cause havoc for agroecosystem as it is predicted about 50% of land will be saline in the next 50 years, but the coping techniques may reduce and even mitigate the adverse impact of soil salinity. Saline agriculture is already happening in the world, and hence it can be an opportunity for sustainability of agriculture. There are many crops that perform better in salt-affected areas that farmers need to adapt under saline soil. This is because of the reason that adaptation to soil salinity is highly positive externality that increases the farmer well-being through increased crop production. However, the dilemma is that most of farmers in developing world are unaware to these crop of salt-affected areas and methods of adaptation techniques under salt-affected areas. Thus, the main focus of the present chapter is to give an overview of the past and present studies undergoing on crops and methods to reduce and even mitigate the adverse impact of soil salinity.

Keywords

Adaptation · Soil salinity · Cost-benefit analysis · Externalities · Environmental impact

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Chapter 6
Data Measurement, Data Redundancy, and Their Biological Relevance

Mohd Sayeed Akhtar, Ibrahim A. Alaraidh, and Mallappa Kumara Swamy

Contents

6.1 Introduction

The fundamental feature of DNA and protein molecules is that they can be organized in the form of digital symbols and digitally stored as a data (De Silva and Ganegoda 2016). Nucleotides (adenine, guanine, thymine, and cytosine) and amino acids (tyrosine, glycine, histidine, lysine, etc.) are distinct, although chemically modified sometimes (Akhtar et al. 2017). Scientists are continuously stepping up their efforts to understand the genetic or biological processes that are connected clinically with the initiation and progression of various diseases. There is a flood of genomic and protein sequence data, which provides a clue on various biological processes, protein interactions, and disease paths. Thus, exploiting these sequence data can

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Chapter 9
Experimental Approaches for Genome Sequencing

Mohd Sayeed Akhtar, Ibrahim A. Alaraidh, and Khalid Rehman Hakeem

Contents

9.1 Introduction

Genome sequencing is developing rapidly as a revolutionizing field due to advances in DNA sequencing technologies and started the new era in the field of molecular biology (Kelley and Salzberg 2010; Ruperao et al. 2014; Khan et al. 2016; Visendi et al. 2016). The scientist working in this arena has gained the popularity by manipulating the DNA molecules for the study of genes and their harness toward the development sparking a new revolution in biological investigations (Fuller et al. 2006; Hsu et al. 2014). These recent advances in genome sequencing served as an important tool in basic and translational research, drug development, and clinical

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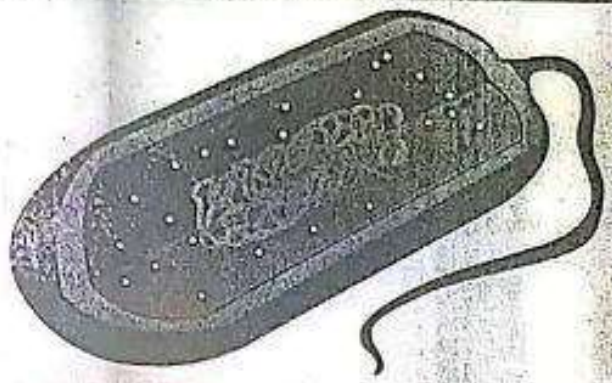

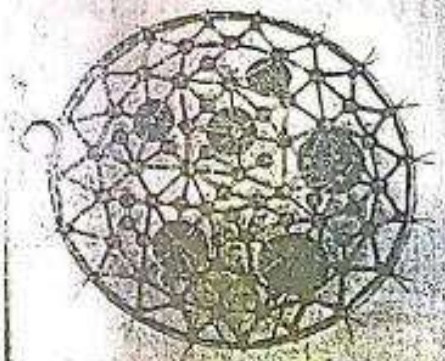

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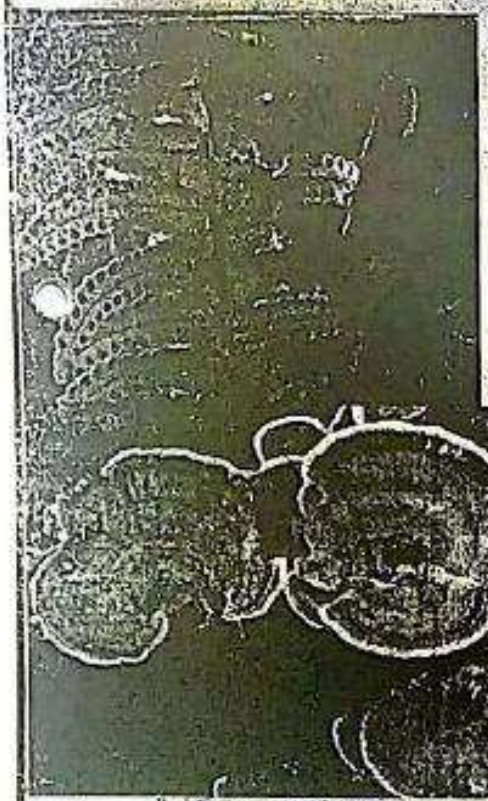

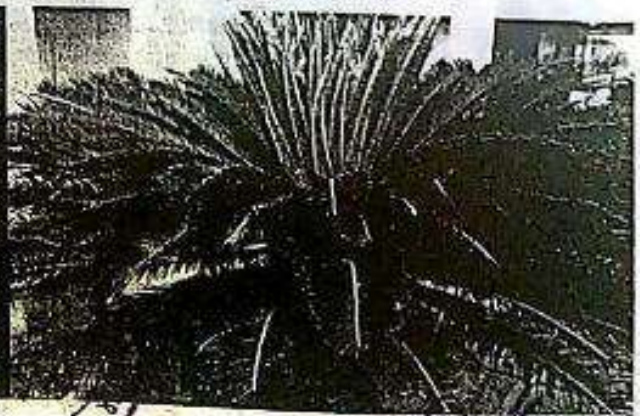

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CLIMATE CHANGE AND GLOBAL WARMING AND ITS CONSEQUENCES

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Abstract

There are numerous natural and human activities collectively responsible for climate changes. Climate change leads to several adverse effects on all living being on the earth. It is required to aware the peoples about this ethically. There is no use of one group of countries reducing their emission if another group increases them. The problem can be solved only if all the countries join together and control the GHG emission to a safe limit. The challenges before us are therefore to protect our environment and ensure the well being for future. In present section efforts have been made to summarize the several causes and consequences as well as some useful strategies.

Key Words: Climate changes, Greenhouse gasses, Environment

Introduction

Climate is a average, or typical, weather conditions that include the type and timing of precipitation or rain fall, amount of sunshine or temperature, average wind speeds and directions, humidity, atmospheric pressure, atmospheric particles count and chemistry and weather extremes and durations, thereof observed over a long period of time for a given area-land or ocean or atmosphere. Different areas have different climate profiles [1].

Climate change refers to a statistically significant variation in either the average or a typical weather conditions or in their variability, persisting for an extended period (typically decades or longer). At present climate variation with an upward bias for sunshine or temperature for all areas of world is the pattern of climate change existing with catastrophic climate-induced complications. Climate change is one of the multifaceted problems, facing mankind today. The overriding complication of the problem is attributed to its deeper implication on a vast range of issues impacting very survival of life on earth [1, 2].

Causes of climate change

There are a number of natural and man-made factors responsible for climate change. Some of the more prominent ones are continental drift, volcanic eruptions, earth orbital changes, solar variations, ocean currents and the earth tilt. Changes in the state of this system can occur externally or internally through any one of the described components. An external change may involve a variation in the sun's output which can externally vary the amount of solarization received by the earth's atmosphere and surface. Internal variations in earth's climatic system may be caused by changes in the concentration of atmospheric gases, mountain building, volcanic emissions and changes in surface or atmospheric reflectivity [3].

Global Warming

The term climate change is often used interchangeably with global warming. Global warming is the increase in average temperature of earths near surface air and ocean often since the mid 20th century and its projected continuation

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DETECTION OF *CANDIDATUS* PHYTOPLASMA ASTERIS AFFECTING *ACALYPHA INDICA* IN CENTRAL UP, INDIA

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ABSTRACT

The typical phytoplasma symptoms of little leaf, yellowing, chlorosis, witches' broom and stunting growth were observed on Aclypha indica plants during the field survey conducted at Shahjahanpur and surrounding districts in year 2017-2018. To confirm the association and possibility of phytoplasma etiology, PCR assays were performed using universal primer pairs (P1/P6) and nested primer pairs (R16F2n/R2) in a total of five diseased samples along with control. A ~1.2 Kb amplicon were observed in nested PCR assay in diseased sample however no band observed in control sample. The positive ampplicons were sequenced for 16S rDNA and used for the virtual RFLP analysis and phylogenetic studies. Phylogenetic analysis showed 99-100% sequence identities with the 'Candidatus phytoplasma asteris' members (16SrI group).

Keywords: Acalypha indica, mollecutes, Candidatus phytoplasma asteris, little leaf, witches broom.

INTRODUCTION

Phytoplasma [earlier- mycoplasma like organism (MLO)] are cell wall less mollicutes that colonize plant phloem sieve tube elements. They are emerging and cause devastating losses in crops and natural ecosystems worldwide. Phytoplasma are transmitted through one plant to others by phloem-feeding insects, primarily leafhoppers, plant hoppers, and psyllids (Bertaccini *et al.*, 2014). They have small genomes and causes disease in many economicaXy important plants. Generally Phytoplasma causes different symptoms of yellowing, stunting of plants, proliferation of shoots, phyllody, verscence, reduced size in plants, which affects their economic value (Berlaccini, 2015). The '*Ca.* P. asteris' 16SrI group is the major group infecting different plant species worldwide (Madhupriya, 2016).

Acalypha indica occurs widely throughout the tropics of the old world. It belongs to the family Euphorbiaceae and a common weed in many parts of Asia including India, Pakistan, Yemen, Sri Lanka and throughout Tropical Africa and South America (Ramachandran, 2008). It has been introduced to areas of the new world with favorable climates. *A. indica* L. is the most frequently and abundantly occurring weed plant in north India during the rainy season. The plants have medicinal properties and are useful in bronchitis, asthma, pneumonia, and rheumatism. Its roots and leaves have laxative properties. This plant is held in high esteem in traditional Tamil Siddha medicine as it is believed to rejuvenate the body (Ramchandran, 2008). In Africa the leaves are cooked and eaten as a vegetable and also browsed by cattle (Schmelzer and Gurib-Fakim, 2008).

In the last few years, many reports focused on the emergences related to new phytoplasma diseases or new outbreaks of already known ones. Diagnosis of phytoplasma through nested PCR assays using universal primers allow the detection of a wide range of unknown phytoplasmas associated with plants (Gundersen and Lee, 1996). In the current investigation, we are reporting an association of '*Ca.* P. asteris' subgroup B with *A. indica* in the world for the first time by nested PCR, sequence analysis and RFLP.

MATERIALS AND METHODS

During survey of Shahjahanpur district in 2017-18, little leaf and witches broom symptoms were recorded in *A. indica*, which were collected for the characterization of associated phytoplasma. Five symptomatic and non-symptomatic leaves samples were collected. Total genomic DNA was isolated according to Ahrens and Seemuller (1992) from symptomatic and non-symptomatic leaf samples and isolated DNA were subjected to PCR with universal primer pairs (P1/P6) (Deng and Hiruki, 1991). PCR product was used as template DNA (1:20) and nested PCR was done with R16F2n/R2 primer (Gundersen and Lee, 1996). Electrophoresis (1%) gel was done to check the presence of phytoplasma. Amplified products were eluted (Nucleo spin, Germany) and directly sequenced. Sequenced were assembled using BioEdit and used for BLASTn analysis.

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IDENTIFICATION OF PHYTOPLASMA AFFECTING *ZINNIA ELEGANS* PLANT IN UTTAR PRADESH

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Abstract

During survey of nurseries at Shahjahanpur district the incidence of phytoplasma disease with the symptoms of typical little-leaf, yellowing were recorded on Zinnia elegans plants. Universal primer pair of P1/P7 amplified the 1.8 kb DNA fragment of phytoplasma 16S-23S rRNA from nucleic acid extracted from two symptomatic Z. elegans plants. Neither by direct (first round) nor by nested PCR, amplification was found from any non-symptomatic plants. BLASTn analysis of the present study isolate revealed more than 99% sequence identity with the 16SrRNA gene of isolates of 'Candidatus Phytoplasma asteris' (16SrI) group and phylogenetic analysis also showed the close relationship with many isolates of 'Ca. P. asteris' group.

Keywords: *Ca.* P. *asteris*, *Zinnia elegans*, India

Introduction

Phytoplasmas are gaining international importance because of unspecific symptoms, serious economic losses and diverse epidemiology throughout the world. Epidemics of these diseases have compelled withdrawal of many ornamental plant varieties from cultivation. General yellowing and stunting of plants, proliferation of shoots, phyllody, virescence and reduced size of flowers and reddening of leaves are the common symptoms observed on ornamental plants which cause serious economic losses [1].

Zinnia is a annual plant of family *Asteraceae*, and notable for its solitary long-stemmed flowers that come in a variety of bright colors. *Zinnia elegans*, is the most familiar species, originally from Mexico and thus a warm-hot climate plant. In this paper, we have reported the occurrence, identification, characterization of phytoplasma on *Zinnia elegans* plants in India for the first time.

Materials and Methods

Survey

For the incidence of phytoplasma disease on the ornamental plants survey were made during the seasons of 2008-09. Zinnia plants showing the symptoms of phytoplasmas were recorded at the garden of Sugarcane Research Station campus, Gorakhpur, Uttar Pradesh, India

DNA Isolation

Procedure of Ahrens and Seemuller (1992) was followed for isolation of DNA from phytoplasma infected *Z. elegans* plants. 500 mg leaf veins were grinded in pre-cool motor and pestle in 6 ml of grinding buffer [2]. The homogenate was centrifuged at 4°C for 4 min at 5,000 rpm. The pellet was discarded. The supernatant was again centrifuged at 4°C for 25 min at 10,000 rpm. The pellet was resuspended in 1.5 ml of warm (60°C) extraction buffer and incubated at 60°C for 30 min in water bath followed by RNAse (50 µg/ml) treatment at 37°C for 30 min. It was

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PHYTOPLASMA DISEASES ON WEEDS IN INDIA-A REVIEW

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Abstract

Phytoplasma cause diseases in several plant species and resulted in serious threat as a source of alternative natural host for the spread of phytoplasma pathogen to other economically important plants and thereby chances of causing severe losses. In earlier days very few phytoplasma diseases were identified in India merely on the basis of bright field, fluorescence, electronmicroscope observations, tetracycline treatment and to a lesser extent by serological assays. Among these, microscopic methods do not attain pathogen identification, and all of them are not always sufficiently sensitive to detect phytoplasma infections in low titer hosts. Today detection of phytoplasma based on molecular genetic methods including PCR assays are efficiently carried out in India and on that basis several plant species are reported to have phytoplasma infections. So far more than 37 plant species have been reported to be associated with phytoplasma infections from all over India. The "Candidatus Phytoplasma asteris", "Candidatus Phytoplasma aurantifolia", "Candidatus Phytoplasma trifolii" and "Candidatus Phytoplasma cynodontis" belong to 16SrI, 16SrII, 16SrVI and 16SrXIV group of phytoplasmas are the major groups associated with different species reported to be infected with phytoplasma throughout India. In this article, we have discussed overall progress on phytoplasma disease on plant species in India in terms of taxonomy, symptomatology, economic significance and characterization.

Keywords: Phytoplasma, 16Sr-RNA sequences, genetic diversity

1. Introduction

Several weeds are reservoirs of important phytoplasma that caused serious diseases to important commercial crops and play an important role in spreading phytoplasmas and serve as natural alternative hosts [1,2]. Phytoplasmas cause diseases in several weeds and resultedin serious threat as a source of alternative natural host for the spread of phytoplasma pathogen to other economically important plants and thereby chances of causing severelosses. Early detection of these phytoplasma associated with diseases of weed crops is very important to check the possibility of further spread of phytoplasma diseases to other commercial crops. The phytoplasma detected in weed species are described herein: *Bermuda grass "Ca.* P. cynodontis", was reported in Bermuda grass on the basis of molecular detectionin UP, India [3,4]. Bermuda grass (*Cynodon dactylon* L. Pers.), family Poaceae is a hardy, evergreen, perennial grass with long rapid-growing, creeping runners or stolons. It is a valuable pasture and excellent fodder grass, staying greeneven during hot and dry weather. Characteristic symptoms of extensive chlorosis, proliferation of axillary shoots, bushy growing habit, small leaves, shortened stolons, rhizomes and stunting are reported on Bermuda grass in India [3,4]. Phytoplasma infections were identified with nested PCR assay using universal phytoplasma primers (P1/P7 and P4/P7) directed to rDNA sequences. The second round of amplification with the nested primers P4/P7, expected ~1.25 kb bands of the phytoplasmas 16S rDNA was amplified. The amplified product was cloned, sequenced [5]. Bermuda grass white leaf Indian strain (BGWL-In) proved to be identical with BGWL phytoplasma strains from Italy, Sudan, Thailand, Indonesia, Australia and Iran as well as to the date palm white tip die-back (DPWTD) and date palm slow decline (DP-SD) phytoplasmas [6]. The data obtained showed that

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MEDICINAL PLANT DIVERSITY IN WESTERN UTTAR PRADESH INDIA

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Abstract

The wealth of medicinal plants is one of the vital resources having important bearing on human health and the region's economy. Most pharmaceutical entrepreneurs associated with Ayurvedic and Unani system of medicine used crude drugs collected from plant resources in the recent past, and so the quality of crude drugs utilized has increased many times. Fortunately India endowed with many natural blessings in terms of human health and welfare such as congenial climate and soil for rich plant growth and in this connection medicinal plant gain special significance. Recently efforts have been made to reveal medicinal plant diversity through ethnobotanical explorations. In India the literature on diverse native floras and medical uses of plant is voluminous. A perusal of literature reveals that Aligarh, Bareilly, Pilibhit and Shahjahanpur district of western Uttar Pradesh have never been surveyed from the ethnobotanical point of view. Such studies can doubtless help to discover new drug plants provided the studies are conducted significantly. Expeditions have been undertaken primarily by investigator interested in valuable information regarding the uses of plants for the treatment of different ailments.

Keywords: Ayurvedic, ethnobotany, medicinal plants

Introduction

Our ancestors lived and spent their life, cages, in the forests, crevices of mountains, shelter of plants, and open areas. Hence they had very much knowledge of valuable medicinal plants and secured their life from various types of serious diseases. In view of the innate Indian strengths, which include diver's ecosystems for growth of herbal plants, farming capacity, strong manufacturing sector, the medicinal plants sector can provide a huge export opportunity after fulfilling domestic needs (Kumar et al., 2003). Nature has bestowed our country with an enormous wealth of medicinal plants, therefore, India has often been refered to as the "medicinal garden of the world" (Katewa and Sharma, 2001). They believed that some plants (especially medicinal plants) had divine qualities. Ayurveda and traditional Chinese medicines are well known to the world for their natural ingredients and multiple benefits (Sachan et al., 2015). Medicinal plants are being looked upon not only as a source of health care but also as a source of income (Sachan et al., 2015). In the present studies, an attempt was made to find out medicinal plants wealth of western Uttar Praadesh, India.

Materials and Methods

Uttar Pradesh state is located between latitude 26.84°N and longitude 80.94°E. The annual average rainfall of the state is 1025 mm and the soil is fertile alluvial and sandy to clayey loamy in general. Here my studies, western part of Uttar Pradesh, was divided in five regions i.e. Bareilly, Aligarh, Pilibhit, Shajahanpur, regions, were selected for the study. The medicinal plants of this region in different habitats such as forest land, orchard lands, crop lands, agricultural land, near the road side, near the houses, Factories or buildings, From anywhere of medicinal plants were located and identified. recognition of the collected (non-identified plant species) small medicinal plants was done at the laboratory by observing their morphological characters with experts when its necessary the plants were identified with the help of clear closer photograph also which clicked

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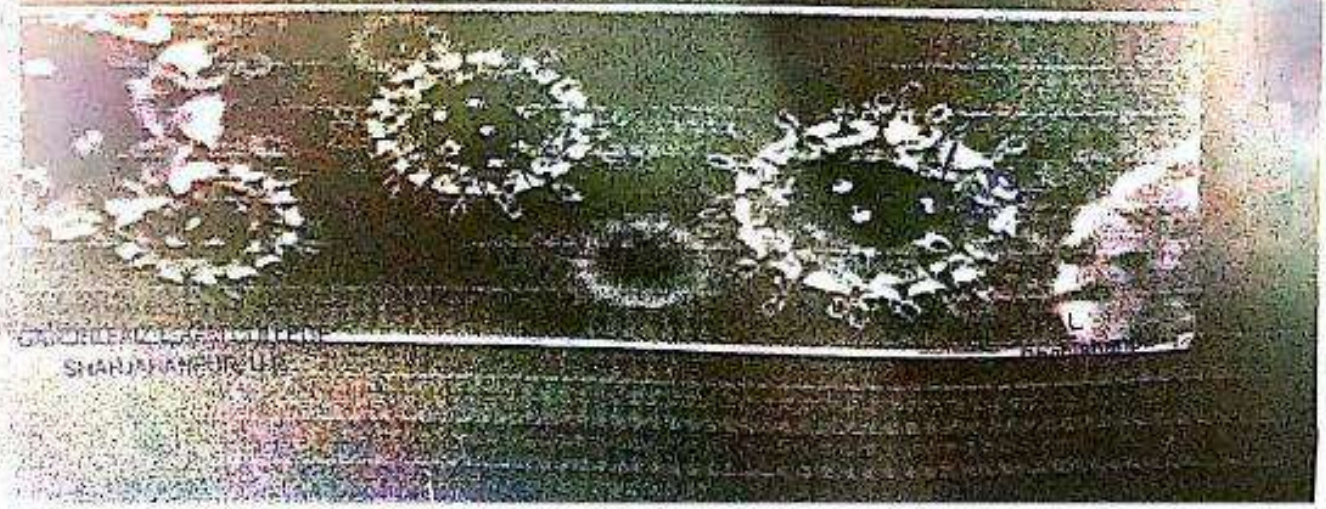

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NANO MEDICINE: SOLVE YOUR HEALTH PROBLEMS AT 10^{-9} LEVEL

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Abstract

Application of Nanotechnology involves various fields such as health, medicine, electronics, energy and environment. Applications of nano particles in drug delivery, protein and peptide delivery, cancer explained. Applications of various nano systems in cancer therapy such as carbon nano tube, dendrimers, nano crystal, nano wire, nano shells etc.) are discussed in this chapter. Nano technology is also helpful in tuberculosis treatment, in ophthalmology, in surgery, visualization, tissue engineering, antibiotic resistance, immune response.

Keywords: Carbon nano tubes, Dendrimers, Drug delivery, Nano particles.

Introduction

Nanotechnology deals with materials in the size of 0.1 to 100 nm; however it is also inherent that these materials should display different properties such as electrical conductance chemical reactivity, magnetism, optical effects and physical strength, from bulk materials as a result of their small size. Nanotechnology works on matter at dimensions in the nanometer scale length (1-100 nm), and thus can be used for a broad range of applications and the creation of various types of nano materials and nano devices. Nano structure consists of nano particles, dendrimers, micelles, drug conjugates, metallic nano particles etc.

Carbon nano tubes: These are small macromolecules that are unique importance for biomedical use.

Liposomes: These have been extensively explored and most developed nano carriers for novel and targeted drug delivery due to their small size, these are 50-200 nm in size. When dry phospholipids are hydrated, closed vesicles are formed. Liposomes are biocompatible, versatile and have good entrapment efficiency. It finds application as long circulatory and in passive and active delivery of gene, protein and peptide.

Dendrimers: Dendrimers are hyper branched, tree-like structures. It contains three different regions: core moiety, branching units, and closely packed surface. It has globular structure and encloses internal cavities. Its size is less than 10 nm. These are used for long for their size, shape, and have unique physical properties. Nano tubes have some special advantages over other drug delivery and diagnostic systems due to their unique physical properties.

Metallic nano particles: Metallic nano particles have used in drug delivery, especially in treatment of cancer and also in biosensors. Amongst various metals, silver and gold nano particles are of prime circulatory, controlled delivery of bioactive material, targeted delivery of bioactive particles to macrophages and liver targeted delivery.

Classification of Nano Materials

Nano materials can be classified dimension wise into following categories: Classification Examples

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EXAMINING THE IMPRESSION OF GREEN MANAGEMENT ON OPERATION FUNCTIONS: CASE OF A BUSINESS

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Abstract

Green management is a paradigm that includes improving environmental awareness, using energy resources and eco-friendly technologies, reuse of wastes, and recycling activities starting from production activities of businesses to packaging and delivering to consumers. Businesses have now become aware that environment must be preserved and tended towards green management as a result of destructed and demolished environment, and the effect of hunger, scarcity, global problems despite developed societies. Businesses have switched from traditional management mentality to environment oriented green management. The objective of green management is to ensure operation activities be performed in accord with environment, to practice environment in business objectives, visions and goals as well as operation functions, to enable continuous development, and to select technologies in accordance with sustainability principle. The aim of this study was to examine business's success in green management, activities and green management vision. The present study discussed a business that uses green management with case study, a qualitative research method. It is concluded that social responsibility acts on business's awareness to green management, businesses provide their personnel with orientation training on green management practices. Protect the environment by applying green management, the business raises consumer awareness, focusing on being environmentally friendly in their ads.

Keywords: Green management, Businesses, environmental,eco-friendly, global problems.

1. Introduction

For many years, businesses have been able to carry out their tasks by adopting general management systems regardless of environmental harm. The gases that are circulating, natural harm caused by chemical substances, solid waste and environmental damage due to environmental pollution are ignored. With global warming, businesses direct their businesses towards green management that focuses on the environment by realizing environmental harms. In the 21st century, business products are able to carry environmentally friendly constructs on their existence, increasing their profitability and productivity as they interact with the environment. Businesses adopt green management applications to minimize harm on the environment. With environmentally friendly productions, environmentally friendly technologies, environmental consciousness businesses have an edge over their competitors. Almost every field develops environmentally friendly activities in itself through various applications. Environmentally friendly hybrid vehicles in the automotive sector,production of papers that are suitable for recycling in the paper industry. Green Star applications in tourism, facility for recycling of packing in food sector and production of environmentally friendly productions in various activities Can be counted as. Place in green management focused environment. There are factors and powers that encourage businesses to green management. The government through its rules and applications encourages businesses to have green management. The government supplies certain privileges and grants to businesses

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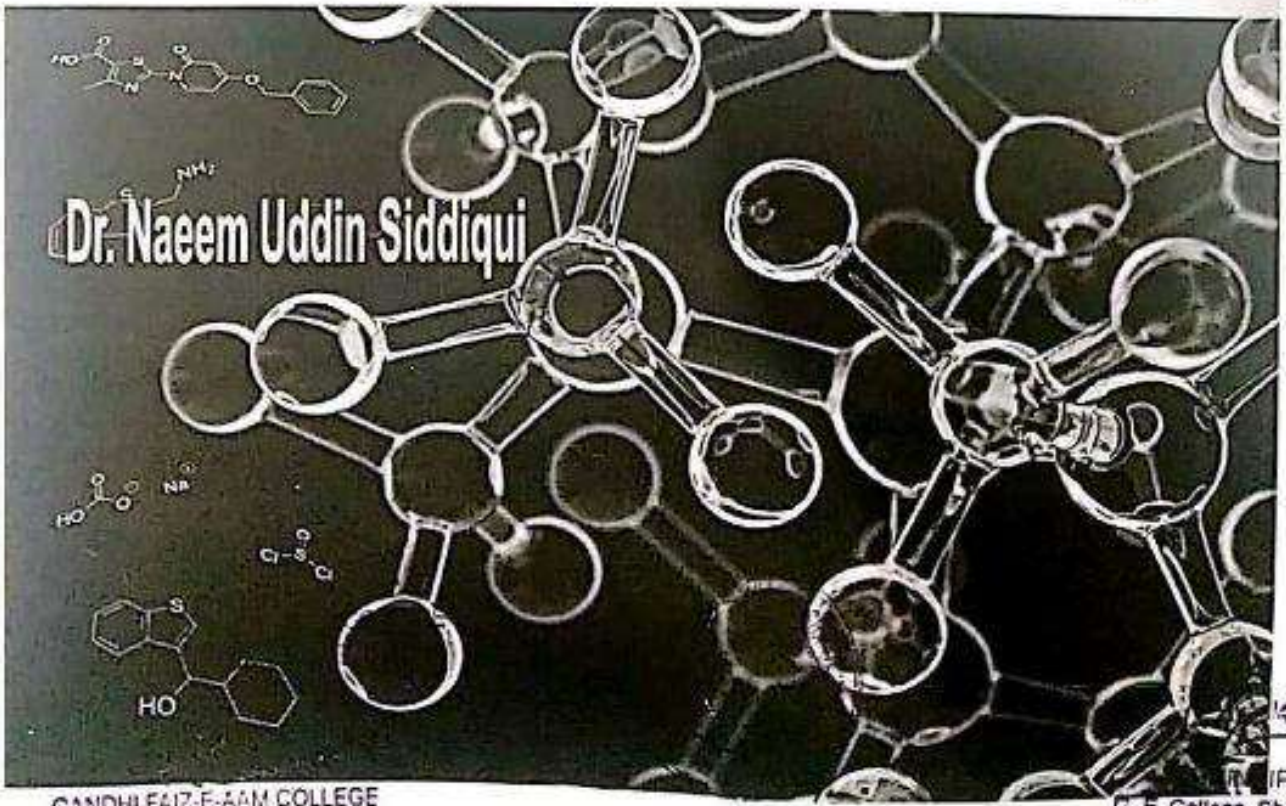

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ECO-FRIENDLY DEVELOPMENT THROUGH GREEN CHEMISTRY

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Abstract

With the help of chemistry many organic compounds were synthesized such as drugs, dye, antibiotics, plastics and other material which increase the quality of life on earth and food supply is also increased by the discovery of hybrid variety of seeds, improving method of farming, insecticides, herbicides and fertilizers. Seen the hazardous effect of chemistry pharmacutical the pollution of land, water and atmosphere. This effect is caused by the products of chemicals industries which are being discharge in to the river land and atmosphere. As on today maximum pollution in atmosphere is caused by numerous chemical industries. Green chemistry design chemical processes to less harmful to environment and human health. Green chemistry informed that manufacturing process such a way that the waste products are minimum, select safer chemicals, obtained product should be bio degradable and atom economy should be high.

