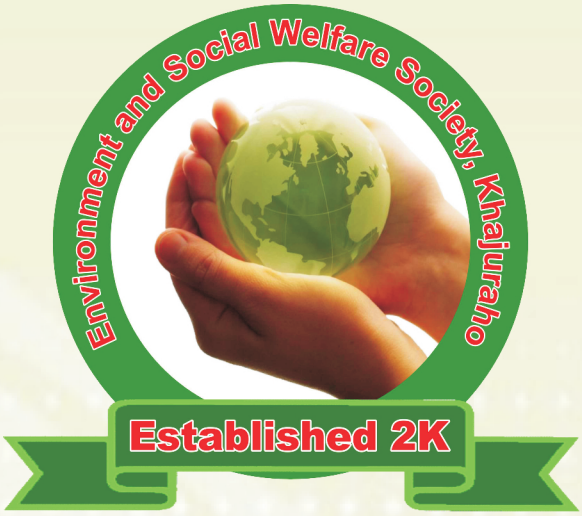
National Conference on

"Environmental Degradation and Global Health"

01 & 02 February, 2015



Organized by

Environment & Social Welfare Society, Khajuraho

Dedicated to Environment, Education, and Science & Technology entire India since millennium
Under Government of M.P., Firms & Society Act 1973 Reg. No. SC2707/2K
Accredited by JAP Government of Madhya Pradesh & NGO-PS, Government of India

Souvenir

In Association with:
Bundelkhand Extended Region Chapter, Chitrakoot,
NASI (UP)

Sponsored By:
Madhya Pradesh Council of Science & Technology,
Bhopal (MP)

Assisted By:
Godavari Academy of Science and Technology,
Chhatarpur (MP)

Email: eswsociety320@gmail.com; Website: http://www.godavariacademy.com

National Conference on Environmental Degradation and Global Health

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In Association with:

Bundelkhand Extended Region Chapter, Chitrakoot, NASI

Sponsored By:

Madhya Pradesh Council of Science & Technology, Bhopal

Assisted By:

Godavari Academy of Science and Technology, Chhatarpur (MP)

Ram Naresh Yadav

RAJ BHAVAN
BHOPAL--- 462 052

MESSAGE

I have much pleasure to know that the Environment and Social Welfare Society, Khajuraho is organizing a National Conference on **"Environmental Degradation and Global Health"** on 01-02 February, 2015 at Khajuraho and also publishing a souvenir to commemorate the occasion.

The problems resulting from environmental change and its degradation pose new challenges for traditional Global health. It is an accepted fact that environmental degradation is contributing to threat to human health worldwide. Deteriorating environment is a matter of global concern. I hope the outcome of the conference will provide valuable guidance to the Environmantal professionals.

My best wishes.

December 23, 2014

Ram Naresh Yadav

(Ram Naresh Yadav)

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MESSAGE

It gives me immense pleasure to learn that the **Environment and Social Welfare Society, Khajuraho** is going to organize a two-days National Conference on **"Environmental Degradation & Global Health"** during 01 & 02 February 2015. This is a subject of highly importance and of great relevance for the present world scenario.

I understand that researches in new emerging areas of Environment Science and Global Health will be shared and discussed among the learned participants of the conference for the benefits of research scholars, students and teachers in general and society in particular.

I wish a grand success of this National Conference.

Date: 20.01.2015

(K.N. Singh Yadava)

Dr. Ashwani Kumar Dubey
Executive Director,
Environment and Social Welfare Society,
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Khajuraho - 471606 (M.P.)

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Prof. B.B. Kaliwal
M.Sc., Ph.D., Post doc(UK)
Vice-Chancellor

MESSAGE

I am very happy to know that, Environment and Social Welfare Society, Khajuraho in Organizing a National Conference on **"Environmental Degradation and Global Health"** on February 01-02, 2015 at Khajuraho at the outset, I congratulate the Organizing Secretary of the Conference. Dr. Ashwani Kumar Dubey, Executive Director, Environmental Social Welfare Society and his team of members for taking up the task to organize the conference.

The objective of the conference is to create environmental awareness and importance of protecting our nature. It is through these conferences that we get to listen to the expert opinions on environmental and global health issues. Find out ways on how to save the environment, to help your town abide by a more nature-friendly approach to their surroundings. With the way the world is deteriorating natural resources, it's time we do our bit to contribute as one guiding force. Biotechnology plays an important role towards the attainment of environmental sustainability by using environment-friendly crops, solid waste management, treatment and purification of the environment. Biotechnology has tremendous potential to address global health issues. Genomics as the powerful new wave of health-related life sciences energized by the human genome project and the knowledge and tools it is spawning.

The Global health, Environment, Wildlife, Biodiversity and Technological Approach towards these issues. Conservation of critical and fragile habitats environment conservation are important to be addressed now before it is too late and technologies like biotechnology, proteomics etc. should be used to overcome the Environmental Degradation and Global health related issues for the better future of the world and the planet at large. I am sure that this unique opportunity provided by the National Seminar will be fruitfully utilized for ensuring better quality of life for human kind toady and for generation to come.

I extended my greetings and best wishes to all the distinguished delegates, participants and organizing committee for a grand success of the event on this happy occasion.

Date : 28.12-2014

Prof. B. B. Kaliwal
Vice-Chancellor

Prof. Pramod K. Verma
Director General
Scientific advisor, Govt. of M.P.

Madhya Pradesh Council of Science & Technology
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MESSAGE

I am delighted to learn that Environment and Social Welfare Society, Khajuraho is organizing a National Conference on "Environmental Degradation and Global Health" during 01 & 02 February, 2015 at Khajuraho.

The problems resulting from environmental change and its degradation, pose new challenges for public health. It is an accepted fact that, environmental degradation exerts significant pressure on human health and has become worldwide threat. Exposure to air, water and soil pollution, to chemicals in the environment, or to noise, can cause cancer, respiratory, cardiovascular and communicable diseases as well as poisoning and neuro-psychiatric disorders.

Many of the environmental conditions that impact health are avoidable. Therefore, prevention of health problems through environmental management, rather than simply treating policy making groups , private business, communities, and individuals are making worldwide strategies to slow or even halt further environmental deterioration, averting significant ecological disruption and its possible accompanying economic impacts.

Improvement must be made in environmental protection, improvement of air quality, water supplies and sanitation, education of title medical community and general public, support of vaccination research and coordinate restrictions of the use of antibodies and pesticides would lead to mitigate the problem.

I hope the conference will provide an opportunity and forum to academician, scientist, research scholar and industrialists for exchanging ideas and interact among them to address most recent progress in the area of environmental sciences.

I extend my warm wishes for the success of the conference and wish a very happy and fruitful interaction amongst the participants.

Pramod K. Verma

Date : 30.12-2014

(Prof. Pramod K. Verma)

GOVERNMENT OF INDIA
MINISTRY OF ENVIRONMENT AND FORESTS

Additional Director

ZOOLOGICAL SURVEY OF INDIA
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Phone-033-24986830
Mob. 08902462801

MESSAGE

I am happy to know that a National Conference on "**Environmental Degradation and Global Health**" is being organised by "Environment and Social Welfare Society", which is d***edicated to Environment, Education, and Science & Technology in entire India since millennium;*** in association with National Academy of Life Sciences India, Allahabad on 1st and 2nd February 2014 at Khajuraho. Godavari Academy of Science & Technology, Chhattarpur is also extending the support to organise the conference.

The environmental degradation due to indiscriminate developmental activities and over exploitation of natural resources have impacted very harshly on Global health, which is very essence for the survival of human kind. The conference topic is very significant and I hope that the conference will have in-depth perspective to reinitiate the discussion on the subject, particularly on mitigation on deterioration of global health. I wish that the participants will have useful and productive deliberations on the environmental degradation and global health, and the Conference will end with vastly enriched insights.

I extend my best wishes and congratulate to Dr Ashwani Kumar Dubey, Executive Director, "Environment and Social Welfare Society" and the organiser of the National Conference and the Organising Committee along with sponsors for their yeoman efforts and contribution.

Dated : 11th December 2014

Dr Kailash Chandra

Additional Director, Higher Education Sagar Division Sagar (M.P.)

Govt. Arts & Commerce College Campus
Sagar

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Message

I deem it a matter of great pleasure that the **"Environment & Social Welfare Society Khajuraho India"** is going to organize two days. National conference on "Environmental degradation and global health" on 01-02 February 2015.

This Research conference would provide a common plat form to researcher, scientist, thinkers, planners, policy makers and executors to interact on this burning theme and yield some positive fruit full conclusions.

I extend my heartiest wishes for the success of this conference.

Date: 27.12.2014

(Dr. C.D. Athaya)
Additional Director
Higher Education
Sagar Division Sagar (M.P.)

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I.A.S.
Collector & Distt. Magistrate
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MESSAGE

I am extremely happy to know that Environment and Social Welfare Society, Khajuraho (Dedicated to Environment, Education, Art and Science & Technology entire India since millennium) is organizing National Conference on "Environmental Degradation & Global Health" during 01 & 02 February 2015 at World Heritage Place Khajuraho. In association with Bundelkhand Extended Chapter, Chitrakoot, The National Academy of Sciences India, Allahabad. Sponsored by Madhya Pradesh Council of Science & Technology, Bhopal.

Aim to take some positive steps towards improving our Earth for future generation. I extend my best wishes to Dr. Ashwani Kumar Dubey, Convener & President, and organizing committee members for grand success of The National Conference.

Date: 27.12.2014

Dr. Masood Akhtar (IAS)
Collector
District Chhatarpur M.P.

कार्यालय म.प्र. जन अभियान परिषद

(म.प्र. शासन योजना आर्थिक एवं सांख्यिकी विभाग)

जिला-पंचायत, छतरपुर (म.प्र.)

संदेश

हर्ष का विषय है कि **''एनवायरमेंट एण्ड सोशल वेलफेयर सोसायटी खजुराहो''** जो कि पर्यावरण, शिक्षा, कला एवं विज्ञान एवं प्रौद्योगिकी के लिये सहस्त्राब्दी वर्ष से संचालित है एवं जन अभियान परिषद् छतरपुर द्वारा मान्यता प्राप्त है के द्वारा **''पर्यावरण क्षरण एवं वैश्विक स्वास्थ्य''** पर राष्ट्रीय शोध संगोष्ठि का आयोजन दिनांक 01 एवं 02 फरवरी 2015 को खजुराहो में किया जा रहा है। यह संगोष्ठि मध्यप्रदेश विज्ञान एवं प्रौद्योगिकी परिषद् भोपाल द्वारा प्रायोजित है।

इससे हमारी भावी पीढ़ी को हम स्वच्छ वातावरण प्रदान करने हेतु मार्ग प्रशस्त कर सकेंगे इसी कामना के साथ इस संगोष्ठि के आयोजनकर्ताओं को हमारी ओर से हार्दिक शुभकामनाएं।

26/12/2014

सुशील बर्मन
जिला समन्वयक
म.प्र. जन अभियान परिषद्
जिला छतरपुर (म.प्र.)

BRCORP
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MESSAGE

I am glad to note that the Environment and Social Welfare Society, Khajuraho under the guidance of the reputed Godavari Academy of Science and Technology, Chhatarpur is organizing a two day National Conference on **Environmental Degradation and Global Health** which is sponsored by the Madhya Pradesh Council of Science and Technology, Bhopal in association with Bundelkhand Extended Region Chapter, NASI, Allahabad during 01-02 February 2015.

The entire world is concerned about environmental degradation, wild life conservation and ecosystem imbalance caused due to the rapid Industrialization in the 18th and 19th centuries. We are now in the Imperial Age which is an important era that involves research and technological improvements. Apart from classroom training at schools and universities, there is a need of technical forum to share and discuss new ideas among people working in similar research areas. I am sure this conference will cater the needs of society; participants will have fruitful discussions and collaborate in future activities.

I congratulate Prof. Ashwani Kumar Dubey and his dedicated team in organizing this national conference and publishing its papers in an International Journal.

Ranipet Hafeez Basha

Website: www.godavariacademy.com
Email : eswsociety320@gmail.com

Acknowledgment

It is my privilege and pleasure to express my profound gratitude to our Chief Guest Prof. Vinod Prakash Sharma, NASI-ICMR Chair Distinguished Professor, Centre of Rural Development & Technology, Indian Institute of Technology, Hauz Khas, New Delhi. Dr. Sneh Bhargava, Professor Emeritus & Formerly Director, All India Institute of Medical Science, New Delhi. Dr. S. N. Pandey, Vice Chancellor, Indira Gandhi Technological and Medical Sciences University, Ziro, Arunachal Pradesh, India, Prof. Kaidar Nath Singh Yadav, Vice Chancellor, Rani Durgawati Unversity, Jabalpur (M.P.) who has given very kindly consented for Inaugural Programme of National Conference.

I am Thankful to Bundelkhand Extended Region Chapter, Chitrakoot, The National Academy of Sciences India, Allahabad for its in association with Environment and Social Welfare Society, Khajuraho for organizing this Conference.

I am highly thankful to Prof. Pramod Kumar Verma, Scientific Advisor, Government of Madhya Pradesh & Director General, Madhya Pradesh Council of Science & Technology, Bhopal for grant to Environment and Social Welfare Society, Khajuraho for this National Conference.

I am thankful to Honorable Guest Prof. U. C. Srivastava, Department of Zoology, University of Allahabad, Allahabad UP. Dr. Niraj Kumar, Executive Secretary, The National Academy of Sciences India, Allahabad. Dr S. K. Mandal, Chief Conservator of Forest, Range Chhatarpur, Dr. Srinivas Murthi, Chief Conservator of Forest, Panna Tiger Reserve, Panna. Dr. Masood Akhtar, Collector & District Magistrate, Chhatarpur. Dr. Rajesh Saxena, Sr. Scientist, Madhya Pradesh Council of Science & Technology, Bhopal MP. Mr. Susheel Varmon, District Co-ordinator, JAP, Chhatarpur for his valuable support and inspiration.

I am heartily thankful to honorable Invitee Guest Who have very kindly consented and given us an opportunity to share valuable thought which will provide milestone on the way of leading Scientists in this National Conference.

I am heartily thankful to Dr. R. S. Chauhan, Formar Director, Deptt. of Aquaculture, College of Fisheries, G B Pant University of Agri. & Tech., Pantnagar (Uttarakhand) who have very kindly consented for Valedictory Function and Award Ceremony.

I am especially thankful to all delegates who actively participated from various state viz Madhya Pradesh, Uttar Pradesh, Chhatisgarth, Uttarakhand, Goa, West Bengal, Odisha, Maharastra, Rajshthan, Jammu & Kashmir, Haryana, Gujrat, Bihar, Tripura and Andhra Pradesh in this National Conference.

I am profoundly thankful to my Board of Director and All members of Environment and Social Welfare Society for their invaluable cooperation, and those entire person who are directly or indirectly concerned with this conference.

Prof. Amita Arjariya

Dr. Ashwani Kumar Dubey (Ph.D., FIASc., FESW)
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EDITORIAL

This is an honor for the **Environment and Social Welfare Society,** Khajuraho, Madhya Pradesh to organize the 2nd Annual National conference on **"Environmental Degradation and Global Health"** in the world heritage, Khajuraho, In Association with Bundelkhand Extended Region, Chapter, Chitrakoot, the National Academy of Sciences India, Allahabad. It is sponsored by Madhya Pradesh Council of Science & Technology, Bhopal. Assisted by Godavari Academy of Science & Technology, Chhatarpur.

The principal goal of this conference will be to present some of the latest outstanding breakthroughs in Environment and global health, to bring together both young and experienced scientists from all regions of the world, and to open up avenues for research collaborations at regional and global level. **With theme** taking some positive steps towards improving our Earth for future generation.