Key wards: Green chemistry, safe chemicals and Eco-friendly.

Introduction

Green chemistry is an important branch of chemistry which deals with the relation between chemical products and environmental effect.Green chemistry aims to protect the environment not by cleaning up but also by inventing new chemical processes that do not pollute. Chemistry has provided valuable materials in the form of medicines, food products, cosmatics, dyes, paints, agro-chemicals, polymers, liquid crystals, biochemicals and nanoparticles.In many chemical reaction, chemicals such as reagents, solvents, acids, bases alkali etc are used as huge quantities. These chemicals are not onlyproduce product but also produced large quantities of undesired and harmful substances in the form of solids, liquids and gases and have become the biggest challenge that chemistry has face. So, the pressing need for the synthetic chemist is to minimize chemical pollution. Due to above problems scientiests worked on this direction.

Term Green chemistry was coined by Anastas in 1991. The purpose of Green chemistry to design chemical processes that will be less harmfulto human health and environment. The revolution of green chemistry provided on enormous number of opportunity to discover and apply new synthetic eco-friendly reaction to minimization of energy and the design less toxic and inherently safer chemical. On the basis of Green chemistry for achieving environmental and economic prosperity is inherent in sustainable world[1].Green chemistry is utilization a set of twelve principles that reduces or eliminate the uses of hazardous substancemanufacture and application of chemical product[2]. The twelve principle of Green chemistry provides valuable guidelines to chemistfordeveloping technology to synthesisless harmful chemical compounds.

Basic principle of green chemistry

(I) Prevention of waste/by products

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Nanoparticles for Drug Delivery

Abu Tariq, Showkat Ahmad Bhawani and Abdul Moheman

Abstract Since ages human kind is using natural and synthetic compounds for the cure of diseases. By large synthetic compounds have edged the natural compounds. Discovery of nanomaterials paved way for smart treatment of diseases which were considered incurable. Nanomedicine and nano drug delivery systems are developing at a very fast pace offering multiple benefits in the treatment of chronic human ailments such as cancer, HIV and many other diseases by target-oriented and site-specific delivery of medicines. A detailed importance of nanomaterials in drug delivery systems is given in this chapter. This chapter also presented a comprehensive scrutiny of the nanomaterials that are handy in targeted and site specific delivery of drugs, their synthesis and applications in the field of drug delivery.

Keywords Nanomaterials · Nanomedicine · Cancer · Drug delivery

1 Introduction

Nanomaterials are organic or inorganic structures with size ranged 1–100 nm, which is comparable to the size of antibodies and DNA plasmids (Whitesides 2003; Lowe 2000; Wang et al. 2008). These materials are responsible for ground breaking change in the field of nanomedicine which includes drug delivery, biosensors and microfluidics (Arayne et al. 2007; Patra and Baek 2014; Joseph and Venkatraman 2017). Mundane and extensive research has been witnessed in past decades in the field of

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USE OF SURFACTANTS AS ELUENTS IN SOIL THIN LAYER CHROMATOGRAPHY OF HEAVY METALS: A GREEN APPROACH TO CHROMATOGRAPHY

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Abstract

Surfactants as green eluents in soil thin layer chromatography (soil TLC) have been used to investigate the separation and migration behaviour of heavy metal ions. These green eluents exterminate or lessen the use of toxic volatile organic eluents and protect the environment from further decay. Surfactant assisted soil TLC involving the use of well powdered natural soil / soil mixed with cellulose as the stationary phase and aqueous solution of surfactants/ mixed surfactants as mobile phase passes to classify our developed methods as Green. The salient features of chromatographic systems used in the identification and separation of heavy metal ions have been provided in the tabular form.

Keywords: Soil thin layer chromatography, Heavy metals, Surfactants, Biosurfactants, Green eluents.

1. Introduction

1.1. Surfactants

Surfactants are amphiphilic molecules that usually consist of a hydrophobic group (water hating) and a hydrophilic group (water loving) in the same molecule. They can be produced chemically (synthetic surfactants) and biologically (biosurfactants). The most important characteristic of surfactants is the formation of micelles (small aggregates of surfactants molecules). At low concentrations in aqueous solutions, single molecules are existent. Beyond a certain concentration (Critical Micelle Concentration, CMC), the surfactant molecules cluster together, forming aggregates of ~20-200 molecules. The CMC is temperature-dependent and dissimilar for every surfactant. The CMC is defined as "the minimum concentration necessary to initiate the micelles formation". The presence of micelles increases the solubility of hydrophilic organic compounds. The adsorption of surfactant molecules onto soil is dependent on the physicochemical properties of soil and the nature of surfactant [1-3]. Most of the studies demonstrated that both desorption and mobilization of organic and inorganic pollutants from soil can be improved by the addition of surfactants [4-8].

1.2. Heavy Metals

Heavy metals are the most toxic inorganic chemical pollutants. They enter in the soil through various sources such as industrial and mining processes, agricultural activities, atmospheric deposition, sewage sludge, and waste water etc. Contamination of soil by heavy metals may pose a risk to human health if the toxic heavy metals enter the food chain. Theefficacy of heavy metals in soil is governed by the nature and the extent of clay minerals, organic matter content, pH, water content, soil temperature and properties of the particular metal ion [9-11].

1.3. Soil Thin Layer Chromatography

Soil thin layer chromatography (Soil TLC) is an adsorption chromatography wherein adsorbent is a thin layer of soil spread on a flat inert surface (e.g. glass plate, plastic sheet). It was

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MIXED MICELLE FORMATION OF GEMINI SURFACTANT IN THE PRESENCE OF ADDITIVES AND ITS IMPORTANCE IN GREEN CHEMISTRY

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Abstract

Gemini surfactants are an interesting class of surfactants whose ability to strongly reduce surface tension makes them potentially useful as detergents. They are made up of two amphiphilic moieties connected by a spacer group of varied nature at or near the polar head groups. Mixed micellization and interfacial properties of cationic gemini surfactant butanediyl -1, 4-bis(dimethyldodecylammonium bromide) (12-4-12) have been studied in the presence and absence of various alcohols (1,2-butanediol, 2-methyl-1-butanol, 2-ethyl-1 butanol, 2-butene-1,4-diol). Parameters studied include cmc (critical micelle concentration), C_{20} (concentration required to reduce the surface tension of the solvent by 20 mN/m), Λ_{max} (maximum surface excess concentration at air/solution interface), and A_{min} (minimum area per surfactant molecule). These parameters indicate mixed micellization between the surfactants and alcohols. The theories of Rosen and Rubingh have been used to investigate the interactions between the constituents at the interface and in the micellar solution.

Keywords: Alcohols, gemini surfactant, mixed micelle, cosmetics, CMC.

Introduction

Gemini or dimeric surfactants are the surfactants that have two hydrophilic groups and two hydrophobic groups per molecule, rather than the single hydrophilic and the single hydrophobic group of conventional surfactants. Their surface properties were first described by Mitsui Okahara of Osaka University and his colleagues [1-4], who synthesized them in their laboratories.

Compared with conventional surfactants, dimeric surfactants (gemini surfactants) are more efficient in lowering surface tension and have a much lower critical micelle concentration (CMC) and better wetting properties [5-7]. They possess specific rheological and some specific aggregation properties. Therefore, it is not surprising that today they are widely used as effective emulsifiers, bactericidal agents, dispersants, antifoaming agents, detergents, etc. An important feature of these surfactants is the ability to design their physicochemical properties, supramolecular structure, and biodegradability by changing the nature and size of the spacer and alkyl chains.

The general structure of the gemini surfactant is shown in Figure given below.

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Role of Ethyleneamines in Mixed Micellization with Cationic Gemini Surfactant Butanediyl- 1, 4- bis(dimethylcetylammonium bromide) (16-4-16)

Rivaj Mohammad*

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GREEN SYNTHESIS OF BIOLOGICALLY ACTIVE SPIRO (CYCLOHEXANE-1:2-THIAZOLIDIN)-4-ONE DERIVATIVES

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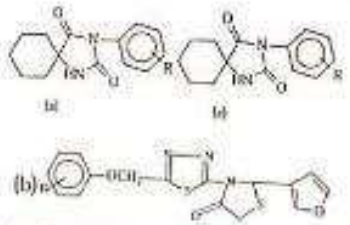
Abstract

Thiazolidinone derivatives are known to have various biological properties[1]. Similarly 1,3,4-thidiazole derivatives are well known for their herbicidal, fungicidal and bactericidal properties[2]. Some cyclohexane spiro imidazoline have been reported as anthelminthicides[3] (a). There is a record when a thiadiazole ring is coupled with another heterocyclic system compounds of better biological activities are obtained (b). Keeping all these observation in mind it was thought of interest to unite 1,3,4-thiadiazole system with 4-thiazolidinone to see how much this combination would sum up towards physiological properties in the title compound (IV). In order to get some biologically active compounds a cyclohexane ring, a thiadiazole ring and a thiazolidinone ring all were combined in one compound with the help of some classical methods. But in new synthesis the main aim to synthesize bioactive compound was associated with replacement of unhealthy solvent with green solvent. 2-amino-5-aryl-1,3,4-thiadiazole was synthesized by the procedure of Maffi et al[4]. The obtained compound when refluxed with cyclohexane provided 2-(cyclohexylidene hydrazino-5-aryl-1,3,4- thiadiazole. Finally the treatment of newly formed compound with mercaptoacetic acid furnished the desired compound 3-[5-aryl-(1,3,4)-thiadiazol-2-yl] spiro (cyclohexane-1:2'-thiazolidin)-4-one.



Key Words: Heterocyclic Fungicides, Herbicides, Thiazolidinones, Thiadiazoles

Introduction

1.1. Biologically Active Heterocyclic Compounds

The first most popular synthetic organic pesticide was DDT, the insecticidal properties of which were discovered by Paul Mullar in 1938. During the same period many commercial organic compounds having biocidal properties were discovered. BHC, a Napthyl thiourea had been used as potent pesticides, the herbicidal properties of S- triazine was discovered in 1952 by a research group of J.R. Geigy. In last few decades extensive research work have been done on biologically active azoles incorporating nitrogen, nitrogen and oxygen, nitrogen and sulphur, nitrogen and phosphurous heteroatoms in the ring. A number of azoles like pyrazole, imidazole, thiazole, oxazole thiadiazole,oxadiazoles, triazoles,and many more heterocycles have been exploited in designing as therapeutics and agrochemicals.

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GREEN CHEMISTRY: A TOOL FOR SUSTAINABILITY AND SUSTAINABLE DEVELOPMENT

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Abstract

Green chemistry, which was established about two decades ago, has attracted much attention. It reflects the efforts of academia and industry to address the challenges related to sustainable development of the chemical industry, and continuous progress is being made, both in academia and industry. Briefly, green chemistry is the utilization of a set of principles to reduce or eliminate the use or generation of hazardous substances in the design, manufacture and applications of chemical products. Green chemistry is a multidisciplinary field and covers areas such as synthesis, solvents, catalysis, raw materials, products and efficient processes, as shown in figure.

Keywords: Green chemistry, Environmental sustainability, Sustainable development

Introduction

Important examples of green chemistry include: phasing out the use of chlorofluorocarbons (CFCs) in refrigerants, which have played a role in creating the ozone hole; developing more efficient ways of making pharmaceuticals, including the well-known painkiller ibuprofen and chemotherapy drug Taxol; and developing cheaper, more efficient solar cells.Making chemical compounds, particularly organic molecules (composed predominantly of carbon and hydrogen atoms), is the basis of vast multinational industries from perfumes to plastics, farming to fabric, and dyes to drugs. In a perfect world, these would be prepared from inexpensive, renewable sources in one practical, efficient, safe and environmentally benign chemical reaction. Unfortunately, with the exception of the chemical processes found in nature, the majority of chemical processes are not completely efficient, require multiple reaction steps and generate hazardous by-products. While in the past traditional waste management strategies focused only on the disposal of toxic by-products, today efforts have shifted to eliminating waste from the outset by making chemical reactions more efficient.

This adjustment has, in part, led to the advent of more sophisticated and effective catalytic reactions, which reduce the amount of waste. The 2001 Chemistry Nobel Laureate RyojiNoyori stressed that catalytic processes represent "the only methods that offer the rational means of producing useful compounds in an economical, energy-saving and environmentally benign way". Green chemistry will be one of the most important fields in the future. Although this field has developed rapidly in the last 20 years, it is still at an early stage. Promoting green chemistry is a long-term task, and many challenging scientific and technological issues need to be resolved; these are related to chemistry, material science, engineering, environmental science, physics and biology. Scientists, engineers and industrialists should work together to promote the development of this field. There is no doubt that the development and implementation of green chemistry will contribute greatly to the sustainable development of our society.

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Removal of Pb(II) from Industrial Wastewater Using of CuO/Alg Nanocomposite

Afzal Ansari, Vasi Uddin Siddiqui, M. Khursheed Akram, Weqar Ahmad Siddiqi and Shabana Sajid

Abstract Wastewater adversely affects humans and another animal including metal like Pb, As, Zn, Hg, and Cd in wastewater (domestic or industrial). These toxic metals affect human health and are a serious threat to the environment by the precipitation, adsorption, accumulation in the food chain and non-biodegradable nature, respectively. In the present study, treatment of industrial wastewater in terms of toxic Pb(II) removal was investigated by the using of copper oxide alginate (CuO/Alg) nanocomposite. The CuO/Alg nanocomposite was prepared by chemical reduction method in solution phase, and synthesized particles size were characterized by X-ray diffraction (XRD), transmission electron microscopy (TEM), scanning electron microscopy (SEM), and Fourier transform infrared spectroscopy (FTIR). The wastewater sample collected from WWTP of the local electroplating industry is located in Okhla Industrial Area, New Delhi. A series of experimental approaches have been used to remove Pb^{2+} from industrial wastewater with CuO/Alg nanocomposite, which includes sorbent mass, competitive ion, contact time, and SEM. The SEM image of CuO/Alg nanocomposite showed that particles had a sheet-like shape and mean diameter of about 18.09 nm. The test was performed under the batch condition to determine the adsorption rate and uptake at equilibrium from single component solution. The maximum uptake value of Pb^{2+} in single component solution was 118.40 mg/g from wastewater. The CuO/Alg nanocomposite identified as the most promising sorbent with an effective potential of removal of Pb^{2+} from wastewater is due to their high metal uptake.

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SYNTHESIS AND STUDY OF WEEDICIDAL ACTIVITY OF THIADIAZEPINES DERIVATIVES

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Abstract

Several diazoles are known to exhibit herbicidal, fungicidal, pesticidal and plant growth regulator properties[1]. Several seven membered heterocyclic compound have been reported to have good medicinal utility but any information related to its herbicidal or pesticidal or weedicidal character is not available[2] so it was thought to combine a diazole nucleus with a seven or eight membered heterocyclic ring in hope to get a new compound of better weedicidal activity. For this purpose 7-aryl-2,4-dimethyl-1,3-diazolo [2,3-b] [1,3,4]thiadiazepines were synthesized by refluxing a mixture of 4-aryl-5-amino-2-mercapto-1,3-diazole and 2,4-pentanedione and then tested for its weedicidal properties. Some of the synthesized compounds showed good weedicidal activity along with a very low phytotoxicity to the host plant.

Key Words: Weedicides, Diazoles, Thiadiazepines, Bioactive Heterocyclic Compounds

Introduction

There are several records of mass destruction of crops caused by weeds. It has been estimated that about 12% of the total world crop is lost annually because of the weed. This decrease in the total food output in the present context of the population growth will be a dangerous signal in many parts of the world. In this struggle chemical weedicides especially organic chemicals have played a very significant role.

1.1. What is Weed

A weed is any plant either wild or cultivated variety that is undesired in particular area. In agriculture and horticulture weeds are thus any plant other than specific crop being grown. The designation weed covers a verity of herb, shrub and other small plants according to the situation[3].

1.2. What are Weedicides

Weedicides are those chemicals which are used to kill the weeds. A good organic weedicide should have following characteristics.

1. It should posses acute and chronic activity to the targeted weed.
2. Its toxicity should be very low on human beings, animals and desired crop.
3. It should be convenient in use, storage and transportation.
4. Its synthesis and use should be highly economic.
5. It should not be persistant in soil and should decompose after a short active life.

1.3. Need of New Weedicide

A weed may be good or bad. A good weed helps in binding the soil and reduces erosion of soil due to strong wind and rain. But a bad weed shares the moisture and nutrients of the soil with the main crop sown in the field. So it is very needed to remove bad weeds from the agricultural

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RENEWABLE RESOURCES AND ITS IMPACT ON SUSTAINABLE DEVELOPMENT

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Abstract

Much attention has been paid to achieve the ultimate goal of sustainability. Vigorous efforts have been made through interdisciplinary approaches in this regard. Numerous agricultural based starting materials have been reported for development of eco-friendly materials of viable applications design new route to excessive utilization of these materials. Among different renewable resources vegetable oils are largely spotted by the academicians due to unique characteristics eco-friendly characteristics. In present overview efforts has been made to discuss the different characteristic of the vegetable oil.

Key words: Vegetable oil, Renewable resource, Sustainable development

Introduction

Now-a-days much attention has been paying to achieve the ultimate goal of sustainability. The sustainability means utilization of available resources for today without compromising the availability of resources for future generation. Numerous efforts have been made through interdisciplinary approaches of social sciences, natural sciences, agricultural sciences and many others to overarching goal.

Utilization of natural renewable resources as a starting material in the development of value added materials promises to several advantages in addition [1, 2]. They have inbuilt functionality for biodegradation no or low toxicity towards human being.Utilization of natural renewable resources especially from agricultural origin significantly contributes towards sustainable development. Such type of feedstock has additional advantages that they can grow again and again. Furthermore their productivity can be increased on demand by more cultivation of particular species. Increasing vegetation improves the environmental condition and also reduces the emission of greenhouse gases [2]. There are need to explore the agricultural based raw resources to architect the useful materials which not only reduces the environmental problem but also provide a route of sustainability.

Numerous agricultural based starting materials have been reported for development of eco-friendly materials of viable applications design new route to excessive utilization of these materials. Some common example of renewable raw materials spotted by researchers now-a-days are empty fruit bunches, wood, bagasse, by-products of carbohydrate hydrolysis, lactic acid, oils and fats of different origin and many others [3].

Vegetable oil

Vegetable oils especially are obtained from the seeds of different plants largely spotted by the academicians and scientific community due to its unique characteristics. These are abundantly available throughout the world, low price, low toxicity towards human beings, inherent biodegradability. Inbuilt availability of various functional groups like double bonds, hydroxyl groups, ester, active methylene, vinyl, allyl, oxirane and many others makes them further suitable for derivatization [3,4].

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BIOMASS BASED COMPOSITES FROM DIFFERENT SOURCES

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Abstract

The use of biomass as an energy source has considerably been increasing in the current scenario. However, biomass availability is crucial for the implementation of any strategy that focuses on bioresources for fuel, chemicals and biomaterials. Mostly, lignocellulosic biomass such as wasted bioresources has been employed extensively towards its valorization. Besides consideration of wasted bioresources, it would be essential to intensify the overall agricultural productivity and, at the same time, identify the potential of relatively unexplored bioresources. Due to the diverse natures of biomass materials, their properties widely range and exhibit different behaviours. This chapter shows the properties of biomass in its wide diversity, i.e., both physical, chemical, mechanicalproperties and its characterization.

Keyword: Biomass, Lignocellulose, Natural fibres

1. Introduction

Environmental activities, natural resources conservation and strictness of laws passed by developing countries compelling researchers to develop materials having renewable characteristics [1]. In this regard, lignocellulosic fibres emerged as a suitable candidate as they are derived from renewable resources and are environment friendly. Furthermore, other features like amazingly low weight and high strength makes them further attractive for the future use. Today, lignocellulosic-based materials are hot topic of research among academic and industrial researchers. This fact is justified by the use of biomass-based materials either as component or as feed in energy sector and in the manufacture of lightweight automotive hardware's, and constructions industries [2].Composites made up of synthetic and natural fibres (i.e. hybrid composites) shows excellent properties and performance over their native counterparts. For instance, composite made up of glass fibre and cellulose possesses improved mechanical strength and is cheaper and healthier than glass fibre. Furthermore, the cost of plant fibres is much less than glass fibre make (1200–1800 US$/tonnes for glass fibres vs. 200–1000 US$/tonnes for plant fibres), making them as an attractive candidate [3]. In addition to the glass fibres, composite made up of cellulose and polymers based on phenolics, urea and melamine have also been studied in the past [4, 5]. In majority of the cases, the lignocellulosic biomass is composed of cellulose, hemicellulose and lignin with other inorganic materials in trace amount.

In this direction the use of green and sustainable solvents derived from renewable resources will rise in demand in the biomass processing industries. Ionic liquids are now widely recognised as green solvent system for processing of biomass and preparation of new functional materials therefrom. Therefore, a brief overview of ionic liquid assisted biomass processing is outlined in this chapter. Overall, the biomass derived from various sources and their availability, structure-property relationship and composites materials derived therefrom have been discussed in the present chapter.

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Abstract

The use of biomass as an energy source has considerably even increasing in the current scenario. However, biomass availability is carucial for the implementation of any strategy that focuses on bioresources for fuel, chemicals and biomaterials. Mostly, lignocellulosic biomass such as wasted bioresources has been employed extensively towards its valorisation. Besides consideration of wasted bioresources, it would be essential to intensify the overall agricultural productivity and, at the same time, identify the potential of relatively unexplored bioresources. Due to the diverse natures of biomass materials, their properties widely range and exhibit different behaviours. This chapter shows the properties of biomass in its wide diversity, i.e., both physical, chemical, mechanicalproperties and its characterization.

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BIOACTIVE NATURAL PRODUCTS AS VERTIABLE SOURCE OF DRUGS AND MEDICINE: AN OVERVIEW

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Abstract

Natural products have been playing an important role in drug discovery, in the last few years due its eco-friendly nature and low toxicity. Recently, there has been a renewed interest in natural product research due to the failure of alternative drug discovery methods to deliver many lead compounds in key therapeutic areas such as immunosuppressant, anti infectives, and metabolic diseases. In view to continue competition with other drug discovery methods, natural product research needs to regularly require to improve the speed of the screening, isolation, and structure elucidation processes, as well addressing the suitability of screens for natural product extracts and dealing with issues involved with large-scale compound supply.

Key words: Antimicrobial, Phytochemical,Natural resource

Introduction

India is bestowed with diversified medicinal and aromatic plants. Medicinal plants are the plants that contain secondary metabolites as an active substance with biological activity. Since earliest times, many plants have been known to exert healing properties against human infections.Due to their content of secondary metabolites, which in more recent times have been found to act as antimicrobial agents against human pathogens. Over the past few decades, much attention has been placed on the study of phytochemicals for their antibacterial activity, especially against multidrug-resistant Gram-negative and Gram-positive bacteria[1].India is the world's richest source of medicinal plants and is called the botanical garden of the world. In the country there are about 45,000 medicinal plant species, with concentrated spots in the region of Eastern Himalayas, Western Ghats and Andaman & Nicobar Island. Traditional practitioners use more than 6000 medicinal plants but only 5000 plants are officially documented [2]. So the identification of bioactive compound inplants, their isolation, purification and characterization of active ingredients in crude extracts by various analytical methods is important. The medicinal properties of plants could be based on the antioxidant,antimicrobial,antipyretic effects of the compatibility with the human body, affordable cost and lesser side effect [3].Natural products have been used since ancient times and in folklore for the treatment of many diseases and illnesses [4].The increase in awareness among the people about health, hygiene and side effects of synthetic drugs lead to the resurgence of interest in medicinal and aromatic plants.People are found to be more inclined towards herbal products especially which are derived from plants. Today the herbal products epitomize safety and cost effective in contrast to synthetic drugs which are found to be unsafe and unaffordable by many people. Medicinal plants still remain the mainstay of most of the rural population for curing various ailments [5]. Herbal drugs obtained from plants are believed to be much safer; this has been proved in the treatment of various ailments [6].Medicinal plants constitute of primary and secondary metabolites which are of great therapeutic value [7]. Medicinal plants play a major role in the traditional health care system of the rural population in developing Asian

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NATURAL PRODUCTS AS RESERVOIRS OF THERAPEUTIC AGENTS: AN OVERVIEW

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Abstract

Medicinal plants represent a reservoir of therapeutic agents and with the importance of multiple drug resistance strain against existing synthetic antibiotics. In recent years, secondary plant metabolites with previously unknown pharmacological activities have gained importance and often studied for its therapeutic efficacy are historically been invaluable as a source of therapeutic agents. However, research into natural products in the pharmaceutical industry has declined, due to issues such as the lack of compatibility of traditional natural product extract libraries with high throughput screening.

Keywords: Antibiotics Natural products,Pharmacological activities,Therapeutic

Introduction

Plant used as medicine always remains a significant part in human history. The study of archeological evidences indicates that human were using medicinal plants to cure different ailments [1]. Ayurveda system is based on the earliest documents of Rig-Veda and the Atharvaveda which detailed the medicinal knowledge [2]. In 10thCentury the Sushruta describes 700 medicinal plants [3]. In middle age, in England and Europe it was found that Monasteries were the primary sources of medical Knowledge [4]. Ibn-al-Baitar described more than 1400 different plants food and drugs [5]. In 19thcentury the experimental scientific methods were introduced which evolve the science of pharmacology [6]. Therefore, there is a continuing need to search for new antimicrobial agents [7]. Over the last decade, plants strains of antimicrobial activity has been studied in different regions of the world[8]. Many studies had shown that the medicinal plants are as good as the conventional ones (in controlling oral bacterial load)[9].The use of plant-derived toothbrushes (chewing-sticks) is a common traditional dental care practice in many parts of the world. Within a given community, chewing-stick plants are often specific, but tend to vary from one culture to the next [10]. As far back as the 1970s, it was suggested that the regular use of the African chewing-stick, acting asan antiseptic, may control the formation and activity of dental plaque and therefore reduce the incidence of gingivitis and possibly dental caries [11]. Thus, there is a need to screen medicinal plants for their promising biological activity.

Classes of natural products

There are following classes of secondary metabolites[12-13]

- Polyketides and fatty acids
- Terpenoids and steroids
- Phenylpropanoids
- Alkaloids
- Specialized amino acids and peptides
- Carbohydrates
- Flavonoids

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BIOACTIVE COMPOUNDS FROM INDIAN MEDICINAL PLANTS USING NANOTECHNOLOGY

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Abstract

The novel properties of nanomaterials offer many new opportunities for the food industry. Different types of nanostructures can be incorporated into food in order to introduce new functionalities. These include, nanoliposomes, nanoemulsions, and nanoparticles. The sizes, shape, and internal structure of the particles vary considerably depending on the method and materials used to fabricate them. Bioactive compounds such as vitamins, antioxidants, and lipids can be protected using nanotechnology, even enhancing bioactivity and functionality. The design and application of nanoderived assemblies as tools for improved delivery and bioavailability of bioactive nutrients is promising. In this sense, success depends on scientific knowledge about degradation mechanism of nutrients and major factors affecting them. Besides, it is necessary to review information in order to decide which delivery system fix with the desired application. In particular, nanotechnology has the potential to revolutionize dairy technology in the coming years.

Keywords: Bioactive compounds, nanotechnology, nanoparticles, release, health

Introduction

Infectious diseases caused by microbes (bacteria, fungi, viruses and protozoa) are the most common and widespread health risk. Most of the infection could be acquired via contaminated food, contaminated water, hospital acquired infection, naturally acquired infection; and intentional infection (through the use of biological warfare agents)(Love and Jones, 2008).

The origin of antibiotic-resistant mutant strains of microbes called for the need of new argtimicrobial drugs. The next source for antimicrobial agents were phytochemicals from plant origin. González-Lamothe 2009, demonstrated that to protect themselves, plants accumulate an armoury of antimicrobial secondary metabolites. Some metabolites represent constitutive chemical barriers to microbial attack (phytoanticipins) and others inducible antimicrobials (phytoalexins). They are extensively studied as promising plant and human disease-controlling agents.

In addition to their physiological functions in plants, number of phytoalexins have also been reported to have strong antioxidant, antibacterial, and herbicidal properties. Many bioactive compounds have been isolated, purified and employed in a wide range of applications including food, pharmaceutical, cosmetic, and agricultural industries (Mierziak et al., 2014, Upadhyay, 2011).

Most of the current drugs are of plant origin, such as morphine (I) (analgesic), scopolamine (II) atropine (III) (anticholinergics), galantamine (IV)(Alzheimer's disease), quinine (V) (antimalarial), paclitaxel (VI), vincristine (VII) and vinblastine (VIII) (anticancer drugs), as well as with digitalis glycosides (IX) (heart failure). This is due to the presence ofmany secondary metabolites in plant organisms, belonging to several chemical classes as alkaloids, coumarins, flavonoids, tannins, terpenoids, xanthones, etc (Canato et al., 2012).Plants synthesize a diverse array of secondary metabolites, many of [illegible] antimicrobial activity. Some of these

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ANTIMICROBIAL ACTIVITY OF GREEN CHEMISTRY AND MEDICINAL PLANTS AGAINST URINARY TRACT INFECTION IN HUMANS

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Abstract

Medicinal plants are part of Green Chemistry and are affiliated with human society to combat diseases from the dawn of civilization. According to World Health Organization (WHO), about 80% of the world population rely chiefly on plant based traditional medicine specially for their primary health care needs and there has been a worldwide move towards the use of traditional medicines due to concerns over the more invasive, expensive and potentially toxic main stream practices. This review gives a bird's eye view on the updated information on urinary tract infections (UTIs). Different categories of urologic herbs, historical use and modern scientific investigations on some important urologic herbs, clinical studies, some isolated chemical compounds and their possible side effects

Keywords: Medicinal plants, Historical use, Clinical studies, Bioactive constituents,

Introduction

A urinary tract infection (UTI) is an infection of kidneys, ureters, urinary bladder and urethra. Most infections involve the lower urinary tract — the bladder and the urethra. Women are at greater risk of developing a UTI than are men. Infection limited to your bladder can be painful and annoying. Its symptoms include A strong, persistent urge to urinate, burning sensation when urinating, passing frequent, small amounts of urine,Urine turns cloudy, blood in the urine,pelvic pain, in women — especially in the center of the pelvis and around the area of the pubic bone. However, serious consequences can occur if a UTI spreads to your kidneys.