Objective of this conference is to provide a platform to Educational Administrators, Vice- chancellors, College Principals, Deans, Readers, Head of Departments, Professors, Assistant- Professors, Scientists, Environmentalist, Researchers, Young scientists and Students to disseminate knowledge related to Impact of "**Environmental Degradation on Global health" Global health Scenario, Environment Scenario, Wildlife and Biodiversity Scenario and possible solution by Technological Approach.**

Environmental degradation is a result of socio-economical, technological and institutional activities. Degradation occurs when The Earth's natural resources are depleted. Air, water and soil resources are affected. Degradation also impact on microorganism, plant, animal and wildlife.

Our land is compromised when people exhaust resources or release harmful chemicals into the air. Deforestation, wasting resources, and pollution all add to the demise of an environmentally-sound and safe planet. Trees of forest are cut down in large quantities, so that more homes can be built on the land, the birds and wildlife who lived in the forest must find a new place to live. The vegetation that once grew on the land is destroyed. Wildlife is the essential part of the environment. The existence of wildlife is the most important aspect to maintain the balance between life and environment. Wild animals are facing threat of extinction due to environmental degradation.

The degradable changes observed in the environment, natural resources and biodiversity can be checked and renovated if each one of us take some sensitive and positive measures as the solution to save the earth from degradation caused by global warming, climatic changes, pollution, acid rains and natural calamities as well**,** therefore it is urgent to discuss and to find a possible solution related to environmental degradation.

Dr. Ashwani Kumar Dubey
Convener & President
National Conference
&
Environment and Social Welfare Society, Khajuraho-471606

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National Conference On
"Environmental Degradation and Global Health"
01 & 02 February, 2015

Object

To provide a platform to Educational Administrators, College Principals, Deans, Readers, Head of Departments, Professors, Assistant Professors, Scientists, Environmentalist, Researchers, Young scientists and Students to disseminate knowledge related to Impact of "**Environmental Degradation on Global health" Global health Scenario, Environment Scenario, Wildlife and Biodiversity Scenario and possible solution by Technological Approach.**

Goal

The principal goal of this conference will be to present some of the latest outstanding breakthroughs in Environment and global health, to bring together both young and experienced scientists from all regions of the world, and to open up avenues for research collaborations at regional and global level.

Theme

Take some positive steps towards improving our Earth for future generation.

The general topics covered in the conference will be as under:

Global health Scenario

Natural calamite, Volcano, Natural disaster, Water conservation, Land degradation and Forest Conservation, Natural Resources and their Conservation, Green energy , Global warming, Social implication caused by alteration of bio-resources, Hydro-chemical and water quality, Recycling process of pollutant, Agrochemical and environmental hazards.

Environment Scenario

Oxidative Stress, Strategic Environmental Approach & Sustainability, Tribal environment relationship and community development, Environmental impact assessment, Preventive measures of environmental degradation, Environmental toxicity, Environmental resources and management, Environment Conservation and Validation of traditional knowledge, Pollution.

Wildlife and Biodiversity Scenario

Wild life Management System, Climate change and endangered species in India , Biodiversity and conservation, Conservation of critical and fragile habitats & corridors, Conservation and promotion of Medicinal plants, Sustainable Tourism, Ethno-biology and human welfare , Role of N.G.O. in Nature conservation

Technological Approach

Application of bio-technology, Rural bio-technology, Tools and technique: for protection and conservation of bio-resources, Bio-markers with special reference to climate change, Ecosystem and conservation Measure

ABSTRACT

National Conference
Environmental Degradation and Global Health

SPECIES DIVERSITY OF CRAMBID MOTH IN VEERANGANA DURGAVATI, WILDLIFE SANCTUARY, DAMOH, (M.P.)

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The study based on the survey made at different localities in Veerangana Durgavati Wildlife Sanctuary, Damoh. This paper deals with the collection and Identification of order Lepidoptera. Family Crambidae compries 10 species of 10 genera and 1 subfamily (Spilomelinae). Crambidae are the grass moth family of order Lepidoptera. The specimens were stretched, pinned, labeled, identified, preserved in the wooden collection boxes and deposited in the national repository of Zoological Survey of India, Jabalpur.
Keywords: wildlife, species dirversity

COMPARISON OF WATER QUALITY AND BACTERIOLOGICAL PARAMETERS IN GOLDFISH, *CARASSIUS AURATUS (L.)* PONDS UNDER LIVE-FOOD AND COWDUNG TREATED REGIMES AND ITS EFFECT ON FISH PRODUCTION

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To test the effectiveness of introduction of live zooplankton against direct manuring in ornamental fish ponds on their survival and production, larvae of gold fish, Carassius auratus (L.) were cultured for 11 weeks (7 September to 20 November, 2005) in earthen ponds maintained according to four management regimes: (1) live zooplankton fed to carp larvae (LF); (2) direct fertilization with cowdung (CD); and (3) a control treatment (C). There were three replicates for each treatment. The growth of heterotrophic bacteria and pathogenic microorganisms like Aeromonas sp. and Pseudomonas sp. were also examined in response to pond management. Values of dissolved oxygen was significantly higher ($P < 0.05$) in the water of LF ponds, compared to other treatments, while the CD treatment recorded significantly higher ($P < 0.05$) values of PO4 - P, NH4 - N, NO3 - N, NO2 - N, specific conductivity, alkalinity, and BOD, compared to the LF and C treatments. The percentage of organic carbon and total nitrogen in the bottom sediments were higher in the CD treatment compared to LF ($P < 0.05$). Average counts of heterotrophic bacteria in the water of CD ponds were significantly higher than other treatments ($P < 0.05$). The development of Aeromonas sp. and Pseudomonas sp. were significantly higher ($P < 0.05$) in the CD treatment. Weight gain of gold fish stocked at LF was significantly higher ($P < 0.05$) than that of fish in the other treatments. There was a significant difference in survival rate of gold fish among the treatments ranging from 62.52% in C to 88.17% in LF. The results suggest that raising gold fish in ponds and fed exogenously with zooplankton would support high rates of survival and production through maintenance of better water quality and greater abundance of zooplankton in the system. Significantly lower abundance of Aeromonas sp. and Pseudomonas sp. in the LF treatment considerably lowered any possibility of occurrence of bacterial disease.

IN VITRO GENOTOXIC EFFECTS OF MERCURIC CHLORIDE ON OYSTER *(SACCOSTREA CUCULLATA)* HEMOCYTES WITH COMET ASSAY

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Single cell gel electrophoresis or comet assay, is widely used in genotoxic testing for detection of DNA strand breaks and alkali-labile sites. In the present study hemocytes from the oyster, Saccostrea cuculata were examined for DNA damage using comet assay after in vitro exposure to mercury chloride, $HgCl_2$. The in vitro effects of $HgCl_2$ were tested using concentrations (10, 25, 50 and 100 ppm). The levels of DNA damage measured were expressed as % tail DNA and olive tail moment (OTM). Hydrogen peroxide-induced DNA strand breaks in isolated hemocytes was used as a positive control. Exposure to $HgCl_2$ had significant impact on both comet parameters. Concentration dependent increase in tail DNA damage was observed during in vitro exposure. The highest % tail DNA of 40.06±1.2 was observed after exposure to 100 ppm of $HgCl_2$. A significant increase in OTM was also observed after 60 min of $HgCl_2$ exposure. The results of the comet assay after in vitro toxicity tests using mercury chloride confirmed its genotoxic effect and showed that DNA damage increased with increasing concentrations.
Keywords: Comet assay; mercuric chloride; genotoxicity; Saccostrea cuculata

STUDY OF PLANT BASED HERBAL MOSQUITO REPELLENTS

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Mosquito repellents are important tools for prevention of dreadful diseases as well as painful mosquito bites. Controlling mosquitoes is of utmost importance in the present day scenario with rising number of mosquito borne diseases. Mosquitoes can act as a vector for many diseases causing viruses and parasites. Mosquitoes -borne diseases include yellow fever, dengue fever, malaria, lymphatic filariasis, elephantiasis, tularemia, and others an alarming increase in the range of mosquitoes is mainly due to deforestation, industrialized farming and stagnant water. Thus, special products like mosquito repellents for combating mosquitoes are required. The products used for mosquito control have varying degrees of effectiveness. Carbon dioxide and lactic acid present in sweat in warm-blooded animals act as an attractive substance for mosquitoes. The perception of the odor is through chemoreceptor present in the antennae of mosquitoes. Insect repellents work by masking human scent a number of natural and chemical mosquito repellents were studied, hence, natural mosquito repellents were preferred over chemical mosquito repellents.
Keywords: Malaria; Anopheles gambiae; filariasis, Essential oil; Repellent, chemoreceptor.

ECOLOGICAL EVALUATION OF FOREST VEGETATION OF SAGAR DISTRICT

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The study was carried out to evaluate the forest vegetation in 10 representative forest sites occurring in Sagar district. As per values of IVI (Importance Value Index) six forest communities were identified. In general the forest vegetation of district is either teak (Tectona grandis) dominating or teak associated. Highest importance value index of teak indicates its dominance and ecological success on account of its good power of regeneration and greater ecological amplitude. The entire three vegetational component i.e. trees, shrubs and herbs exhibited contagious distribution and it is the commonest type of pattern found in most of the communities. Shannon-Wiener diversity index ranged from 2.22 to 3.66 for trees, 1.26 to 1.86 for shrubs and 2.5 to 3.04 for herbs. In general species diversity of tropical dry deciduous forests is much lower however; at some places it may be higher due to more heterogeneity in the vegetation. Beta diversity ranged from 0.69 to 1.83 for trees, 0.64 to 2.35 for shrubs and 0.29 to 1.04 for herbs. The values of concentration of dominance were generally low in all the communities indicating the dominance shared by more than one and/or many species. Dominance - diversity curves were prepared and a common pattern was found in all the study sites. It was log-normal for trees and herbs indicates shared resources pattern by a number of species and mixed nature of vegetation and herbs whereas geometric curve was found in case of shrubs showing low diversity and less sharing of resources.

Vegetation still posses comparatively higher species richness and diversity. It is experienced that vegetation in a stress of biotic pressure gradually transform into xeric nature. Interestingly most of the species are still retained due to their broad ecological amplitude and greater adaptability against biotic influences. They are having a good potential for natural regeneration. The vegetation can be easily conserved for its diversity and growth by adopting the strategy of reduction of biotic pressure.

Keywords: Quantitative analysis, Shannon-Wiener diversity, Beta diversity, Dominance-diversity curves.

MEDICINAL IMPORTANCE OF SOME TRADITIONAL PLANTS

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The nature has provided variety of plants to cure many disease of mankind. The traditional herbal medicines are still practiced in large part of our country. Chhatarpur district is also store house of remedies to cure all aliments of mankind. Some of them here given in detail.

Keywords : Traditional, medicine, store house.

STUDY OF MICRO AND MACRO FLORA ON KHAJURAHO MONUMENTS AT CHHATARPUR DISTRICT (M.P.)

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Central India (Madhya Pradesh) is one of the culturally rich state of India, bestowed with three world heritage zone and more than 600 ancient monuments of which Khajuraho is one of them . It is located at Jhansi Panna Road, 620km away from Delhi (capital of India). It is said that it conserve Hindu and Jain culture, as many priceless monuments are still found there. They are one of the UNESCO World Heritage sites of India. The temples are famous for their Nagara style architectural symbolism.
Most of the Khajuraho temples were built between 950 and 1050 AD, during the period of Chandel dynasty. Historical records note that Khajuraho temple site 85 temples have survived, spread over 6 square kilometers temple is decorated with a protrusion of sculptures with intricate details, symbolism and expressiveness of ancient Indian art. But day by day these cultural heritage or monument get affected by biotic and abiotic factors. This Bio-deterioration of monumental stone cannot be considered as an isolated phenomenon, it generally occurs with other Physical, chemical or phytochemical process, but present study based on biophysical factors (micro and macro flora) caused deterioration and how these micro and macro flora get affect on monuments. After field work Micro and Macro flora have seen on monuments. In Micro flora there are colony of Rhizopus, Mucor, Alternaria, Lichen and Cyanobacteria and some Macro flora like grasses weeds have seen on monuments which deteriorate the monuments. In any heritage expressions have their importance but due to deterioration expression changed. So the present work focused how to these historical monuments can be conserve.

MORPHOTAXONOMICAL STUDY OF PISCIAN TREMATODE PARASITES FROM SAHJAD RESERVOIR / DAM DISTRICT- LALITPUR (U.P.) INDIA

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One hundred forty four fresh water edible fish, Rita rita (Ham.) were collected from Sahjad reservoir/dam, district-Lalitpur (U.P.) India. Only twelve fish were found infected by eighteen trematode parasites in its gall bladder. Morphological character of trematode parasites revealed them to belong to the Genus, Opisthorchis Blanchard, 1895 and Allocreadium Looss, 1900.

THE PRE-LINKAGE SURVEY OF DIATOM FLORA OF THE KEN-BETWA RIVER

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The rivers Chambal, Betwa, and Ken etc. form the life line of the Vindhya in Central Highlands. Ambitious plans are afoot to link these rivers. Execution of the Ken-Betwa link has already begun. A preliminary prelinkage survey was done with respect to diatom communities in the Betwa and Ken River. The diatoms are broadly categorized as centrales, fragiliroides, raphidioids and biraphids of which the shares of the biraphids are more than 60%. Of the two fifty seven species and forty six genera of diatoms, two hundred five species and forty two genera were present at Ken and one hundred fifty three species and thirty eight genera at Betwa. One hundred one (39%) taxa were common to both rivers. The Shannon diversity (log base 2) and Evenness indices varied meagerly (5.23, 1.02 - Ken; 4.37, 0.92 - Betwa) but was high. Species richness and diversity index are known to be significantly high in agricultural streams than in either organically polluted rivers. All these point towards diverse nature of these Vindhayan river and linkages could destroy the biodiversity paving way for bioinvasion, which are common in disturbed habitats as waters will be regulated as per needs of the populace.

BLIGHT DISEASE OF LINSEED WITH ITS EFFECTS ON OIL QUALITY AND ETHNO MEDICINAL CONTROL

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Linseed crop is common crop of northern Bundelkhand region in Ravi crop, but day by day production rate of linseed and oil quality is decreasing due to some microbial or fungal infection. More than 70% population of this area depend on agriculture and its related job, but due to these infections crop yield is not proper as wanted. Present study have been conducted how Alternaria lini effect on oil yield and oil quality. Some biological methods have been given here to cure the crop. Biological methods have been done by using enthnomedicinal plant like Azadirachta indica, Lantana camara and Calotropis procera, Chlorodendrom, Lawsonia, Datura, Pathenium, Calotropus and Citrus. Azaradichta indica Leaves, found more effective them others. There are so many drugs have been used by Linseed to cure high blood pressure so Linseed is one of the most effective oil yielding plant.

ROLE OF COOPERATIVES IN ENVIRONMENTAL PROTECTION

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Cooperatives play a major role in rural areas, particularly where private businesses hesitate to go and public authorities do not provide basic services. They are instrumental in providing opportunities for productive employment, as well as offering health care, education, potable water, improved sanitation, roads, and market access.The cited paper entitled "Role of Cooperatives in Environmental Protection" narrates the qualitative effort of authors in the realm of development through various Strategies followed by cooperative societies via theoretical analysis.

The issue of environment protection can be left to the government alone. It is the concern of every citizen of the country, cooperatives and its members. As cooperative institutions are peoples, organization, it can play catalytic role in creating awareness among the people. The role could be

1. Creating awareness about environment protection among cooperatives and cooperative members through extension programmme.
2. Developing educational and training programme for Board members and the staff.
3. Crating awareness among the people on consequences of felling down tree indiscriminately and shifting cultivation.
4. Encouraging people to develop social forestry programme.
5. Encouraging people to participate community development programme like rural sanitation and plantation in waste land.