UTI is the second most common disease after respiratory infection. The urinary tract involvese kidneys, ureters, bladder and the urethra (Geetha et al, 2011). More than 95% of UTI aredue to single bacterial species *E. coli*(Kebira et al., 2009). Other bacteria which causes UTIare-*Klebsiella, Pseudomonas, Enterobacter, Proteus, Staphylococcus, Mycoplasma, Chlamydia, Serratia and Neisseria spp.* It is well known that about 35% of healthy women suffer symptoms of Urinary tract infection and about 5% of women each year suffer with the problem of painful urination (dysuria) and frequency. Women are more prone to UTI as compared to men. Several potent antibiotics are available for the treatment of UTI, but increasing drug resistance among bacteria has made therapy of UTI difficult. Bacteria have the genetic ability to transmit and acquire resistance to drugs (Soulsby, 2005).

The word "herb" has been originated from the Latin word, *"herba"* and an old French word *"herbe"*. Herbs refers to any part of the plant like fruit, seed, stem, bark, flower, leaf, stigma or a root, as well as a non-woody plant. Earlier, the term "herb" was only applied to non-woody plants, including those that come from trees and shrubs. These medicinal plants are also useful as source of food, flavonoid, medicine or perfume and also in certain spiritual activities.

The increasing interest on traditional medicine may lead to discovery of novel therapeutic agent. Since, plant contains potential antimicrobial components that may be useful

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PHYTOCHEMICALS: AS PHARMACEUTICAL

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Abstract

India has rich culture of medicinal plants. Medicinal plants contain many phytochemicals as secondary metabolites which have antioxidant activities, antimicrobial effect, detoxification, modulation and anticancer activity. These are categorised as alkaloids, flavonoids, glycosides, tannins, saponins, phenolics and terpenoids.

Keywords: Alkaloids, Antibacterial activity, Phytochemicals and Saponins.

Introduction

In India Ayurveda is believed to be prevalent since last 5000 years. Ayurveda is one of the most noted systems of medicine in the world. Ayurveda is based on the hypothesis that everything in the universe is composed of five elements viz. space, air, energy, liquid and solid. These elements exist in the human body in combined forms like Vata (space and air), Pitta (energy and liquid) and Kapha (liquid and solid). Vata, Pitta and Kapha are considered as Tridosha or three pillars of life. The important herbes are*Rauwolfiaserpentina, Asparagus racemosus, Cassia angustifolia, Sesamumindicum, Holarrhenaantidysenterica, Withaniasomnifera, Aconitum napellus and Piper longum* etc.[1].Using herbal ingredients from these plants as an effective medicinal treatment has been long and accepted mainstream tradition in many Asian countries and a growing number of scientific studies have conferred a wide range of benefits. Sports enthusiasts believe that certain herbs can enhance their performance on field. Purified extracts from herbal sources as caffeine increases certain aspects of exercise and vigour. *Camellia sinensis, Silybummarianum, Curcuma longa* show antioxidant activity. *Hypericumperforatum, Lavandulaaugustifolia, Valerianaofficinalis, Jasminumsambac promote relaxation. Ulicineverum,Pimpinellaanisum, Syzigiumaromaticum, Menthapiperita* and *Zingiberofficinale* are good for digestion. *Calendula officinalis, Eucalyptus globules, Echinacea purpurea* and *E. Augustifolia* treat cold flue infection [2].

Phytochemicals

Phytochemicals are secondary metabolites which have antioxidant activities, antimicrobial effect, detoxification, modulation and anticancer activity. These are categorised as alkaloids, flavonoids, glycosides, tannins, saponins, phenolics and terpenoids.

Phenolics

Phenolics has diverse biological activities like antiulcer, anti- inflammatory, antioxidant, cytotoxic and antitumor, antispasmodic, and antidepressant activities [3]. Phenolic compounds present in leaves of olive were evaluated against several microorganisms that may be causal agents of human intestinal and respiratory tract infections, namely Gram positive (*Bacillus cereus, B. subtilis*and *Staphylococcus aureus*), Gram negative bacteria (*Pseudomonas aeruginosa, Escherichia coli* and*Klebsiellapneumoniae*) and yeast (*Candida albicans*and *Cryptococcus neoformans*). They identified seven phenolic compounds like caffeic acid, verbascoside,

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PHYTOCHEMICALS AS ANTIMICROBIAL AGENTS

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Abstract

Most of the microbial infections are transmitted via contaminated food and water, hospital acquired infection, naturally acquired infection and intentional infection. Phytochemicals as secondary metabolite provide defense against many microorganism. This chapter discuss phytochemical analysis and antimicrobial activity of some medicinal plants like Foeniculumvulgare, Curcuma longa ,Syzygumaromatic,Coriandrumsativum and Piper nigrum

Key words: Agar Well Diffusion Assay, *Foeniculumvulgare,* Phytochemicals *Piper nigrum.*

Introduction

Phytochemicals are isolated from plants which provide health benefits to humans. They protect plants from damage, disease and provide aroma, colour and flavor. They protect plants from pollution, stress, drought, UV and pathogens. Till date more than 4000 phytochemicals are listed. Phytochemicals are present in every part of plant like roots, stems, leaves, flowers, fruits and seeds. They are also called secondary metabolites because not needed for vital activities. Phytochemicals as secondary constituents include alkaloids, terpenes, flavonoids, lignans, plant steroids, curcumines, saponins, phenolics and glucosoids.

1. Foeniculumvulgare (Fennel)

A. Phytochemicals Analysis

Roby et al., 2013 reported presence of many phytochemicals like neochlorogenic acid (1.40%), chlorogenic acid (2.98%), gallic acid (0.169%), chlorogenic acid (6.873%), caffeic acid (2.960%), *p*-coumaric acid (4.325%), ferulic acid-7-o-glucoside (5.223%), quercetin-7-o-glucoside (3.219%), ferulic acid (3.555%), 1,5 dicaffeoylquinic acid (4.095%), hesperidin (0.203%), cinnamic acid (0.131%), rosmarinic acid (14.998%), quercetin (17.097%), and apigenin (12.558%) in *Foeniculum* fruit [1]. Sahar khiz and Tarakemeh (2013) reported that the main oil components at different fruit maturity stages were trans-anethol (84.1 -86.1 %), fenechone (7.13 – 8.86 %), limonene (3.0 – 3.3 %), and methyl chavicol (2.5 – 2.7 %) [2].Saxena et al., 2018 reported that essential oil obtained from fennel includes terpinene, 4-allyl anisole/pinene, myrcene, cymene, methyl chavicol, gerniol, anatholeestragol and geranyl acetate. The seeds of fennel contains 2% essential oil in which 4-allyl-anisole (53.69%) and anethole (44.30%) [3].

B. Antimicrobial Activities

Oils extracted from fennel show antifungal activity against many fungal genus like *Alternaria, Aspergillus, Fusarium, Penicillium* and *Rhizoctonia*[4].Fennel extract showed antibacterial activity against both gram positive and gram negative bacteria like *Escherichia coli* and *Bacillus megaterium*Experiment conducted by Khan 2017 concluded that methanolic extract of fennel seeds showed antibacterial activity against bacteria like *Bacillus subtilis, Staphylococcus aurens, Escherichia coli,* and*Klebsiella pneumoniae*. But there was no activity against *Pseudomonas aeruginosa, Bacillus cereus, Bacillus subtilus, Bacillus megaterium, Shigelladysenteriae,*

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AN OVERVIEW OF STRUCTURAL PROPERTIES OF VEGETABLE OILS: A SUSTAINABLE ALTERNATE OF PETROLEUM-BASED POLYMERIC RESINS.

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Abstract

Sustainable development, which became a key idea during the 20th century may be regarded as the progressive and balanced achievement of sustained economic development, and improved social equity and environmental quality. In recent years vegetable oils have attracted much attention as a raw material for the preparation of resins and polymeric materials to replace the traditional petrochemical based polymeric resins. The vegetable oil based polymers have many advantages over the polymers obtained from petroleum-based monomers. They are known as biodegradable in nature and are also eco-friendly, than petroleum-based polymers. In this paper an overview on the unique properties of vegetable oils is discussed which made them the alternative raw material of petroleum based polymeric coating materials.

Key words: sustainable development, vegetable oil-based polymers, coating materials

Introduction

During the last century the supply of raw materials for the chemical industry underwent radical changes. Whereas at the beginning of the 19th century the demand for basic chemicals was satisfied entirely by renewable raw materials, from about 1900 the chemical industry came to rely increasingly on coal. Mineral oil became increasingly important in the 1940s, and during the past 40 years it has remained by far the most important source of raw materials [1-3]. The growing demand for petroleum-based products and the resulting negative impact on the environment, plus the scarcity of non-renewable resources, are some of the many factors that have encouraged the chemical industry to begin using renewable resources as raw materials. [3].

General Constitution of Vegetable Oils

Vegetable oils are mainly made up of triglyceride molecules, which have the three-armed structure shown in scheme-1. Triglycerides comprise of three fatty acids joined at a glycerol junction [5]. Most of the common vegetable oils contain saturated and unsaturated fatty acids that vary from 14 to 22 carbons in length. The unsaturated fatty acids may contain one, two, three and some times more double bonds per fatty acid. [4,5].

One of the most dominant parameters affecting fatty acid and oil properties is the degree of unsaturation which is measured by [illegible] glyceride oils are divided into three groups

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REVIEW ARTICLE ON COMPUTATION OF MICROMOLECULAR PROPERTIES BY EXTENDED HUCKEL THEORY

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Abstract

Chemistry is really very helpful to us as its application are used worldwide for several purposes. We cannot really imagine a world without chemistry and its applications. However, we should now concentrate on green chemistry or sustainable chemistry, which refers to reducing or stopping the damage done to the environment around us. Hence green chemistry could include anything from reducing waste to even disposing of waste in the correct manner. Another way to save the environment through sustainable chemistry is to make use of computational process in the field of research, in the aspect of sustainability, our review is based on computational work by Extended Huckel theory.

Keyword: Extended Huckel Method, computation of micro molecular properties

Introduction

One of the primary concern of chemistry is to formulate theories of molecular structure and thereby to explain the chemical reactivity and reaction rate, likewise this should also be primary aim of quantum chemistry. The determination of structure and explanation of reactivity, so far as chemistry is concerned, involves the contribution mainly of energy terms rather than entropy factors.

Quantum mechanical consideration structural reactivity aspect should be likewise be aimed towards the estimation of ground state energies of aggregates of atoms as a function of their spatial arrangements.

Prior to the advent of quantum mechanical approach to chemical problems, chemistry, particularly in sphere of molecular structure and chemical reactivity was a subject of adhoc assumptions and make shift arrangements. The purpose of quantum chemistry is to build a logical theory of molecular structure and chemical reactivity by considering the dynamic aspect of bond electrons through the application of principles of quantum mechanics.

Following work has been done on Huckle theory and extended Huckel theory in the relevant field:-

In 1967 the Journal of Chemical Physics> volume 46 issue 3:- extended Huckel theory and shape of molecules were determined

Ab initio MOSCF wave function and one electron energies are compared with extended Huckel theory vales for polyatomic molecules BeH_2, BH_2^+, BH_2^-, NH_2^-, H_2O, BeH_2^-, CH_2^-, Li_2O, F_2O, LiOH and FOH. A remarkable similarity in the modal structure, order of energy level, prediction of molecular shape and changes in hybridization and ionization potential with angle is observed. The origin of this correspondence for molecular shape is found to be a general theorem relating changes in the sum of one electron energies to the total energy and implying information contained to the angular dependence of molecular [illegible] analysis chemically interesting quantities are not to be expected. These investigation [illegible] give a quantum mechanical underpinning to extended Huckel theory

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ECO-FRIENDLY ADVANTAGEOUS MATERIALS DERIVED FROM VEGETABLE OILS

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Abstract

Polymers are comprehensively used in developing small house hold articles to outstanding machineries, in addition to their outstanding utility in biomedical, bioengineering, textile industries. The majority of polymers are derived from petrochemicals a non-renewable resource and is going to deplete day by day. Furthermore use of petrochemicals affects the environment appreciably with the increase in discharge of greenhouse gases.Now a day investigations are therefore, spotted on developing polymers from plants and agriculture origin.Among various renewable resources vegetable oils, a triglyceride rooted with different unsaturated and saturated fatty acids play very vital role in the synthesis of polymers of spongy utility. In the present communication efforts has been made to explain some useful polymers obtained from vegetable oils.

Keywords: Vegetable oil, renewable resource, bio-based polymers

Introduction

Polymers have received important positions in making small house hold articles to grand machineries, in addition to their versatile utility in biomedical, bio-engineering's, adhesive industries [1-3]. However, the precincts of polymeric materials are their non-biodegradable character; especially those derived from petrochemicals, which ultimately cause several threats to environments. Depletion of petrochemical stock day by day further worried the academician and scientist to search some alternative sources. Recent investigations are therefore, focused on to develop the polymers from renewable origins.

Among the numerous renewable sources vegetable oils obtained from the seeds of different plants are nontoxic, non-depletable, domestically abundant, non-volatile and biodegradable resources provides good prospective to polymer syntheses [4]. Vegetable oils like soybean, castor, coconut, sunflower and many others have been extensively used in polymer synthesis for long time. To improve the physicochemical and corrosion / chemical resistance performances the developed vegetable oil based polymers were modified with the other monomers and polymers. In the present communication efforts has been made to describe some important polymers derived from vegetable oil.

Polymers derived from vegetable oils

The vegetable oils have enormous potential and are proven for the polymer syntheses. They have several reactive sites such as double bonds, hydroxyls, esters, epoxies and many others for the syntheses of polymers of film forming ability. Numerous polymeric materials such alkyds, poly(ester-amide), epoxies, poly(urethane)s, poly(ether-amide)s, polyamides have been derived using the vegetable oils as a precursors. These polymers are extensively used as the binders for the paints and coatings in addition to different areas of industries and domestic purposes. Alkyds,

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ISBN: 81-88962-83-X Recent Developments in Nanoscience and Green Chemistry

PRACTICABLE MATERIALS DERIVED FROM RENEWABLE RESOURCE: A PERSPECTIVE

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Abstract

Several renewable resources are spotted by the different industries for sustainable development. India is an agriculture based country numerous plants and herbs are available, which provides various type of natural starting materials. Among them some common examples are starch, cellulose, protein, poly (lactic acid), cashewnut shell liquid,lignin, triglyceride oils obtained from different seeds. These materials themselves provide opportunities to use for many useful materials. Furthermore easy derivatization makes enormous utility.

Key Words: Sustainable resource, Renewable resource, Carbohydrate

Introduction

In the search of sustainable development vigorous efforts have been made to utilize the renewable resources, bestowed by thee the nature [1]. Natural resources have functionalities of biodegradation, which is another aspect of environment balance.These bio based materials reduce the environmental issues remarkably and reduce the different types of pollution by rotting away on the earth surface [2]. Furthermore, increasing the utilization of these materials reducing the consumption of petrochemicals asthe most of the material of daily practices made up from them. Exhaustive utilization of petrochemical causes fast depletion of resources and consequently hikes its price [3].

In view to overcome these problems several renewable resources are spotted by the different industries. India is an agriculture based country numerous plants and herbs are available provides various type of natural starting materials. Among them somecommonexamples are starch, cellulose, protein, poly (lactic acid), cashewnut shell liquid,lignin, triglyceride oils obtained from different seeds [4].

Starch

Starch is polysaccharide largely found in plants. Large amount of starch obtained from potatoes, rice and seeds such as corn. Starch enbodied with many hydroxyl groups and consequently heavily hydrated due to much intermolecular hydrogen bonding with water. It is constituted with linear polymer amylose, branched polymer amylopectin [5].

Starch is generally used as a compostable polymer. It is used to as an additive to plastics, filters, for different purpose. It is also reported to work as useful cross-linker and bridging agent for change the structure of plastic into network. Starch of acetate obtained by acylation, a more hydrophobic material than starch itself and can be used filmcasting easily by simple solvent method. Starch is used as filler in various resins systems to obtain known for impermeable to water but permeable to water vapour. The hydroxyl group is also used for urethane formation with isocyanate [6].

Cellulose

Cellulose is a linear homopoly (sa[illegible]ose and is abundantly occurring material biopolymer. It is a fibrous, tough, water [illegible] crystalline substance. Due its bio-degradation

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SOLID WASTE DISPOSAL AND MANAGEMENT

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Abstract

This chapter discusses methods of solid waste disposal and management which are open burning, Dumping into the sea, Sanitary Landfills, Incineration, Composting, ploughing in fields, Hog feeding, Grinding and discharging into sewers, Salvaging, Fermentation and biological digestion.

Keywords: Composting, Fermentation, Salvaging, Sanitary Landfills.

Open burning of Solid Wastes

Not an ideal method in the present day context

Dumping into Sea

1. Possible only in coastal cities
2. Refuse shall be taken in barges sufficiently far away from the coast (15-30 km) and dumped there
3. Very costly
4. Not environment friendly

Sanitary Landfilling of Solid Wastes

1. Simple, cheap, and effective
2. A deep trench (3 to 5 m) is excavated
3. Refuse is laid in layers
4. Layers are compacted with some mechanical equipment and covered with earth, leveled, and compacted
5. With time, the fill would settle
6. Microorganisms act on the organic matter and degrade them
7. Decomposition is similar to that in composting
8. Facultative bacteria hydrolyze complex organic matter into simpler water soluble organics
9. These diffuse through the soil where fungi and other bacteria convert them to carbon dioxide and water under aerobic conditions
10. Aerobic methanogenic bacteria utilize the methane generated and the rest diffuses into the atmosphere
11. Too much refuse shall not be buried – fire hazard
12. Moisture content – not less than 60% for good biodegradation
13. Refuse depth more than 3m – danger of combustion due to compression of bottom layers – hence should be avoided
14. Refuse depth is generally limited to 2m

भारतीय अर्थव्यवस्था : एक आंकलन

डॉ० पुनीत कुमार श्रीवास्तव 'मनीष'
विभागाध्यक्ष, वाणिज्य विभाग
जी० एफ० कॉलेज, शाहजहांपुर

स्वतन्त्रता के बाद भारत ने आर्थिक विकास के लिये समाजवादी आर्थिक नीतियों का अनुसरण किया। कई क्षेत्रों में तो भारत सरकार का एकमात्र अधिकार था। स्वतन्त्रता के उपरान्त तीन दशक तक भारत की प्रति व्यक्ति आय केवल 1% प्रति वर्ष की दर से बढ़ी। 80 के दशक के मध्य से भारत ने अपने बाजार को धीरे-धीरे खोलना आरम्भ किया और आर्थिक उदारवाद के मार्ग पर चल निकला। 1991 ई० के पश्चात और भी अधिक मूलभूत आर्थिक सुधार हुए। 2000 के बाद आर्थिक सुधारों को और गति दी गयी और अब भारत मुक्त बाजार अर्थव्यवस्था की दिशा में बहुत आगे निकल गया है। भारत की अर्थव्यवस्था विश्व की तीसरी सबसे बड़ी अर्थव्यवस्था है। क्षेत्रफल की दृष्टि से विश्व में सातवें स्थान पर है, जनसंख्या में इसका दूसरा स्थान है और केवल 2.4% क्षेत्रफल के साथ भारत विश्व की जनसंख्या के 17% भाग को शरण प्रदान करता है। भारत बहुत से उत्पादों के सबसे बड़े उत्पादको में से है। इनमें प्राथमिक और विनिर्मित दोनों ही आते हैं। भारत दूध का सबसे बड़ा उत्पादक है और गेहू, चावल, चाय चीनी, और मसालों के उत्पादन में अग्रणियों मे से एक है यह लौह अयस्क, बाक्साईट, कोयला और टाईटेनियम के समृद्ध भंडार हैं। 2017 में भारतीय अर्थव्यवस्था मानक मूल्यों (सांकेतिक) के आधार पर विश्व का पाँचवा सबसे बड़ा अर्थव्यवस्था है। अप्रैल 2014 मे जारी रिपोर्ट में वर्ष 2011 के विश्लेषण में विश्व बैंक ने 'क्रयशक्ति समानता (परचेजिंग पावर पैरिटी) के आधार पर भारत को विश्व की तीसरी सबसे बडी अर्थव्यवस्था घोषित किया। बैंक के इंटरनैशनल कंपेरिजन प्रोग्राम (आईसीपी) के 2011 राउंड मे अमेरिका और चीन के बाद भारत को स्थान दिया गया है। 2005 में यह 10वें स्थान पर थी।[3] 2003-04 में भारत विश्व में 12वीं सबसे बड़ी अर्थव्यवस्था थी। संयुक्त राष्ट्र सांख्यिकी प्रभाग (यूएनएसडी) के राष्ट्रीय लेखों के प्रमुख समाहार डाटाबेस, दिसम्बर 2013 के आधार पर की गई देशो की रैंकिंग के अनुसार वर्तमान मूल्यों पर सकल घरेलू उत्पाद के अनुसार भारत की रैंकिंग 10 और प्रति व्यक्ति सकल आय के आधार पर भारत विश्व में 161वें स्थान पर है। सन 2003 में प्रति व्यक्ति आय के आधार से विश्व बैंक के अनुसार भारत का 143 वाँ स्थान था। किसी समय मे भारत कृषि प्रधान देश था किन्तु नए आँकडे बताते हैं कि यह देश अपनी विकास-की यात्रा में तीसरे चरण में प्रवेश कर चुका है तथा विकसित देशों के इतिहास को दोहराते हुए द्वितीयक एवं तृतीयक क्षेत्रों का योगदान जीडीपी में बढ़ोतरी का रुझान दर्शा रहा है। यहाँ प्रतिभाशाली जनशक्ति का सबसे बड़ा पूल है। लगभग 2 करोड़

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ROLE OF EDUCATION TO CONTROL AIR POLLUTION PROBLEM AND WASTE WATER TREATMENT

(वायु प्रदूषण नियंत्रण एवं दूषित जल उपचार में शिक्षा की भूमिका)

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Abstract (संक्षिप्त)

वर्तमान समय में मनुष्य की विभिन्न गतिविधियों के कारण शुद्ध–वायु में विभिन्न जहरीली गैसों, कार्बनिक पदार्थों, व धूल के कणों तथा मेटेलिक कणों की मात्रा बढ़ती जा रही है। जिससे वायु प्रदूषण बढ़ता जा रहा है। वायु–प्रदूषण बढ़ाने वाले कारक प्रदूषक (Pollutant) कहलाते हैं। यह प्रदूषित वायु विभिन्न प्रकार से पौधों, मनुष्य एवं वातावरण पर प्रतिकूल प्रभाव डाल रही है। वायु प्रदूषण कम करने के लिए विभिन्न नवीन तकनीकियों का प्रयोग आवश्यक है। उत्पादन के क्षेत्र में विशेष कर के औषधीय (medicine) उत्पादन के क्षेत्र में हरित रसायन (Green chemistry) की तकनीकि का प्रयोग काफी सकारात्मक परिणाम देगी। प्रदूषण की समस्या एवं निवारण के लिए प्रारम्भ से ही इसे शिक्षा पाठ्यक्रम में शामिल कर लेने से लोगों में अधिक जागरूकता रहेगी तथा अधिक सकारात्मक परिणाम प्राप्त होंगे। इसी प्रकार दूषित जल जो औद्योगिक संस्थानों एवं घरों से आता है को उपचार में जहाँ विभिन्न विधियों का उपयोग करके इस जल को स्वच्छ बनाते जा रहे है। वहीं यदि शिक्षा के पाठ्यक्रम में दूषित जल से होने वाली हानियों और जल को किसी भी विधि (Process) से कम से कम दूषित करने की जानकारी बच्चों को शिक्षा के माध्यम से प्रारम्भ से ही प्रदान करें तो जल के दूषित होने को नियंत्रित किया जा सकता है तथा इसके उपचार में आने वाले अनावश्यक व्यय (Investment) को कम किया जा सकता है।

Keywords – प्रदूषक (Polletents) यौगिक (Compounds) रेडियेशन (Radiation) उपचार (Treatment) ओवेन डस्ट काउन्टर (Owen's dust counter)

वायु प्रदूषण निवारण एवं दूषित जल उपचार में शिक्षा की भूमिका

(Rate of Education to control of Air pollutions Problems and waste water Treatment)

हमारे सौरमण्डल (Solar system) में पृथ्वी एक मात्र ऐसा ग्रह (Planet) है जिस पर जीवन (Life) है। साथ ही इस पर रहने वाला मनुष्य अपनी बुद्धि के बल पर इस का सर्वश्रेष्ठ प्राणी बन बैठा है। प्रारम्भिक काल में जब जनसंख्या कम थी तब मनुष्य प्रकृति के बहुत निकट अर्थात पृथ्वी के सभी मण्डल जिनमें वायुमण्डल, जलमण्डल, भूमण्डल और जैवमण्डल आते है अपनी शुद्ध अवस्था में थे। तात्पर्य यह है कि लम्बे समय तक प्रकृति के अवयवों (Components) और मनुष्य के मध्य संतुलन बना रहा जिसके परिणाम स्वरूप सभी जीव और अजीवय घटक (Components) सन्तुलित रहे तथा उनमें शुद्धता बनी रहे। ऐसा नहीं था कि उस समय मनुष्य सभ्य और सुसंस्कृत नहीं था किन्तु समय के साथ–साथ जब मनुष्य की आवश्यकताओं ने लालच (Greediness) का रूप ले लिया और अपने ज्ञान तथा विज्ञान की सहायता से प्रकृति की शुद्धता में दखल देने लगा, या प्रकृति के शुद्ध घटको में अतिक्रमण करने लगा यहीं से प्रदूषण का प्रारम्भ होता है। मनुष्य ने अपने को वर्तमान समय में जब से कथित स्टेटस रूपी सभ्यता में जीवन जीना प्रारम्भ कर दिया तब से प्रदूषण रूपी दानव ने अपना आकार बढ़ाना शुरू कर दिया, आज जीवन का शायद ही कोई ऐसा क्षेत्र बचा हो जो प्रदूषण रूपी जहर से प्रभावित ना हो रहा हो। यहीं पर वायु प्रदूषण (इस जवसरानजपवदद्ध को मुख्य विषय के रूप में स्पष्ट करना है। व्यक्ति बगैर भोजन या पानी के कुछ समय तक जीवित रह सकता है किन्तु शुद्ध वायु के अभाव में कुछ सेकेण्ड भी जीना कठिन हो जाता है। वायु प्रकृति या वातावरण का जीवनदायी घटक है किन्तु मनुष्य पता नहीं किस लक्ष्य की प्राप्ति के लिये शुद्ध वायु में धुआँ (Smoke) धूल (Dust)

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Bakha, a Product of Indian Caste System: An Appraisal of Mulk Raj Anand's *Untouchable*

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Mulk Raj Anand is among the founding fathers of Indian fiction – the other two being Raja Rao and R.K. Narayan. Mulk Raj was born in Peshawar in 1905. Educated at Khalsa College, Amritsar, University College, London and Cambridge University, he completed a doctoral thesis on 'Bertrand Russell and the English Empiricists' in 1928 and lived in England for twenty one years. He is politically committed to Marxism.

Anand is Marxist, progressive and committed writer. Though he considered art as propaganda, his feeling was genuine. His fiction is excessively concerned with India. He is passionately involved in the villages, poverty, the cruelty of caste, the underdogs, the wrongs of women, the orphans, and the untouchable and urban laborers. He writes in an angry reformist way, like a less humorous Dickens and more emotional wells of the personal sufferings induced by injustices. It is really economics he is writing about even when the subject is caste.

Anand is also moved by National Movement led by Gandhi, a Movement against our degrading social practices, spiritual weakness, immorality and religion and for the liberation of the human spirit. Anand's originality consists in the urgency with which he reacted to the problems of his own society.

In *Untouchable* Anand creates a character who is seeking identity for himself in a world which has for ages suppressed his kind. While Bakha occupies the centre of the stage throughout the novel, there is not any attempt to idealize him. He is a type and individual. Bakha shows his indignation at the society which is exploiting and suffered

ISBN: 81-88962-83-X Recent Developments in Nanoscience and Green Chemistry

ENVIRONMENTAL AWARENESS THROUGH ECOCRITICISM IN INDIAN ENGLISH LITERATURE

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Abstract

One of the pressing problems of the twenty first century is the environmental degradation that has awakened the environmentalists to think over this problem and to search for different ways of maintaining the liveableenvironment. Even the literary artists also could not remain untouched with this awesome phenomenon. Eco-criticism in literature is also an effort in this direction in this paper an effort has made to show howecocritical approach to some literary works in Indian English literature has brought on surface that the writers, consciously or unconsciouslyhave concerned with the environmental disturbance due to the irresponsible actions of man. That is why they show the benign influence of nature on their characters and their desireto return to the unspoiled nature in order to restore lost harmony and simplicity. The writers and critics are making collective efforts to protect environment by creating eco-consciousness among the reading section and the people in general.

Keywords: Ecocriticism, environment, awareness

Introduction

Literary artists have been depicting nature and its soothing influences upon mankind. Many writers were inspired by the singing birds, flowing water of streams and rivers, incense-breathing flowers. But environmental deteriorationhas been leading the singing birds to their extinctionand the water resources are slowly being polluted due to the newly established chemical industries. Environmentalists and scientists around the world are making people aware of this hazardous activities of men so that every one, irrespective of his or her vocation, can do something to protect environment which will ultimately protect mankind on earth.Ecocriticism opens the avenues before the lovers of literature and the writers to do their parts for the amelioration of the deteriorating condition of environment.Ecocriticismmakes us realize that survival of man on earth is allied with the co-existence of man and nature but it is being disturbed due to the devastationwrought on nature by the reckless activities of men.

Ecocriticism is a term formed by the combination of two terms 'criticism' and 'eco', the short form of 'ecology' which explores the interdependence and inter-relations of human beings and natural vegetation including animal life and their physical environment. It is also known as 'environmental criticism' and 'green studies. In his seminal workentitled ***Literature and Ecology: An Experiment in Ecocriticism***William Rueckertwrote that ecocriticism brought about "application of ecology and ecological concepts to the study of literature" (Glotfelty and Fromm xx).According to Glotfelty:

"Ecocriticism is the study of the relationship between literature and the physical environment. Just as feminist criticism examines language and literature from a gender- conscious perspective, and Marxist criticism brings an awareness of modes of production and economic

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SINGLE-USE PLASTIC BAN: A BOON OR A BANE

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Abstract

A teeny village Lachung in the north-eastern state of Sikkim, India has waged a war against single use plastic. The village launched the plastic ban in 1998 and instead of plastic, they have been increasingly using handcrafted eco friendly articles and containers as an alternative. Lachung has set an example for the rest of the world by creating awareness about single-use plastic hazards to resolve and combat ecological imbalance.