Keywords: Cooperative,Environmental Protection, Role

A STUDY OF ENDEAVOURS OF THE RULERS OF BUNDELKHAND IN THE ENVIRONMENTAL SECTOR

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The study of environment is recently fascinating historians and environmentalists alike. But till recent times, it was considered as an "unimportant" theme and no independent work on it came to light. The historians working on pre-colonial India has sometimes discussed forests in judging the extension of agriculture but little attention has been made to study the relationship between the forests and general environment. The impact of the later on the social life particularly the human beings has been not even considered the 'integral part' of the history.

The study of environment mainly encompasses nature's gifts and the contribution of the rulers in this field to improve upon the former. An attempt has been made in this paper to highlight the efforts of the Chandela and Bundela rulers in making Budelkhand environment friendly or pollution free state so people could get fresh air. I would mainly concentrate on some of their efforts which really changed the landscape of the rugged territory. The extent of influence on human beings would also be touched upon.

ROLE OF CLIMATE SMART EXTENSION EDUCATION FOR IMPROVING BIODYNAMIC LIVELIHOOD STATUS IN GLOBAL PERSPECTIVE FOR HOLISTIC DEVELOPMENT, A COMPARATIVE RESEARCH AND STUDY

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Between now and 2050, the world's population will increase by one-third. Most of these additional 2 billion People will live in developing countries. At the same time, more people will be living in cities. If current income and consumption growth trends continue, FAO estimates that agricultural production will have to increase by 60 percent by 2050 to satisfy the expected demands for food and feed. Agriculture must therefore transform itself if it is to feed a growing global population and provide the basis for economic growth and poverty reduction. Climate change will make this task more difficult under a business-as-usual scenario, due to adverse impacts on agriculture, requiring spiraling adaptation and related costs. To achieve food security and agricultural development goals, adaptation to climate change and lower emission intensities per output will be necessary. This transformation must be accomplished without depletion of the natural resource base. Climate change is already having an impact on agriculture and food security as a result of increased prevalence of extreme events and increased unpredictability of weather patterns. This can lead to reductions in production and lower incomes in vulnerable areas. These changes can also affect global food prices. Developing countries and smallholder farmers and pastoralists in particular are being especially hard hit by these changes. Many of these small-scale producers are already coping with a degraded natural resource base. They often lack knowledge about potential options for adapting their production systems and have limited assets and risk-taking capacity to access and use technologies and financial services. Enhancing food security while contributing to mitigate climate change and preserving the natural resource base and vital ecosystem services requires the transition to agricultural production systems that are more productive, use inputs more efficiently, have less variability and greater stability in their outputs, and are more resilient to risks, shocks and long-term climate variability. More productive and more resilient agriculture requires a major shift in the way land, water, soil nutrients and genetic resources are managed to ensure that these resources are used more efficiently. Making this shift requires considerable changes in national and local governance, legislation, policies and financial mechanisms. This transformation will also involve improving producers' access to markets. By reducing greenhouse gas emissions per unit of land and/or agricultural product and increasing carbon sinks, these changes will contribute significantly to the mitigation of climate change. The research and study will be conducted in global basis, where there may be possibility of Climate Relicense and Impact of Extension Education play major role for development of Biodynamic Livelihood for Holistic and Sustainable Development. The Sample size taken From Each country and continent was 30 and total sample size would be 600.This will be done by Ex-post Facto design via Randomized block Analysis. The Empirical models, conceptual frame work, concept road map and policy will be formulated for achieving MDG, SDG and Vision 2050 in the final part of this Study. Documentation and Data interpretation would be done accordingly for Future Research and Technological Advancement Refinement.(TAR)

Keywords: Biodynamic Livelihood, Climate Smart Extension Education, Climate Smart Agriculture, Climate Resilescence, MDG, SDG, TAR, FAO, Holistic Developement

CHEMISTRY OF GROUND WATER IN PANNA DISTRICT OF VINDHYA PRADESH

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The present study is aimed to evaluate the ground water and soils of Panna district covering various inorganic non metallic constituents covered are pH, turbidity, dissolved oxygen (DO), biochemical oxygen demand (BOD), chemical oxygen demand (DO) chloride, sulphate, phosphates, nitrates, nitrites, heavy metals. Ni concentrations were found more than the permissible limits during all the season. The results were compared with their standards prescribed by various statutory bodies, namely WHO and BIS. Most of these parameters are correlated with one another. Statistical analysis of the data is presented.
Keywords: Panna district, ground water, heavy metals, statistical analysis, Vindhya Pradesh.

FIRST REPORT OF A CARYOPHYLLIDEAN TAPEWORM, FROM *CLARIAS BATRACHUS* (LINN.) FROM BARUASAGAR, DISTRICT JHANSI (U.P.) INDIA

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Ten fishes, Clarias batrachus (Linn.) caught from Baruasagar, district Jhansi (U.P.) India, five were found infected by eight alike cestodes in their intestines. Morphological studies of the cestodes revealed them to belong to a new species of the genus, Pseudobilobulata Srivastav and Lohia, 2002 of the family Capingentidae Hunter, 1930. Diagnostic features of the species are the presence of pointed and smooth scolex without any groove, cushion or spines, small neck, partly cortical and partly medullary vitellaria , reaches below the level of cirrus pouch, numerous medullary testes, oval to round cirrus pouch, presence of receptaculum seminins, bilobed ovary and nonoperculate eggs.
Keywords: Baruasagar, Capingentidae, Caryophyllidea, Cestodes, Clarias batrachus, Pseudobilobulata

ENVIRONMENTAL MANAGEMENT, ISSUES AND CHALLENGES FOR SUSTAINABLE DEVELOPMENT

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In last 50 years dependency of natural resources has almost doubled. If this continues, two earths will be required to fulfill our requirements. This is an alarming situation. We are loosing our natural resources rapidly including fuels, minerals, water, etc. Total available volume of water on earth is 1500 million cubic kilometer out of this 97% is sea water, 2% is in ice caps and only 1% is available for recreational use. Due to multiple anthropogenic activities, this 1% of water is also heavily polluted. Therefore, availability of portable water is a serious problem now a days.

Environmental Management is an attempt to control human impact and interaction with the environment in order to preserve natural resources and also focuses on the improvement of human welfare for present and future generations. For sustainable environmental development some of the important issues which should be economic, viable, social, and eco-friendly should be taken on top priority such as water scarcity, population pressure, global warming, glacier melting, deforestation, land fertility, desertification, management of natural resources, health, plastic management, ozone depletion, waste management, E-waste management, green transportation, irrigation for agriculture, agricultural production, zero carbon technique , conservation of biodiversity , energy efficient technologies etc. and we can overcome these problems by changing our lifestyle, endorsing scientific practices and adopting new viable scientific technologies.

ENVIRONMENTAL DEGRADATION AND OXIDATIVE STRESS IN FISH

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Environmental degradation is the deterioration of the environment through destruction of aquatic ecosystem. Climate change affects the Earth's water supply in a large number of ways. Living systems encounter a variety of stresses during their continuous interaction with aquatic environment. Environmentally-induced stresses frequently activate the endogenous production of reactive oxygen species (ROS), most of which are generated as by-product of metabolism. Hence, constant exposure to stressors may enhance ROS-mediated oxidative damage.

Increased number of agricultural and industrial wastes enter aquatic environment and being taken up by aquatic organisms induce plural changes. Some of them directly enhance ROS formation whereas others act indirectly. Fish are particularly threatened by water pollution.

The use of sentinel species in biomonitoring needs to be discussed due to different level of their vulnerability by environmental degradation.

Keywords: fisheries, oxidative stress, aquatic ecosystem, environmental degradation.

PHYTODIVERSITY OF KAMADGIRI HILL SACRED GROVE, CHITRAKOOT-THE LEGENDARY PLACE OF INDIA

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The Kamadgiri (Chitrakoot hill) is most sacred and legendry hill of the pilgrimage of Hindus. It is situated on the border of Satna district of Madhya Pradesh and Chitrakoot (Karwi) district of Uttar Pradesh, covering an area of 5 sq km. According to epic Ramayana Lord Ram with Sita and Lakshamana resided on Kamadgiri about 11.5 year during the 14-year exile. The hill is protected with the faith and belief of Hindus and has natural vegetation. It is considered as one of the most ancient and important sacred grove of India. The Kamadgiri (Chitrakoot hill) is a sacred grove, it is clearly mentioned in Ramcharitmanas as " all the forests of Gods existing in the universe were filled with envy at the sight of Rama's hill forest". The Chitrakoot hill is also called Ramgiri, had also been residing place of Yaksha (a Demi God) of Kalidas's Maghdoot. Where from he sent a massage through Megh (cloud) to his beloved wife who was residing at Alkapuri, which was situated near Himalaya. Kuver (the God of wealth and king of Alkapuri) expatriated Yaksha who was a minister of a Kuver's court for not being regular to the court.

Since the Ramayana period, Chitrakoot was very rich in biodiversity. Adikavi Valmiki and Goswami Tulsidas illustrated a comprehensive account of biodiversity in their texts Ramayana and Ramcharitmanas respectively. According to Valmiki Ramayana, "Chitrakoot is a beautiful and sacred hill where different types of herbs, shrubs, trees and climbers bearing variety of fruits, flowers and roots are available. The hill is known as 'Chitrakoot' and there are several monkeys, baboons and bears wander independently on the lofty peak. The hill is as beautiful and attractive as the Gandhmadan of deities.

The review of literature revealed that no work on floristic diversity of Kamadgiri has so far been carried out. Therefore an author has carried on extensive survey of Kamadgiri and found that there are 223 species fewer than 153 genera and 55 families are occurring. Out of which, 181 species, 125 genera and 48 families are belonging to dicots and 42 species, 28 genera and 7 families belonging to monocots. In the present paper, a detail about the work will be presented during the conference.

DATA ANALYSIS OF WIND SOLAR HYBRID SYSTEM

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Renewable energy systems in rural and non-electrified location in India and throughout the world in general has a major weakness that they are highly dependent on the renewable resources that cannot be controlled and are intermittent in nature and in some cases are difficult to be predicted such as solar irradiance and wind energy. Hybrid systems solve part of this problem by combining two or more types of energy that complement each other, In this paper, a prefeasibility study is carried out to assess the potential for solar-wind hybrid systems for roof top mechanical building in Hubli (15.362° N, 75.085° E)

Keywords: Solar insolation, Wind speed, Voltage, Current.

TAXONOMIC STUDY OF TAPEWORM PARASITE FROM FRESH WATER FISH, *CHANNA PUNCTATUS* (BLOCH) IN RAJGHAT DAM DISTRICT-LALITPUR (U.P.) INDIA

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During the Cesto-Piscian study of Bundelkhand region of Uttar Pradesh.. On 26 January 2014, we visited the district Lalitpur Rajghat Dam and collected the fish with the help of local fishermen. After thoroughly examination we found that one of the Channa punctatus (Bloch) yielded two moving parasites in its intestine. These parasites were segmented tapeworms which were preserved in 5% formalin in the laboratory. These parasites were thoroughly washed, stained, mounted and ultimately identified as new member of family Capingentidae Hunter, 1930.

BIODIVERSITY OF PACHMARHI BIOSPHERE RESERVE

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Pachmarhi Biosphere reserve is a conserved region of Satpura region of Madhya Pradesh with a total area of 4926.28 sq.km, spread among three districts of Hoshangabad, Betul and Chindwara. The conservation area was created in 1999 and designated as Biosphere reserve in 2009 by UNESCO. The forest has a unique feature having both Teak (Tectona grandis) and Sal (Shorea robusta) dominated forests. The region is covered with thick forest which exists between the transition zone of Western Ghats and eastern region. The region has rich biodiversity and several endemic and endangered species of plants and animals. The floral diversity includes more than 1300 species of Angiosperms, 20 species of Gymnosperms, 100 species of Pteridophytes, 150 species of Bryophytes, 150 species of Lichens, 200 species of fungi and algae .While the faunal Diversity include more than 40 species of mammals which includes Carnivores tiger (Panthera tigris), Leopord (Panthera pardus), Sloth bear (Melursus ursinus) ,Indian wild cat (Felis sylvestris), jungle cat (Felis margirata), Indian Heyna (Heyna heyna),wild dog (Cuon alpinus), palm civet (Paradoxus harmaphroditus), Indian wolf (Canis lupus), Jackal (Canis aurius) desert fox (Vulpes vulpes) and large herbivores like Gour (Bos gourus), Neelgai (Bosalphus tragocamelus), Indian sambar (Rusa unicolor), Chital (Axis axis,) barking deer (Muntjac muntjack), black buck (Antelope cervicapra) Chinkara (Gazella benetii),wild boar (Sus scorfa), 200 species of birds, 30 species of reptiles, 200 species of butterflies and moths and more than thousand species of insects. It has some endemic species of Plants like Psilotum nudum, Alsophila balakrishnanii, Ficus cupulata and jasminum brevipetiolatum. Some endemic animals include Gaint Squirrel (Ratufa indica centralis) flying squirrel (Petaurista philippensis), tree shrew (Anathana ellioti). Apart from this there exist 42 species of Orchids and more than 300 species of medicinal plants in this region. The present paper reflects the richness of biodiversity which exists therein.

Keywords: Pachmarhi, Fauna, Flora, Biodiversity

ENVIRONMENTAL DEGRADATION AND GLOBAL HEALTH

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In the present scientific scenario there has been enormous improvement in living of humans. But, due to rapidly increase in the industrialisation and mateterialistic culture, our environment is very badly polluted. It is true that we live in it, as such are bound to face such hazard. According to IPCC report, climate change has taken a broad alarming situation and now we can see its effects around us. One of its serious causes is global warming. If we do not take steps to improve the environment, there is no doubt that nature will not give us another chance. At present the earh's temperature is about 1.2^{o}C, but if this situation continues than after this century, we will have to face temperature increase upto 4^{o}C. Such increase in the temperature will be equal to a new world war. Due to this rapid increase in the world's temperature, humans have to face a havoc type of situation in which there will be disastrous flood and draughts just like happened in Jaisalmer and Cherapunji (Assam) respectively. Due to this temperature rise the glaciers in Himalaya region will start melting which will lead to an increase in the water levels of oceans, people have to face Tusnami's and Alninos. If this situation continues than, that day is not very far when them forever Ganges will stop its flow and become quite. The main reason for this cause would be the harmful green house gases like CO_2, CH_4, N_2O, CFC etc. which are increasing the earth's temperature. At present in developed countries the CO_2 release per capta per year is 11 M.Tons, where as in developing countries it is 3 metric tons. The large scale cutting of forests is also increasing the temperature of the earth day by day. Reducing area of forests now becomes one of the major factors of flood and drought. Thus like other pollutants, cutting of forests, increasing number of vehicles, industries now become the important cause of high amount of CO_2 and SO_2 in the atmosphere. To control it the UNO is taking account as seen by the quoto protocol declaration, 1997 for environment protection, which is very important. According to this taking standard of 1990, the total decrease of G.H.G. release is fixed upto 5.2%. With respect to this, we can also change our life style by not adopting materialistic culture and can contribute to this movement. We must focus to take serious measures which include making of policies to reduce the release of green house gases. Instead of using private vehicle, we should encourage use of public transport. We should also encourage the use of wind and Solar energy.

POLLUTION

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Pollution is just small word but is bigger then it's word. Pollution is the introduction of contaminants into the natural environment that causes adverse change. Pollution can take the form of chemical substances, or energy, such as noise, heat or light. We know only upper layer pollution but it harmful very deeply which is out of our thoughts that a simple thing can cause cancer and many more diseases. We have to awake ever person about this pollution otherwise our future generation can be more susceptible for just normal disease because pollution make our immunity low which is great health problem for living being.

ICHTHYOFAUNAL DIVERSITY AND SOCIO-ECONOMIC CONDITION OF FRESH WATER RESERVOIR MAJALGAON DAMIN MAHARASHTRA STATE, INDIA

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Majalgaon Dam it's a second stage of Jayakwadi Project of NathSagarwas constructed on the River Sindphana which is a tributary of River Godavari, in Beed District (Maharashtra, India) in 1987. The River Sindphana has been under constant threat of pollution by sewage and industrial wastes, disposal of dead bodies, deforestration, excessive use of fertilizers and pesticides, bathing and water development programmes. The dam has a catchment area is 3840 sq. km. It is of great Importance for the region because its water is used for human and cattle consumption, power generation, fish production and irrigation. A total of 24 species of phytoplanktons, 24 species of zooplanktons and 16 species of fishes were identified.i.e. Catalacatla, CyprineusCorpio, LabeoRohita, Silver Carp, Mrigal, Barbus, Ticto, Ophiocephalous, Mestembaleusarmatus,

WallagoattuChannamarulius,Labeocalbasu,Clariusbatracus,Mystuscavasius,Chnnapunctatus, Channaorientalis.etc. Water quality of the dam was also studied for physico-chemical parameters including total dissolved solids, dissolved oxygen, free CO2, BOD, COD, and total hardness etc. for one year (June 2012 to May 2013). Results revealed that water quality is normal and favorable for the cultivation of fishes.

Keywords: Limnology, fish production, socio-economic condition, fisherman.

CORRELATES OF ANALYSIS OF IRRIGATION, AGRICULTURE, LIVELIHOOD AND POVERTY LINKAGES IN THE DISTRICTS OF ODISHA

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An analysis of irrigation, agriculture, livelihood and poverty linkages in the districts of Odisha has been carried out. District-wise scenario of irrigation, agriculture, livelihood and poverty has been revealed with the help of different indexes developed. The values of Groundwater Development Index have been found low to very low for 25 districts. Created irrigation potential out of the total potential ranged from 19 to 93 per cent in kharif and 8 to 61 per cent in rabi season. Half of the districts have shown medium Agricultural Development Index values. Level of living of majority of districts has been found at medium level. About60 per cent of the BPL rural families comprise agricultural labourers, marginal and small farmers; ranging from 25 to 94 per cent. Balasore, Bargarh, Bhadrak, Cuttack, Ganjam, Jajpur and Puri districts have shown higher irrigation and agricultural development and Deogarh,Nayagarh Dhenkanal, Kandhamal, Malkangiri, Nuapara, Raygada and Sundargarh districts have shown lower irrigation and agricultural development. The links and/or missing links between irrigation resources, agriculture development, poverty and level of living have been explored.

Keywords: Irrigation, livelihood, poverty, Odisha, groundwater development index, agricultural

ENHANCING COMMUNITY BASED FOOD AND WATER SECURITY THROUGH MICRO-DIVERSION BASED IRRIGATION INITIATIVE IN POVERTY STRICKEN AREAS OF ODISHA

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The Present paper entitled as" Enhancing Community based Food and Water Security through Micro-Diversion Based Irrigation Initiative in poverty stricken areas of Odisha" was undertaken in Nayagarh District, a tribal district having hilly areas with major irrigation problems.In 7 GPs the DBI structures had been developed via Selfhelp mode and assistance from SDTT-Udyama convulgence. The goal of this project This project seeks to further lasting improvement in quality of life and a tangible reduction in distress migration of poor families and economic excludes through enabling local community empowerment. This project will acknowledge the enhancement of social justice where in house hold livelihood security, food security; entitlements to assured employment along with addressing the emerging issues like human adaptation are ensured and maintained. This project seeks to address the inherent problems associated with human living and gross nature of social intervention applicable for deprived sections of the society. Here life saving wells were built up for water conservation and preservation for future. With capillarity system of pipes and gravitational force the water will flow and supply to farmer for both agriculture and daily use.

ENVIRONMENTAL PHILOSOPHY IN LITERATURE

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One of the most notable concerns of the modern world is the issue of environmental protection. Most of the developing as well as the developed countries put this issue at the top agenda and allocate specific funds to achieve optimum success in this direction. It is globally felt that the biggest menace to humanity in recent years has not come so much from military invasions as from the environmental disasters. The chief factor responsible for environmental deterioration is believed to be the modern way of living impacted by the capitalist thought of industrial imperialism. This leads impious encroachment into the world of Nature which tends to strike back after a certain interval of time. Remarkably, the world literatures have contributed a great deal for maintaining ecological balance. Various philosophical trends are traceable in these literatures attempting to create harmony between Man and Nature for peaceful coexistence
Keywords: Nature, Man, Environment, Literature

DETERMINATION OF WATER QUALITY OF SURFACE WATER IN EIGHT BLOCKS OF BANDA DISTRICT: CHEMICAL AND BIOLOGICAL STUDIES

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The issue of access to potable water is very important. In developed countries, people may not put a great deal of thought into the source of their water. In developing countries, however, and especially in Africa, a large proportion of the population does not have access to safe water. Water is indeed the most essential commodity for human consumption and without it life cannot exist. It is an important vital substance in the biosphere which is required for metabolism, circulation, movement and cycling of nutrients in the body of living organisms. Water is a universal solvent and renewable resource. Water of lakes, rivers, waterfalls and sea that is found on the surface of the earth is called surface water. Any unusual activities of man, which make water unfit for all living beings, directly or indirectly, cause water pollution. Addition of any unwanted substance which changes the composition of water, smell, taste, colour, pH or dissolved oxygen causes water pollution. Water which is not safe to drink can carry diseases and heavy metals. People who consume this water will become ill, and there is a risk of death. Unfortunately, even in areas where the water is known to be unsafe, people may drink it anyway, out of desperation. The lack of potable water is often accompanied by other lapses in sanitation, such as open sewers and limited garbage collection. Many of these public health issues impact the poor more than anyone else. Reduction of oxygen, addition of pathogens and increase of toxicity in water which may alter the physical or biological properties of water are responsible for water pollution. The investigation was undertaken with an objective of developing techniques for the potability of drinking water of eight blocks of Banda region. For this investigation the water samples of these blocks have been collected on September 2012.In chemical analysis, the pH value, turbidity, temperature, alkalinity, total hardness, total dissolved solid(TDS), total suspended solids (TSS), total solid presence, conductivity, chloride, fluoride, calcium, magnesium, iron, nitrite and nitrate contents etc. have been determined. In bacteriological analysis presumptive test, confirmed coli form test and membrane filter method have been used. Many pathogens like bacilli, navicula, anavina, coccus, have been determined in the surface water samples. It was found from the chemical analysis as well as biological analysis that surface water is good for drinking water.
Keywords: potability, surface water, Banda city

SOME OBRERVATION ON MOTHS DIVERSITY OF RAMNAGAR AREA OF SATNA DISTRICT (M.P.)

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Order Lepidoptera includes moths which are of great economic importance in the field of agriculture and forestry. The collection of moths has been conducted from different habitats of Ramnagar area of Satna district (M.P) during summer and rainy seasons, which are most active period of these moths. The result showed that the fauna of Satna region is very rich.

SCIENTIFIC EVALUATION OF DARVYADI KVATHA CURNA-A CLASSICAL AYURVEDIC COMPOUND FORMULATION

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Ayurveda comprises of various types of medicines including asavas (fermented infusions), arishtas (fermented decoctions), Curnas (fine powder) and Kvatha curnas (coarse powder). These are regarded as valuable therapeutics due to their efficacy and desirable features. Identification and quality evaluation of crude drugs is a fundamental requirement of industry and other organizations dealing with natural health products. Thus, there is an urgent need to evaluate such parameters which can be adopted by the pharmaceutical industries. In the present communication attempts have been made to standardize Dãrvyãdi Kvãtha c?rna an Ayurvedic compound formulation which is used to treat Pradara (Excessive veginal discharge) and formulated by eight ingredients viz. Dãrvaî (Dãruharidrã) (Berberis aristata DC.-Stem), Rasãnjana (Dãruharidra) (Berberis aristata DC.-Solid extract stem), Vrsa (Vãsã) (Adhatoda zeylanica Nees.-Root), Abda (Mustã) (Cyperus rotundus Linn.-Rhizome), Kirãta (Kirãtatikta) (Swertia Chirata Buch Ham.-Whole plant), Bilva (Aegle marmelos Corr.- Fruit pulp), Bhallãtaka (?uddha) (Semecarpus anacardum Linn. f.-Fruit), Kairava (Kumuda) (Nymphaea alba Linn. Flower). Three sample procured from different manufacturers were subjected to powder microscopic characterization. Its showed diagnostic characters viz. Yellow coloured, short, lignified, thick walled phloem fibres with wide lumen and pointed ends, cortical parenchymatous cells containing starch grains, fibre sclerids from scale leaves in packed rows, spongy parenchyma with minute acicular crystals, endosperm cells filled with oil globules and fragments of stellate sclereids. HPTLC fingerprinting and physicochemical analysis was done. Physicochemical parameters average value of total ash 5.42%, acid insoluble ash 1.22%, alcohol soluble extractive 12.41%, water soluble extractive 19.72%, and loss on drying at 1050c 7.23%. It was observed that the powder microscopic chromatographic analysis complements each other in their findings and can be used effectively for the identification of raw materials in the compound formulation.

STUDIES ON SOIL CONDITION OF THE POND OF MAHNAR, VAISHALI (BIHAR)

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Water is the essence of life on earth and dominate in the chemical composition of all organisms. In vaishali (Bihar),Which is so rich in water resources, there is a great potentiality of fish production. It is therefore, necessary to study in detail the physical, chemical and biological condition of water as well as the soil condition of the bottom. The soil of Mahnar is of Alluvial origin and rich is inorganic matters with alkalin tendency.

CONTROL OF INSECTS-PEST THROUGH RADIATION TECHNOLOGY

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The present Research relates to a method of controlling a population of pests by way of using radiation techniques. The method comprises collecting a predetermined quantity of pests and treating the said pests with a plurality of radiations at predetermined doses and time to induce sterility. The pests include plurality of species of coleopteran beetles which further include Raphidopalpa faveicollis, Alphitobius diaperinus and Hoplocerambyx spinicornis species. The radiations include UV radiation, X-ray radiation and CO60 radiation. The radiations induce sterility in said pests by hampering reproductive cells of said pests which hinder their growth. It is thus inferred that the affected germ cells by high dose of CO.60 radiation exposure treatment cause interruption of spermatogenesis. This seems significant because discontinuity of spermatogenesis will be the result when all or most of the spermatogonia are damaged and this will lead to permanent sterility. It is very remarkable here that the effects of radiation on sperms showing the partial aspermia state and clumping of chromosomes undergo abnormal mitosis. The sperm fail to form sperm bundles and showing the disturbed physiological state of gonad and adds to infertility. The objective of this study is also to develop an alternative strategy for controlling the injurious insect pests through the radiation technology. In India this technology has not been applied so far for insect pest control.

Keywords : Raphidopalpa-faveicollis, Alphitobius-diaperinus Hoplocerambyx spinicornis, Hampering, Sterility, Spermatogenesis, Offspring's, Aspermia, Clumping.

THE MICROBIOLOGICAL INVESTIGATION OF GROUND WATER IN SIMALIYA, DISTRICT KOTA, RAJASTHAN

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Water samples were analysed from different hand pumps and borewells used for drinking, washing, bathing, household and for domestic animals. The sampling points and number of samples per month were selected on the basis of their use. The water samples were investigated for presence of pathogenic and non pathogenic bacteria using standard methods. Microbiological parameters like viable count, total coliform count and pathogen presence were also analysed. The results were compared with ISI, BIS and WHO standards.

The results of present investigation indicate that most of the water samples vary and were found within tolerable limits of water quality standards. Some samples were reportedly showing higher values of coliform and pathogens. This indicates bacterial contamination in the ground water resource. Some water samples were showing values near to upper limit. On the basis of present observations it is concluded that water is safe for domestic uses.

Keywords: coliform bacteria, pathogens, non pathogenic bacteria, ground water, Kota, Rajasthan.

COLDWATER RESOURCES: ISSUES OF CLIMATE CHANGE, HABITAT DEGRADATION AND IMPACT ON FISH AND AQUATIC BIODIVERSITY

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Global climate change is impacting and will continue to impact fish and fisheries. Data trends show global climate change effects ranging from increased oxygen consumption rates in fishes, to changes in foraging and migrational patterns, to fish community changes. Changing fish distributions and abundances will undoubtedly affect communities of humans who harvest these stocks. Any loss of genetic variation results in erosion of evolutionary flexibility in the adaptation to changing environment and risk of extinction. Most fish species have a distinct set of environmental conditions under which they experience optimal growth, reproduction and survival. If these conditions change in response to a changing climate, fish could be impacted both directly and indirectly. Larval fishes are usually more sensitive than adults to environmental fluctuations, and might be especially vulnerable to climate change. The fisheries of the entire Himalayan region, in contrast to warm water fishes are considered to be poorly developed primarily due to difficult terrain and its inaccessibility. Therefore, there is a need to research the physiology and ecology of coldwater fishes. As a broader and deeper information base accumulates, researchers will be able to make more accurate predictions and forge relevant solutions. The objective of the present paper was to synthesize various issues, knowledge gaps, strategies and implications with reference to climatic changes on coldwater fisheries and biodiversity and the role of scientific interventions for management of fragile ecosystem in a sustainable manner.

STORED-GRAIN-INSECT PEST AND THEIR EFFECTIVE ECOFRIENDLY MANAGEMENT

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Ecofriendly management of stored-grain pest can be done by holistic approach by using less residual insecticide or pesticide as per the incidence of insect-pest with Economic threshold level and Economic injury level by adopting bio control measures and cultural Indigenous technical knowledge. Here researchers want to narrate the effective ecofriendly management practices to help farmer friends.
Keywords: Ecofriendly approaches, stored grain pest, ITK.

EVALUATION OF THE TOXIC EFFECT OF PESTICIDE CYPERMETHRIN, IMIDACLOPRID AND AZADIRACHTA INDICA FRUIT EXTRACT, ON *PHERETIMA POSTHUMA*

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The toxic effect of common pesticides i.e. cypermethrin and locally used Neem (Azadirachtaindica) fruit extract has been investigated on adult earthworm (Pheretimaposthuma) and compared with another commonly used pesticide imidacloprid. The earthworms were treated with the test compounds using feeding cum contact method to establish LD50 values. Major organs of the LD50 treated surviving earthworms were subjected to total protein extraction, estimation, SEC FPLC and SDS-PAGE analysis. The total protein contents of cypermethrin (which was found to be the most toxic, LD50 = 0.14 ppm) treated earthworms was 25.2, 37.2 and 38.5 mg/ml in the peristomium, clitellum and abdominal regions, respectively. Whereas Neem fruit extract treatment (which was found to be the less toxic LD50 = 0.48 ppm) demonstrated moderate effect on total protein concentrations (37.8, 54.8 and 66.4 mg/ml). Imidacloprid which is also a commonly used pesticide was found to be more toxic (LD50 = 0.24 ppm) to earthworms as compared to Neem fruit extract and showed protein concentrations of 27.7, 26.1 and 30.3 mg/ml in the peristomium, clitellum and abdominal regions, respectively. The untreated or control animals showed protein concentration of 63.9, 76.8 and 78.7 mg/ml in peristomium, clitellum and abdomen regions, respectively. These results were further confirmed by SEC FPLC profiles which demonstrate drastic differences in terms of the proteins and peptides compared to their respective controls. These results were further complemented by SDS PAGE analysis of extracted proteins of peristomium (head) region which revealed that cypermethrin is selectively more toxic to proteins of the head region as compared to imidacloprid and Neem fruit extract suggesting different mode of action of these pesticides on different organs of the earthworms. In conclusion, our results demonstrate for the first time not only the toxic effect of these commonly used pesticides but also the differential action on the secondary target organisms such as earthworms.
Keywords: Toxic effect, Pesticide and Earthworm

TOXIC EFFECT OF HEAVY METAL SALTS COPPER SULPHATE ON THE MALE REPRODUCTIVE PHYSIOLOGY OF *(OREOCHROMIS MOSSAMBICUS)* TILAPIA

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Progressive development in the field of mining and industries led to the pollution of rivers by heavy metal salts. During this present work toxic effect of copper sulphate on Oreochromis mossambicus have been studied. The spermatogenetic stages of Tilapia fish shows degeneration in Copper sulphate treated fishes the number of treated follicles has increased.