Keywords: Awareness, plastic, eco-friendly, hazards

Introduction

The word Plastic drives from the Greek word plassein or plasticos, meaning to mold or shape a soft substance [1]. In Chemistry Plastic is defined as "any synthetic or semisynthetic organic polymer. In other words, while other elements might be present, plastics may be made from just about any organic polymer, most industrial plastic is made from petrochemicals." [2]

Most plastics are man-made and they do not occur in nature. "People experimented with plastics based on natural polymers for a very long time. Alexander Parkes, an English inventor (1813-1890), created an early form of plastic in 1855. It was hard but flexible and transparent. He called it "Parkesine" but now it is called "Celluloid." [3]

Single-use plastics - are disposable plastics used only once or meant for use-and-throw. These items are often used in packaging consumer products, cosmetics, healthcare, and disposable utensils - comprise polythene bags, beverage containers, plastic drinking bottles, plastic bottle caps, plastic wrappers, food wrappers, coffee capsules, straws, stirrers, wet wipes, plastic sachets, Styrofoam cups or plates, and razor blades, etc.

UN Environment Head Erik Solheim believes that:

"Plastic is a material that has brought immense convenience to our lives. But it is this convenience that has contributed to the crisis the world faces today. Plastic pollution is like climate change. Once it gets out of control, it is difficult to put on the brakes." [4]

Advantages of plastics-A Boon

1. Single-use plastic protects food and other products packaged in it and keep them fresh for a longer time
2. It saves food from spoiling and it's safer and more hygienic for food packaging.
3. It has excellent thermal and electrical insulation properties.
4. It keeps the products' cost down
5. It is a more durable
6. It is more economical

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Recent Developments in Nanoscience and Green Chemistry

MESAAGE OF AWARENESS AND LOVE FOR NATURE IN THE POETRY OF WILLIAM WORDSWORTH

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Abstract

To save the environment is not an issue, it is a survival truth. Today, individuals, organisations and governments need to come together and join hands to save and protect environment. The less human beings pollute the environment, the more they prevent global warming. A stand against deforestation must be taken soon. Losing the rainforests means losing millions of trees that clean the air for us. So, there is a need to teach our children to respect nature and its objects.

Keywords: Awareness, nature, global warming.

Introduction

The study of William Wordsworth's poetry shows that he is the great worshipper and high priest of nature. According to him, there is a mutual consciousness, spiritual communion or mystic intercourse between man and nature. He establishes a new idea of family resemblance in man and nature. For him nature is the mother and all creatures of this world including man are her sincere and obedient children. He favours and supports the idea that human beings who grow up in the lap of nature are perfect and poised in every respect. His famous poem entitled 'Three Years She Grew in Sun and Shower' is a good example in this connection. He says :

> Myself will to my darling be
> Both law and impulse, and with me,
> The girl, in rock and plain,
> In earth and heaven, in glade and bower
> Shall feel an overseeing power. (7-12)

Wordsworth points out the education of nature, and the great influence nature can exercise on human life. Indeed, nature has the power to impart education better than all the teachers and educationists can do. Man passes his life living in close communion with the objects of Nature, the rocks, the earth, the glades, the heaven, the mountains, the clouds, the trees and the storms. The short poem profoundly teaches all human beings the universal truth of the nature of life, that is, they are from nature, they sustain by nature, they have to return to nature and there is no loss of human life after death. So, each object of nature has its great importance for human life and existence.

Innumberable passages of the description of nature are scattered in the poetry of wordsworth. If one goes through his poetry, one will come to know that for him nature is a living entity. He opines that the indwelling spirit in nature imparts its own consciousness to all objects of nature. Mark :

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M.R. Anand's Views on Gandhian Thought in the light of 'Untouchable'

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ABSTRACT

Mulk Raj Anand is a novelist having a remarkable place in Indian writings in English. The perusal of his novel *The Untouchable* reflects that Mulk Raj Anand imbibed Gandhian thought as the novel deals with the problematic issue of casteism which is knawing into the fabric of Indian social structure. The novel brings on surface the exploitation and social injustice undergone by the marginalized people of India. Following the lead of Gandhi Ji Mulk Raj Anand tried to link these lower caste people to the mainstream of society. The present study aims to reflect the exploitation of the underdogs and thereby to improve the deteriorating condition of these lower caste people.

Key words: casteism, marginalized, exploitation and Gandhian thought.

Aims of the Study:

Through this study an effort has been made to bring on the surface the problematic issues of the society just as the casteism, victimization of the underdogs and the social injustice and thereby to bring about the solution of these evils through Gandhian ideology of equality among all the strata of society.

Introduction:

Mr. Anand has selected his hero as from the lowest strata of the society and has placed them on the honourable place. The Untouchable in his first attempt and in the portrayal of the untouchable boy ,Bakha, he has proved his perfection in the character portrayal. He is central figure rather the only person on whom the novelist has concentrated his attention throughout. He reveals the desire of the children and youths of the outcastes who try to break their bonds but finds no way to come out of their age old chains of the caste system.

Mulk Raj Anand has a very important place among the modern Indo-Anglian novelists. He has developedan interest in the Indian

Train To Pakistan: Moral Values for Humanity

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Abstract; Nationalism reflected in Indo-Anglian novels i the glorification of the past for the same purpose of self-assertion a probing into the past for drawing lessons for the present. Th discovery of the past through historical fiction for achieving unity a self-determination among the people of a country may be interpret as one of the meanings of nationalism. In this regard prof. G.P. Sha makes a relevant remark as—"Behind the search for the past glori of a country by its people lies a national spirit."1 This spirit is th sign of first stage of the development of nationalism. And K.R. Minogue also remarks that through historical fiction the people of a country want to rouse a "political and historical consciousness o the nation."2

Meaning of nationalism may be the reforming zeal of the people fo a better and happier society and a stronger nation. The attempt o seeking freedom from foreign oppression also wants at the sam time to organise and consolidate the collective power of the peopl by removing social injustices and age-old evil practices. This attempt is a national process. This endeavour involves consolidation an integration of various peoples into a race or nation. The Indo-Anglia novels and stories with a reformative purpose may be treated a having a nationalistic spirit. One important aspect of nationalism is the political aspect. Nationalism may be defined as the attempt to struggle for political freedom In India freedom movement..Problem facing the nation after independence have been reflected in the novels and short stories published after independence. Among the post-independence political novels reflecting the phenomenon of our attainment of freedom in a spirit of analytical reconstruction the important ones are—Kamala Markandaya's Some Inner Fury (1955), Khushwant Singh's Train to Pakistan (1956) and I Shall not Hear the Nightingale (1959), Attia Hosain's Suinlight On a Broken Column (1961) and short stories, Phoenix Fled and Other Stories (1953).

Resonance of Freedom Movement in R.K Narayan's 'Waiting for the Mahatma'

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"There are writers—Tolstoy and Henry James to name two—whom we hold in awe, writers—Turgenev and Chekhov—for whom we feel a personal affection, other writers whom we respect—Conrad, for example—but who hold us at a long arm's length with their 'courtly foreign grace.' Narayan (whom I don't hesitate to name in such a context) more than any of them wakes in me a spring of gratitude, for he has offered me a second home. Without him I could never have known what it is like to be Indian."—Graham Greene1

Loosely repeating the Mathew Arnold's dictum, it can be said, "Literature is a criticism of life." It is ad rem and pertinent to mention that, approximately, all the movements in the world were born in one form or another from the womb of literature. "The Gandhian phase of the anti-colonial movement for India's freedom finds frequent expression in literary representations of the period." 2 Indian English literature played a pivotal role in India's struggle for independence and it influenced the National Movement along with other Indian languages. India's struggle for freedom is an indispensable part and the sine qua non of R. K. Narayan's novel "Waiting for the Mahatma."

Waiting for Mahatma was originally published in 1955 by Metheun London. The story of the novel is woven around the national movement, which is [illegible] in the ideology of Gandhi. The narrative tone of the novel belongs to the political fiction genre. If we highlight Narayan's literary journey, this novel is known as his most political novel. It is narrated in his gentle comic style and the usual dose of irony. The story of the novel is set during the Quit India Movement of the 1940s.

The protagonist Sriram meets Bharti for the first time when she approaches him for donations for the reception of Gandhiji's visit

National consciousness in the poetry of Sarojini Naidu

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Sarojini Naidu is among the brightest stars and luminaries in the firmament of Indian Writing in English. She is hailed as one of the most talented and illustrious daughters of Mother-India. It is interesting to discern that she combines in her an intense poetic temperament and a very strong patriotic and nationalistic urge. If one goes through her poems, one will come to comprehend that she is an ardent and avid worshipper of beauty. She has a longing to pass her time inside the boundaries of her ivory tower of beauty and romance, but she knows her role responsibilities towards the social, moral or political issues faced by her country and countrymen. In other words, she is a distant cousin of John keats so far as her views about beauty are concerned, but she is well aware and conscious about the problems of her motherland. Prof. K.R.S, Iyenger remarks about her : like Rabindranath Tagore and Shri Aurobindo, Sarojini Naidu too was more than a poet; she was one of Mother-India's most gifted children, readily sharing her burden of pain, fiercely articulating her agonies and hopes, and gallantly straining to redeem the mother and redeem the time. (1)

She is the poetess of Indian thought and sensibility and for her India is an ever present reality. The study of her poems show that she has wheeled out all the [illegible] dedicated soul into the service of the motherland. Her famous poem entitled 'To India' is a good example in this connection. In this poem she deliberately frames and designs Indian to be personified as Mother whom she invokes and pleads to wake up from her slumber. She says :

O YOUNG through all thy immemorial years!
Rise, Mother, rise, regenerate from thy gloom,
And, like a bride high matched with the spheres

भारत का राष्ट्रीय आंदोलन और साहित्य

आनन्द मोहन पाण्डेय
(शिक्षा शास्त्र विभाग)
जी0एफ0 (पी0जी0) कॉलेज
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वर्ष 1600 ई0 में व्यापार करने के उद्देश्य से आये अंग्रेजों ने धीरे–धीरे तमाम कूटनीतियों और हम भारतवासियों की कुछ विसंगतियों का लाभ उठा कर यहाँ अपना शासन स्थापित कर लिया तथा अपने शासन की नींव मजबूत करने की दृष्टि से उन्होंने हमारी एकता, अर्थव्यवस्था, संस्कृतिक मूल्य एवं शिक्षा व्यवस्था को छिन्न–भिन्न कर दिया और हमें दासता की जंजीरों में जकड़ते चले गये, परिणाम स्वरूप भारत ब्रिटेन का एक उपनिवेश बनकर रह गया।

अंग्रेजों के लगातार बढ़ते जन उत्पीड़न से त्रस्त आम जनता, कृषक, व्यापारी आदि इनके शासन से मुक्ति का रास्ता खोजने लगे जिसके परिणाम स्वरूप जगह–जगह छोटे–छोटे आन्दोलन होने लगे, जिन्हे अंग्रेज अपनी सेना या पुलिस आदि के बल पर दबा देते थे। इस काम में यहाँ के ब्रिटिश हुकूमत एवं अंग्रेजियत पसंद लोग अंग्रेजों का साथ देने से बाज नहीं आते थे। इसके अतिरिक्त अंग्रेजी हुकूमत के विरुद्ध आन्दोलनकारियों को राष्ट्रीय स्तर पर ना तो कोई मार्गदर्शक मिला था और न ही जनजागरण का कोई माध्यम विकसित हो पाया था।

अंततः सन् 1857 ई0 में बंगाल में मंगल पाण्डेय नामक एक भारतीय अंग्रेजों की सेना के सिपाही ने स्वाधीनता संग्राम की चिनगारी प्रकट की थी, फिर धीरे–धीरे राष्ट्रीय आन्दोलन का सिलसिला चल पड़ा, उधर अंग्रेजी हुकूमत ने भी उनके विरुद्ध होने वाले आन्दोलनों को कुचलने की कोई कसर नहीं छोड़ी यहाँ तक की विभाजनकारी या फूट डालो की कूटनीतियों का भी सहारा उन्होंने लिया।

तमाम विसंगतियों के चलते जब 1885 में भारतीय राष्ट्रीय कॉंग्रेस की स्थापना हुई और बाद में जब महात्मा गांधी द्वारा राष्ट्रीय आन्दोलन की कमान संभाल लेने पर आन्दोलन को एक दिशा तथा मार्गदर्शन प्राप्त हुआ। हालाँकि उस समय कांग्रेस के तमाम नेताओं तथा महात्मा गांधी में कई मुद्दों पर मतैक्य नहीं था फिर भी राष्ट्रीय आन्दोलन की एक राह निकल गयी थी और सम्पूर्ण भारत में आन्दोलन की बयार तेज होने लगी थी। राष्ट्रीय आन्दोलन के इस दौर में आम जन, कृषक, व्यापारी, शिक्षक, कानूनविद, युवा तथा मातृशक्ति अपना–अपना सहयोग दे रहा था तथा हिस्सेदारी निभा रहे थे, सभी का लक्ष्य था अंग्रेजो भारत छोड़ो।

राष्ट्रीय आन्दोलन में ऐसे अवसर पर अपनी हिस्सेदारी निभाने से भला कैसे हमारे साहित्यकार एवं पत्रकार कैसे पीछे रह सकते थे। हमारे देश के साहित्य

RAJA RAO'S *KANTHAPURA*: VICTIMIZATION AND CONTRIBUTION OF THE MARGINALIZED IN INDIAN NATIONAL MOVEMENT

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ABSTRACT

Raja Rao (1908-2006) is considered to be one of the greatest novelists in Indian English Literature. He imbibed Gandhian thought as is evident from his first novel ***Kanthapura*** (1938). Early life-time of Raja Rao covers the period which is surcharged with struggle for freedom from British regime. A cursory reading of the novel reflects that the people of India were undergoing the pain of exploitation and victimization under the reign of Britain. Everybody, irrespective of his caste and religion, participated in Indian National Movement. But women and the people belonging to lower caste were prone to victimization at two levels. Like all other Indians they were also being tortured at the hands of the British but on the other hand they were also being marginalized by their own people. Moorthy, the protagonist of the novel under consideration, belongs to the upper caste but he mixes himself up with the pariahs, the lower caste people, to link them to the mainstream of freedom movement. These marginalized lower caste people, facing the two-fold victimization, do not, however, lag behind in their struggle to make their motherland free from the clutches of foreign rule. The present study is an effort to highlight the sacrifices rendered by the marginalized section comprising of the lower caste pariahs, coolies and women.

Key words: Indian National Movement, victimization, exploitation, marginalization.

The novel ***Kanthapura*** deals with the freedom movement carried out in a village called Kanthapura situated in the province of Karnataka in the southern part of India. The village is divided into five quarters, Brahmin, Pariahs, Potters, Weavers and Sudras, and with

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TRENDS OF $PM_{2.5}$ AND PM_{10} IN AMBIENT AIR OF LUCKNOW CITY, INDIA

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Abstract

From the industrial to the rural and urban areas Particulate matters $PM_{2.5}$ and PM_{10} are the main sources of Air pollution. Particulate matter (PM) is a mixture of extremely solid particles and liquid droplets. Some examples include automobile exhaust, soot, and fugitive dust emission. There is a high fluctuation rate in $PM_{2.5}$. As per the report of 2009, the annual concentration of $PM_{2.5}$ was 89.4 ig/m^3 and 2018 as 202 ig/m^3. As per the record of January 2019 in the Vikas Khand station of Lucknow PM_{10} recorded alarmingly high levels 269 ig/m^3.

Keywords: Air pollution, $PM_{2.5}$ and PM_{10}, Lucknow.

Introduction

The Atmosphere which comprises a mixture of various gases and it extended up to hundreds of km above the surface of the earth. The air pollution depends mainly upon the state of the troposphere, which is extended up to 11 km from the surface of the earth. It contains major chemical components such as H_2O, CO_2, N_2 and O_2. The changes in the concentration of particulate matter can affect the formation processes of cloud and rainfall and indirectly affect climate change. Particulate matter is referred to as the solid or liquid particles of extremely small size suspended in a gas[5]. It can be natural or man-made. Naturally such as volcanoes, dust storms, sea spray, and forest fire (shown in fig. b). Man-made is burning of fossil fuel in vehicles, several industrial processes and power plants (shown in fig. a). For a particular area, Vikas Khand Lucknow (highly populated area) level of particulates has great interest. PM_{10} having a size less than 10 im is concerned thoracic fraction. $PM_{2.5}$ (2.5 im is 0.0025 mm) having a size less than 2.5 im is concerned respiratory fraction.

Fig: (a) various sources of particulates matter (PM)

Fig: (b) Different Sizes of PM

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IMPACT OF POLLUTION UPON UNDERGROUND WATER

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Abstract

Groundwater pollution occurs as a result of release of pollutants into the ground to natural underground water reservoirs known as aquifers. Once the pollutants released find their way into groundwater, they cause contamination. It is a type of water pollution that is mainly caused by release of substances either intentionally or accidentally through anthropogenic activities or natural causes. The pollutants usually move within aquifers depending on biological, physical, and chemical properties. Processes such as diffusion, dispersion, adsorption, and the speed of moving water often facilitate the movement. But in general, the movement of the contaminants within an aquifer is usually slow and as such, their concentration tends to be high and in a form called a plume. As the plume spreads it might connect with springs and ground wells making them unsafe for human consumption.

Introduction

Pollution can occur from on-site sanitation systems, landfills, effluent from waste water treatment plants, leaking sewers, petrol filling stations or from over application of fertilizers in agriculture. Pollution (or contamination) can also occur from naturally occurring contaminants, such as arsenic or fluoride. Using polluted groundwater causes hazards to public health through poisoning or the spread of disease.

Pollutant types

Contaminants found in groundwater cover a broad range of physical, inorganic chemical, organic chemical, bacteriological, and radioactive parameters. Principally, many of the same pollutants that play a role in surface water pollution may also be found in polluted groundwater, although their respective importance may differ.

1. Arsenic and fluoride

Arsenic and fluoride have been recognized by the World Health Organization (WHO) as the most serious inorganic contaminants in drinking-water on a worldwide basis. Arsenic in groundwater can also be present where there are mining operations or mine waste dumps that will leach arsenic.

Fluoride can especially be released from acidic volcanic rocks and dispersed volcanic ash when water hardness is low. In areas that have naturally occurring high levels of fluoride in groundwater which is used for drinking water, both dental and skeletal fluorosis can be prevalent and severe.

2. Pathogens

Waterborne diseases can be spread via a groundwater well which is contaminated with fecal pathogens from pit latrines. The lack of proper sanitation measures, as well as improperly placed wells, can lead to drinking water contaminated with pathogens carried in feces and urine. Such fecal-oral transmitted diseases include cholera and diarrhea.

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ENVIRONMENTAL HAZARDS AND DISASTER IN INDIA

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Abstract

Hazards originate from interplay of physical, biological, social system. India prone to natural disaster earthquakes floods, cyclones and droughts.Our planet earth is an ever dynamic evolving system with complex interactions of internal and external process. The internal process includes earthquakes, volcanic, while, the external process includes flood, hurricanes, tornadoes, and radioactivity.Every hazard has a different space and time characteristic, which has been summarized in tabular form (Table 1). The natural hazards are related to climate, water and geological causes. Besides natural, the other hazards, as recognized by High Powered Committee on Disaster Management relate to chemical, industrial, nuclear, biological and accidental disaster. Over the last two decades the natural disasters have claimed over three million lives and adversely affected 800 million people worldwide with 90 percent of the victims being from developing countries. In India, there are a total of 593 districts, of which 199 are most disaster prone.Three major natural hazards,namely earthquakes, cyclones and floods are known from times immemorial. India has been affected by these hazard However, the listing of the major occurrence of these hazards is available only for the last about 200 years.

Keywords: Environment, hazards, disaster, industry

Introduction

The total area of India is 3.28 million square km. and 55% of India's land area is vulnerable to seismic, 8% to cyclonic and 10% to flood hazards. Out of that exposed to seismic, about 12% of the land area of the country is liable to severe earthquake intensities of MSK IX or more, about 18% liable to MSK VII and about 25% MSK VII. Earthquakes of giant magnitudes 7.5 or more have occurred in Andaman islands, Kutch area of Gujarat, H.P, J&K, North Bihar and the North-Eastern States. Earthquake of magnitude up to 6.5 and MSK intensity VIII have occurred in the Peninsular India (Fig. 1).

India's coast is extremely vulnerable to cyclone although cyclones affect the entire coast of India. The eastern coast is significantly more prone to cyclone as compared to the western coast. It may be mentioned that as many as 19 major cyclones have occurred out of these, in which the life losses exceeded 10,000 (Fig. 2). World Disaster Report, on an average 5000 people are killed and 59 million get affected and nearly one percent (more than a million housing units) of existing housing stock are known to be damaged during the occurrence of these hazards every year in India. Physical losses added to reconstruction and rehabilitation costs, deliver a body blow to the economy of the country. The memories of Gujarat, Latur and Kashmir earthquakes are still fresh in the minds of the people for heavy damages due to house collapses and heavy loss of human lives. There are numerous instances of disasters caused by cloudburst floods and flash folds from landslides and debris flow from dam failures in the Indian Himalayas. On an average, at least one event is reported every year from some part of the Himalayas. Cloudbursts are common in the Higher Himalayas region and mainly confined to narrow villages.

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NECESSITY OF ENVIRONMENTAL AWARENESS AND EDUCATION

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Abstract

According Rigveda which is older, "The dust (Dhuli) of mother earth and light of Father sky should remain be associated with full brightness for our welfare". According to Rigveda, there are three kind of god-the celestial, the aerial and terrestrial i.e. land, air and water. Brihaspati is most important, means awareness of these mandals. The whole Brahmanda was full of peace and happiness because life and environment were so closely related that it was difficult to think man and organism as something separate from nature or environment.

Introduction

Environmental Education is the new area of study of the discipline of education. With recent developments and adance, ' environmental education' is virtually a new source of concern for educators, teachers and students. There are of 'Environmental Education' has been discussed thoroughly at several national and international seminars, workshops and conferences. Most of the people have recognized the urgent need of environmental education. Therefore, an attempt has been in this paper to explain the concept of 'environmental education'. Education is defined as the process of development, and environment is the aggregate of all the external conditions and influences affecting the life and development of man and other living organism. Man's environment consists of natural as well as social cultural environment. Education can chage and improve the quality of man's environment for desirable modification of his behavior. Education deals with the various problems and principles which govern the relationships between studenrs and their environment which is created by school and teacher formally and informally.

Definition of Environmental Education

The term 'Environmental Education' has been discussed in valous nation and internation seminars who tried to define it. Some of the definitions have been provided here to understand the concept.

"Environmental education is the process of recognizing values and clarify concepts in order to develop skills and attitude necessary to understand and appreciate the interrelatedness among man, his culture and his bio-physical surrounding. It also entails proactive in decision making and self formulation of a code of behaviour about problems and issue concerning environmental quality."

UNESCO (1970) Working Commitee

"Environmental education is a way of implementing the goals of environmental protection. It is not a separate branch of science or field of study. It should be carried out according to the principle of he life-long integral education."

UNESCO (1976) seminar at Jammi

Environmental education is a process of providing learning expriences to obtain knowledge, understanding, skill and awareness with desirable attitudinal changes about man's

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SOLID WASTE GENERATION AND ITS IMPACT ON HUMAN HEALTH (A GEOGRAPHICAL STUDY IN PILIBHIT CITY, U.P.

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Abstract

Open dumping is the most common method of solid waste disposal in many developing countries including Urban areas. Appropriate landfill site selection is important to minimize negative impacts associated with open dump sites. Landfill siting is an extremely difficult task to accomplish due to strong public opposition and regulations. Developing countries do not have a systematic process for landfill site selection and hence unsuccessful landfill siting leading to environmental degradation is typically the result especially in the developing world. Selection criteria include engineering, maintenance, management and analysis of geographical data and its has been signed for working with data that has spatial and descriptive dependency. No site selection study focusing on waste disposal has been performed in (NPP) Pilibhit town of U.P. area which is located at 312 km East of Delhi & 265 km towards south, Lucknow population 1.28 Lakh (2011) people and total waste production of approx. 2924 ton per year. Weather 17°C wind wat 11km/h 68% humidity in NPP Pilibhit. This study has been done using guidelines for selection of site from residential area distance from roads, land use distance from ground water distance from fult geology distance from sensitive ecosystem etc. were used and after data Geo referencing, the weighting of the criteria and adjusting them with the geographical features of the area, data overlaid and finally in two location proposed for landfill were introduced in Pilibhit town.

Key Words: Solid waste, Landfill site, Analytical Hierarchy process, GIS, NPP Pilibhit, Generation.

1. Introduction

The solid waste from Pilibhit NPP is rising in Pilibhit NPP Municipal Area. Such rise in solid waste generation is observed by Pilibhit NPP Municipal Corporation. An increase in solid waste is observed because of increase in urbanization, population density and income, changing food habits, taste and pattern. The growth of industry, commercial units such as hotels, theaters, restaurants, shops are rising fast. Such units are positively contributing to the solid waste generation. In Pilibhit city as a result of huge pressure on the existing Urban infrastructure and within creasing population the generation of Urban Municipal solid waste is on a rise. The health Department P.M.C. headed by the Chief Health Officer is assigned with the charge of NPP Municipal solid waste management to maintain hygienic and aesthetic life of the city.

2. Objectives

The main objectives of the present study are-

1. To identify the sources of solid waste generation in the city.
2. To analyse the spatio-temporal framework of solid waste generation.
3. To analyse the physico-chemical, geographical characteristics of the solid waste in relation to the socio-economic status of the concerned population.

3. Hypothesis

In study area management of solid waste recycling disposal in proper way & population save many diseases.

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पर्यावरण अवनयन और उसके कारण : एक भौगोलिक लेख

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सारांश

पर्यावरण अवनयन विभिन्न भौगोलिक परिस्थितियों में सक्रिय है, परन्तु कुछ क्षेत्र पर्यावरण अवनयन के लिये इतने संवेदनशील है कि अवनयन प्रक्रिया में उत्क्रम तथा बदलाव करना कठिन हो जाता है। वर्तमान समय में वायुमण्डल में उत्सर्जित गैसें, वन विनाश, उच्च औद्योगीकरण, कृषि विकास, जनसंख्या वृद्धि, नगरीकरण, आधुनिक प्रौद्योगिकी की पृष्ठभूमि में पर्यावरण विश्लेषण लगातार महत्व का विषय बनता जा रहा है। विकसित देशों में आर्थिक, औद्योगिक विकास पर्यावरण के परिदृश्य में एक अलग ही रूप में उभर के सामने आ रहा है। जीवन निर्वाह कृषि अर्थव्यवस्था के प्रदेश पूरा रूप से प्राप्त प्राकृतिक संसाधन विशेषकर जैविक संसाधनों पर निर्भर करते हैं। बढ़ती हुई मानव जनसंख्या का दबाव जैविक संसाधनों पर प्रतिकूल प्रभाव डाल रहे हैं, जिसके फलस्वरूप क्षेत्रीय पर्यावरण में पर्यावरण ह्रास के संकेत उभर के सामने आ रहे हैं। अतः हम साधारण भाषा में कह सकते हैं कि पर्यावरण अवनयन के अन्तर्गत पर्यावरण में होने वाले उन सभी परिवर्तन आते हैं जो अवांछनीय हैं और किसी क्षेत्र विशेष में या सम्पूर्ण पृथ्वी पर जीवन और संसाधनीयता को खतरा उत्पन्न करते हैं, अर्थात प्रदूषण, जलवायु परिवर्तन, जैव विविधता का क्षरण और अन्य प्राकृतिक आपदाएं इत्यादि शामिल की जाती हैं।

मुख्य शब्द : पर्यावरण, अवनयन, वायुमण्डल, औद्योगिकरण, प्रौद्योगिकरण, प्रदूषण।

प्रस्तावना

प्राकृतिक पर्यावरण की संरचना दो घटकों से मिलकर हुई है – जैविक घटक और (भौतिक) अजैविक घटक। जैविक घटक के अन्तर्गत पौधे, जन्तु, सूक्ष्म जीव और मानव आता है, लेकिन अजैविक घटक के अन्तर्गत स्थल, जल, मृदा और वायु आते है। जीव मण्डलीय तंत्र में प्राकृतिक पर्यावरण तंत्र का भौतिक तथा जैविक प्रक्रमों द्वारा कार्यान्वयन एवं नियंत्रण होता है। यह भौतिक तथा जैविक प्रक्रम इस प्रकार कार्य करते है कि प्राकृतिक पर्यावरण के किसी क्षेत्र में किसी घटक में किसी खास समय में कोई परिवर्तन होता है, तो उसकी पूर्ति हो जाती है। तो ऐसा अंतर्निर्मित स्वतः नियामक क्रिया-विधि द्वारा होता है। यह एक ऐसी क्रिया विधि है जिसके अंतर्गत यदि पर्यावरण में कोई परिवर्तन होता है, तो ऐसे परिवर्तन को दूसरे प्रकार के घटित परिवर्तन द्वारा क्षति पूर्ति हो जाती है। ऐसी प्रणाली को स्वतः नियंत्रित होने वाली क्रिया विधि को समस्थैतिक क्रिया विधि कहते है। इस क्रिया विधि के कारण प्राकृतिक पारिस्थितिक तंत्र या पर्यावरण तंत्र में सन्तुलन बना रहता है।

प्राकृतिक पारिस्थितिक तंत्र में भौतिक प्रक्रम तथा प्रक्रियाएं जीवो के लिए विभिन्न प्रकार के स्थान मुहैया करती है। इसके साथ ही साथ जैविक समुदाय का मानव अपनी आवश्यकताओं की पूर्ति के लिए भौतिक पर्यावरण में परिवर्तन करता रहता है। औद्योगिक क्रांति की शुरुआत से मानव ने आधुनिक प्रौद्योगिकी से लैस होकर अपने ज्ञान व बौद्धिक क्षमता से अपनी अकांक्षाओं को पूर्ण करने के लिये पर्यावरण में उस सीमा तक परिवर्तन किया है जिससे न केवल जीव-जन्तुओं का ही नहीं बल्कि मनुष्य का अपना ही अस्तित्व खतरे में पड़ गया है। वर्तमान समय में प्राकृतिक संसाधनों का लोलुपतापूर्ण धुआँधार विदोहन हो रहा है, जिसके कारण भौतिक पर्यावरण के कुछ घटकों में इतना अधिक परिवर्तन हो गया है कि उसकी क्षति पूर्ति अन्तर्निर्मित होमियोस्टेटिक क्रिया विधि द्वारा सम्भव नहीं है, जिससे पर्यावरण जीवमण्डल के जीवों पर प्रतिकूल प्रभाव पड़ता