SALINITY TOLERANCE OF LABORATORY REARED FINGERLINGS OF MAJOR CARP, *LABEO ROHITA* (LINN.) DURING DIFFERENT SEASONS

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Fish is increasingly being preferred as a part of our everyday diet and Labeorohita is one of the favoured freshwater food fish among carps. To bring more area under inland fisheries, the possibility of bringing the brackish water area of the state is being explored. Laboratory studies have been designed to explore tolerance of fingerlings at different salinities during different seasons so as to observe their survival rate. A total of four hundred and fifty fingerlings were subjected to salinity regimes of 0, 1.5, 3, 6, and 12 ppt for 60 days during different seasons (summer, autumn and winter). Temperature variations were indicative of the seasonal changes in ambient environment. Hundred percent survival was detected at 0 ppt to 6 ppt salinity during all seasons. Mortality recorded was 100% at 12 ppt salinity during summer (28.00C-37.00C) and autumn (22.50C-30.50C), while 50% survival was observed during winter (14.50C-19.00C). Fish showed high appetitive behavior to food between 0 to 6 ppt salinities. The present study suggests that common carp fingerlings can be reared in coastal waters with salinity of upto 6 ppt with 100% survival rate indicating that the high salinity areas may be explored for fisheries as well as for stocking enhancement programs.
Keywords: Salinity, growth and Labeo rohita.

EFFECT OF DIFFERENT ARTIFICIAL DIETS ON THE CULTURE POTENTIAL OF *CATLA CATLA*

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Culture potential of Catlacatla was investigated using three different diet treatments for 8 weeks in 0.24m3 capacity aquaria. Aquaria tanks was filled with 50 liters of water and stocked with Catlacatla fry of mean weight 0.54 ± 0.02 g and mean length 4.42 ± 0.1cm at a stocking density of 2L-1. Three different dietary treatments were performed in replicates: Treatment 1: Rastrenobolaargentia, maize bran, sunflower seedcake. Treatment 2: Caradinaniloticus, rice bran, sunflower seedcake. Treatment 3: Rastrenobolaargentia, wheat bran, cotton seedcake. The fish were fed powdered diets at 3% body weight twice daily with the different diets, which contained 30% crude protein. Physico-chemical parameters of the aquaria water were recorded weekly while mortality records were done daily. There was significant difference in specific growth rate (SGR) between diet 1 and 2 ($P < 0.05$) and diet 1 and 3 ($P < 0.05$), with diet 1 recording 0.53% compared to 0.42% and 0.45% for diet 2 and 3 respectively. There was no significant difference between diet 2 and 3, ($P = 0.605$).The mean weight gain of individual fish were 0.45 ± 0.02, 0.31 ± 0.03 and 0.41 ± 0.01 for diets 1, 2 and 3 respectively. There was positive correlation between length and weight ($r2 = 0.8352$). The survival rates and water quality parameters were similar in all the treatments ($P < 0.05$). The low growth rate in Diet 2 could be attributed to high fiber content of rice bran, which makes it difficult to digest and thus less palatable. Poor growth rate in Diet 3 was attributed to gossypol, which is a toxic chemical contained in cotton seed meals. Catlacatla fry can adapt to culture conditions when fed appropriate supplementary diet.
Keywords: Diet, Artificial food, Catla catla.

AUCHENORRHYNCHA (INSECTA: HEMIPTERA) FROM ANDAMAN AND NICOBAR ISLANDS, INDIA

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Andaman and Nicobar Islands are a group of more than 500 islands and islets are located in Bay of Bengal. The tropical rain forests of these islands house avery rich and unique diversity of animal life.Auchenorrhynchaare called short-horned bugs because their antennae are usually small and inconspicuous; when long, they appear slender and filamentous or two segmented.Present study describes 32 species from 23 genera belonging to 6 families of suborder Auchenorrhyncha from Andaman and Nicobar Islands.The present discourse includes detail description, illustration and distributional pattern of each of the taxa of Auchenorrhyncha.These bugs were collected by sweeping over vegetation with a net. Some specimens found under stones, leaf axils and loose bark were collected by picking with forceps or small ones with a hairbrush dipped in spirit. Night collection was also carried out with using white cloth sheet and mercury bulb. The identification of specimens up to species level was done using reference collection present in ZSI, Jabalpur.The record of these species will enhance the diversity of order Hemiptera of the Islands. It is also expected that the study of unexplored area may yield many more species.
Keywords: Auchenorrhyncha, distributional pattern, Andaman and Nicobar Islands.

THE STUDY OF PHYSICO-CHEMICAL PROPERTIES OF GROUND WATER IN SIMALIYA, DISTRICT KOTA, RAJASTHAN

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Ground water is the major resource for domestic and agricultural use in villages of non-command area of Kota district in Rajasthan. Domestic use include drinking, washing, bathing, household and for domestic animals. Water samples were analysed from different hand pumps and bore wells used for the above purposes. The sampling points and number of samples per month were selected on the basis of their use and location. The physico-chemical parameters (like alkalinity, BOD, COD, dissolved oxygen, electrical conductivity, pH, salinity, TDS, temperature, Total hardness and ions such as Ca++ , Mg+, chloride, nitrate, phosphate, fluoride etc.) were measured using standard methods. The results were compared with ISI, BIS and WHO standards.

The results of present investigation indicate that most of the water samples vary in these physic-chemical parameters within tolerable limits of water quality standards. Some samples were reportedly showing higher values of fluorides, salinity and nitrates. This is indicative of contamination in the ground water resource. Some water samples were within limits but showing values near to upper limit. On the basis of present observations it is concluded that water is safe for domestic and agricultural uses.
Keywords: ground water, physico-chemical parameters, Kota, Rajasthan.

DIVERSITY OF LIZARDS (FAMILY: GEKONIDAE, ORDER LECERTILIA, CLASS REPTILIA) IN BARAN DISTRICT, RAJASTHAN, INDIA

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Gekonidae is a family of class Reptilia. The family Gekkonidae is represented by at least 82 genera and 870 species. Geckos comprise the second most diverse lizard family and occur throughout most of the world. Geckos contain a number of identifiable characteristics including a lidless eye covered with an immovable clear spectacle. Sub-digital lamellae (toe pads) are present on the ventral surface of the digits. The lamellae are comprised of several setae, each consisting of several branching hair-like projections 60 to 90 microns in length with expanded tips. These setae provide the geckos with their ability to "adhere" to vertical on smooth surfaces such as glass and sometimes upside down on ceilings. Most geckos are nocturnal and adorned with dull coloration.

The study was carried out in eight tehsils (Anta, Atru, Baran, Chhabra, Chhipabarod, Kishanganj, Mnagrol and Shahabad) of Baran district of Rajasthan at different studies sites during 2009 to 2013 to study qualitative and morphological variation of lizards fauna (family: Gekonidae). We listed a total of three species of Gekonidae family in the present scientific survey from the area. The observations include new locality records, distribution, ecology and natural history information on some species of reptiles including Hemidactilus flaviviridis, H. brookii and H.leschenaulati.

H. brookii was observed expressing a modest degree of morphological and colour pattern variation (polymorphs). Present paper gives an account of the diversity, number, ecology and distribution of Gekonids observed during the study.

Keywords: Reptiles, Gekonidae, Biodiversity, Baran, colour pattern ,ecology, Rajasthan.

COMSOL MULTIPHYSICS BASED SIMULATION STUDY ON HCCI MODE DIESEL COMBUSTION CHEMISTRY

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In this paper elementary reaction of larger chemical species i.e. diesel has been structured. This structure of diesel with CO and H2 elementary reactions gives a logical organization to combustion chemistry. COMSOL multiphysics tool is used to simulate this combustion model and the effect of different variables like compression ratio, initial temperature, initial pressure and engine speed have been observed by parametric sweep operation. The peak temperature and in-cylinder pressure obtained were 1050 K and 80 bar respectively which are higher compared to the experimental results due to the ideal conditions considered for modeling.

Keywords: COMSOL multiphysics, HCCI.

RECENT TECHNIQUES FOR BIODIVERSITY MANAGEMENT

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Biodiversity and its management are the critical important for living organisms survival and well being in their environment. Conservation is a management of human use of biosphere so that it may yield sustainable benefit to the present generation while, maintaining its potential to meet the needs and aspiration of posterity.

Conservation is the most efficient and most beneficial utilization of natural resources. There are two different approaches; one that concentrates on identifying individual species of importance, and one that identifies important areas where it is hoped that actions will benefit a significant number of species. Some recent techniques may help us to reduce the prevalence of inherited disease in the nation's companion animals. The role of protected areas in biodiversity management may be set aside for the protection of biological diversity, and of natural and associated cultural resources and is managed through legal or other effective means.

In the present paper, recent techniques are described which assist in the management of amphibian biodiversity in particular and of vertebrate biodiversity in general. These include new methods for collecting and storing genes, detection and elimination of disease, identification of useful genes, improved techniques for long term storage, and, safer and more efficient distribution of germplasm to users.

Keyword: Amphibians, Biodiversity, Conservation, Germplasm, Management.

STUDIES OF THE MACROINVERTEBRATES OF LENTIC POND OF KOTA REGION

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Benthos is an important part of the food chain, especially for fish. Many invertebrates feed on algae and bacteria, which are on the lower end of the food chain. In the most freshwater ecosystem, the larval insects dominate the macro-invertebrates community. Nematoda, Annelida, Arthopoda and Mollusca are the main phyla that contribute to this community. Benthic macro- invertebrate are very suitable biological indicators tools due to their longer life span, visibility to the naked eye and sedentary nature. The most diverse groups of freshwater benthic macro-invertebrate are from the dipteran group of aquatic insects, and thus they are excellent organisms for studies of changes in water quality.

In the present study, the qualitative observations of the fresh water macro-invertebrates were recorded during the study period in a lentic waterbody of Kota. Total 21 species macro-invertebrates belonged to 4 phyla, 8 classes, 18 families and 1 unidentified species were recorded. 21 species were identified of macro invertebrates representing four groups namely Nematoda, Mollusca, Arthropoda and Annelida.

Keywords: biological indicators, macro-invertebrate, Benthos, food chain, lentic water body,

ON THE RELEVANCE AND IMPORTANCE OF ARTHROPODS IN PUBLIC HEALTH

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Arthropods are one of the most remarkable creatures on the earth, and they merit study for at least two major reasons. First, arthropods have unsurpassed diversity and niches; because of their extensive variation. Secondly, they directly affect the human life either by benefitting or by harming. The discipline of Public health entomology, popularly known as medical entomology is focused upon insects and arthropods that affect human health. Medical entomology also includes scientific research on the behavior, ecology, and epidemiology of arthropod disease vectors, and involves a outreach to the public, including state officials and other stake holders in the interest of public safety. Medical entomologists work in the public health area, dealing with insects (and other arthropods) that parasitize people, bite, sting, and/or vector disease. Medical Entomology is the branch of entomology which deals with arthropods which affect the health and well-being of man and vertebrate animals. In other words, medical entomology is the medical science directly concerned with vectors that affect human and animal health.

Major insect-borne diseases are: Dengue fever - Vectors: Aedes aegypti (main vector) Aedes albopictus (minor vector) threatens -50 million people are infected by dengue and annually, 25,000 die. Malaria - Vectors: Anopheles mosquitoes-500 million become severely ill with malaria every year and more than 1 million die. Leishmaniasis - Vectors: species in the genus Leishmania in the New World and Phlebotomus in the Old World. Two million people infected.

Bubonic plague-Principal vector: Xenopsylla cheopis At least 100 flea species can transmit plague. Sleeping sickness-Vector: Tsetse fly, not all species. Sleeping sickness threatens millions of people in 36 countries of sub-Saharan Africa (WHO). Typhus - Vectors: mites, fleas and body lice 16 million cases a year, resulting in 600,000 deaths annually. Wuchereria bancrofti - most common vectors: the mosquito species: Culex, Anopheles, Mansonia, and Aedes; affects over 120 million people. Yellow Fever - Principal vectors: Aedes simpsoni, A. africanus, and A. aegypti in Africa, species in Haemagogus genus in South America, and species in Sabethes genus in France -200,000 estimated cases of yellow fever (with 30,000 deaths) per year.

Minor insect-borne diseases are : Ross River fever - Vector: Mosquitoes, main vectors A. vigilax, Aedes camptorhynchus, and Culex annulirostris Barmah Forest Virus - Vector: Known vectors Culex annulirostris, Ocleratus vigilax and O. camptorhynchus and Culicoides marksi. Kunjin encephalitis (mosquitoes) Murray Valley encephalitis virus (MVEV) - Major mosquito vector: Culex annulirostris. Japanese encephalitis-Several mosquitoes are vectors, the most important being Culex tritaeniorhynchus. West Nile virus-Vectors: vary according to geographical area; in the USA Culex pipiens (Eastern US), Culex tarsalis (Midwest and West), and Culex quinquefasciatus (Southeast) are the main vectors. Lyme disease - Vectors: several species of the genus Ixodes. Alkhurma virus (KFDV) - Vector: tick Kyasanur forest disease-Vector: Haemaphysalis spinigera. Brugia timori filariasis - Primary vector: Anopheles barbirostris. Babesia - Vector Ixodes ticks. Carrion's disease - Vectors: sandflies of the genus Lutzomyia. Chagas disease - Vector: assassin bugs of the subfamily Triatominae. The major vectors are species in the genera Triatoma, Rhodnius, and Panstrongylus. Chikungunya - Vectors: Aedes mosquitoes Human ewingii ehrlichiosis - Vector: Amblyomma americanum. Human granulocytic ehrlichiosis-Vector: Ixodes scapularis. Rift Valley Fever (RVF) - Vectors: fleas in the genera Aedes and Culex. Scrub typhus - Vector: Chigger. Loa loa filariasis - Vector: Chrysops sp.

In the present paper, some aspects of relevance and significance of medical entomology and existing public health problems are discussed in details and inferences were drawn. Special emphasis is given on mosquito borne disease like dengue, malaria and Chikungunya.

Keywords: Arthropod, Chikungunya, dengue, malaria, medical entomology, encephalitis.

HEALTH HAZARD AND MANAGEMENT OF BIOMEDICAL WASTE IN KOTA

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Biomedical waste comprises any solid or liquid waste including its container and any intermediate product generated during the diagnosis, treatment or immunization of humans or animals. Proper handling, treatment and disposal of biomedical waste plays a vital role in hospital infection control programme and sanitation. Improper handling on the other hand, can cause environment pollution and serve as a mode of transmission of dangerous and contagious diseases like hepatitis, HIV, tuberculosis etc through contaminated needles and equipments. Another objective of Biomedical Waste Management involves preventing transmission of disease from patient to patient, from patient to health worker and vice-versa, to prevent injury to the health worker and to prevent general exposure to the harmful effects of cytotoxic and chemical waste generated in health care centres.

The present review article studies the basic health and sanitation issues related to various types of Biomedical wastes, their collection, segregation, treatment, handling procedures and proper disposal of biomedical waste in Kota city.

Keywords: Health, sanitation, hazard, waste management, disposal.

EFFECT OF ENVIRONMENTAL DEGRADATION ON WILDLIFE

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Environmental degradation is a result of socio-economical, technological and institutional activities. Degradation occurs when Earth's natural resources are depleted. Air, water and soil resources are affected. Degradation also impact on microorganism, plant, animal and wildlife.

Our land is compromised when people exhaust resources or release harmful chemicals into the air. Deforestation, wasting resources, and pollution all add to the demise of an environmentally-sound and safe planet. Trees in forest are cut down in large quantities, so that more homes can be built on the land, the birds and wildlife who lived in the forest must find a new place to live. The vegetation that once grew on the land is destroyed. Wildlife is the essential part of the environment. The existence of wildlife is most important to maintain the balance between life and environment. But wild animals facing the threat of extinction due to environmental degradation.

The degradable changes observed in the environment, natural resources and biodiversity can be checked and renovated if each one of us take some sensitive and positive measures as the solution to save the earth from degradation caused by global warming, climatic changes, pollution, acid rains and natural calamities as well, therefore it is urgent to discuss and to find a possible solution related to environmental degradation.

Keywords: Environmental degradation, socio-economical, plant, wildlife.

PRODUCTION OF HIGHLY EFFICIENT BACTERIAL FLOCCULANT IN WATER TREATMENT

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A bioflocculant is a kind of biodegradable flocculants produced by many microorganisms Including different type of bacteria during their growth. The aim of this study was the production of bacterial bioflocculant highly efficient and which has special advantages: such as safety, susceptibility to degradation and harmless to humans and the environment and to make a comparison with electrostatic precipitators industries such as salts of aluminum (alum), and therefore is likely to be applied in drinking water and sewage treatment to benefit from bioflocculants widely in the areas of water purification . Where were isolated and purified kinds of different bacteria and diagnosis by vitek 2 compact and traditional ways of some isolates to confirm them either isolation Bacillus spp. then preparation bioflocculants. The results showed the highest value for the type of bacterial Bacillus ssp. were 94 % and less value was Enterobacter spp. % 82 compared with alum aluminum salts recorded 95% , with kaolin suspension when the pH optimum was (7) at room temperature, the presence of calcium chloride have shown the results of the statistical analysis and there is a difference significant at * ($P < 0.05$) in the density values optical (OD).
Keyword: Production, bioflocculant and water treatment.

EFFECTS OF DIETARY FISH OIL SUBSTITUTION WITH SUNFLOWER OIL ON THE SURVIVAL, GROWTH PERFORMANCE AND PROXIMATE COMPOSITION OF *CYPRINUS CARPIO* (LINN.)

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Lipid is an essential component of fish nutrition and fish oil is the major source of lipid and is supplemented at very high levels in fish diets. Decreasing global availability coupled with highly variable price of fish oil has forced the aquaculture industry to investigate the possibilities of alternative cheap dietary lipid sources. Therefore, the present study was conducted to evaluate the effects of fish oil replacement with sunflower oil (SFO) on survival and growth parameters of fish and proximate composition of fish flesh in Cyprinus carpio (Linn.). Five isonitrogenous and isoenergetic dietary treatments (0%, 25%, 50%, 75% and 100% replacement of fish oil with sunflower oil) were prepared. The diet with 0% SFO was the control. Fish were fed on these diets for a period of 60 days. Significant differences ($P > 0.05$) were not detected during 60 day feeding trial on the net weight gain and specific growth rate of the fish. No statistically significant differences ($P > 0.05$) were observed on the survival of fish as well as proximate composition of fish flesh. Hence, the study suggested that the SFO can serve as a good substitute of fish Oil for cost effective feed production and aquaculture.

BIOMEDICAL WASTE MANAGEMENT PRACTICES IN CHHATARPUR REGION INDIA: A CASE STUDY OF THREE SELECTED HEALTH CARE FACILITIES

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Biomedical waste (BMW) has become an environmental and health hazard in many countries, including India. Careless disposal of these wastes by Healthcare facilities (HCFs) has become a significant concern for medical staff, patients, general community and largely the environment. Characterization and quantification of BMW generation in selected HCFs was analyzed to assess the current BMW management practices including segregation, collection, transportation, storage, treatment and final disposal strategies and health /safety practices for the health care personnel involved in BMW Management. The average daily per bed production of infectious BMW was 0.2 kg/bed/day at JIPMER, 0.3 at GH and 0.6 at MH. However, the percentage of infectious waste produced in the MH (40%) was higher than GH (28%) and JIPMER (23%). BMW management had not received adequate attention in Puducherry region. BMW was dumped and mixed with domestic waste, which was collected, transported and disposed off in a similar manner as that of the Municipal solid waste. The safety measures taken by waste handlers were not satisfactory due to poor awareness of potential health hazards. This violates the BMW Rules, 1998. Thus, it is concluded that there should be strict implementation of a waste management policy, ideally by an infection prevention and control team for all large/major hospitals and a dedicated resident doctor in charge for this purpose in all other hospitals and periodic training and motivation must be given paramount importance to meet the current needs and standards of BMW management.
Keywords: BMW management.

PHYTOREMEDIATION: GREEN TECHNOLOGY TO CLEAN THE ENVIRONMENT

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The technology of phytoremediation is cost effective and ecologically friendly in which plant utilizes its natural abilities to restore environment. In nature there are a number of plants existing with innate mechanisms for removing heavy metals from soil, air and water as a survival strategy. Among several subsets of phytoremediation, the widely studied strategies are (a) phytoextraction (b) phytofiltration (c) phytovolatilization and (d) phytostabilization. Application of organic/inorganic chelants in soil directly affects the solubility of heavy metals and consequently increases their accumulation in plants that enhances phytoextraction. In the present review current knowledge about the phytoremediation and its techniques are discussed.
Keywords: Phytoremediation, Green Technology Clean Environment.

EVALUATION OF AZOLLA AS BIOFERTILIZER AND FEED INGREDIENT IN FRESHWATER AQUACULTUTRE

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Azolla is a free floating aquatic fern which is naturally available mostly on moist soils, ditches, marshy ponds and is widely distributed in tropical belt of India. The dorsal lobe which remains exposed to air is having a specific cavity containing its symbiotic partner, blue green algae (BGA), Anabaena azollae. The fern is capable of fixing atmospheric nitrogen. The Azolla - Anabaena azollae symbiosis has long been used by farmers, mainly in Asia, as feed for their animals and as green manure. A number of laboratory and field studies have shown beneficial effect of Azolla as an organic nitrogen fertilizer, mainly in terms of increasing rice grain yield. Recent research has focused on the use of Azolla in integrated farming systems, mainly rice- fish- Azolla and pig-poultry-fish- Azolla. Use of Azolla fern as a biofertilizer is advocated to minimize the dependency on chemical nitrogen fertilizer.

Comparative study was conducted to examine growth rate, biomass production and proximate composition of six different Azolla species namely Azolla pinnata, Azolla microphylla, Azolla filiculoides, Azolla caroliniana, Azolla maxicana and Azolla rubra in control condition (45x36x36cm trays), in fibre glass tanks (1 m dia; 1 m deep) and in field condition (4 x 1.25 x 0.6 m earthen cisterns). Azolla microphylla and Azolla pinnata were found suitable for production in the tarai belt of Uttarakhand. The suitable range of water temperature and pH for good production of Azolla was found to be as 24-30°C and 5.4-5.9, respectively. Azolla microphylla fixed 0.3128 mg nitrogen/day/g dry weight in earthen cistern. Highest protein content (20.4%) was recorded in Azolla pinnata in field condition. A feeding trial was conducted in the cemented tanks (8 x 1.25 x 0.85 m) to examine efficacy of dried Azolla mixture as a feed ingredient in the diet of rohu, Labeo rohita. Azolla mixture was incorporated in diet at 15%, 25% and 35% level. Highest weight gain was recorded with the diet containing 25% Azolla mixture with specific growth rate of 0.7468%/day. The experimental fishes recorded the value of exponent 'n' in the range of 2.5155 to 2.7760. The condition factor 'K' of all experimental fishes was above 1.0 (1.2237-1.2326) indicating good condition of experimented fishes. Incorporation of Azolla in the fish diets reduced the fat content in muscle of fishes.

EFFECT OF PHYSICO-CHEMICAL PARAMETERS ON AQUATIC WEED OF GWALMANGRA POND OF CHHATARPUR DISTRICT (M.P.), INDIA

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The effect of physico-chemical parameters on aquatic weed was investigated in Gwalmangra Pond of Chhatarpur District (M.P.) India. The physico-chemical parameters investigated where as Temperature, Transparency, pH, DO, BOD, Total Alkalinity, TDS, and Hardness. The main aim of this study was to establish relationship between physico-chemical characteristics and aquatic weed of the pond.

EFFECT OF INFECTIONS BY NOSEMA CUNEATUM (MICROSPORIDA: NOSEMATIDAE) IN HIEROGLYPHUS BANIAN FABRICUS

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Some heitherto unreported field and laboratory observation of diseased Hierglyphus banian were recorded like abnormal flight, feeding activity, copulatory time, oviposition egg laying, fecundity etc. Although large number of protozoan parasites are found in insects due to relative difficulty in studying, taxonomically identification, few attempts were made to use them in the field control (Steinhaus, 1957). Weiser (1956) stated :there is scanty information on the ecology of protozoan diseases and the role of protozoan o=in the apparently underrated." Protozoan infection in insects very much differ due to certain limitations like chronic rather than acute infection. Protozoan pathogen are obligatory in nature and are not able to grow on artificial media.

In the present study, it observed that morphologically, in the beginning of the infection in the adults, there were no marked differences. The first effect appeared in the body colouration, the second in the body texture which became very soft. On dissection, observed different part of fat tissue exhibited different degree of hypertrophy. The reproductive organs also affected with spores. Probably due to disease the individuals have showed the aggregation tendency. The effect of the pathogen protozoan disease was reflected in the flight activity of the individuals. Since Nosema cuneatum affected invariably the fatty tissue, the flight activity was highly affected and reduced so become an easy prey to several predators of the area. It was also noticed that individuals stopped feeding 2-3 days prior to their mortality. The tendency for copulation appeared more vigorous among males in the diseased population, but the females appeared reluctant for mating and showed lesser inclination. Unlike most of the insect diseases Nosema is known to be passed from one generation to the other.

The diagnosis of the infection in first instar was most difficult, but the spores of pathogen were easily detectable in the tissues of gut. Thus in females the pathogen entered the follicles of the ovary and was further transmitted with infected eggs to the next generation. It has been observed that the infection in the females were more as compared to male, but the body deformities were much in the males. From the data it is revealed that the disease has affected on behaviour viz. copulation, oviposition, egg laying, moulting period as compared to healthy one.

SEASONAL CHANGE IN DIVERSITY OF THE ZOOPLANKTONIC COMMUNITY AT BAKIA BARAZ SATNA MADHYA PRADESH

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The Bakia baraz is very famous Baraz in Satna district. Present study deal with the seasonal variation of this water body study of collection and identification of zooplankton done with monthly. A total 65 species of zooplankton, 9 species belong to Protozoa, 31 species of Rotifers, 14 species to Cladocera, 08 species to copepods and only 3 species of Oligochacta was recorded during present study.

QUALITY ASSESSMENT OF GROUND WATER IN SOME RURAL AREAS OF KANPUR

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Water Pollution is one of the most serious problems of living organisms. Kanpur is well known thickly populated industrial city of Uttar Pradesh. Water is the biggest and chief natural resource, necessary for conservation for survival of living organisms on earth. It is the biggest necessity for life and in developing countries like India ground water is the most important source for drinking, irrigation, and industrial purposes. But unfortunately due to wide spread over use of harmful chemicals in agriculture, industrial effluents, pollution of rivers etc. ground water is getting increasingly contaminated with pollutants.

A laboratory study was conducted for the quality assessment of ground water in some selected rural areas of Kanpur. For the experimental purposes, four water samples were collected from different locations of the city in the month of September 2014 (Two open well and two bore well). The results were analyzed with standard value prescribed. It was concluded that the sampling sites No. A to C showed that all the physico-chemical Parameters within the range of standard water quality as prescribed by (W.H.O.) physico chemically, the quality for drinking purpose. The results of present study also concluded that most of the physico- chemical parameters are within permissible limits except samples No. D.

Keywords: World Health Organization (W.H.O.), Physico-chemical Analysis, Industrial effluents, Physico Chemical Parameters.

ASSESSMENT OF GANGES RIVER WATER QUALITY AT RANI GHAT KANPUR

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Kanpur, Manchester of the East, famous for its leather industry, has its other side of story to tell too. It's also one of the most polluted cities in India as well as in World. In fact, environmental pollution has taken up by gigantic proportions and has become a major cause for concern among the population of the city. The main aim of the present study was to access the impact of urban and industrial activities or the water quality of Ganges river at Rani ghat Kanpur. For this Ganga river water samples were collected at Rani ghat Kanpur. The water samples were analyzed for temperature, pH, Acidity, dissolved oxygen (DO), biochemical oxygen demand (BOD), chemical oxygen demand (COD) and establish the relationship between concentrations of Chloride, Nitrate, Phosphate and Chromium in water at different periods during the year. Comparison between observed & estimated values based on physico-chemical parameters studies and water quality indices revealed that the river water quality at Rani ghat location were found to be contaminated.

Keywords: Ganges River, Biochemical oxygen demand (BOD), Chemical oxygen demand (COD).

THE REACTION OF VARIOUS TYPES OF PULSES ON THE LIFE PROCESS OF CALLOSOBRUCHUS CHINENSIS (LINN)

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Pulses in general are the rich source of protein to the vegetarian people and usually stored to provide a food reserve as well as seed for implantation. Among important insect-pests of stored grains, bruchids or pulse beetles, C. chinensis is one of the major pests causing substantial loss and affecting the nutritive value of pulse grains. The aim of the present study was to find out the host preferentiality and the effect on development by different pulses. The most preferred food was applied during the set up of further experiments.

Twelve pulse grains namely red gram/ pigeon pea/Arhar, (Cajanus cajan L.), Chick pea/ Bengal gram, (Cicer arietinum L.), Lentil, Masur (Lens culinaris Medic.), Black gram, Urd, (Vigna mungo or Phaseolus mungo L.), Green gram, Mung (Vigna radiata or Phaseolus radiatus L.), Bhut/black seeded Soybean, Soya, Soybean, yellow seeded (Glycine max. Merr.), Cow pea, (Vigna unguiculata or Vigna sinensis L.), Moth, (Vigna aconitifolia or Phaseolus aconitifolius Jacq.), French bean or Kidney bean, (Phaseolus vulgaris L.), Pea, (Pisum sativum L.), Khesari, (Lethyrus sativus L.)., were collected from different sources ensuring that these pulses were not treated with any insecticides. The pulses were put in markin cloth bags and conditioned for seven days at 60 per cent relative humidity.

All the pulse grains tested produced different growth response. The average number of adults emerged ranged from 4.2167 in Bhut to 310.8233 in lentil. The data when statistically analyzed exhibited highly significant differences. Most preferred food appeared to be lentil which gave maximum adult emergence followed by green gram, red gram, Bengal gram, cowpea, khesari, pea, soybean and Bhut in decreasing order. However, Bengal gram and red gram were statistically at par with each other and cowpea which was significantly different from red gram was at par with Bengal gram. Bhut (black seeded soybean) and soybean (yellow seeded) were comparatively less preferred and statistically at par.

Keywords: Pulse Grains, Insect Pest, food reserve, Bhut (Black Seeded Soybean), Black Gram.

INTERESTING STUDY OF PISCIAN TAPEWORM, PROBOTHRIOCEPHALUS SAJNENSIS N. SP. Of *CHANNA PUNCTATUS* (BLOCH) FROM SAJNAM DAM DISTRICT LALITPUR , (U.P.) INDIA

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Eight fresh water edible fish, Channa punctatus (Bloch) were examined in March 2014 from Sajnam dam district Lalitpur (U.P.) India. One of them infected by two alike tapeworm parasites in their intestine. Morphological charecters of tapeworm revealed that it is the new species of the genus, Probothriocephalus Campbell, 1979; of the family, Parabothriocephalidae Yamaguti, 1959.