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20वीं शताब्दी का भारतीय साहित्य और राष्ट्रीय आंदोलन

संपादक

डॉ0 फ़ैयाज़ अहमद

राष्ट्रीय चेतना का प्रश्न और भारतेन्दु हरिश्चन्द्र

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राष्ट्रीय चेतना की प्राचीन संकल्पना आधुनिक काल में नए आयामों के साथ हिंदी साहित्य के फलक पर अभिव्यक्त हुयी है। विशिष्ट राजनैतिक तथा आर्थिक परिस्थितियों ने भारतीयों के हृदय में उद्वेलित राष्ट्रीयता को नया स्वरूप दिया। भारत के सांस्कृतिक, राजनीतिक, नवजागरण की चेतना से समन्वित स्वाधीनता आंदोलन के दौर के साहित्य की मूल प्रेरणा राष्ट्रीय है। स्वाधीनता के दौरान राष्ट्रीय दायित्व लेखकों की सृजन प्रक्रिया का अनिवार्य हिस्सा बनकर राष्ट्रीय आंदोलन की इतिहास यात्रा के साथ जुड़ा। स्वाधीनता आंदोलन के एक विशिष्ट युग को साकार करने वाले साहित्य ने देशसेवा की उन्मुक्त पुकार लगाई और सच्चे देशभक्त बनने की ललक पैदा की। स्वाधीनता के बाद के साहित्य की भावभूमि में राष्ट्रीयता का विस्तार भिन्न रूप में हुआ।

1857 के प्रथम स्वातंत्र्यता संग्राम के बाद अंग्रेजों और भारतीयों में जातीय कटुता उत्पन्न हो गई थी। इस संग्राम के बाद स्वराज प्राप्ति की चेतना का समूचे देश पर व्यापक असर दिखाई पड़ा और उससे हिन्दी साहित्य भी प्रभावित हुआ। विदेशी साम्राज्यवाद की विरोधात्मक प्रतिक्रिया के परिणामस्वरूप राष्ट्रीय आंदोलन के दिनों में राष्ट्रीय स्वरों का उच्चारण करने वाले साहित्य को गति मिली। साहित्यकारों ने संस्कृति के बिखरे हुए सूत्रों को तत्कालीन राष्ट्रीय संदर्भों में आकलित किया। ऐतिहासिक दृष्टि से राष्ट्रीयता को आधुनिक साहित्य में यथोचित पृष्ठभूमि प्राप्त हुई। राष्ट्रवादी चेतना के प्रभाव से काव्यानुभूति की बुनावट में परिवर्तन आया। हिन्दी साहित्य में राष्ट्रीय चेतना की इस ऐतिहासिक यात्रा के अग्रदूत भारतेंदु हरिश्चंद्र को माना जाता है। जिन्होंने अपने साहित्य के माध्यम से भारतीय जनमानस के हृदय में राष्ट्रीय चेतना के दीप को प्रज्वलित किया।

राष्ट्रीयता के विकास में साहित्य का महत्वपूर्ण योगदान रहा है। वस्तुतः समाज साहित्य और राष्ट्रीयता का संबंध अत्यन्त घनिष्ठ है। समाज की स्थितियां सृजन की प्रेरणा देती हैं, साहित्य राष्ट्र-निर्माण में सहायक होती है भारतेन्दु युगीन साहित्य में अकाल, महामारी, बेकारी, टैक्स, सामाजिक धार्मिक एवं आर्थिक अवस्थाओं का प्रचुर मात्रा में चित्रण किया गया है। उनका लक्ष्य इन परिस्थितियों से जनता को अवगत कराकर हृदय में देशप्रेम की भावना जागृत करना था। पराधीनता

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अनुवाद : संदर्भ और प्रकृति

डॉ0 फ़ैयाज़ अहमद

एजुकेशनल पब्लिशिंग हाऊस, दिल्ली–2

बाल–साहित्य और भारतीयता

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राष्ट्र कोई स्थूल विचारधारा नहीं है, जिसे देखा, सुना या छुआ जा सके। वह अत्यधिक सूक्ष्म और अविरल है। वह हाथों से स्पर्श की वस्तु नहीं। उसे हृदय से छुआ जा सकता है। वह महसूस करने की वस्तु है। उसे मन की आँखों से देखा जा सकता है। उसकी ध्वनि प्रकृति की प्रत्येक वस्तु में सुनी जा सकती है। वह हर जगह है। कण–कण में है। किन्तु फिर भी स्थूल रूप में उसकी कोई व्यवस्थित परिकल्पना नहीं की जा सकती।

रचनाकारों ने भारतवर्ष को या संपूर्ण राष्ट्रीयता को स्थूल रूप में समझने के लिए 'माता' या 'देवी' के रूप में दर्शाने का प्रयास किया है। यथा–प्रातःकाल के सूर्य की किरणों से चमकती चोटियाँ माता का मुकुट। गंगा–यमुना उसका कंठहार। पंजाब से बंगाल तक फैला संपूर्ण विस्तार उसकी साड़ी का आँचल। नर्मदा और विंध्याचल की मेखला उसका कटिप्रदेश और कन्याकुमारी उसके चरण हैं, जिसे हिन्द महासागर पखार रहा है। इस रूप में किसी राष्ट्र की परिकल्पना की जा सकती है। यदि कोई बालक यह प्रश्न करे कि देश क्या होता है? तो हम उसे इस रूप में मोटे तौर पर समझा सकते हैं।

किन्तु यह देश या राष्ट्र की कोई मुकम्मल तस्वीर नहीं कही जा सकती। कोई भी देश अपनी बोली, भाषा, संस्कृति, समुदाय, रहन–सहन, खान–पान, तीज–त्योहार, पहनावे, भौगोलिक स्थिति, वनस्पति और प्रकृति के कण–कण के गठन से पहचाना जाता है। यह पहचान ही किसी भी देश की धरोहर है और उसे सुरक्षित रखना ही राष्ट्रीयता है। किन्तु वर्तमान में हम अपने राष्ट्र की राष्ट्रीयता को परिभाषित करने या समझने में असफल हुए हैं। मोटे तौर पर हम राजनैतिक सीमा में सैनिक–बद्ध भौगोलिक चौहद्दी को ही [illegible] अनुपालन राष्ट्रीयता मान लेते हैं। किन्तु राष्ट्र उपर्युक्त दर्शायी [illegible] समुच्चय है उस राष्ट्र की प्रत्येक वस्तु के प्रति अनुराग तथा उन सबकी सु[illegible]

बाल–साहित्य भी प्रौढ़–साहित्य के समान्तर चलने वाली एक अविरल धारा है। चूँकि बालक ही देश का कर्णधार है अतः बाल–साहित्य के बहाने राष्ट्रीयता के सवालों पर बहस करना अधिक समीचीन होगा।

बाल पाठकों को लुभाती है उनकी किस्सागोई

मो. साजिद खान

समाज, देश और दुनिया के बाल मन की खासी समझ वाले चुनिंदा साहित्यकारों में प्रकाश मनु जी का नाम पहले लेना ज़्यादा सार्थक होगा। मनु जी उन पुरोधाओं में से एक हैं, जिनके पास अनुभव का तपा हुआ चौबीस कैरेट सच, भावों की लयपूर्ण गहराई, चिंतन का व्यापक फलक, अभिव्यक्ति की बलवती चेतना तो है ही, साथ ही मनुष्य और मनुष्येतर समाज के रिश्तों का सौंधा-सौंधा हिसाब भी है। एक बच्चे को क्या देना है और क्या नहीं? उसे खूबसूरती के किस साँचे में ढालना है? मूल्यहीन-दिशाहीन हो रहे समाज में उसके अंतर्मन में मूल्यों के कौन-से बीज डालने हैं? बहुत अपनेपन से बच्चों तक क्या पहुँचाना है? इस बात की उन्हें गहरी समझ है। उनकी कहानियाँ सघन पाठ की माँग करती हैं। हर एक वाक्य अपने में संपन्न, संतुलित और पूर्ण रूप से चिंतन का संप्रेषक बनकर आता है।

मनु जी प्रेरणा-पुरुष हैं। वे बच्चों के साथी और हमसफर तो हैं ही, बाल साहित्यकारों के भी उतने ही सखा और हितैषी! जितने मधुर स्वभाव और वाणी से, उतने ही लेखन के शब्दों में। उनकी सरलता का अंदाजा इसी बात से लगाया जा सकता है कि दूरभाष से बातचीत के दौरान वे एक प्रतिष्ठित बाल-पत्रिका के संदर्भ में कहते हैं, "साजिद भाई, यह पत्रिका तो मेरे लिए एक परिवार की भाँति है। इसे पढ़ता हूँ तो लगता है, जैसे मैं हर पल अपने परिवार के साथ हूँ। नई-पुरानी कुल मिलाकर तीन पीढ़ियों के लेखकों से हर माह मिलना हो जाता है।" और इसी बातचीत के दौरान वे इस लेखक से भी कहते हैं, "मैं तुमसे मिला तो नहीं, पर इसके माध्यम से मिलकर बहुत सुकून मिलता है। जैसे मुझे अपना परिवार मिल गया हो।"

मनु जी की कहानियाँ कई मायनों में महत्त्वपूर्ण हैं। उनकी हाल की कुछ चुनिंदा कहानियों की बतौर बानगी, मैं उल्लेख करना चाहूँगा। कतिपय कहानियों के माध्यम से ही उनकी विराट लेखन-यात्रा का आकलन आसानी से किया जा सकेगा।

किस्सागोई शैली अब कम नजर आती है, हालाँकि बच्चों के अंतर्मन को टटोलने और चुपके-से उनके मन में चरित्र-निर्माण का सच्चा मोती धर जाने में उनकी कोई विकल्प नहीं था। जाहिर है, दादा-दादी, नाना-नानी [illegible] गया। आज के एकल परिवारों में बच्चों को इकट्ठा कर किस्सा सुनाने[illegible] नहीं [illegible]। अगर रहा भी तो यह बच्चों से दूर है, या आज की अकादमिक पढ़ाई [illegible] बच्चे भी उनसे दूर हो गये हैं। कहना न

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सी बी टी प्रकाशन

नीम का तिनका

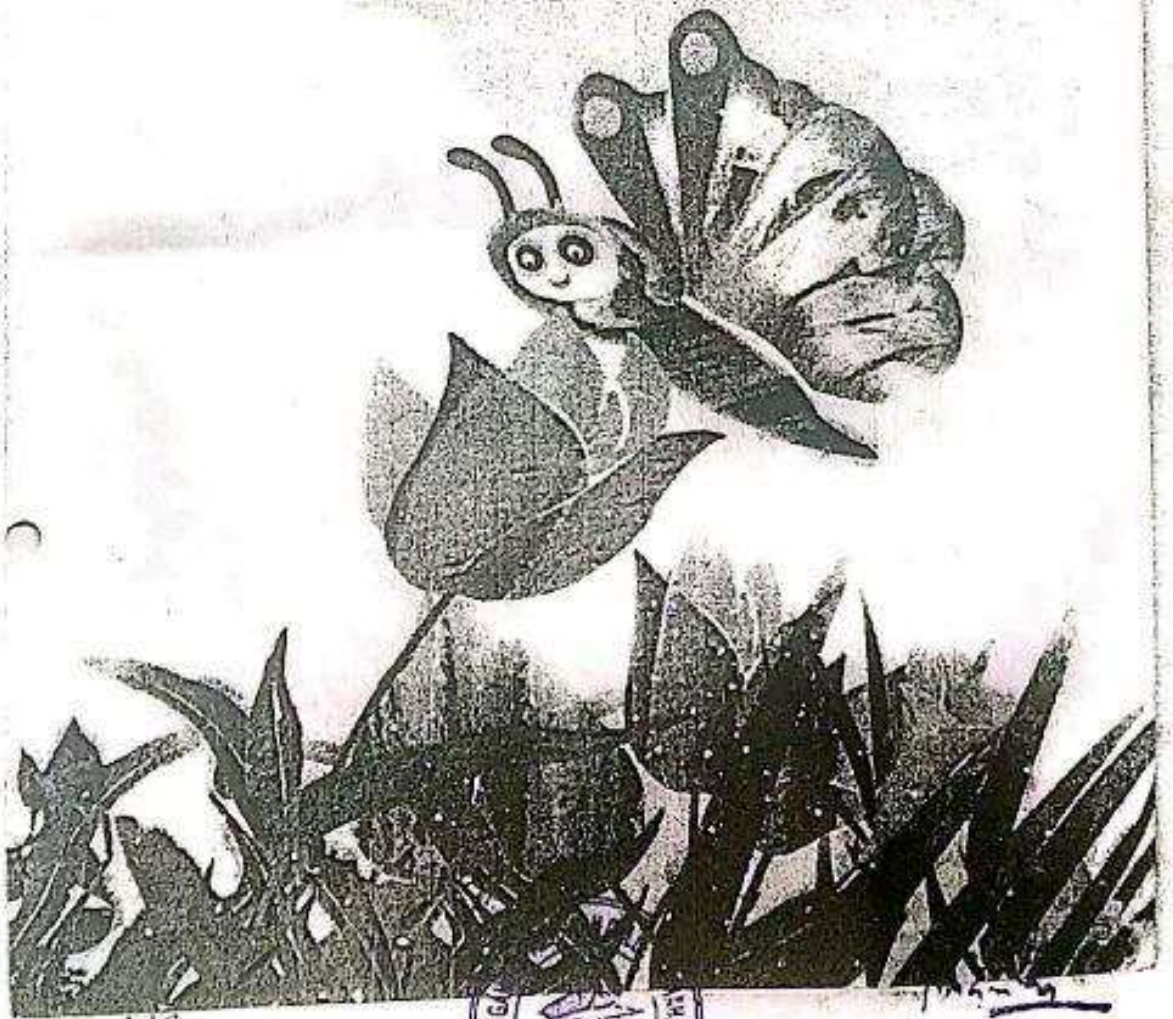
लेखन: मोहम्मद साजिद खान

चित्रांकन: सौरभ पण्डेय

एन.सी.ई.आर.टी. प्रकाशन

तितलियों के रंग

मोहम्मद साजिद खान
चित्रांकनः शशि शेटये



THE NEEM SPELL

A CBT PUBLICATION

Mohammad Salid Khan
Illustrated by Saurabh Pandey

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Mohammad Sajid Khan
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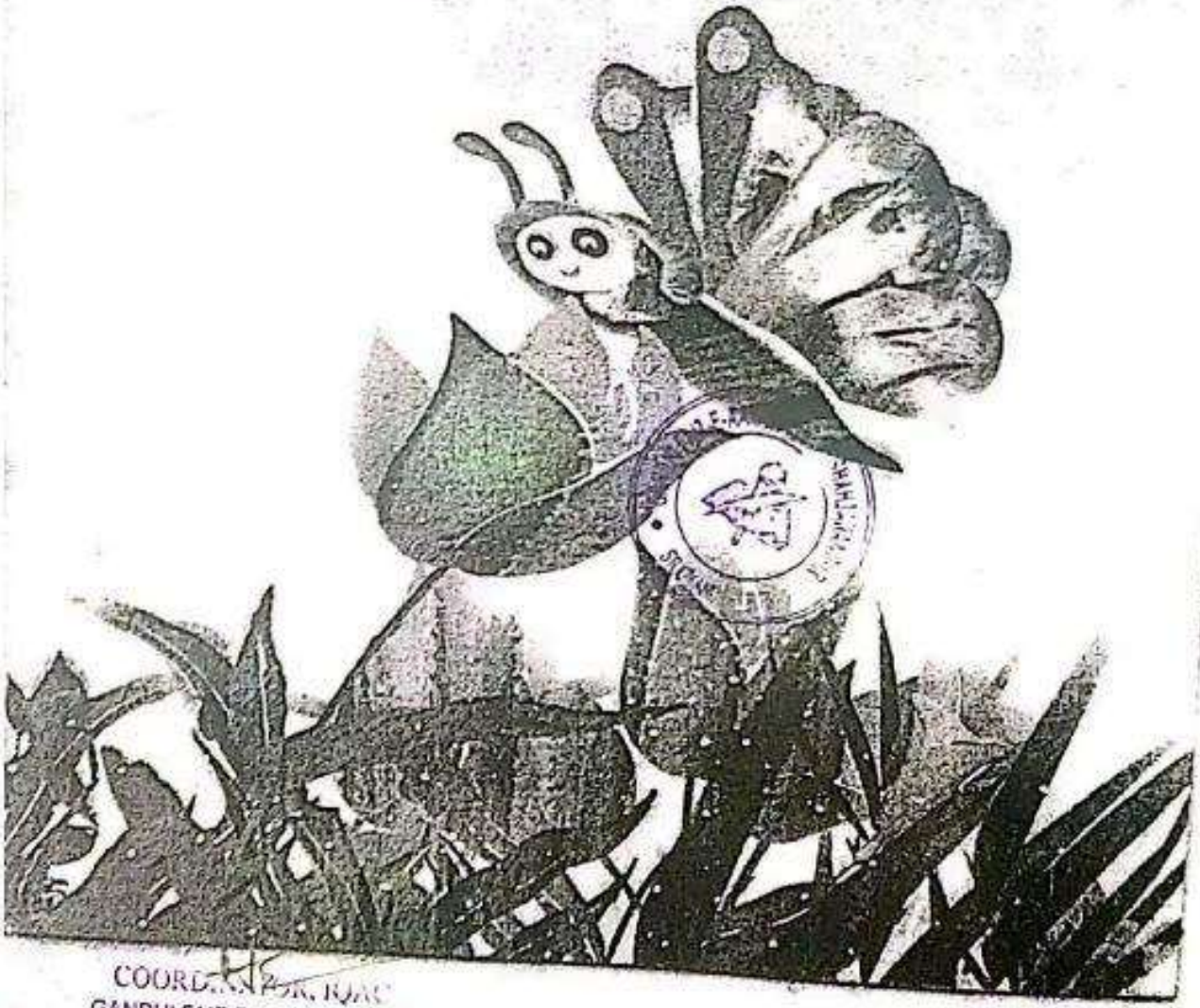

हिंदीतर भारतीय भाषाओं का बाल साहित्य और स्वाधीनता–आंदोलन

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जिस तरह मध्यकाल में भक्ति आंदोलन ने भारतीय समाज की मूल चेतना को परिभाषित करने का कार्य किया था उसी तरह राष्ट्रीय स्वाधीनता आंदोलन ने भारत की जातीयता, अखंडता और भावनात्मक एकता का महत्वपूर्ण कार्य संपन्न किया। कहना न होगा कि इसमें अन्य कारकों के साथ साहित्य का भी गहरा योगदान रहा है और बाल साहित्य भी इससे अलग नहीं है।

यूँ तो भारत में बाल साहित्य का आरंभ ईसा पूर्व 'पंचतंत्र' से मान लिया जाता है। किंतु बाल साहित्य को उसका पृथक अस्तित्व आधुनिक काल में, अंग्रेजों के आगमन और छापेखाने के विकास के बाद ही प्राप्त होता है। अंग्रेज़ी शासन के प्रभावों, प्राप्त सुविधाओं तथा गुलामी की बेचैनी से पैदा हुयी स्वचेतना के परिणामस्वरूप ही बाल साहित्य प्रकाश में आया। बालकों में सत्य, तेज, ओज, स्फूर्ति, उत्साह, प्रफुल्लता, जाति प्रेम, आत्मगौरव आदि सद्भावों को जागृत करने का जो बीड़ा लेखकों ने उठाया वह नवजागरण का ही परिणाम था। बाल साहित्य का उदय जनतांत्रिक चेतना के विकास का परिणाम था। इस चेतना के विकास के साथ–साथ बाल साहित्य विकास भी होता गया। बाल साहित्य का आरंभिक रूप भले ही अंग्रेज़ी शिक्षा पर आधारित पाठ्य पुस्तकों के रूप में विकसित हुआ, पर शीघ्र ही उसने यह लीक छोड़कर बालकों के मनोविज्ञान, उनके संस्कार–निर्माण और मूल्यपरकता से जोड़ा। 1917 में प्रकाशित 'बालसखा', जिसे हिंदी बाल साहित्य की 'सरस्वती' कहा जाता है, के प्रवेशांक में पत्रिका का उद्देश्य 'बच्चों में उच्च भावों को भरना और उनमें दुर्गुणों को निकाल बाहर करना'[1] बताया गया था। यह बाल साहित्य द्वारा राष्ट्रीय चेतना के प्रसार का ही नतीजा था कि 1946 में जब अंग्रेजों भारत छोड़ो का बिगुल बजा तो नौजवानों की एक ऐसी पीढ़ी तैयार हो चुकी थी जो इसी तरह का साहित्य पढ़कर बड़ी हुई थी।

अन्य भाषाओं [illegible] बाल साहित्य नवजागरण की देन है। उर्दू बाल साहित्य का आरंभ [illegible] अंग्रेजी शिक्षा पर आधारित स्कूलों की पाठ्य पुस्तकों के रूप में विकसित

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अनुक्रम

उजली हँसी के कथाकार प्रकाश मनु

मो. अरशद खान

[illegible]

प्रेमचंद की राष्ट्रीय चेतना : सोज़े वतन के सन्दर्भ में

डॉ० दरखशाँ बी.
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डॉ० निजामुद्दीन खां

बीसवीं शताब्दी के प्रारंभिक वर्ष भारत के लिए राजनैतिक एवं सामाजिक परिवर्तन की दृष्टि से राष्ट्रीय आंदोलन के इतिहास में महत्वपूर्ण स्थान रखते हैं क्योंकि इस समय विभिन्न क्षेत्रों में स्वतंत्रता की मशाल प्रज्वलित हो रही थी। जहाँ एक ओर समाज के विभिन्न महत्वपूर्ण अंग जैसे किसान, छोटे–बड़े व्यापारी, कारीगर आदि महत्वपूर्ण भूमिका निभाते हुए राष्ट्रीय आंदोलन को तीव्र गति प्रदान कर रहे थे, वहीं दूसरी ओर एक वर्ग ऐसा भी था जो अपने कलम की रौशनी से स्वतंत्रता के पथ को आलोकित कर रहा था।

लेखकों के इस वर्ग में मुंशी प्रेमचंद का नाम सर्वोपरि है। चाहे उनके उपन्यास हों, कहानियाँ हों, नाटक हों सभी में राष्ट्रीयता का स्वर मुखर हुआ है। मुंशी प्रेमचंद ऐसे लेखक हैं जिन्होंने गाँधी जी के आह्वान पर सरकारी नौकरी से इस्तीफ़ा दे दिया था और प्रत्यक्ष तौर पर राष्ट्रीय आंदोलन से जुड़ गए। "जलियाँवाला बाग हत्याकांड और असहयोग आंदोलन के छिड़ने पर प्रेमचंद ने नौकरी छोड़ दी। यह बीस साल की सरकारी नौकरी थी, जिस पर उन्होंने लात मारी थी।"[1]

उनकी रचनाओं में स्वतंत्रता की ज्वाला इतनी तीव्र थी कि ब्रिटिश सरकार को उनका कहानी संग्रह 'सोज़े वतन' ज़ब्त करना पड़ा जबकि हम देखते हैं कि 'सोज़े वतन' में कहीं भी प्रत्यक्ष रूप से ब्रिटिश सरकार का विरोध नज़र नहीं आता है, तो फिर वह कौन सा डर था, जिसके भय से 'सोज़े वतन' के लिए ब्रिटिश सरकार ने यह रुख अपनाया–"श्री रघुपति सहाय फ़िराक के अनुसार 'सोज़े वतन' की पाँच सौ प्रतियों में प्रेमचंद को आग लगाने पर मजबूर किया गया। दुनिया भर में जनतंत्र की हिफ़ाजत का [illegible] हुकूमतों ने इस तरह भारतीय जनता के सबसे बड़े लेखक की रचनाओं का स्वागत किया।"[2]

अंग्रेज़ी को [illegible] प्रेमचंद के 'सोज़े वतन' से भारतीय जनता पर क्या असर पड़ेगा, कहीं बग़ावत पर न उतर आए–"इस संग्रह की पाँच कहानियों से अंग्रेज़ शासक घबरा उठे। वे जानते थे कि युद्ध की तैयारियों का असर हिन्दुस्तान पर क्यों पड़ेगा। वहाँ के लोगों की ज़िंदगी पर और भी तबाही बरपा होगी। नतीजा यह होगा कि यहाँ का स्वाधीनता आंदोलन और भी तेजी से आगे बढ़ेगा। अपने साम्राज्यवादी हितों की रक्षा के लिए वे यहाँ के [illegible] आंदोलन को ही

अल्लामा इक़बाल की राष्ट्रीय भावना

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मनुष्य के जन्मजात भावों में प्रेमभाव सर्वोपरि है। यह प्रेम किसी भी वस्तु, व्यक्ति अथवा स्थान के प्रति हो सकता है। परिवार, समाज और देश के प्रति यह प्रेम भाव निरंतर गतिमान रहता है। देश अथवा राष्ट्र के प्रति प्रेम से तात्पर्य देशवासियों और देश के कण–कण के प्रति मन में प्रेम और उसका प्रदर्शन दोनों ही हैं। यदि कोई केवल मन में देश के प्रति प्रेमभाव रखे और समय–समय पर इसका प्रदर्शन न करे, तो ऐसा प्रेम आधा–अधूरा देशप्रेम कहलाता है। इसी दृष्टिकोण के चरित्रार्थ बुद्धिजीवी वर्ग अपने भाषणों एवं सार्थक एवं सारगर्भित रचनाओं का आश्रय लेते हैं। साहित्यकार अपने राष्ट्रप्रेम को अपनी रचनाओं के माध्यम से जन–जन तक पहुँचाकर उनमें राष्ट्रप्रेम जाग्रत करने के अपने कर्त्तव्य की पूर्ति करता है।

अल्लामा इक़बाल की गणना उर्दू के महान साहित्यकारों में होती है। उनका काव्य–जगत अत्यधिक समृद्ध है। साहित्य की अनेक विधाओं यथा– ग़ज़ल, रुबाई, कसीदा, क़त्अ, नज़्म इत्यादि में उन्होंने जहाँ अपनी लेखिनी के चमत्कार दिखाए, वहीं उन्होंने विभिन्न भाषाओं की उत्तम रचनाओं के भी उर्दू में काव्यानुवाद किए। विषय विविधता अल्लामा इक़बाल के काव्य में प्रचुर मात्रा में उपलब्ध है। उन्होंने धर्म, दर्शन, राजनीति, संस्कृति, समाज, मनोविज्ञान, मानव एवं राष्ट्रप्रेम को अपनी रचनाओं में प्रस्तुत किया। उन्नीसवीं शताब्दी के अंत तक आते–आते वो शायरी के क्षेत्र में उतर चुके थे। बीसवीं सदी के आरंभ में मंच से अपनी कविता अथवा नज़्में प्रस्तुत करने में सक्षम हो गए। परिस्थितियों और देश के प्रति प्रेमभाव ने उन्हें राष्ट्रप्रेम से ओतप्रोत रचनाएँ प्रस्तुत करने के लिए प्रोत्साहित किया।

प्राकृतिक सौंदर्य एवं संरचना की दृष्टि से भारत एक अद्भुत देश है। हिमालय इसका शीशमुकुट है। भारत के इस प्रहरी और शीशमुकुट के प्रति काव्य रचना राष्ट्रप्रेम का एक [illegible] अंग है। अल्लामा इक़बाल ने अपने काव्य–संग्रह– बाँग–ए–दिरा का [illegible] हिमालय' शीर्षक नज़्म से किया है। वे हिमालय को भारत की सुरक्षा का [illegible] बताते हैं। वह इतना ऊँचा है कि आकाश भी झुककर उसके माथे को चूमता है। संसार की रचना के समय से है किंतु युवा है और इस में जर्जरता परिलक्षित [illegible] होती। वे 'हिमालय' को संबोधित करते हुए कहते हैं कि–

"ऐ हिमालय! ऐ! फ़सील–ए–किश्वर–ए–हिंदोस्ताँ,

उपन्यास 'मान' कृत चित्रावली
आलोचनात्मक विश्लेषण

लेखक:
डॉ. मुहम्मद इलियास

संपादक:
डॉ. शमशाद अली
असि. प्रोफेसर

मुद्रक एवं प्रकाशक:
मुस्लिम एजुकेशनल प्रेस, अलीगढ़
मो० 08071655496

राष्ट्रीयता का प्रश्न और भारत–भारती

डॉ. मो0 कारिफ नईम
असिस्टेंट प्रोफेसर
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बीसवीं शताब्दी के पूरे भारतीय वाङ्मय में मानवाधिकारों को आंदोलन की शताब्दी कहा जा सकता है। भारत में आंदोलनों का प्रारम्भ तो 1857 ई. में स्वतंत्रता आंदोलन के साथ ही हो गया था किन्तु 20वीं सदी तक आते–आते इन आंदोलनों के विभिन्न रूप हो गये जो राष्ट्रीय भावना से ओत–प्रोत थे। भारतेन्दु युग में हिन्दी अपने नये रूप में पल्लवित हो रही थी। गद्य की नयी विधाओं का विकास भी इसी युग से प्रारम्भ माना जाता है और स्वतंत्रता आंदोलन के साथ अन्य आंदोलनों की भूमिका बनानी शुरू हो गयी थी, जिसका रूप द्विवेदीयुग, छायावाद, प्रगतिवाद, प्रयोगवाद और निरन्तर आगे के समय में देखने को मिलते है, वैसे तो हिन्दी साहित्यकारों ने विभिन्न आंदोलनों का ताना–बाना बुना है, आधुनिक काल के द्विवेदी युग में खडी बोली के हस्ताक्षर कवि 'मैथिलीशरण गुप्तजी' आते हैं, जिन्हें आधुनिक युग का तुलसी भी स्वीकार किया जाता है। खड़ी बोली कविता को उच्च स्थान दिलाने में 'मैथिलीशरण गुप्त' की महत्वपूर्ण भूमिका है।