CHRONIC CADMIUM TOXICITY OF AN AIR BREATHING FISH *CHANNA PUNCTATUS*

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Nine out of 18 adult Channa punctatus exposed for 11 months during a chronic bioassay including reproduction were killed at 80 ?g/liter of cadmium in water of 200 mg/liter (as CaCO3) hardness. Progeny exposed for 30 days were killed at 90 ?g/liter. Adult fish spawned at 239 ?g/liter and at 2,140 ?g/liter, but most larvae were severely crippled 6 days after hatching at these concentrations. No effects on survival, development, or reproduction were attributable to cadmium at 31 ?g/liter. The highest tissue residues were found in liver, intestine and caecum, and kidney. Cadmium concentrations increased with exposure concentration in gill, liver, and intestine and caecum, but not in kidney. At least until more information is available on cadmium toxicity in different water types, chronically toxic and "just safe" continuous exposure concentrations probably can be estimated better by relatively short-term exposures of embryos and larvae than by the use of application factors.

CLIMATE CHANGE: IMPACTS ON AGRICULTURE IN DEVELOPING *COUNTRIES W/R INDIA*

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Climate change is a significant and lasting change in the statistical distribution of weather patterns over periods ranging from decades to millions of years. It may be a change in average weather conditions or the distribution of events around that average. Climate change may be limited to a specific region or may occur across the whole world. Now Climate change is a reality and in the coming years Indian agriculture is likely to suffer losses due to heat, erratic weather, and non availability of water for irrigation. At the same time, world population is increasing so more people require more food, energy, transportation, etc. Increasing urbanization and rural migration also effects the agriculture production.

Due to climate change cereal productivity to be decrease by 10-40% in year 2100.Greater loss expected in rabi crop. Every 1o C increase in temperature reduces wheat production by 4-5 million tons. Increasing temperature would increase fertilizer requirement for the same production targets resulting in higher emissions of toxic gases, increased water requirements, shelter and energy requirement for livestock. Increasing sea and river water temperatures are likely to affect fish breeding, migration, and harvests.

This situation can be managed by change in life style, introduction of new varieties of crop species which should be drought/heat resistant, new farm management practices, change in land use and watershed management, reduce vehicle use, improve energy-efficiency in buildings, develop carbon capture and storage processes, increase solar power, decrease deforestation/plant forests etc.

FISH BIODIVERSITY OF RAMGARH LAKE FOR CONSERVATION AND SUSTAINABLE EXPLOITATION

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Ramgarh Lake, a natural oxbow-lake formed by river Rapti, is situated at the southeast of Gorakhpur (260 13'-27029'N; 830 05'-83056'E) in eastern Uttar Pradesh and covers an area of about 723 ha with the catchment area around 653 ha. This lake receives rainwater runoff and wastewater through several drains like Kuraghat Nalla, Gordahiya Nalla, Mohaddipur Power House Nalla, Golf Ground Nalla and Padleyganj Nalla and outflows into Rapti river through Gurrah Nalla. The threat to the lake comes from the discharge from the residential colonies, around 800 quintals of wastes are being dumped into the lake every day. There is only one major fish landing/assembling centre located close to the outlet of the lake. Fishes collected from Ramgrah Lake is generally sold afresh in local fish markets of Kuraghat and Dharmshala Bazar and the adjoining districts (Deoria, Sant Kabir Nagar and Maharajganj) but some are sun-dried too. Preliminary surveys conducted revealed the occurrence of Catla catla, Labeo rohita, Cirrhinus mrigala, Hypophthalmichthys molitrix, Cyprinus carpio, Gadusia chapra, Setipinna phasa, Amblypharyngodon mola, Wallago attu, Notopterus notopterus, Mystus seenghala, M. tengara, M. vittatus, Bagarius bagarius, Pangasius pangasius, Clarias batrachus, Heteropneustes fossilis, Channa striatus, C. marulius, C. punctatus, C. gachua, Puntius sarana, P. ticto, Chanda nama, Chanda ranga, Colisa fasciatus, Xenantodon cancila, Mastacebalus aculeatus, Amphipnous cuchia and Tetradon cutcutia. Water temperature of the lake (200 m from shore) during April 2014 at 12 a.m. ranged between 29.4-31.10C, pH 7.23-7.72, dissolved oxygen (DO) 5.02-5.58 ppm, salinity 0.18-0.20 ppt, total dissolved solids 228-242 ppm and conductivity 478-482 microS/cm. Though water depth of the lake ranged from 3.8 to 4.5 m, the depth at major portion of the lake ranged from 2.1-3.1 m. Since the wastewaters from households contain nitrate and phosphate resulting in severe eutrophication of the lake leading to low oxygen content of water. Shores of the lake are heavily infested with water hyacinth. There are 150 fisher folks (142 males, 08 females) engaged in fishing activities of the lake. They are registered with Matsyajivi Sahkari Samiti Limited, Ramgarh Tal urf Maharava-ki-Bari, Gorakhpur. Registration of the Society is being renewed every after 3 years and Office bearers like President, Registrar and Members are elected for the term of 3 years. Since this lake is leased, they are involved in stocking, rearing, harvesting and drying for the fish. Some of them are working as labour too. The present lease of the lake is with Matsyajivi Sahkari Samiti Limited, Sorahiya Tola, Champa Park, Gorakhpur. Ramgarh Lake is being developed under the National Lake Conservation Plan (NLCP) of the Ministry of Environment and Forests (Government of India), New Delhi and an amount of Rs. 147.69 crores has been sanctioned to Gorakhpur Development Authority (GDA) for the purpose. Uttar Pradesh Jal Nigam,Lucknow has undertaken the programme for removal of water hyacinth and strengthening of Bundhs around the lake to check encroachment.

IMPACT OF CHANGING CLIMATIC CONDITIONS ON FISH GERMPLASM RESOURCES OF INDIA

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The United Nations Convention on Biological Diversity (Agenda 21) reaffirms the sovereign rights of the member nations over their entire genetic resources and also envisages conservation, sustainable use and equitable sharing of the benefits arising from the biological resources. Though the five major key issues like water and sanitation, energy, agricultural productivity, biodiversity and human health care which were the focus of attention during the recently concluded United Nations World Summit on Sustainable Development (WSSD-2002) at Johannesburg, protection of the dwindling fish stocks throughout the world constituted an important item of discussion during the special session of biodiversity conservation. The United Nations Post-Earth Summit Assessment Report (2002) revealed that 2.4% of the world forests (90 million ha larger than the size of Venezulea) were destroyed and about 40% of world population faced water shortage during this period. The need to feed rising global population projected to reach 8 billion by 2025 against the present over 6 billion with exacerbated increase in food consumption (from 2,100 calories to 2,700 calories/day in developing countries and from 3,000 calories to 3,400 calories/day in developed countries), will put extra pressure on agricultural production which consumes about 70% of the global freshwater. Signs of climate change linked to global warming causing most frequent and intense droughts in parts of Asia and Africa and rising sea levels will be having impact on fish germplasm resources too.

India is fortunate to have vast and varied aqua-resources comprising 2.02 million square km area of Exclusive Economic Zone (EEZ) surrounding seas, more than 29,000 km length of rivers, about 1,13,000 km of canals, around 1.75 million ha of existing water-spread in the form of reservoirs, about 1 million ha in the form of tanks and ponds and nearly 0.6 million ha of stagnant, derelict, swampy water-spread areas. Though existence of more than 28,500 finfish species throughout the world has been reported, it is assumed that at least 5,000 species (more than all mammals: 4,809 species) are waiting to be discovered. Patrick Babin et al. (2007) reported the existence of 29,400 finfish taxa representing more than half of the vertebrate diversity. In India, 2,662 fish species belonging to 42 Orders, 246 Families and 1,019 Genus have been documented from different ecosystems such as freshwater of plains (877; 32.94 %), brackishwater (113; 4.25%) and marine environment (1,672; 62.81%). Of these, 258 species are commercially important, 199 endemic and 275 species come under game fish. Besides, these indigenous taxa, 291 species have also been introduced into the subcontinent for ornamental as well as commercial purposes.

Due to anthropogenic stresses like habitat destruction, over-exploitation, indiscriminate killing of juveniles and brood fishes, excessive water abstraction, pollution, uncontrolled introductions of exotics and spread of dreaded diseases, a number of fishes are exhibiting declining trends from the conventional fishing grounds while some have become threatened too. Sharks, rays and skates are the most vulnerable to collapse or extirpation because of slow growth rate, late maturity (dusky shark is the slowest growing marine chordates, takes 20 years to mature) and poor fecundity. Concerns have been raised on the by-catch (about 10-12% of the total landings) of the trash fishes including juveniles/sub-adults in mechanized nets resulting in serious decline of the marine species such as bellies, scianids, catfishes, flatfishes, lizardfishes etc throughout the world. It appears that endangerment of aquatic organisms is greater than those of terrestrial animals, partly because of the social biases against small, cold-blooded and wet species as well as lack of information regarding the conservation status of these species. The global climate change is also affecting reproductive physiology and shifting distribution as well as migratory routes of fishes. Fishes inhabiting coral reefs are badly affected by the climatic disturbances. The status assessment report of the American Fisheries Society (AFS) revealed systematic decline in the native fish distribution and abundance throughout the North America. It is estimated that about 33% of the native freshwater fish species of that region are either endangered, threatened, or of special concern with membership of each group exhibiting significant increase during the last three decades. In India too, it appears that about 23-27% fish taxa are presently threatened needing immediate attention for conservation and rehabilitation.

LIGHT POLLUTION NEW THREAT TO ENVIRONMENT

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The electric light turns night in today around the globe. In the first world atlas of artificial night sky brightness released in 2001 by the Italian astronomer pier Antonio cinzano and based on high resolution satellite data, the heavily developed urban corridors of Japan western Europe and the United States blaze like amusement park. We flood the heavens with so much artificial light that nearly two thirds of the world's people can no longer see the Milky Way. Research suggests that excessive exposure to artificial night light can alter basic biological rhythms in animals, change predator prey relationship and even trigger daddy hormones imbalance in humans. Many creatures are genetically programmed to navigate by the dim glow of the stars and the moon and artificial light is a source of confusion for them. Entomologist believes that light pollution may be the leading cause after habitat loss, of the decline of the spectacular giant silk moths that were once a source of summer visual delight, bright light also disrupt migration routes confining some moth population to isolated island of darkness new medical data suggest human are not immune to light pollution in 2001, the journal of the national cancer institute published that the association between exposure to light at night and breast cancer risk with alarming implications . Light striking the retina even during sleep, can reduce production of melatonin, a hormone that helps regulate circadian rhythms. Melatonin also has antioxidant properties, and for some mammals it has been shown to suppress the estrogens estradiol, which is associated with breast cancer. Light also disrupt the zooplankton life.

CYTOGENETIC DAMAGE INDUCED BY THIODICARB, A CARBAMATE INSECTICIDE IN THE BONE MARROW OF *CALOTES VERSCICOLOR*

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The present work is designed to investigate in vivo cytogenetic effects of the carbamate insecticide thiodicarb, by evaluating its capability to induce chromosomal abnormalities in the bone marrow cells of garden lizard Calotes versicolor. Adult male garden lizards were acclimatized for one week in the laboratory and then treated daily with an intra peritoneal dose of ¼ LD50 (40mg/kg body weight) of thiodicarb. The obtained data showed significant increase in the Micronucleus frequency in Polychromatic Erythrocytes (P? 0.005). The treatment also induced Chromosomal Aberrations in the bone marrow cells in the form of structural changes which included gaps, breaks, additions and deletions in the treated group as compared to control group (P? 0.05 and P? 0.005). This study also reveals that significant level of induction is time dependent as the significant increase in MN and CA was seen after 21 and 28 days of treatment when compared to control. Our work reveals that thiodicarb is mutagenic and also acts as a clastogen and influences the mitotic apparatus as a spindle poison.

SOCIO-ENVIRONMENTAL ASSESSMENT OF USING ETHANOL AS A BLENDED FUEL FOR AUTOMOBILE ENGINES

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Ethanol has been adopted world wide as an alternate fuel for automobiles. It is used in various percentage of blending in Gasoline engines. The purpose of using ethanol has advantages of reducing the exponentially increasing oil import bills as well as reducing the pollution caused by automobiles. Though, the Ethanol Blending Programme (EBP) in India had stumbled, the new Government has set a revised 20% target for blending by 2017. In view of this, the effect of blending on existing two wheeler automobile engines should be assessed carefully. The author has carried out various tests on small engines. The effect of various percentage of blending on performance and emission characteristics was observed and analyzed. Ethanol blending not only has environmental assessment but also some social aspect. Society of Indian Automobile Manufacturer (SIAM) has provided some guidelines regarding the extent of ethanol blending. During the trials conducted, it was observed that the performance characteristics of existing engines are affected for 20% blending. In this regard, it becomes essential to take the automobile industry into confidence to ensure the necessary modifications in engine parts required for higher percentage of blending. Apart from these technical improvements, the sustained supply of ethanol to Oil Marketing Companies is essential for successful implementation of this programme. Otherwise, if the ethanol supply is interrupted, the percentage blending will become irregular and non uniform. This will affect the engine performance and cause social unrest.
Keywords: Ethanol, Ethanol supply, Blending percentage, Emission characteristics, Conférence Stream, Environment Scenario.

TOXICITY OF MERCURY AND SELENIUM OF THE EGGS OF *CHANNA PUNCTATUS*

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Antagonistic interactions of mercury and selenium have been demonstrated in vivo, but interactions under environmental conditions that might affect the toxicity of either element have not. We exposed fish eggs to trace amounts of mercury and selenium to test for an effect on hatchability. Test concentrations of Hg(II) (from $HgCl_2$) and (from SeO_2) were 1, 2, 3, 4, and 5 µg/g each, and each possible combination of these concentrations. No eggs hatched when incubated in ? 4 µg/g Hg(II), but up to 5 µg/g had no effect on hatchability. Three µg/g was the lowest concentration of Hg(II) that had an effect on hatchability. A greater depression of hatchability was noted in eggs exposed to mixtures of mercury and selenium than in those eggs exposed to these elements singly. These results demonstrate synergistic toxic effects of mercury and selenium.

BIOREMEDIATION OF CONTAMINATED SOIL AND WATER: AN OVERVIEW

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Bioremediation is the use of living organisms, primarily microorganisms, to degrade the environmental contaminants into less toxic forms. It uses naturally occurring bacteria and fungi or plants to degrade or detoxify substances hazardous to human health and/or the environment.The contamination of heavy metals to the water and soil are of great concern due to its potential impact on human and animal health.Bioremediation approach is currently applied to contain contaminants in soil, groundwater, surface water and sediments including air. The conventional techniques used for remediation have been to dig up contaminated soil andremove it to a landfill, or to cap and contain the contaminated areas of a site. The methods have somedrawbacks. Cheaper and effective technologies are needed to protect the precious natural resources and biological lives. The cultivation and harvest of animals to remediate nutrient and pathogenic microorganism pollution in aquatic systems is the most common form of zooremediation. Phytoremediation involves the use of certain plants to cleanup soil and water contaminated with inorganics and/or organics. The phytoremediation technological development has led to plant gene manipulation and soil chelation treatments to facilitate plant uptake of heavy metals, which has improved its acceptance as a remediation tool. Rhizoremediation,which is the most evolved process of bioremediation,involves the removal of specific contaminants fromcontaminated sites by mutual interaction of plantroots and suitable microbial flora.Constructed wetlands are theresult of human skill and technology integratinggeology, hydrology and biology. Thus Bioremediation is emerging as an effective, environment friendly and innovative technology for treatment of a wide variety of contaminants in water and soil.