'मैथिलीशरण गुप्तजी' ने 'रंग में भंग', 'जयद्रथ वध', 'किसान', 'विकट भट', 'गुरूकुल', 'साकेत', 'भारत–भारती', 'झंकार', 'यशोधरा', 'द्वापर', 'जय भारत', 'विष्णु प्रिया', 'सिद्धराज', 'हिन्दू', 'वैतनिक', 'पंचवटी' आदि प्रमुख काव्य ग्रंथों की रचना की है जो साहित्य की एक अमूल्य निधि है और मैथिलीशरण गुप्त को सही भाव से समझने का मार्ग प्रशस्त करती है, 'गुप्तजी' जिस समय में कविता कर रहे थे, वह युग भारत में उथल–पुथल का समय था, स्वतंत्रता आंदोलन का संघर्ष अपने चरम पर था, राष्ट्रीयता की एक नयी [illegible] व्याख्यायित हो रही थी, जिसमें राष्ट्र और राष्ट्रवाद को समझना हर व्यक्ति के लिये आवश्यक था जिसकी नये रूपों में परिभाषा गढ़ी जा रही थी "'राष्ट्र' को [illegible] वस्तु नहीं है, और न ही सीमाओं में आबद्ध भूमि और जनसमूह है। राष्ट्र मनुष्य के [illegible] निवास की आंतरिक पृष्ठभूमि में जीवन का वह अमूल्य सिद्धांत है जहां मनुष्य अपनी आस्था और संस्कृति की त्रिधारा में सभ्यताओं को जन्म देता है।"[1]

वर्तमान परिदृश्य में भी भारत की परिस्थितियों में राष्ट्रीयता की परिकल्पना महत्वपूर्ण हो गयी इसलिये राष्ट्रीयता के अर्थ को समझना आवश्यक है 'राष्ट्रीयता की संकल्पना अत्यन्त प्राचीन है 'राष्ट्रीयता' एक ऐसा मनोभाव है, जिसका मूल ध्येय

नज़ीर अकबराबादी की समन्वयवादी दृष्टि : एक अवलोकन

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हिन्दी साहित्य में धार्मिक एवं सामाजिक समन्वय का प्रारंभ भक्तिकाल से माना जाता है। भक्तिकाल में निर्गुण और सगुण दो ऐसी विपरीत विचारधाराएँ चल रही थीं, परन्तु दोनों धाराओं के कवि चाहे तुलसी, सूर, कबीर, जायसी या अन्य कवि हों पर उनका समस्त साहित्य धार्मिक और सामाजिकता का ताना–बाना है। इसी परंपरा की परिपाटी हमें रीतिकालीन कवि नज़ीर अकबराबादी (वली मुहम्मद) के साहित्य में देखने को मिलती है। वैसे रीतिकाल को अलग–अलग नामों श्रृंगारकाल, कलाकाल, अलंकृतकाल के नामों से जाना जाता रहा है। रीतिकाल का काव्य लोकवादी रहा है, क्योंकि भक्त–कवि प्रायः सामान्य जन के बीच अपनी भक्ति–भावना का प्रचार करते थे। उनमें लोकमंगल और लोकरंजन की प्रवृत्ति प्रधान थी, किंतु रीतिकालीन कविता सामान्य जन से कटकर राजदरबारों में आ गई। परिणामस्वरूप यह जन साहित्य न होकर दरबारी साहित्य हो गई..रीतिकालीन कविता देशी या विदेशी राजाओं, नवाबों के दरबार में लिखी गई, इसीलिये उस पर तत्कालीन सामंती परिवेश का पूरा प्रभाव पड़ा, इसीलिये रीतिकालीन कवियों को प्रायः तीन मुख्य श्रेणियों में विभाजित किया गया जो इस प्रकार हैं– रीतिबद्ध कवि, रीतिसिद्ध कवि, रीतिमुक्त कवि। नज़ीर अकबराबादी रीतिमुक्त काव्यधारा के अन्तर्गत आते हैं, परन्तु उनके साहित्य के विभिन्न दृष्टिकोणों को जानने से पूर्व युगीन धार्मिक एवं सामाजिक परिस्थितियों का अध्ययन उसके पूर्णरूपेण परिचय का द्योतक होता है जो युग के उपर्युक्त

सम्पूर्ण ढाँचे को परिवर्तित कर उसे नवीन रूप प्रदान करता है। अतः युगीन परिस्थितियाँ ही युगीन परिवेश की परिचायक होती है। नज़ीर अकबराबादी का काव्य युगीन परिवेश और परिस्थितियों की छायाप्रति है।

नज़ीर का समय मुगल शासक मुहम्मद शाह से आरम्भ होता है, जिसका शासनकाल 1719 ई० से 1748 ई० तक रहा। यहीं से आरम्भ होकर नज़ीर का समय अकबरशाह सानी तक रहा, जिसका शासनकाल 1806 ई० से 1837 ई० तक था। इन सौ वर्षों में भारत में राजनैतिक उथल–पुथल हुई, क्योंकि यह मुगल शासन के पतन का समय था, मुगल शासन जहाँ अपना वर्चस्व स्थापित करने में अक्षम हो रहा था, वहीं फ्रांसीसी और अंग्रेजी सत्ता भी अपना प्रभाव बढ़ाकर सत्ता पर अपना अधिकार करने के प्रयास में थी और इसी काल में "रीति परंपरा के श्रेष्ठ कवि देव, घनानंद, पद्माकर और उर्दू के दो बड़े शायर मीर, गालिब थे, सभी प्रायः 1725 ई० से 1825 ई० के बीच के सौ बरसों में रामकालीन और कार्यरत थे। 1750 के आसपास मीर, देव, घनानंद लिख रहे थे, 1825 के आसपास पद्माकर और गालिब ये एक ही भाषा–क्षेत्र के कवि थे, भाषा–उनकी काव्य–भाषा प्रयोग–विधि और काव्य–परंपरा में अ[illegible]। रेख्ता भाषा यह है बोलचाल के रूप में उर्दू हिन्दी से अलग नहीं [illegible] मालवी की तुलना में उर्दू आधुनिक खड़ी बोली [illegible] के बहुत अधिक निकट है।"[1]

नज़ीर जिस युग में कविता लिख [illegible] युग के महानगरों के सामाजिक–स्थल पर दोनों विशेष धर्मों के अनुयायियों अर्थात हिन्दू और मुसलमानों को एक दूसरे के निकट लाने के लिए संधि एवं समन्वय की नीति पर विशेष बल दिया जा रहा था, इन्हीं दोनों धर्मों के अनेक सम्प्रदायों ने नज़ीर को प्रभावित किया। इसलिए नज़ीर इस्लाम और शिया–सम्प्रदाय के साथ हिन्दू धर्म व सिख सम्प्रदाय से प्रभावित होकर अपनी कविताओं में इसका विवेचन किया। नज़ीर के ऊपर इस्लाम धर्म का पूर्ण प्रभाव था इसलिये नज़ीर ने पैगम्बर मुहम्मद की प्रशंसा में कविता की है। रसूल में अपनी आस्था को प्रकट करते हुये नज़ीर कहते हैं कि–

"रख अपने दिल में ऐ आदम के बिन कलमा मुहम्मद का।
और अपनी उंगलियों के ऊपर भी बिन कलमा मुहम्मद का।
पढ़े हैं सब परी और देव जिन कलमा मुहम्मद का।
मुसलमाँ हो तो रख मूल एक बिन कलमा मुहम्मद का।
पढ़ाकर रिदक दिल से रात–दिन कलमा मुहम्मद का।।"[2]

भारतीय राष्ट्रीय आंदोलन और 'उग्र' की कहानियाँ

डॉ० परवेज़ मुहम्मद
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भारत एक प्राचीन देश है, जिसकी सभ्यता और संस्कृति दुनिया की सभी संस्कृतियों में श्रेष्ठ है। जिसका प्रमुख कारण यह है कि प्राचीन काल से ही भारत पर आर्यों, यूनानियों, शकों, कुषाणों, हूणों, अरबों, इरानियों, तुर्कों, अफगानों, मुग़लों और अँग्रेज़ों का शासन रहा है। जिससे यहाँ के निवासियों पर इनके रहन –सहन, खान–पान, दीन–धर्म और आचार विचार आदि का गहन प्रभाव पड़ता रहा। इनमें से बहुत से लूट–पाट करके वापस लौट गए, परन्तु कुछ ऐसे भी थे जिन्होंने भारत को ही अपना देश मानकर यहीं बसना बेहतर समझा। उदाहरण के लिए मुग़ल साम्राज्य को देखा जा सकता है। जिसमें अकबर सबसे उल्लेखनीय है। जिसने यहाँ के दो बड़े धर्मों हिन्दू और इस्लाम में धार्मिक सद्भाव पैदा किया। यही कारण है कि अकबर और उसकी जैसी सोच के अन्य शासकों ने भारत और भारतीय जन–मानस के दिलों पर लंबे समय तक राज किया, परन्तु कुछ विदेशी शासकों जैसे अँग्रेज़ों ने भारत को अपना देश न समझकर उसे गुलाम बनाकर उस पर बर्बरतापूर्वक शासन किया। उनको भारतीय जनमानस ने कभी स्वीकार नहीं किया। वह यहाँ की धन सम्पदा लूटकर इंग्लैण्ड भेजते रहे और भारत में धार्मिक मतभेदों को बढ़ावा देकर फूट डालो राज करो की नीति से शासन करते रहे। अंग्रेजों की इन्हीं नीतियों के परिणाम स्वरूप भारतीय जनता एकजुट होकर उनके खिलाफ खड़ी हो गयी। भारत में राष्ट्रीय चेतना का वास्तविक उदय और विकास अंग्रेजी शासन के प्रति जनता के इस प्रखर आक्रोश द्वारा ही संभव हो सका। जनता का कम्पनी शासन के खिलाफ 1857 का विद्रोह इसी व्यापक असंतोष का परिणाम था। 1857 के विद्रोह के बाद अंग्रेजों ने इसे दबाने के लिए और भी ज्यादा दमन शुरू कर दिया। परंतु अंग्रेजी शासन की गलत नीतियों के खिलाफ राष्ट्रीय चेतना के जो बीज 1857 में पड़ गये थे, लाख दबाने के बावजूद वे वट वृक्ष बनकर उभरे। खासतौर से बीसवीं शताब्दी में, जब स्वाधीनता आंदोलन अपने चरमोत्कर्ष पर था।

राष्ट्रीय चेतना और राष्ट्रीय आंदोलनों का व्यापक प्रभाव बीसवीं शताब्दी के रचनाकारों पर प्रमुखता से दिखाई देता है। ऐसे रचनाकारों में पाण्डेय बेचन शर्मा 'उग्र' का नाम अग्रणीय है। यह लेखन के साथ-साथ सक्रिय व्यक्तिगत रूप से भी राष्ट्रीय आंदोलन से जुड़े हुए थे। "1920 के ही आसपास उग्र बंगाल आतंकवादी क्रांतिकारियों के सम्पर्क में आये थे, पर वे उनसे वैचारिक रूप से प्रभावित होने पर भी व्यवहारिक

रवीन्द्रनाथ टैगोर और भारतीय अस्मिता की खोज

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भारतीय राष्ट्रीय आंदोलन में रवीन्द्रनाथ टैगोर ने बहुआयामी भूमिका निभाई. प्रत्यक्ष राजनीति में उनकी सक्रियता कम ही रही लेकिन सामाजिक, सांस्कृतिक स्तर पर उन्होंने भारत की स्वतन्त्र आत्मा और अस्मिता को विश्व में पहचान दिलाने का कार्य कर स्वतन्त्रता की पूरक लड़ाई लड़ी।

सन् 1888 में रवीन्द्रनाथ टैगोर ने कांग्रेस अधिवेशन में भाग लेकर अपनी कविता पाठ द्वारा देश की सामाजिक दुर्दशा को दूर करने के लिए देशवासियों से एकजुट कर कार्य करने का आह्वान किया। बंग भंग विरोधी आंदोलन के दौरान स्वदेशी का प्रचार किया। स्वदेश प्रेम से सम्बन्धित कई रचनाएं रचीं तथा शिक्षण संस्थाओं से भरे लेख लिखे। अंग्रेजों की संप्रदायवादी एवं विभाजनवादी नीतियों को विफल बनाने के लिए उन्होंने बंग भंग दिवस को हिन्दू–मुस्लिम एकता के प्रतीक के रूप में दोनों धर्मों के लोगों द्वारा एक दूसरे की कलाई पर राखी बांधकर रक्षाबंधन मनाने का आह्वान किया था, इसी समय उन्होंने आमार सोनार बांग्ला की रचना की जो कालान्तर में बंग्लादेश का राष्ट्रीय गीत बना, जिसमें क्षेत्रीयता के रूप में राष्ट्रवाद की अभिव्यक्ति है। जलियांवाला बाग हत्याकाण्ड से आहत रवीन्द्रनाथ टैगोर ने अंग्रेजी राज द्वारा दी गई– नाइटहुड और सर की उपाधि को लौटा दिया। रवीन्द्रनाथ टैगोर ने भारतीय राष्ट्रीय आंदोलन के दौरान अनुभव किया कि अंग्रेजों द्वारा थोपी गई शिक्षा प्रणाली में त्रुटियां हैं, फलस्वरूप भारत में निर्धनता, हीन भावना तथा आत्मविश्वास की कमी है तथा बोलपुर में अपने विचारों को साकार करने के लिए "शान्ति निकेतन" की स्थापना की जो आज एक प्रमुख विश्वविद्यालय के रूप में विख्यात है। इस संस्थान में छात्र की प्रतिभा के अनुरूप विकास और सर्वांगीण उन्नति तथा संस्कृति, मातृभाषा, नैतिक, बौद्धिक विकास के साथ–साथ शारीरिक शिक्षा पर बल दिया गया था। इन्होंने राष्ट्रीय शिक्षा समिति की रूपरेखा भी तैयार की थी। उन्होंने यह भी महसूस किया कि भारत का उद्धार ग्रामों के उद्धार से ही होगा। उन्होंने ग्रामीण विकास की दिशा में कृषि के क्षेत्र में सहकारी प्रणाली का सूत्रपात किया तथा सहकारी बैंक की स्थापना करके किसानों को बहुआयामी शोषण से मुक्त करने की व्यवस्था की। उन्होंने अपने नोबल पुरस्कार की राशि किसानों में बांट दी। वे स्पष्ट

राष्ट्रीय आंदोलन में उर्दू शायरी की पृष्ठभूमि

डॉ. मनसूर अहमद सिद्दीकी
असिस्टेंट प्रोफेसर
इतिहास विभाग,
जी.एफ. कॉलेज, शाहजहाँपुर

अदब को समाज का आइना कहा जाता है। एक शायर और अदीब अपने आसपास में होने वाली सियासी, समाजी, मआशरती और तेहज़ीबी सरगरमियों की तर्जमानी करता है। उर्दू ज़ुबान भी इससे बाहर नहीं है। हालांकि उर्दू शायरी का ज़िक्र आते ही ग़ज़ल और फिर जाम–व–सुबू और बरम–ए–ग़ज़ालां का तसव्वुर उभरता है, मगर सच तो यह है कि हमारे शायरों ने सिर्फ़ रग–ए–गुल से बुलबुल के पर ही नहीं बांधे है बल्कि कत्ल–व–गारगरी, खूरेज़ी और इन्कलाबी वाकेयात को भी इस खूबी से ब्यान किया है कि ज़बान की लताफ़त भी बाकी रही और मज़मून भी अदा हो गया।

अठारवीं और उन्नीसवीं सदी का हिन्दुस्तानी शायर भले ही वतनियत के जदीद तसव्वुर से पूरी तरह वाकिफ़ न हो मगर अपने वतन पर ग़ैर मुल्कियों के तसल्लुत और फिर उसके नतीजे में होने वाले इस्तेहसाल को अच्छी तरह समझता था और इस बिना पर अंग्रेजों से नफ़रत का एक शदीद जज़्बा भी उस के दिल–व–दिमाग़ में पनप रहा था, जिसका इज़हार वह रमज़िया और खुले दोनों अन्दाज़ में कर भी रहा था।

इसका आग़ाज़ उस वक़्त से ही हो गया था जब अंग्रेज़ी सामराजियत ने हिन्दुस्तान में अपने पैर पसारने ही शुरू किये थे। इसकी सबसे बेहतर मिसाल मुल्ला मौज़ूं का वह शेर है जो उन्होंने सिराजुद्दौला की मौत पर कहा था–

ग़िज़ालां तुम तो वाकिफ़ हो कहो मजनूं के मरने की
दिवाना मर गया आखिर को वीराने पे क्या गुज़री

और फिर प्लासी की शिकस्त के बाद मुल्क की इस्तेहसाल पर मुसहफ़ी का यह शेर भी उस वक़्त के हालात का बेहतरीन तरजुमान है–

हिन्दुस्तां की दौलत–ए–हशमत जो कुछ कि थी
काफ़िर फ़रंगियों ने बतदरीज खींच ली।

बक्सर की जंग के बाद शाह आलम की लाचारी और अंग्रेजों के हाथों बेबसी की कैफ़ियत को उस वक़्त के एक गुमनाम शायर कमाल ने इस तरह ब्यान किया है–

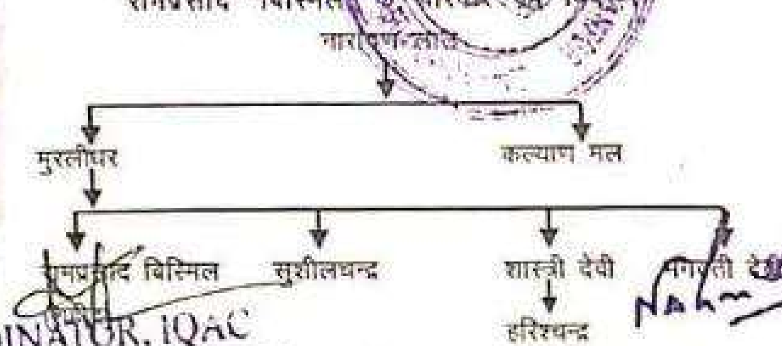
इसी से समझो रहा सल्तनत में क्या रूतबा
वही जब कि महलसराओं में गोरों का पैहरा।

रामप्रसाद 'बिस्मिल' की कविता में राष्ट्रीय चेतना

मो० तुफैल खाँ
असिस्टेंट प्रोफेसर
इतिहास विभाग,
गाँधी फैज़–ए–आम,
कालेज, शाहजहाँपुर।

रामप्रसाद एक कवि, शायर, अनुवादक व साहित्यकार भी थे। 'बिस्मिल' का उर्दू तखल्लुस (उपनाम) था, जिसका हिन्दी में अर्थ होता है 'आत्मिक रूप से आहत'। बिस्मिल के अतिरिक्त वे 'राम' और 'अज्ञात' के नाम से भी लेख व कवितायें लिखते थे। भारतीय क्रान्तिकारी आन्दोलन के अमर शहीद रामप्रसाद 'बिस्मिल' का जन्म 11 जून सन् 1897 ई० को उत्तर प्रदेश के शाहजहाँपुर जिले के एक मध्यवर्गीय आर्य समाजी परिवार में हुआ था। आपके पिता श्री मुरलीधर अत्यधिक उदार एवं सरल प्रवृत्ति के व्यक्ति थे। बिस्मिल ने अपनी आत्मकथा के प्रारम्भिक पृष्ठों में अपने परिवार का जो संक्षिप्त वृत्तान्त दिया है, उसके अनुसार आपके परिवार के लोग मध्यप्रदेश के तत्कालीन ग्वालियर राज्य में चम्बल नदी के बीहड़ों के बीच बरबाई ग्राम के निवासी थे। आपके पितामह गृह–कलह के कारण अपना गाँव छोड़ दिया।' कालान्तर में यह परिवार शाहजहाँपुर जिले में आकर बस गया। रामप्रसाद को बचपन से ही उछलने–कूदने, घुड़सवारी करने का शौक था। शाहजहाँपुर से ही आपकी प्रारम्भिक शिक्षा प्रारम्भ हुई और आपने यहीं से नवी कक्षा की परीक्षा पास की। हालांकि उनके पिता ने पहले उन्हें हिन्दी का अक्षर–बोध कराया किंतु उ से उल्लू न तो उन्होंने पढ़ना सीखा और न लिखकर दिखाया। हारकर उन्हें उर्दू के स्कूल में भर्ती करा दिया गया। किन्तु रामप्रसाद उर्दू मिडिल की परीक्षा भी उत्तीर्ण न कर सके, फिर भी आगे चलकर वह उर्दू के प्रेम रस से परिपूर्ण उपन्यासों एवं [illegible] पुस्तकें पढ़ने के आदी हो गये थे। छात्र–जीवन से ही आप क्रान्तिकारी [illegible] लेने लगे। हाईस्कूल परीक्षा में असफल हो जाने के पश्चात आपने [illegible] छोड़ दिया इसके पश्चात आप सम्पूर्ण समय क्रान्तिकारी कार्यों के आयोजन में लगाने लगे।

रामप्रसाद 'बिस्मिल' के परिवार का विवरण



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FOREST PROTECTION ACTS IN BRITISH INDIA: AN OVERVIEW

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Abstract

Forests are the major natural resources and are also recognized as a colourful expression of nature. They are also recognized as guardians and protectors of the wildlife of the country. Forests are valuable not only due to his botanical use but also for its recreational and scenic beauty that gives glory and attraction to many places in North-east of India as well as in other countries. Forests always add to the agriculture of the place it was situated whether it is in the terms of fertility of the soil, prevention of soil erosion, and promote perennial stream flow in rain-fed rivers. They shelter wild animals, preserve gene pools, and protect the tribal population. Thus, forests help in maintaining the ecological balance.

Keywords: Environment, forest, India, shelter

Introduction

Besides these environmental and ecological benefits, forest bring revenue to the state, supply raw material to industries, and act as a source of fuel and fodder. Forest management always gives rise to conflicting viewpoints. Claims of development would raise problems of ecological security. During the last century, forest has been cut at rates unequalled in world and they are disappearing at an alarming rate. In India, it has been claimed that we have got vegetation cover over 19% of the total land area as against the accepted ideal of 33% in India and over 40% internationally. Thus, vegetation cover is much less than required. The forests are home to some of the world's signature fauna, including the Bengal tiger and Asian elephant, as well as a diverse tropical flora unique to the subcontinent. The forests also contain vast reserves of natural resources, like timber products and minerals. With its population growing, demanding more resources, and consuming more, Indian forests face possible degradation. Forest helps in keeping air and water fresh and climate good. The Indian Forest Act 1927 and State legislation relating to forest impose Governmental control over forests by classifying them into reserved forests, protected forests and village forests.

Every law carries with it the hopes and aspirations of the social and political forces at work at a given time. The Indian Forest Act, 1927 is a comprehensive legislation relating to forests management that consolidates the pre-existing laws. The Forest Act, being a product of the British colonial period, reflects the exploitative intentions of colonial and feudal society of that time, rather than the environmental and ecological interests of the society. Based on a revenue-oriented policy, its main object was to regulate dealing in forest produce and augment the public exchequer by levy of duties on timber.

When India gained independence, forests were placed on the state list of the constitution. Forest departments of individual states continued to regulate forests in accord with the Indian Forest Act of 1927, as implemented by state regulations. The Indian Forest Act gives the state jurisdiction over both public and private [illegible] facilitates the extraction of timber for profit.

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HISTORICAL ASPECTS OF BIODIVERSITY CONSERVATION IN INDIA

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Abstract

This paper deals with the emergence and conservation of the concept of biodiversity and its rise of in India. It refers that how wilderness to the conservation of biodiversity grows and developed from the historical point of view. Though time is good healer, but the case is contradictory here. Due to hunger self-centred approaches of several exploitation behaviour and in turn human behaviour with certain precautionary measures by government have been discussed. My aim is to make understand the concept of biodiversity to the society. The need of the hour is to equate the demands of the "real world" with the address the most immediate issues of historians, activists, politicians, administrators, and technicians involved with the conservation of nature and the theoretical and methodological requirements. In this article approach is to make aware about the progressive steps taken to counter the challenges of biodiversity and its conservation in India. The steps were also taken for some suggestive measures to conserve and safeguard the Biodiversity.

Keywords: Biodiversity, human behaviour, safeguard

Introduction

Historical Background:

If we see the statecraft of Biodiversity in Indian history's point of view then we find the text Yajnavalkya Smriti which was written well before the 5th century AD.It prohibited the cutting of trees and prescribed punishment for such acts. During Chandragupta's reign, there was a regular forest department led by a *Kupyadhyaksha* (Superintendent) and *Vanpalas* (Forest Guards). Even Kautilya's Arthashastra says that they had a role of classifying the trees, plants and herbs and fixing their price, they imposed fines on those who cut trees without permission. It further mentions that besides this how other Biodiversity related conservation was made through admonishing, physical punishment and financial changes. In those days some of the trees, animals, reservoirs were left for particular castes like Brahmins, Shudras, and other castes. The text of Mauryan period emphasised the need of forest administration, let it may be for medicine purpose or fruit and shadow. The Chandragupta's grandson Ashoka, besides implementing the written laws on Wildlife Conservation in letter, went one step further and implemented it in the spirit too. He is known to have done much for the promulgation of Buddhism during his reign. Ahimsa and the Non-violence entered in his spirit after War of Kalinga against all human beings, including animals. After historic violence he adopted Buddhism to realise his past Karma. His penchant for wildlife also extended to art and aesthetics. For this evidence the Lion Capital of Ashoka's pillars can be seen in where four lions are there back to each other. Unfortunately, the streak of good fortune that wildlife had enjoyed did not persist through the centuries.

During British rule, an invitation by the provincial ruler to hunt game within their district was seen as a beehonious gesture towards the colonists. This misplaced camaraderie between the colonist and the princes resulted in irreversible damage to India's wildlife. It was under these circumstances that India's first National Park, the Hailey National Park (Jim Corbett National Park) was founded in 1936, in no small measure due to the efforts of hunter turned conservationist and naturalist Jim Corbett. Post-independence, the first genuine need to protect wildlife in India was realized. In 1952, the Indian Wildlife Board was constituted to centralize all the rules and

राष्ट्रीय आन्दोलन और कलम का योगदान

सैय्यद अनीस अहमद
एसोसिएट प्रोफेसर
लाइब्रेरी एवं इन्फॉर्मेशन साइंस
जी.एफ. कॉलेज, शाहजहाँपुर

जिस प्रकार हम राष्ट्रीय आंदोलन के सेनानियों को भूल गये, उसी प्रकार आज़ादी के दीवाने साहित्यकारों, पत्रकारों एवं कवियों को भी भूल गये। आज़ादी के समय कवियों की कविताओं, ग़ज़लों, गीतों एवं नारों ने आज़ादी की लड़ाई में एक अहम भूमिका निभाई।

हमारी संस्कृति हमारे राष्ट्र की आत्मा है। भारत की संस्कृति सदैव से प्रेम करने की तथा लोगों के हृदय पर शासन करने की रही है और हृदय पर शासन भी वही कर सकता है जो चरित्र में महान होता है। उसका चरित्र ही उसका आदेश बन जाता है। भारतीय राष्ट्रीय आंदोलन के दौरान कवि केवल कविता नहीं करते थे, बल्कि वे अपने कारागार की यात्रा और पत्रकारिता भी करते थे। प्रथम स्वतन्त्रता संग्राम से लेकर 1947 में आज़ादी प्राप्त होने तक हिन्दी एवं उर्दू की राष्ट्रीय काव्य धारा में कवियों ने विस्तृत परिचय दिया। भारतेन्दु मैथिलीशरण एवं प्रेमघन ने स्वाधीनता संग्राम में पूर्ण आत्मविश्वास के साथ अंग्रेजी शासन को चुनौती दी तथा भारत के गौरव का स्तुतिपाठ किया, उनके बाद की पीढ़ी के कवियों ने भी इसी परम्परा को आगे बढ़ाया।

प्रेमचन्द के रंगभूमि, गोदान, कर्मभूमि उपन्यास, भारतेन्दु का 'भारत–दर्शन' नाटक, जयशंकर प्रसाद के [illegible] 'स्कन्दगुप्त' नाटक आज भी देशप्रेम की भावना जगाने के लिए [illegible] है। पंडित जवाहरलाल नेहरु की 'भारत एक खोज' या फिर लोकमान्य तिलक की 'गीता–रहस्य' या शरद बाबू का उपन्यास 'पथ के दावेदार' जिसने भी घर–परिवार की चिंता छोड़ देश की खातिर अपना सर्वस्व अर्पण करने के लिए स्वतंत्रता की लड़ाई में कूदने में देर नहीं लगाई।

राष्ट्रीय कवि मैथिलीशरण गुप्त ने 'भारत–भारती' में आह्वान किया–

"जिसको न निज गौरव तथा निज देश का अभिमान है,
वह नर नहीं, नर–पशु निरा है और मृतक समान है।"

सोहन लाल द्विवेदी ने कहा–

"हो जहाँ बलि शीश अगणित, एक सिर मेरा मिला लो।
मुझे तोड़ लेना बनमाली उस पथ में देना तुम फेंक।
मातृभूमि पर शीश चढ़ाने जिस पथ जावें वीर अनेक।।"

सुभद्रा कुमारी चौहान की 'झाँसी की रानी' कविता [illegible] 'खून खौल सकता है, जिसने अंग्रेजों की चूलें हिला दीं–

A REVIEW ON SYNTHESIS OF NANO SIZED MXENES FOR DRGRADATION OF DIFFERENT POLLUTANTS

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Abstract

In the developing society, water pollutants and environmental pollution are becoming more and more serious. . In recent years, photo catalytic has shown great potential as a low-cost, environmental-friendly, and sustainable technology. Here, a simple method to synthesize highly efficient catalytic compounds named as self-assembled MXenenanocomposites and self-reduction compounds has been proposed. Palladium nanoparticles were grown in situ on MXenenanosheets to form MXene. MXene composites with different reaction times were prepared by adjusting the reduction reaction time. $M_{n+1}AX_n$ (MAX) phases are nano-laminated compounds based on a transition metal (M), a group A element (A), and carbon or/and nitrogen (X), which exhibit a unique combination of ceramic and metallic properties. The conventional preparation method is limited by conditions such as cumbersome operation, high energy consumption, and high pollution. There is the urgent need to develop a new type of sustainable green material for degradable pollutants.We review the classification of current photo catalysts and the methods for improving photo catalytic performance; we also further discuss the potential industrial usage of photo catalytic technology. This review also aims to provide basic and comprehensive information on the industrialization of photo catalysis technology. Fast and efficient degradation of organic molecules is caused by different factors, which makes the Mxene monohybrid a highly efficient photo catalyst and a promising candidate for much future applications.

Key words: MXenes, Nano and Green Materials, pollutants andphotocatalist.

Introduction

Photo-catalysis is a low cost and environment-friendly technique to purify the wastewater frompollutants such as the organic dyesthus splitting out the compounds to form water moleculesand carbon monoxide. In the past, semiconductors have been widely used as the photo catalysts todegrade organic dye owing to the fact that they are not easily biodegradable [1]. For the last decade,the TiO_2 used as a photocatalyst, however, its activity is limited to the ultra-violet (UV) light as it has wider band gap (~3.2 eV) and lower activity under visible light irradiation. As, the UV and visible lights from 4 % to 43 % of the solar spectrum respectively, therefore it is required todevelop such materials that could be used under visible light spectrum [2-4]. For this purpose,bismuth ferrites are the potential candidates under visible light irradiation having narrow band gap.Complex layered structures occur in a wide range of ceramic materials. The so- called 'MAX phasesare an exciting playground for property tuning and understanding of process-structure-property relationships. They stand out because of the large variations in chemistryand hence design opportunitieswithin the same materials family. The history of the MAX phases began in the 1960s, when Hans Nowotny's group in Vienna discovered more than 100 new carbides and nitrides. $M_{n+1}AX_n$ (MAX) phases are nano-laminated compounds based on a transition metal (M), a group-A element (A), and carbon or/and nitrogen (X), which exhibit a unique combination of ceramic and metallic properties. A new family of 2D materials has emerged, consisting of transition metal carbides, nitrides, and carbonitrides, also known as MXenes. The vast majority

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PARAMETERS AFFECTING THE ALPHA-PARTICLE REGISTRATION AND COUNTING IN LR-115SOLID STATE NUCLEAR TRACK DETECTORS (SSNTD)

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Abstract

In view of the fact that the radon progeny contribute the highest to the natural radiation dose to general populations, large scale and long-term measurements of radon and its progeny in the houses have been receiving considerable attention. Solid State Nuclear Track Detector (SSNTD) based systems, being the best suited for large scale passive monitoring, have been widely used for the radon gas (using a cup closed with a semi-permeable membrane) and to a limited extent, for the measurement of radon progeny (using bare mode in conjunction with the cup). These have been employed for radon mapping and indoor radon epidemiological studies with good results. In this technique, alpha tracks recorded on SSNTD films are converted to radon/thoron concentrations using corresponding conversion factors obtained from calibration experiments carried out in controlled environments. The detector response to alpha particles depends mainly on the registration efficiency of the alpha tracks on the detector films and the subsequent counting efficiency. While the former depends on the exposure design, the latter depends on the protocols followed for developing and counting of the tracks. The paper discusses on parameters like etchant temperature, stirring of the etchant and duration of etching and their influence on the etching rates on LR-115 films. Concept of break down thickness of the SSNTD film in spark counting technique is discussed with experimental results. Error estimates on measurement results as a function of background tracks of the films are also discussed in the paper.

Keywords: SSNTD, Radon, Thoron, Alpha tracks,

Introduction

The science of solid state nuclear track detectors was born in 1985 when D. A. Young discovered the first tracks in crystal of LiF [1]. Operation of the solid-state nuclear track detector is based on the fact that a heavy charged particle will cause extensive ionization of the material when it passes through a medium. For example, an alpha particle with energy of 6 MeV creates about 150,000 of ion pairs in cellulose nitrates. Along the path of the alpha particle, a zone enriched with free chemical radicals and other chemical species is then created. This damage zone is called a latent track. The track effect exists in many materials. It is particularly pronounced in materials with long molecules, e.g., cellulose nitrates or different polycarbonates, and such materials are the most convenient ones for application and detector manufacturing. A comprehensive survey of the materials that show the track effect is given by Fleischer et al [2]. Now when a piece of material containing latent tracks is exposed to some chemically aggressive solution, chemical reaction would be more intensive along the latent track. The overall effect is that the chemical solution etches the surface of the detector material, but with a faster rate in the damaged region. In this way a 'track of the particle is formed, which may be seen under an optical microscope or by other counting techniques.

Track Development In Material

One of the challenges that have attracted significant amounts of attention was a formal description of the track development i.e., growth of tracks. The problem is rather geometrical in

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ANGULAR MOMENTUM DEPENDENCE ON INCOMPLETE REACTION DYNAMICS IN $^{16}O + ^{160}GD$ AT ENERGY 5.6 MEV/ NUCLEON

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Abstract

Spin distribution of evaporation residues (ERs) populated via complete fusion 'CF' and incomplete fusion 'ICF' like xn, $\alpha/2\alpha-xn$ and $\alpha/2\alpha p$-xn channels have been observed in the interaction of ^{16}O with ^{160}Gd target nucleus at energy ~ 5.6 MeV/A. These measurements have been done by performing the particle-γ coincidence experiment using Charged Particle Detector Array (CPDA) + Gamma Detector Array (GDA) at IUAC, New Delhi. The experimentally measured spin distribution is constant up to 9ħ for direct $\alpha/\alpha p$-xn and 11ħ for $\alpha/2\alpha p$-xn (both associated with ICF), thereafter yield successively decreases exponentially with high spin states, while spin at half yield (i.e. mean input angular momentum) for all CF channels comes out to be 7ħ. An attempt has been made to extract the side-feeding pattern from the spin distribution for all 'CF' and 'ICF' channels like xn, $\alpha/\alpha p$-xn and $\alpha/2\alpha p$-xn channels. It has been observed that CF products are strongly fed over broad spin range, while low partial waves are strongly hindered in the last δ-emission channel (associated with ICF) in the forward direction and no side-feeding takes place in the low observed spin. These features of side feeding in ICF reaction product results are consistent with existing data. It has also been observed that mean input angular momentum for direct α -emitting channels have been found to be relatively higher than evaporation δ-emitting channels and increases with direct δ-multiplicity in forward direction and hence lead to peripheral interaction.

Key Words: Heavy Ion Nuclear Reaction, Spin Distribution, Side-feeding

Introduction

It has been well experimentally established that complete fusion (CF) and incomplete fusion (ICF) are the dominating modes of reaction at energies above the Coulomb barrier [1-2]. The different modes of reaction can also be understood on the basis of driving angular momenta imparted into the system. For CF to occur, entrance channel angular momentum should be such that ℓ d" ℓ_{crit}, the upper limit of angular momentum, where the projectile hugs the target nucleus with the involvement of all the nucleonic degrees of freedom at projectile energy above the Coulomb barrier. On the other hand, mean input angular momentum lying in the range $\ell_{crit} < \ell \leq$, maximum angular momentum, where the projectile is break-up into the fragments, one part of the projectile fuses with target nucleus called participant and rest part moving in the forward direction as a spectator with almost same velocity as that of incident ion beam. It may be pointed out that multitude of driving angular momenta may vary with the projectile energy and/or with the impact parameter. However, there is no sharp boundary for the CF and ICF processes; both the processes have been observed below and/or above the limiting value of input angular momenta [3]. The most important issues about ICF reaction dynamics at energy ~5.6 MeV/ nucleon are localization of angular momentum window and possibility of populating high spin states. Hence, the study of ICF reaction dynamics is still an active area of investigation to get a clear picture about the

Incomplete Fusion Reaction in $^{20}Ne + ^{159}Tb$ system

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This paper presents to study more complex and interesting phenomenon of incomplete fusion (ICF) reactions induced by ^{20}Ne on ^{159}Tb have been measured at several beam energies range of 4.3-8.2 MeV/A by using catcher foil technique followed by the gamma-ray spectrometry. The cumulative cross-sections of evaporation residues produced in above reaction have been measured and deduced independent cross-sections have been compared with statistical model based computer code PACE-2 and SUM-RULE model. The complete fusion (CF) channels xn and pxn agrees well with PACE-2 predictions after the subtraction of precursor contribution. The alpha emission products shows higher cross-section than that predicted by the complete fusion product, which is attributed to the presence of incomplete fusion of projectile with target at lower energies. This enhancement in the measured cross-section is attributed to the fact that these residues are formed not only by complete fusion but also through the incomplete fusion of ^{20}Ne into α clusters i.e. ^{20}Ne into $^{16}O+\alpha$ and/or $^{12}C+2\alpha$ etc. For the better understanding of incomplete fusion reaction, the incomplete fusion fraction has also been deduced and its sensitivity with various channel parameters like projectile energy, entrance channel mass-asymmetry, α-Q value, Coulomb effect (Z_PZ_T), deformation parameter (β_2) [1] have been observed. Moreover, combined parameter $Z_PZ_T \times \beta_2$ and $\mu_{EC}{}^{AS} \times \beta_2$ are not found suitably to explain ICF reaction particularly for spherical and for deformed targets.

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STATISTICAL CHARACTERISTICS OF PC4 MAGNETIC PULSATION WITH KP INDICES AND ITS VARIATION ON SOLAR WIND VELOCITY

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Abstract

Magnetic Pulsations recorded on the ground on the Earth are produced by processes in the magnetosphere and solar wind. These processes produce a wide variety of ULF hydromagnetic wave types that are classified on the ground as either Pi or Pc pulsations (irregular or continuous). Different regions of the magnetosphere originate different frequencies of waves. Digital Dynamic Spectra (DDS) for the north-south (X), east -west (Y) and vertical (Z) components of the recorded data were constructed for each day for one year (January 1 to December 31, 2005). Pc4 geomagnetic pulsations are quasi-sinusoidal variations in the earth's magnetic field in the period range 45-150 seconds. The magnitude of these pulsations ranges from fraction of a nano Tesla (nT) to several nT. The present study is undertaken for describing the Statistical Characteristics of Pc4 Magnetic Pulsation with Kp indices at low latitude in India and its Variation on Solar wind Velocity (VSW). The monthly variation of Pc4 occurrence has a Kp dependence range of 0 to 9 . The magnitudes of durations of Pc4 occurrence decreased in the station order PON, HAN and NAG respectively. It is also worth noting that Pc4 in winter was observed during intense magnetic activity when 5+ <Kp< 8+. Analysis of the data for the whole year 2005 provided similar patterns of Pc4 occurrence for VSW at all the three stations. Although Pc4 occurrence was reported for VSW ranging from 250 to 1000 Km/s, yet the major Pc4 events occurred for a VSW range of 350-700 Km/sec. The results suggest that the solar wind controls Pc4 occurrence through a mechanism in which Pc4 wave energy is conveyed through the magnetosheath and coupled to the standing oscillations of the magnetospheric field lines

Key Word: Pc4 Magnetic pulsations, MHD waves and instabilities, Solar wind-control of Pc4 pulsation

Introduction

Ultra low frequency (ULF) waves incident in the Earth's environment are produced by processes in the magnetosphere and solar wind. These processes produce a wide variety of ULF hydromagnetic waves. Different frequencies of waves and polarizations originate in different regions of the magnetosphere. Ultra low frequency waves (magnetic pulsations) are caused by hydromagnetic waves that may be generated as a result of different types of plasma instabilities in the magnetosphere or on its boundary in a very complicated manner. In this paper, the generation of hydromagnetic waves, their sources within and external to the magnetosphere and their propagation and modification within the magnetosphere and ionosphere are briefly discussed. A very good summary of these topics, with references to the most important publications dealing with ULF waves, has elegantly been reported by McPherron (2005), Southwood and Hughes (1983) and also presented in the books "Introduction to Space Physics", edited by Kivelson, M.G. and Russell, C.T. (1995) and "Geomagnetic [illegible]" by Jacobs (1970). The information given in this paper is mainly cited from [illegible] publications and references contained therein. The

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POLLUTION AND ITS EFFECT ON LIFE

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Abstract

Pollution is a wide reaching problem and it is likely to influence the health of human populations is great. This paper provides the insight view about the affects of pollution in the perspective of environment, air, water and land/ soil waste pollution on human by diseases and problems, animals and trees/ plants. Study finds that these kinds of pollutions are not only seriously affecting the human by diseases and problems but also the animals and trees/ plants. According to author, still time left in the hands of global institutions, governments and local bodies to use the advance resources to balance the environment for living and motivate the breathed intellectuals to live friendly with environment. An effective reply to contamination is largely base on human appraisal of the problem from every age group and voluntary participation.

Keywords: Environment Pollution; Air Pollution; Water Pollution; Soil Pollution; Land Pollution

Introduction

The significance of environmental factors to the health and well-being of human populations' is increasingly apparent (Rosenstock 2003; World Health Organization [WHO], 2010b). Environment pollution is a worldwide problem and its potential to influence the health of human populations is great (Fereidoun et al, 2007; Progressive Insurance, 2005.). Pollution reaches its most serious proportions in the densely settled urban-industrial centers of the more developed countries (Kromm, 1973). In poor countries of the world more than 75% polluted water have been used for irrigation with only seventy to eighty percent food and living security in industrial urban and semi urban areas. (Mara & Cairncross, 1989). Industry, clustered in urban and semi-urban areas surrounded by densely populated, low-income localities, continues to pollute the environment with impunity (Government of India, 2009). Over the last four decades there has been increasing global concern over the public health impacts attributed to environmental pollution (Kimani, 2007). Human exposure to pollution is believed to be more intense now than at any other time in human existence (Schell et al, 2006). Pollution can be made by human activity and by natural forces as well (Fereidoun et al, 2007; TheEncyclopedia of the atmospheric Environment, n.d). Selfish private enterprise and their lack ofawareness of public well-being and social costs (Carter, 1985) and natural disasters (Huppart &Sparks, 2006) e.g. volcanic ash from Iceland (World Health Organization [WHO], 2010a) are the oneof the main reason of pollution. British Airways (1993) expresses their concern about environment intheir general goal "to be a good neighbor, concerned for the community and the environment. Thisimplies that, businesses now adopted this responsibility as part of their overall business strategy;which should match their broader business goals (Pearce, 1991).

At present, the adoption of environmental auditing in any economic sector is voluntary butfuture legislation could well make it [illegible] (Goodall, 1995). Sharp & Bromley (1979) posit that pollution control program[illegible]nationwide fixed cost-sharing effort relying upon voluntaryparticipation. Interestingly, Goodall (1995) refers tourism as the potential to damage

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DEPENDENCE OF PC4 OCCURRENCE ON KP VALUES AT LOW LATITUDES IN INDIA

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Abstract

A recent study has been undertaken for Pc4 geomagnetic pulsations (in 6.7 – 22.2 mHz frequency range) at three very low latitude stations, viz Pondicherry (PON) (geomagnetic latitude 2.5° N, geomagnetic longitude 151.91° E), Nagpur (NAG) (geomagnetic latitude 11.72° N, geomagnetic longitude 151.92° E), Hanley (HAN) (geomagnetic latitude 23.38° N, geomagnetic longitude 151.89° E) in India employing three axis fluxgate magnetometers, established and operated by the Indian Institute of Geomagnetism (IIG), Navi Mumbai. Digital Dynamic Spectra (DDS) for the north-south (X), east-west (Y) and vertical (Z) components of the recorded data were constructed for each day for one year (January 1 to December 31, 2005). The X- and Y-components of these DDS were investigated for carrying out statistical study of the dependence of diurnal and seasonal variations of occurrence of Pc4 events on Kp. The monthly variation of Pc4 occurrence has a Kp dependence range of 0 to 9. However the yearly Pc4 occurrence was found to be evenly distributed with magnetic activity over the Kp = 2- to 4 range at all the three stations with the peak occurrence recorded at Kp = 3-. The magnitudes of durations of Pc4 occurrence decreased to the station order PON, HAN and NAG respectively. The prominent peaks in the seasonal Pc4 occurrence were observed at Kp = 3-, 3 for all the seasons. However additional peaks were observed at Kp = 1-, 1 and 1+ for the autumn season. It is also worth noting that Pc4 in winter was observed during intense magnetic activity when 5+ < Kp < 8+.

Keywords: Pc4 geomagnetic Pulsations, MHD waves and instabilities, Solar wind – Magnetospheric interactions

Introduction

Naturally occurring ultra-low frequency quasi-sinusoidal variations (1–1000 mHz) in the earth's magnetic field, termed as geomagnetic pulsations have been studied extensively in the past (Jacobs ,1970). Continuous pulsations in the 7 to 22 mHz frequency range are termed as Pc4 pulsations. Observations of geomagnetic pulsations at low latitudes (L<3) indicate that significant hydromagnetic wave energy penetrates deep into the magnetosphere and the plasmasphere (Orr, 1973). Vero and Hollo (1983) have studied a summary of results on the comparison of pulsation data from the satellite ATS-6 and the surface station Nagycent for a year and found that in spite of the difference in L-value, strong similarities were observed. Vero et al. (1991) have reported that at low latitude, the pulsation activity was different in spectrum from the mid-latitude ones. Vero et al. (1992) have also compared pulsations data from equatorial and mid-latitude stations. They found that similar to the results obtained in India (L=1.1), Pc3 pulsations were practically absent, and a few Pc4 events were better correlated with higher latitude station than with the lower latitude one. Ansari et al. (2009) have suggested that the observed diurnal characteristics of occurrence of Pc4 pulsations detected on the night side actually originated on the dayside by an extended origin of ULF waves in the [illegible] sector. However the origin of these waves has not been

ATMOSPHERIC EFFECT OF BROMINE AND PARAMETRIC CALCULATION OF BR II

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Abstract

Bromine is ahalogen and nonmetallic element. It is very harmful to the atmosphere. The second spectrum of bromine (Br II) is Se I-like ion with ground configuration $4s^24p^4$.Thisis a 4-electron system and having a complex structure. Theoretical structure of Br II was predicted using Cowan's Computer code. The excited configurations$4s^24p^3(5s+6s+7s+8s)+4s^24p^3$ (4d + 5d + 6d) in the odd parity system and $4s^24p^3$ (5p +6p+ 7p+ 4f) in the even parity system were talenfor parametric calculation. Relativistic Hartree-Fock (HFR) and least squares fitted (LSF) parametric calculations were usedtothe experimental energy levels taken from ASD NIST(USA) link.

Keywords: Energy parameters, Atomic spectra, Relativistic Hertree-Fock, Energy levels, Atmospheric effect, ab initio.

1. Introduction

Bromine is the nonmetallic element that is liquid at ordinary temperatures. It has atomic number 35. Bromine is irritating to the eyes, skin and respiratory systemand it is very harmful to the atmosphere.Bromine occurs in compounds present in sea water and salt-lake evaporates.About 70% bromine isnatural and rest comes from human activities. Up to half of the loss of ozone above Antarctica is due to reactions involving bromine.

The second spectrum of bromine (Br II) has neutral Selenium (Se I) - like spectrumwith the ground state electronic configuration $4s^24p^4$. The excited configurations are $4s4p^4$, $4s^24p^3ns$ (n e" 5) and $4s^24p^3nd(ne"4)$ and further excitations lead to $4s^24p^3(5p+6p+4f+5f)$ configurations.Present calculation was based on full theoretical support with help of experimental levels which were taken from the ASD NIST link for the confirmation and prediction of energy parameters of untouched configurations.

2. Results and discussion

(a) ab initio calculation

The predictions for this spectrum were obtained theoretically by using Cowan's parametric code in relativistic Hertree-Fock mode. The interacting configurations included for even matrix were $4s^24p^4$,$4s^24p^3(5p+6p+4f+5f)$that for odd parity systemwere $4s4p^3$,$4s^24p^3(4d + 5d + 5s + 6s + 7s)$ for a reliable prediction. The values of ab initio for various energy parameters were taken as E_{av} and æ at 100%, F^k at 85%, G^k and R^k at 70% of HFR values.

(b) The $4s^24p^35p$ and$4s^24p^34f$ configurations.

This configuration arises from the [illegible] of $4s^24p^34d$ and $4s^24p^35s$ configurations. This transition array [$4s^24p^34d$, $4s^24p^3$[illegible] predicted by Cowan's code .The least squares fitted energy parameters were found to be in close agreement with the parameters of Se I which is the isoelectronic of Br II. The ab initio calculations of $4s^24p^34f$ configuration were also

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TOOLS OF OPERATIONAL RESEARCH IN AGRICULTURE

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Abstract

The Operational Research consist of a group of primary quantitative techniques based in Mathematical programming and linear programming is the most widely used technique from this group. Linear programming is used for planning in the field of agriculture and agribusiness for a long time. The experiment is so designed that in the first part the theme is elaborated theoretically while further, through practical example of application of crop production and livestock production. There are many practical problems in the field of Agribusiness which could be solved by linear problem. The material presents practical examples for linear programming for crop and livestock production.

Keywords: Agriculture, tools, livestock

Introduction

The material in front of you offers a practical presentation of the usage of Linear programming in the process of planning in agriculture and agribusiness. Today, the process of planning is unthinkable without using some of the qualitative or quantitative techniques which are efficiently used within the other fields as well. The operational research consist of a group, primary quantitative techniques based on a mathematical programming which are efficiently used in the various management processes. The linear programming is among the most used techniques from that group.For a long time, the linear programming is used for planning in the field of agriculture and agribusiness, yet, there is still a room for its expansion.The purpose of this course is to practically approach the possibilities and ways of usage of the linear programming in the various fields of agriculture to a wider group of beneficiaries. The materials is so structured that in its first part the theme is elaborated theoretically, while further, through practical examples of application of crop production and livestock production, the reader is guided through the rest of the necessary steps. For the linear programming problem solving the Solver is used which is an Add-in and is part of MS Excel.

Planning in agriculture (in brief)

Due to its complexity and its wider spectrum, there are many definitions for planning. One of them could be: The planning is a process of determination the goals and defining the steps towards their accomplishment. Also, there are many different classifications of the planning. Some of them take the time horizon as a criteria on which the planning is based, others take the space within the entity on which the planning refers while others take the general (details) of the goals, etc. Even though the planning is a process towards future and is characterized with uncertainty and risk, the mistakes done during planning are cost effective and not easily forgiven. It leads to the conclusion that the process of planning must be approached cautiously. The wrongly

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Results on Construction of Disjoint Spectra Cryptographic Functions

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Abstract. The investigation of nonlinearity and resiliency of cryptographic functions is a crucial criteria with respect to protection of ciphers from affine approximation and correlation attacks. Constructions of disjoint spectra Boolean functions by concatenating the functions on lesser number of variables are of special interest. In this paper, we have listed few such disjoint spectra functions where the profiles of the functions declare their nonlinearity and resiliency.

Keywords: Walsh-Hadamard transform (WHT), affine approximation attack, resiliency, nonlinearity, disjoint spectra functions

1 Introduction

During last few years, it is observed that the resiliency and the nonlinearity are two important cryptographic criteria for designing Boolean functions used in various cryptosystems. High resiliency provide protection against correlation attacks [2, 10, 14], whereas high nonlinearity helps to prevent the ciphers from linear cryptanalysis [9] and best affine approximation attacks [4, 8]. A resilient function is a correlation immune and balanced function. A balanced function with high nonlinearity is considered to be a good candidate for various cryptographic applications. Such functions are used as combiner functions in LSFR based stream ciphers. Therefore, it is important to construct resilient functions having high nonlinearity. Several constructions of resilient functions satisfying some other important cryptographic criteria have been reported in the literature [2, 10, 14, 4, 9]. Sarkar-Maitra [12], Maitra-Pasalic [6] and Zhang-Xiao [17] have constructed some resilient function having high nonlinearity. For more study on constructions of resilient functions and their properties we refer to [1, 5, 7, 11, 12, 16, 17]. Gao et al. [3] have provided a technique to construct resilient Boolean functions having high nonlinearity. Singh [15] constructed some disjoint spectra functions with good nonlinearity.

Now, we present some basic definitions and existing results which are used in describing the results provided in this paper.

A function $\phi \in B_n$ is *plateaued* if for every $u \in V_n^2$, $H_\phi(u) \in \{0, \pm 2^k\}$, $k \in \mathbb{N}$. Two functions ϕ and ψ in B_n satisfying the property $H_\phi(u)H_\psi(u) = 0$ for all

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SIGNIFICANCE OF AFORESTATION A GREEN PROSPECTIVE

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Abstract

Forests have long been seen as important sources for many useful things including clean drinking water. Forested catchments supply a large proportion of total water used for domestic, agricultural and industrial requirements. Trees and plants recycle moisture present in the atmosphere through transpiration to increase the rainfall. The significance of forest and trees to rainfall and water supply include, improvement of water cycle, reduction in runoff, improve the replenishment of the water table, filtration of pollutants, control of floods and regulation of stormwater. Now a days in spite of their importance, forests face threats due to indiscriminate exploitation. Therefore, it is required for sustainable water supply and rainfall through natural regeneration by land protection, aggressive afforestation.

Key words: Afforestation, environmental friendly, water cycle, natural resource

Introduction

The term afforestation is used for plantation of more trees or sowing seeds in barren lands to create forest. Afforestation is a good practice beneficial for all living being. It increase the oxygen content in the atmosphere, reduces the level of carbon dioxide a major constituents of greenhouse gases. The world summit on sustainable development (Earth Summit- 2002) held on Johannesburg, South Africa to discuss the sustainable development. The history of establishment of forest plantations in world dates back to the 17th century; however, until the 1920s, treeplanting activities were isolated and episodic [1]. The protection of land through woodland creation was considerably hampered by economic and social conditions and then by the shift in forest policy from afforestation towards natural forest regeneration. In the 1990s, the decreasing scale of afforestation was also caused by difficulties of the transition process from a command-and-control towards a market economy, such as the lack of well-defined and ensured property rights; shortage of investment and economic incentives; increasing attention paid by forest management to short-term financial objectives [2]. In order to be viable afforestation projects need to be coherent, effective, cost efficient, widely acceptable by the public and consistent with other aspects of sustainable development policy [3]. Numerous examples indicate that climate policy measures will likely be accepted by the public and will consequently be implemented, if they are consistent with the programmes that focus on issues, other than climatic stresses [3]. Many scholars support this view, emphasizing the "win-win" opportunities of forest carbon projects, which may all at once provide biodiversity conservation and rural development benefits [2,3]. Policy measures then should aim the "win-win" situations, which would benefit rural development, the environment, people, and the economy all together. The Kyoto Protocol provides opportunities for countries to cope with the changing climate from an economic perspective. Its flexible mechanisms were designed to help Annex B countries, including Ukraine, to meet their emissions reduction targets at least cost [4]. It allows (non-EU) countries to sell carbon offsets to industrialized countries and, therefore, raise funds needed for its forestry sector and a wider economy. Carbon sequestration through afforestation in Ukraine could be beneficial also for Annex-B countries in view of

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THE GOVERNMENT ACTION, AGAINST DEFORESTATION TO CONSERVE ENVIRONMENT

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Abstract

In this article the importance of forest will be discussed. The action taken by government through various rules and regulation to conserve our forest will also be part of it. The problems faced by all living creatures due to deforestation and also benefits like transportation and rehabilitation from it will be analysed. The position of forests before independence and after that are explained and impact on environment is presented in this article, so constitutional aspects can be studied for future course of action.

Keywords: Environment, transportation, deforestation

Introduction

"A nation that destroys its soil destroys itself. Forests are the lungs of our land, purifying the air and giving fresh strength to our people" Franklin Deleno Roosevelt (Former US President)

No doubt forests are vey essential for every creature of this world,because these forests play vital role in the development of country as well as to eradicate the pollution through removing the CO2from atmosphere. The Forests are highly complex in group which covers wildlife, trees, shrubs, beautiful ferns, and flora, on the floor of the forest along with millions of microscopic biotic components. The biotic componentsinclude air, water, nutrients and sunlight. Trees are dominant components of this complex community. The most significant role played by forests includes clear air to the millions and millions of living organisms of the globe, provides home to plants, animals, bamboo and several types of grasses for paper and pulp industry. Forests also provides minor forests product such as canes, gums, resins, dyes, tannins, lac and variety of medicines etc.

The Forest covers almost 30% the world's land area. A forest is defined as a large area of land covered with trees or woody vegetation. These are Lungs of the ecosystem which helps in purification of Air by consuming carbon dioxide and releasing oxygen in atmosphere. Forest contributes in approx ¾ production of organic compounds and to its home almost 80%. According to a report of United Nations Framework Convention on Climate Change (UNFCCC), agriculture is one of the primary causes of deforestation. This can be linked to increasing population and shrinking space available for humans. The agriculture is responsible for 48% of forest destruction; commercial 32% of the deforestation and logging is responsible for 14% of the degradation according to the report by Food and Agriculture Organisation almost 50% of forest in tropical region have been cleared by tribal communities. They fell the forest and burn them to clear the area for agriculture. These communities move from one area to another in search of more fertile piece of land. They are known by different names. In India as zoom in northeast, diaper in Chhattisgarh, guruva in Jharkhand etc. Nomenclatures in world are milpa in Mexico roka in Brazilete.

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RULES TO PROTECT THE ENVIRONMENT: A POLITICAL APPROACH

(With Special Reference to Air and Water Pollution)

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Abstract

As the great philosopher Aristotle said "Man is a social animal". It means he can't live without society. Further, Russian philosopher added "Every where he is in chains". If we combine views of both the Philosopher then, we find that every human being is interconnected and can't stay without to each other. Hence it is clear that whatever he does, it affects every human being. The God has provided everything to all creatures on this earth, still he faces lot of problems economically, socially, and physically. This is because, whatever natural resources gifted to us, we are unable to procure and service them. Beside this we are unnecessarily and lavishly using these resources daily without worrying about our future. Study reveals that at present the biggest menace to the human race on the planet earth is environmental issue. It challenges us physically, mentally and psychologically every day. The environmental problem which is worsening gradually, required to be paid more attention, so its harmful effects on the human being and on planet earth can be rectified.

Keywords: Pollution, air, water, environment

Introduction

Now question comes, what is environment? In simple words it can be said that everything which is around us may be biotic (living) or abiotic (non-living) things, is called environment. It includes physical, chemical and other natural forces. And it is our moral duty to save the environment, from being polluted. Because the effects of environmental pollution on all living and non-living things will be equally serious. While on human, effects may be mainly physical, but can also turn into neuro-affections in the long term. The best-known troubles are in respiratory system, in the form of allergies, asthma, irritation of the eyes and nasal passages or other forms of respiratory infection. Other top environmental issue are like: Public health through infectious disease, land management and urban sprawl, waste disposal, overpopulation, loss of biodiversity, air pollution, water scarcity, water pollution, and deforestation etc.

Environmental pollution also effect animals and other living beings by causing harm to their living environment as it becomes toxic for them, to live in. Acid rains can change the composition of rivers and seas, making toxic for aquatic life. Another important problem is that increasing quantity of ozone in the lower parts of the atmosphere can cause lungs problem to all. Almighty has created everything in ratio and as per requirement of all living beings but we have destroyed the ratio and gifted the polluted environment to all. It means pollution exclusively created by human activities. Which has negative impact on the ecosystem because it destroys required layers and further causing adverse effects on the upper layers also. Problems like ozone depletion, global warming, greenhouse effect, melting of glaciers etc. have arisen due to pollution only. It has five basic types, namely Air, Noise, Water, Soil and Radioactive pollution. Hence it becomes duty of every individual to know the causes of pollution and methods to eradicate them.

One will not involved in any issue of environmental awareness until and unless he or she realises and visualises the various aspects of environmental degradation such as air pollution,

भारतीय राष्ट्रीय आन्दोलन में साहित्य की भूमिका

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साहित्य सदियों से हृदय का स्वाभाविक उद्‌गार रहा है, जनता तो हृदय देखती है, हृदय की बात सुनती है और हृदय की प्रेरणा से अपना कर्तव्य निश्चित करती है। सविकार भावों को तोलकर जनता पीछे हट जाती है और उस ओर बढ़ती है, जहाँ उसे सरस वाक्यों के विशाल हृदय की सूचना प्राप्त होती है। कहते हैं कि अंतःकरण की बात ही अंतःकरण में बैठती है। अंतः साहित्य ही हमारे हृदय में निवास करता है। चिरकाल से ही मानवता के पुजारी साहित्यकार, जीवन को मूल्यवान सिद्ध करने में प्रयत्नशील रहे हैं। वे मानव जाति की आत्मा की भाषा ग्रहण करने में निमग्न रहे हैं। साहित्य ने जीवन–मरण, स्त्री–पुरुष, आदि से अनंत काल, सौन्दर्य से कुरूपता तक, बेड़ियों से स्वच्छंदता तक, देश से विदेश तक प्रत्येक रूप में समाज, देश व विश्व की सेवा की है। साहित्य की वेशभूषा मूल रूप से उसी काल पर निर्भर करती है चाहें फिर वह भक्तिकाल हो या रीतिकाल। साहित्य ने प्रत्येक काल में अपनी छटा बिखेरी है। इसी प्रकार ब्रिटिश काल में भी साहित्य ने क्रान्तिकारी, उदारवादी, उग्रवादी आदि सभी कालों में अपन पूर्ण योगदान देकर अपना कर्तव्य निभाया है। फिर साहित्य चाहे रविन्द्र नाथ टैगोर का हो अथवा बंकिम चन्द्र चटर्जी की, प्रेमचन्द्र का हो या शरतचन्द्र का, गोर्की का हो अथवा टॉलस्टाय का, मार्क्स का हो या डार्विन का, सभी का साहित्य लोक–केन्द्रित जनता को समर्पित रहा है। जिस प्रकार लोक–कल्याणकारी साहित्य के प्रणेता संस्कार–शिल्पी, के रूप में न्याय और नैतिकता का आदर्श स्थापित करते हैं। उसमें धर्म और परम्परा की गूंज होती है, शास्त्रों और संस्कारों की सुगंध होती है। वे पापी और अनाचारी को कठोरतम सजा देते हैं तथा पुण्यात्मा और आदर्श चरित्र की आरती सजाते हैं। साहित्य जीवन का व्याख्याता है। वह जीवन के महान सत्य का उद्‌घाटन करता है। वह मनुष्य के भीतर, उन भव्य प्रवृत्तियों और आत्मिक गुणों का विकास करता है, जो उसे एक सुखद सुन्दर–संसार के निर्माण में आने वाली बाधाओं को परास्त करने की शक्ति दे सके। फिर चाहें वह जन आन्दोलन हो, छात्र आन्दोलन हो, महिला आन्दोलन हो या राज्य स्तर अथवा राष्ट्रीय स्तर का–राजनीतिक, सामाजिक या अन्य आन्दोलन।

भारतवर्ष में ब्रिटिश राज्य के साथ–साथ ईसाई धर्म का भी आगमन हुआ। ईसाई धर्म के प्रचार से शेष सभी धर्मो को खतरा पैदा हो गया था क्योंकि जिस प्रकार ईसाई मिशनरियों ने एक ओर साम्राज्यवाद पर ध्यान दिया तो दूसरी ओर धर्म का

श्री अरविन्द से महर्षि अरविन्द

डॉ0 नीलम टंडन
समाजशास्त्र विभागाध्यक्ष
जी0एफ0कालेज, शाहजहाँपुर
मो0–9935079[illegible]

20वीं शताब्दी के भारतीय साहित्य और राष्ट्रीय आन्दोलन की आधारशिला 1885 में कांग्रेस गठन से भी पूर्व सामाजिक आन्दोलन के रूप में राजाराम मोहन राय, स्वामी दयानन्द, विवेकानन्द, महर्षि अरविन्द, डा0 भगवान दास जैसे अनन्य विद्वानों द्वारा रखी गयी जो पाश्चात्य शिक्षा के ज्ञान को उसी सीमा तक ग्रहण करने के पक्षधर थे जहाँ तक वह भारतीय उन्नति व प्रगति में सहायक बन सके। सामाजिक समस्याओं का उन्मूलन कर सकें। वह सभी मानवतावादी धर्म के पक्षधर थे। राधाकमल मुखर्जी[3] जैसे विद्वान "मूल्यों की सामाजिक संरचना" और "मूल्यों का गतिशीलता" जैसी समाजशास्त्रीय पुस्तकें लिखकर अन्तर्राष्ट्रीय स्तर पर अनुपम योगदान के कारण विख्यात हुए।[2]

राष्ट्रीय आन्दोलन के केन्द्र में सामाजिक आन्दोलन और सामाजिक परिवर्तन विद्यमान रहता है। यह परिवर्तन किसी प्रतिस्पर्धा के फलस्वरूप नहीं उत्पन्न होते हैं बल्कि इनके मूल में किसी न किसी समस्या का विरोध रहता है। सामाजिक आन्दोलन के प्रमुख तथ्य जिनसे यह प्रभावित होते हैं वह हैं सामाजिक समस्यायें–जो क्रमशः संरचनागत तनाव, प्रतिवाद, चुनौती, संघर्ष, क्रान्ति, समाजिक परिवर्तन आदि के रूप में स्पष्ट होती हैं।

"सामाजिक आन्दोलन अगर सामाजिक गतिशीलता और सामाजिक परिवर्तन को उत्पन्न करते हैं तो दूसरी ओर यह परिवर्तन परम्परागत शक्ति संतुलन को भी बनाये रखने में सहायक होते हैं।[3]

एम0एस0ए0राव [illegible] सापेक्ष वंचना के सिद्धान्त के आधार पर आन्दोलनों की उत्पत्ति [illegible] इसकी सीमाओं का उल्लेख किया है जिसमें–"सहयोगियों से एक यथेष्ठ स्तर [illegible] समन्वय और नियंत्रण की अपेक्षा की जाती है और वे सुविधा सम्पन्न और सुविधा वंचित लोगों की सामाजिक और सांस्कृतिक दशाओं के बीच के विरोध को देखने और अनुभव के योग्य होने चाहिए, साथ ही उन्हें अहसास हो कि इस स्थिति के लिए कुछ [illegible] सम्भव है।"[4] प्रो0 जी0 शाह कहते हैं–सापेक्षित वंचन सिद्धान्त प्रदर्शनों और आन्दोलनों को तो स्पष्ट करता है किन्तु क्रान्तिकारी आन्दोलनों का विश्लेषण नहीं करता और यह आवश्यक नहीं कि विरोध प्रदर्शन आन्दोलन का रूप धारण कर ले।[5] जबकि प्रो0 टी0के0 ओमन कहते हैं–ऐसे

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گلوبل وارمنگ: اسباب، نتائج اور حل

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معروف امریکی سائنسداں David Grinspoon کا قول ہے:

"Fixing global warming is more important than astronomy."

انسان سے متاثرہ ماحولیاتی تبدیلیوں اور گلوبل وارمنگ کی وجہ سے سارے عالم میں گرمی لہروں میں اضافہ ہوا ہے۔ اور ہمارا ملک بھی اس سے اچھوتا نہیں ہے۔ اوزون کی تہہ کا کمزور ہونا، انٹارکٹیکا میں برف کے تیزی سے پگھلنے سے سمندروں کی سطح کا بلند ہونا، موسموں میں شدید تبدیلی ہونا یا پھر تیزی سے درجہ حرارت میں اتار چڑھاؤ، فیکٹریوں کے زہریلے دھوئیں سے سانس کی بیماریوں کا عام ہونا یا پھر آکسیجن کی مقدار کا گھٹنا یا کاربن ڈائی آکسائڈ کی مقدار میں اضافہ۔ یہ سبھی وہ مضر اثرات ہیں جو اس خوشنما سیارہ پر متیم تقریباً سبھی Species کو نگل جانا چاہتے ہیں۔

گلوبل وارمنگ یا عالمی حرارت زمین کی سطح کے درجہ حرارت میں روز افزوں مستقل و مسلسل اضافہ کا نام ہے۔ یا یوں کہیے کہ اس سے مراد آب و ہوا کی تبدیلی ہے جو زمین کے درجہ حرارت کے اوسط میں اضافے کا سبب بنتی ہے۔

موسمیاتی تبدیلی پر انٹر گورنمنٹ پینل (آئی پی سی سی) کی پانچویں تشخیص رپورٹ کا اختتام ہوا جس میں موسمیاتی نمونوں کے تخمینے کے خلاصہ میں یہ اشارہ کیا گیا کہ اکیسویں صدی کے دوران عالمی سطح کے درجہ حرارت میں تقریباً 0.3 سے 1.7 °C (0.5 سے 3.1 °F) اضافے کے امکان ہیں۔

سائنسدانوں کے مطابق آب و ہوا کے جدید نمونوں سے ظاہر ہوتا ہے کہ کاربن ڈائی آکسائڈ پہلے لگائے گئے اندازوں سے کہیں زیادہ طاقتور گرین ہاؤس گیس ہے:

Developed in parallel by separate teams in half-a-dozen countries, the models -- which will underpin revised UN temperature projections next year -- suggest scientists have for decades consistently underestimated the warming potential of CO2..."Climate sensitivity has been in the range of 1.5C to 4.5C for more than 30 years. If it is now moving to between 3C and 7C, that would be tremendously dangerous."1

ہندوستان پر بھی گلوبل وارمنگ کی چپیٹ میں ہے۔ اور اس کے بہت سے علاقے اور وہاں قیام پذیر باشندے بھی اس سے بری

ہندوستانی ادب میں قومیت اور تحریکِ آزادی کے سُر

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ادب سماج کا آئینہ ہے۔ یہ سماج پر اثر انداز بھی ہوتا ہے اور سماج کے اثر کو قبول بھی کرتا ہے۔ پریم چند اسے 'تنقیدِ حیات' بتاتے ہیں۔ دنیا میں جتنی بھی تحریکیں وجود میں آئیں وہ کسی نہ کسی طور پر ادب سے متاثر تھیں۔ ہندوستان میں جب آزادی کی جنگ بجا تو سبھی زبانوں کے ادب نے اس میں بڑھ چڑھ کر حصہ لیا اور ہندوستان کو انگریزوں کی غلامی سے نجات دلائی۔

ہندوستانی ادب کو عام طور پر دنیا کا قدیم ترین ادب ہونے کا شرف حاصل ہے۔ ہندوستانی آئین کے آٹھویں شیڈیول میں [illegible] زبانوں کو فہرست میں شامل کیا گیا ہے۔ حالانکہ انگریزی اس کا حصہ نہیں ہے پھر بھی انگریزی کو ہندوستان میں ایک اہم مقام حاصل ہے۔ ہزاروں سال پیچھے تاریخ پر غور کریں تو مختلف زبانوں میں ادب کا ایک وسیع ذخیرہ منظرِ عام پر آیا، جس میں قدیم ترین ادب کا سہرا سنسکرت زبان کے سر بندھتا ہے۔ اگر منصفانہ طور پر کہا جائے تو پالی اور پراکرت زبانوں نے بھی اس میں اہم کردار ادا کیا کیونکہ اس وقت یہ عوام کی زبانیں ہوا کرتی تھیں۔

اردو شاعری میں قومی تحریک کے اثرات

ڈاکٹر تجمل حسین

صدر شعبۂ اردو، جی۔ ایف۔ کالج، شاہجہاں پور

اردو زبان بلاشبہ ایک میٹھی زبان ہے۔ یہ زبان اپنے مترنم لب و لہجہ مخصوص زیر بم کی بنیاد پر دنیا کی دوسری زبانوں سے مختلف ہے یہی وجہ ہے اس کے ساتھ متعصبانہ رویہ اختیار کرنے کے باوجود آج بھی لوگ اسے دلچسپی کے ساتھ سنتے اور بولتے آرہے ہیں۔ اس زبان میں مشرق اور مغرب کی تمام زبانوں کی موجود ہے اس لیے اس زبان نے ہر دور کی تحریکات کا اثر قبول کیا ہے۔ اس بات وضاحت ممتاز شمیم سے بھی ہوتی ہے۔

''دنیا کی دیگر ترقی یافتہ زبانوں کی طرح اردو زبان وادب کا دائرہ ہر مرحلہ پر وسعت طلبگار رہا ہے۔ اور چونکہ اس زبان میں اخذ اور قبول کا مادہ ابتدا ہی سے موجود تھا اس لیے کوئی تحریک کوئی رجحان اور کوئی تجربہ ایسا نہیں جو اس خمیر سے آزاد ہو۔''[1]

اردو زبان و ادب میں بالخصوص اردو شاعری میں قومی تحریک کو بڑی اہمیت حاصل رہی ہے۔ ملک کی آزادی کے وقت حب الوطنی کے راگ اسی زبان میں گائے گئے ہیں۔ ہند کی تاریخ اس بات کی ضمانت ہے کہ ۱۸۵۷ء سے لے آج تک جتنی بھی

اقبالؔ کی شاعری میں حب الوطنی کا تصور

کوثر جمال
اسسٹینٹ پروفیسر، شعبۂ اردو
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اردو شاعری کو ایک نئی جہت اور سمت سے روشناس کرانے والے علامہ اقبال ہیں، جنھوں نے شاعری میں ایک نئے باب کا اضافہ کیا۔ اس سے قبل اردو شاعری حسن و عشق اور گل و بلبل کے دائرے تک محدود تھی۔ اقبال نے شاعری کے ذریعے مختلف قومی، سماجی و سیاسی مسائل کو موضوع بنایا۔ وہ شاعری کے ذریعے اپنے پیغام ہر خاص و عام تک پہنچانا چاہتے تھے۔ اس کے لئے انھوں نے نظم کے دامن میں پناہ لی۔ اقبال کے زمانے میں ہندوستان پر انگریز حکمراں مسلط تھے اور ہندوستانی قوم غلامی کی زنجیروں میں جکڑی ہوئی تھی۔ اقبال اردو شاعری کے افق پر نمودار ہوتے ہیں اور ہندوستانیوں کے دلوں میں حب الوطنی کے جذبہ کو عام کرتے ہیں۔ ان کے یہاں قومیت سے متعلق جو جذبات و خیالات ملتے ہیں ان میں اتحاد و اشتراک کے خیالات کی کارفرمائی ملتی ہے۔ اقبال چاہتے تھے کہ ہندوستان کی آزادی کے لئے ہندوستانی عوام میں قومیت کا جذبہ بیدار ہو۔ وطن پرستی سے سرشار ان کی نظمیں

The present investigations provide base line and significant information on the effect of various doses of gamma radiation on the testicular biochemical milieu.These are manifested by changes in the estimates of total protein, triglyceride, esterase and acid phosphatase and lactate dehydrogenase. Agar gel electrophoretic resolution of LDH isoenzymes provide clues to the changes in the bioenergetics of the testes. Further studies were also made on the alterations in the mitotic index, and on the morphological changes in the chromosomes of bone marrow cells. These indicate the extent of damage to the genomic apparatus due to different doses of gamma radiation in Swiss albino mice.

Arib Anjum Rehman
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Changes in testes of Swiss albino mice exposed to gamma radiation

Biochemical, electrophoreticand cytogenetic evaluation

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FISH AND FISHERIES OF RIVER GANGA, INDIA: A REVIEW

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Abstract

Ganga River known as Ganga Maata or Mother Ganges is respected as a goddess whose purity cleanses the sins of the faithful and aids the dead on their path toward heaven. The river Ganga is the largest river in India and the 4th longest in the world. Ganga river in northern India is of great importance because its water is used for human and cattle consumption, power generation, fish production and irrigation and for pilgrimage. Flora and fauna of river Ganga is threatened by anthropogenic activities. The river has been under constant threat of pollution by sewage and industrial wastes, disposal of dead bodies, deforestation, excessive use of fertilizers and pesticides. The impact involves gross changes in water quality viz reduction in dissolved oxygen and reduction in light penetration that tends to loss in self purification capability of river water. Any change in aquatic environment will alter the structure and composition of biotic community.

Keywords: Fish, Freshwater, Ganga river, India, pollution.

Introduction

India is one of the 17 mega biodiversity hot spots contributing 60-70% of the world's biological resources and contributing 11.72% of globefish biodiversity. With third position in fisheries and second in aquaculture, the country has high potentials in the sector for rural development, domestic nutritional security, employment generation, gender mainstreaming as well as export earnings, that only few other activities can provide. Fisheries sector in India has shown outstanding growth and ranks third in the world in total fish production and contributes around 1.07 % of the countries Gross Domestic Products (GDP) and 5.34% of the agricultural GDP [1]. Inland fisheries resources of India in terms of area are vast.

Ganga is the largest river in the Indian subcontinent by discharge. It has long been considered the holiest of all rivers by Hindus and worshiped as the goddess Ganga in Hinduism. The basin of river Ganga, has very high cultural, heritage and religious values, drains about 1, 060, 000 km^2 area [2]. The river originates from ice-cave 'Gaumukh' (30°55' N/70°7' E) in the Garhwal Himalaya at an altitude of 4,100 m and discharges into the Bay of Bengal. The length of the main channel from the traditional source of the Gangotri glacier in India is about 2,550 km [3]. After origin it drains the southern slopes of the central Himalayas. Ganga passes through Uttar Pradesh, Bihar, some parts of Rajasthan, Madhya Pradesh and West Bengal and finally joins to the Bay of Bengal. It has a large number of tributaries and 'Yamuna' river is one of the major tributaries of this system, which is about 1000 km long. The other tributaries are – Ram Ganga, Gomti, Ghaghra, Gandak, Kosi, Chambal, Betwa and Ken.

Fishery resources are available in the form of rivers and their tributaries, reservoirs, wetlands, lakes, ponds and tanks exhibited a rich genetic diversity. In India, all tributaries of the Ganges are controlled by barrages diverting flow for irrigation and as a result fish catch has been declined, and thereafter, loss of species diversity has been reported [4,5]. Therefore, conservation and restoration of river have become vital for the overall development and nutritional and livelihood

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ERI CULTURE AND EMPLOYMENT OPPORTUNITIES IN UTTAR PRADESH

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Abstract

Sericulture was introduced in Uttar Pradesh as back as 1847 in Lucknow by captain Hollings. Uttar Pradesh is highly populated state of India. It has diversified climate, vegetations, topographies and soil types. It is traditionally agriculture based state with maximum number of small / marginal agricultural farmers to the extent of 80 % with 0.69 hectare of average land. Pressure of population on land based activities is increasing and land holding capacity is decreasing every day. Eri culture is agro- based small scale industry, which include rearing of silkworm for production of silk. It is considered as an important point to generate income as well as employment to small and marginal's farmers. Eri culture has vast potential to generate employment for skilled and non-skilled persons. These opportunities applied for the benefits of farmers and also for socio-economic upliftment of societies. The main purpose of ericulture is to exploit the available castor plant for rearing of silkworm and also to develop employment opportunities for local peoples. So there is an urgent need to develop awareness among the farmers about the rearing of eri silkworm. Moreover, it may also develop poverty alleviation in the rural of Uttar Pradesh.

Keywords: Silkworm, eri silk, agriculture, economics, employments

1. Introduction

Sericulture is a labour intensive agro-based cottage industry, ideally suited to the economy of developing countries like India, where unemployment is a big problem. It rightly fits into socio-economic structure of rural areas and can serve as an effective tool for rural reconstruction, benefiting the weaker sections of the society by providing employment to a large section of the population. The most important consideration is effective utilization of family labour particularly the handicapped, illiterate and women folk. Sericulture plays a significant role in transferring wealth from rich class to the poor section of the society.Silk is a fine, proteinaceous animal fibre extruded by caterpillars of various sericigenous insects. It is produced by the ripe silkworm larva to form a protective covering around its body to overcome the unfavorable environmental conditions and for self-protection from the natural enemies. Silk has texture, luster, tensile qualities, comfort adoptability to all climatic condition and ability to take up dyes [1]. It is mixture of fibroin and sericin or silk gum produced in the silk gland.

Sericulture was introduced in Uttar Pradesh as back as 1847 in Lucknow by captain Hollings [2, 3]. In 1858, Captain Hutton of Mussoorie was allowed to undertake plantation of mulberry trees near Mussoorie at Government expense, thereafter the work of mulberry plantation; silkworm rearing and silk production was transferred to textile manufacturing firm (M/s Lister and company of England) in 1881.

The world eri means "castor plants" which derives its name from Sanskrit nomenclature for this food plants: Eranda and Assamies word Era [4,5]and castor is the main food plant of the eri silkworm. *Attacusricini* now known as *Philosamiaricini*, belong to the family Saturniidae of the order Lepidoptera. This is the only completely domesticated non-mulberry silkworm. The best natural food of eri silkworm, castor is considered to have originated at foothills of Himalayas,

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MICROBIAL CONTROL OF INSECT PEST FOR SUSTAINABLE AGRICULTURE

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Abstract

Insect pests are always become a problem to man since they started cultivation of the crops. They cause economic losses to our commodities in different ways. But their control becomes a major problem, though it developed resistance against many insecticides. However, a variety of problem sare associated with the traditional use of non selective insecticides which include environmental issues, negative impact on nature enemies, food safety and hazards to human health. Therefore, use of other alternatives like microbesis being more conventional in the present scenario. Moreover, microbial control of insects can concern with the use of insect-specific pathogens viz., virus, bacteria, protozoa, fungi and nematodes, which are capable for killing the insect pests. Generally they are attacking to the targets and reduce the pest population below economics without disturbing the ecosystem and biodiversity. Use of microbial pesticides has number of advantages over chemical pesticides and also helps to maintain equilibrium of our natural ecosystem. The demand of microbial pesticides increased drastically since last two decades in the global market, which can become possible only due to awareness among the farmers.

Keywords: Bacteria, fungus, nematodes, protozoa, pesticides, virus

1. Introduction

The term microbial control was first used by Steinhaus [1] to express the pest population management through disease causing by microorganism or their by-product. Although use of these agents are in practice since last eight decades, but their development dependent is largely depend on the accumulation of knowledge with regard to biology of such pathogens like bacteria, viruses, nematodes, fungi and protozoans. Therefore,the frequency of chemical pesticides can reduce by fulfill the need of alternative pest control practices *i.e.*, microbial control [2]. Microbialpathogens can disseminated like chemical pesticides in the pest population in large quantity. These pathogens are exploited for biological control of insect through introductory application.

Microbial pathogens of insect are intensively investigated to develop eco-friendly pest management strategies in agriculture and forestry [3]. The most successfully utilized insect pathogen is a bacterium, *Bacillus thuringiensis* denoted by *Bt*, is used for management of certain lepidopteron pest. As far as viruses is concern, baculoviruses comprising nuclear polyhedrosis virus (NPV) and granulosis virus (GV), which have successfully been used as insect pathogen [3]. Both granulosis virus and nuclear polyhedrosis virus formulation are frequently used for the control of lepidopteron pests like *Spodoptera lituria* and *Helicoverpa armigera* in India [3]. Entomopathogenic nematodes likes *Heterorhabditis*spp and *Steinernema*spp are available in multiple

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HYDRO-CHEMICAL ANALYSIS OF KHANNAUT RIVER AT DISTRICT SHAHJAHANPUR

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Abstract

The river is a natural source of water, which become toxic due to discharge of different industrial, domestic and agricultural waste. The present study is aim to chemical analysis of water of Khannaut river (Tributary of Ramganga in Shahjahanpur) which may directly or indirectly influenced the flora and fauna of the water body. Some parameters such as pH, Dissolved Oxygen(DO) and Biological Oxygen Demand (BOD)were studied and find that Hanumat Dham (27°88 'N 79°91 'E) is much polluted due to increment of pH, BOD and decrement of DO as compare to Purwayan (28°04 'N80°06 'E).

Introduction

Water is main constituents of earth's hydrosphere and most important for sustainable development of life [1, 2]. Life cannot assume without water on earth, but resources of water declining day by day and the quality of water become a global problem now days [2]. Among all natural resources water is essential for development of urban and rural areas. Main source of water are river, lakes and ponds. In rural areas as well as in urban areas due to discharge of industrial, agricultural and domestic waste into water, it becomes toxic and may cause different type of diseases in environment. The main reason of water pollution is urbanization and development of industrialization is directly proportional to water pollution [3]. Water requirements is higher in urban areas in compare to rural areas and the quality of water in urban areas is more toxic[4, 5].

According to World Health Organization (WHO), 80% disease is water borne. Due to bad quality of water and unhygienic 3.1% death occurs[6]. Now a day, safe drinking water is becoming challenge to man throughout the world. Moreover, aquatic fauna is also shrinking due to poor quality of rivers in India. The water quality of river Ramganga is near to deterioration due to the addition of different types of pollutants through drains.The hydro biological studies indicate that the water is polluted in Ramganga River at Bareilly and neighbor places [7, 8]. Khannaut River is main tributary of Ramganga flowing in Shahjahanpur near Bareilly. Geographically this area is flat, fertile and its climate is moderate subtropical with 1128 mm of average rainfall annually. The water quality of this River is greatly affected by discharge of wastage from industries, municipal and agriculture of Shahjahanpur. Therefore, main objective of present study is to determine the water quality of River Khannaut at district Shahjahanpur.

Materials and Methods

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TRICHOGRAMMA: BIOLOGICAL CONTROL AGENT FOR SUSTAINABLE AGRICULTURE

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Abstract

Most of the farmers are relying on toxic chemicals for the control of insect pests to achieve the successful cultivation of various crops. This process is disturbing the natural equilibrium of the ecosystem. Therefore, it has become imperative to follow an alternative ecologically viable and economically feasible technology to suppress insect pest population. Several parasitoids and predators of insect pests have been successfully used in pest management programme. Among them, Trichogramma spp are one of the most potentially important biocontrol agents. Trichogramma spp parasitize over 200 insect species belonging to 70 families and 8 orders in diverse habitats from aquatic to arboreal. In India, about 18 Trichogramma spp have been recorded, of which T. chilonis, T. japonicum and T. achaeae are widely distributed and are key mortality factor at egg stage of many lepidopterous pests. Moreover, present study extensively discusses the mass multiplication techniques of Trichogramma spp in the laboratory and releases them in the field of different crops. In this way, wide use of Trichogramma spp develops a broad ecological approach for suppression of injurious insect pests and also helps to conserve the normal equilibrium in its right position by utilizing biotic factors of the ecosystem. It may only be possible through frequent mass releases of laboratory reared Trichogramma in a large crop areas.

Keywords: Biological control, hazards, parasitoid, hymenoptera

Introduction

In sustainable agriculture, use of bioagents is an important functional component of Bio-intensive Integrated Pest Management (BIPM) programme. Of the several bioagents, *Trichogramma* occupy a prominent niche in suppressing a large number of insect pests at its initial development. *Trichogramma* Westwood belongs to order Hymenoptera and family Trichogrammatidae [1]. About one hundred species, subspecies and strains of Trichogrammatids are distributed throughout the world [2]. In India, *Trichogramma chilonis, T. japonicum* and *T. achaeae* are widely distributed species [3]. Efforts are underway to develop *in vitro* rearing techniques for *Trichogramma* spp at several places in India. However, National Bureau of Agriculture Insect Resources, Bengaluru (ICAR-NBAIR) has developed superior strains of *T. chilonis viz.*, Bio H—$_1$ for graminacious tissue borers, Bio H—$_1$ for *Helicoverpa armigera* and Bio C_1 and Bio C_0 for cotton bollworms [4]. Insecticide tolerant strains of *T. chilonis* (Endogramm) have also been developed which are being enthusiastically used by the farmers particularly in south India [5 & 6].

Availability of such biological agents for their inundative release at a critical time is essential for implementation of Integrated Pest Management strategy. With an increasing awareness of IPM among the farmers, the demand for biological control agents is growing fast. There are only a few laboratories of Indian Council of Agriculture Research and State Agriculture Universities, which deal with biological control agents. To fulfill the demand of bioagents and their augmentative releases, some private organizations have also ventured into the production of biological control agents. In spite of such efforts, supply of Trichogrammatids is still very low to cater the need of farmers of the county. Deficiency in supply has resulted as a serious constraint to farmers to adopt Bio-intensive Integrated Pest Management (BIPM) strategy in most of the

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INSECT AND THEIR ROLE FOR SOCIETY

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Abstract

Both human and insects societies depend on complex and highly coordinated infrastructure systems, such as communication networks, transportation Network. Like human draw infrastructure, those of social insects are regularly subject to disturbed such as natural disasters, breaks in the transportation networks.There is no deliberate planning or centralized control system. Individual insect make any decision based on local information. We bring together literature resilience in three key social insects infrastructure system. We described how systems differentially invest in three pathways to resistance or reconstruction. We suggest that investment in particular resistance pathway is related to the severity and frequency of disturbance. Human infrastructure management might therefore learn from social insect researchers, whointerms can make use of the mature analytical and simulation tools developed for Human infrastructure.

Keywords: Social, insect, human, environment indicator

Introduction

What is an Insect?

Entomology usually comes under the control of biology or agriculture departments, and most universities in the world offer courses in entomology Insects area unit quite exceptional creatures and that we have known within the region of one million species with estimates of the quantity of unidentified species starting from five million to eight million. Insects exist everywhere the globe and survive in a number of the harshest environments on earth; it's believed that they - in terms of numbers - total all different animal species combined.

It may look like a straightforward question, however there's some confusion over what's and what's not an insect. There are sure criteria by that we tend to outline that creatures are insects. For starters, they have and skeleton - this is often common to all or any arthropods. so as for the invertebrate to be an insect, the specimen should have six legs - this is often typically what separates them from different arthropods. They even have 3 distinct body components softened into the top, abdomen and thorax. They will or might not have wings, or antennae, or each and that they might live to tell the tale land, within the air or in bodies of water (though there aren't several marine species as these environments ar dominated by different forms of arthropods).

Most insects have compound eyes that ar massive relative to their bodies, although some ar eyeless (5) and lots of have ocelli (sensors that fulfill some functions of eyes in different species) (6, p14-15). Combined, the compound eyes, antennae and ocelli perform most sensory functions of the insect. Sensory hairs on the bodies of the many insects tell them the direction the wind is processing, thus if they smell food, they recognize what direction to fly or crawl to seek out it.

A golden times of Entomology

Humans have invariably been fascinated by insects for one reason or another; ancient cultures have examined, farmed and even honored them. Ancient Egyptians idolised an outsized

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