FLY ASH AND HEALTH HAZARDS IN DISTRICT BALAGHAT

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The district Balaghat is known for best quality of rice of many varieties. The rice shown area in the district is approximately 90 percent of total crop area 273000 ha. which is highest in Madhya Pradesh. The paddy (seed of rice with husk) is raw material for varieties of products like beaten rice, steamed rice, pop-rice, puffed rice etc. There are more than 150 beaten-rice mills in the district due to high availability of rice in the district. The annual turnover of each beaten rice mill goes more than 120 tonnes which uses 50 tonnes paddy-husk as fuel every year. The total burnt rice seed coat (rice-husk) is thrown in nearby roadside area. The dumped burnt rice-husk is called fly ash which is thrown immediately from the furnace causing burning of the vegetation of roadside area. The wind blow scatters it in the air which reaches to the lungs of people and animals of the area. There are no proper guidelines for proper dispose of the fly ash.

STUDY OF TOXICOLOGICAL VARIATIONS OF SOME SYNTHETIC TYPE-II PYRETHROIDS

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The extensive worldwide efforts of structural modification of natural pyrethrins for better performance have resulted in successful development of a wide variety of synthetic pyrethroids with tremendous efficacy. Currently these pyrethroids including their preferentially manufactured stereoisomers are widely used in agriculture, and for public health as well as household insect control. Descriptors are characteristic properties of molecules, often represented as numerical values. In recent years quantum chemical descriptors have been used in SAR studies because the quantum chemical quantities are able to provide accurate quantitative descriptions of the molecular structures and chemical properties. In present study an effort has been made to explain the variations in toxicological behaviour of some synthetic pyrethroids on the basis of atomic charges, molecular electrostatic potential(MEP) at surfaces, distribution of frontier molecular orbitals, highest occupied molecular orbital energy (E-LUMO), lowest unoccupied molecular orbital energy (E-LUMO) and HOMO-LUMO gap using ab initio quantum calculations. These electronic descriptors affect the binding of a pesticide with receptor. Molecular electrostatic potential (MEP) mapping is useful in the study of hydrogen bonding, reactivity and structure-activity relationships of molecules including biomolecules and drugs. Electrostatic maps provide useful information regarding the sites for electrophillic attack. The knowledge of charge distributions on atoms in molecules is extremely useful in identifying the probable active sites of drugs and insecticides as they give information regarding the hydrogen bonding ability. The analysis of molecular orbitals provides the information of the nature of electrophiles, reactivity, hardness and electronegativity. The results give valuable information regarding the sites of electrophilic attack and their strength by quantitative comparisons of various parameters in determining the structure activity relationship.

FISH DIVERSITY OF JABALPUR WITH SPECIAL REFERENCE TO HIRAN RIVER

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Hiran River is one of the most important water body of Jabalpur division. The River drains from two districts of the division; Jabalpur and Katni. Rural tribes and peoples from adjacent area are depends on the River for their Drinking, Domestic use and also for irrigation purpose. During present investigation, a total of 34 fish species belonging to 7 orders and 15 families were recorded. Study period started from January, 2006 to December, 2007. Out of 34 fish species most of the fishes are comes under Ciprinidae family. It contributes 11 fish species and showed dominance at all the sampling stations of Hiran River. Most of the native ornamental fishes e.g. Notpterus notopterus, Heteropneustes fossilis, Botia Dario, Silonia silonia, Ompok bimaculatus, Clarias batrachus, Mastacembelus armatus, Monopterus cuchia, Parambacis ranga, Channa marulius, Channa gachua, and Xenentodon cancila were also found in the river.

TEMPERATURE RISE IN JABALPUR IN LAST THIRTY YEARS AND URBANIZATION OF PERIPHERAL VILLAGES

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Temperature is an important factor to regulate life processes. Temperature affects plants and animals both. Global warming is a present days problem because its direct and indirect effect on biosphere is harmful. Good health obtained in balanced environmental conditions. The rate of urbanization has shot up in recent years. Recently many Grampanchayat near the Jabalpur city erases their existence. They become the part of Jabalpur Nagar Palika. When city expands it swallows villages. With the villages agricultural land is also become smaller and smaller. Most of the agricultural land is diverted for building making purpose. Builders use diverted agriculture land to build residential complexes. The crop production has ceased and in place of green fluttering harvest stable concrete structures are coming up. This become the cause of environment warming and creates health problems. Agriculture cools the environment by irrigation, transpiration, absorption and use of carbon dioxide with sunlight for food production.

In Jabalpur temperature differences from 1978 to 2008 is observed. The numbers of building projects are also increasing. Agricultural land of peripheral villages had converted for these purposes. The rise in temperature and diversion and shortening of agricultural land may correlated. Increasing temperature harms the human as well as other animal's health directly or indirectly. Crop balances the carbon dioxide concentration in atmosphere. The carbon dioxide concentration affects the nutritive value of crops. With the carbon dioxide concentration, the quantity of certain elements in the crops varies. This affects the health of human beings. So the reduction of agricultural land may be harmful to human health by changing the amount of carbon dioxide and increasing environmental temperature.

Keywords: Agricultural land, Diversion, Carbon dioxide concentration and Temperature.

AN ANALYSIS ENVIRONMENT AND ITS SAFETY

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The impact of environmental disasters can be devastating on the social, economic, and environmental systems of a country or region as well as the global ecosystem. Environmental disasters do not recognise man-made borders, and threaten the legacy left to future generations of a clean and supportive environment. Because of the interdependency of earth ecosystems international co-operation is paramount to prevent, and when disaster strikes, respond to relieve quickly and effectively the effects of environmental disasters. Thus, Governments, International organizations and communities must work together – at all levels – to lessen the risks associated with environmental degradation and its contributing factors, such as climate change, and ensure that vulnerable people are prepared to survive and adapt. At the same time, companies, organizations and individuals must also ensure that their work is environmentally friendly and sustainable. This research focus on importance of safe environment and its good effect on human being.

HEALTH AT THE MERCY OF TOXINS

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We all are exposed to a wide array of toxins in our day-to-day life, whether they are chemicals, plastics, medicines or various household goods, and they all pose potentially toxic effects on human health and the environment. Released indiscriminately into the environment, via sources like industry, agriculture and our households, toxins pollute the air we breathe, the water we drink and the food we eat. They also affect our rivers, lakes and forests, harm wildlife, change climate and ecosystems.

The quality of surface water at different places has been assessed to see the suitability for domestic applications. The various parameters analyzed were pH, Electrical conductivity (EC), Carbonate (CO_3^{--}), Bicarbonate (HCO_3^-), Chloride (Cl^-), Sulphate (SO_4^{--}), Nitrate (NO^{---}), Fluoride (F^{---}), Calcium (Ca^{++}), Magnesium (Mg^{++}), Sodium (Na^+), Potassium (K^+), Iron (Fe) and Total hardness (TH). The results were compared with standard values of drinking water prescribed by IS:10500, BIS and WHO.

To analyse the data with statistical point of view the statistical parameters like Mean, Range, Standard deviation, coefficient of variation, correlation coefficient, Kurtosis, Skewness were systematically calculated for each parameter. Also, Single factor Anova tables, Piper Diagram and Schoeller graph were prepared to signify the major results.

Also, an account has been prepared to analyze the factors like Sum of Anions (meq/l), Sum of Cations (meq/l), calculated TDS (mg/l), Dissolved Minerals (mg/l) like Halite (NaCl), Sylvite (KCl), Carbonate ($CaCO_3$), Dolomite ($CaMg(CO_3)_2$), Anhydrite ($CaSO_4$), permanent hardness, temporary hardness and alkalinity.

For studying the effect of these pollutants the chironomids have been used as test animals. Chironomids represent one of the most important groups of aquatic invertebrates. They belong to family Chironomidae (that includes all the non-biting midges) of order Diptera, class Insecta. They display exceptionally wide range of sensitivity to environmental parameters such as DO, pH, salinity, substrate, and pollution by organic wastes, heavy metals and contaminants, hence, play an important role in indicating radioactive pollution.

The results of our research indicate that the toxins present in the aquatic environment are capable of producing numerous structural alterations in chironomid polytene chromosomes and hence, confirm the genotoxicity of the different toxins and also the potential for enhanced activity of the chironomid genome in response to environmental stress. These responses are thus used as cost effective and sensitive biomarkers for detecting a range of genotoxic agents under natural environmental conditions.

PHENOTYPIC PLASTICITY OF BODY SIZE AND OVARIOLE NUMBER IN *DROSOPHILA IMMIGRANS*

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Reaction norms of female body weight and Ovariole number were analyzed at seven growth temperatures (12 to 31° C) in two geographical populations of Drosophila immigrans. The non-linear shapes of reaction norms demonstrate significant divergence at intermediate temperatures (17 to 21° C) for both the traits. Among wild caught samples means and CV differ significantly between populations for both the traits. On the basis of observation, the trait variability can be explained can be explained mainly due to the temperature effect. The occurrence of significant divergence in reaction norms of both the traits in two geographical populations are in agreement with thermal climatic conditions of site of origin.

Keywords: Drosophila immigrans, body weight, Ovariole number, phenotypic plasticity.

PREVENTIVE MEASURES OF ENVIRONMENTAL DEGRADATION

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The term environment means the circumstances or surroundings in which everything exists. Everything external to the organism is included in it. The organism may be a human, animal, plant, as well as surroundings. Also these organisms are dependent on each other for their sustenance and absence of any may lead to an imbalance in environment. This imbalance gives rise to various problems such as Water Pollution, Air Pollution, Noise Pollution, and Careless use of Natural resources. Further associated or resultant issues could be landslides, desertification, deforestation, water logging , urban flood and unfortunately change in ecosystem.

Environment & Development both act opposite to each other. This is related to the social aspect of environment because of which topic has gained importance in the recent past. For development to occur large scale industrialization is must which leads to concentration of population in an area, over exploitation of resources, demand for efficient transportation system all acting as the contributor to environment degradation. Evidently there remains a conflict between environment and development but with rise in urbanization, development cannot be stopped so an effort to strike a balance between the two is essential. Protection of environment thus becomes the responsibility of every individual, group, organization, NGO's, Govt., in order to strike the balance between nature and humans. There are several laws relating to the environmental protection and conservation which already exists in India and have been inacted by the central government like the Environment Protection Act 1986.

The study has tried to firstly discuss the aspects of degrading environment highlighting the best practices adopted in order to suggest preventive measures for the same. These measures could range from raising awareness on environmental issues to rain water harvesting and waste segregation at house hold level.

Keywords : Environment, Development, Natural Resources, Pollution.

ACCUMULATION OF MALATHION IN THE LIVER, KIDNEY AND GILLS OF HETEROPNEUSTES FOSSILIS (Ham.) AS ASSESSED BY GAS LIQUID CHROMATOGRAPHY

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This paper presents the qualitative detection of malathion in the liver, kidney and gills of the fresh water teleost, Heteropneustes fossilis by Gas Liquid chromatography study was made after exposure of fish to a sublethal concentration of 60 ppm for 30 days. The presence of the pesticide in the different tissues is indicated by different peaks on the chromatogram. The results indicate a accumulation of Malathion in these tissues.

STUDY ON INSECT PESTS AND PREDATOR COMPLEX OF PADDY FIELD IN JANJGIR- CHAMPA DISTRICT

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Paddy field is a man made semi- aquatic ecosystem; many varieties of rice are cultivated here. These are highly infested by different insects from seedling to harvesting stage. Use of bird as a bio-control agent in paddy field is considered as one of the alternatives to overcome the hazardous effect of chemical pesticides for the control of insect pests.

A survey on paddy field insect and bird was conducted during kharif and rabi season of paddy in Janjgir- Champa district during 2013-14. During the study period 11 species of insect pest were found belonging to 5 orders to infest the paddy crop. Out of which 4 were major and other 7 were minor pest. During survey 41 bird species belonging to 08 orders and 25 families were also found. Out of these, 07 were omnivorous, 09 were insectivorous(eat only insects prey), 03 were purely carnivorous, 17 were insectivorous as well as carnivorous(eat vertebrate prey), 03 were granivorous, and 01was nectarivorous and. As enemies of insects, birds stand secondary consumer strata of paddy field ecosystem. 36 bird species are categorized to be beneficial. 04 birds species are considered to be highly beneficial these are Black Drongo Dicrurus macrocercus destroying injurious insects like stem-borer, skippers and leaf rollers in enormous numbers in the rice ecosystem, Small green Bee-eater Merops orientalis, little egret Egretta garzetta and white-breasted kingfisher Halcyon smyrnensis are also beneficial.
Keywords: paddy field, pesticides, bio-control agent, insectivorous, carnivorous, kharif and rabi season.

ISOLATION OF OPPORTUNISTIC PATHOGENIC FUNGAL CONTAMINATION FROM THE HOSPITAL ENVIRONMENT

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Mycotic diseases of man are an emerging public health problem which receives growing alternation from the health authorities. Most indoor fungal contaminants come from the hazardous non biological agents. Fungi are ubiquitous in distribution and are a serious threat to public health in indoor hospital environment. A report to explain the possible source of infection for human pathogenic fungi of deep mycoses was examined. Soil water and air samples were investigated from in and around the environment of hospitalized patients. This paper reports the results of environmental surveillance of fungi as biological contaminants and their impact on human health in 3 local hospitals of Jabalpur. The air samples in the hospitals yielded Aspergillus, Rhizopus and Candida species. The dust samples were positive for Candida, Fusarium, Rhizopus and Aspergillus species. The water of the sterilizing apparatus, yielding Aspergillus, Fusarium, Rhizopus and Candida species were isolated.
Keywords: ubiquitous; pathogenic fungi; biological contaminants; sterilizing apparatus.

NANOMATERIALS IN THE ENVIRONMENT: ASSESSMENT AND EFFECTS

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The nanotechnology is advancing very rapidly and the corresponding use of nanomaterials is expanding with promises of substantial benefits that will have significant economic and scientific impacts, applicable to numerous areas, ranging from aerospace engineering and nano-electronics to environmental remediation, consumer products, medical healthcare, transportation, energy and agriculture. Unusual physicochemical properties of engineered nanomaterials have been attributed to their small size, chemical composition, surface structure, solubility, shape, and aggregation. Yet concerns have been raised that the very properties of nanostructured materials that make them so attractive for wide variety of applications could potentially lead to unforeseen health or environmental hazards. Manufactured nanomaterials enter the environment through intentional and unintentional releases such as atmospheric emissions and solid or liquid waste streams from production facilities. Deliberate use of nanomaterials includes their use to remediate contaminated soils, including the use of iron nanoparticles to remediate ground water, in addition nanoparticles in paints, fabrics and personal health care products including sunscreens and cosmetics enter the environment proportional to their use among population. Given the increasing production and application of nanomaterials the potential for their release in the environment and subsequent effects on ecosystem health is becoming an increasing concern and needs to be addressed especially by nanotechnology researchers, scientists as well as regulatory agencies. In doing so it is necessary first to determine the fate and behaviour of manufactured nanomaterials in the environment followed by their assessment on physiology and health of organisms. Answers to these and several other questions will guide the setting of regulatory guidelines that will provide adequate protection to environment and ecosystems while permitting the advantages that nanotechnology offers to develop at a faster and sustainable rate.

EFFECT OF NOISE POLLUTION ON HUMAN HEALTH

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Noise is a sound of random nature; it is defined as an unpleasant, unwanted and undesirable sound. Noise pollution is unwanted sound. Noise health effects are the health consequences of elevated sound levels. Elevated work place or other noise can cause hearing impairment, hypertension, scheme heart disease, annoyance, sleep disturbance changes in the immune system birth defects etc. have been attributed to noise exposure. Although some pres by cusis may occur naturally with age, in many developed nations the commutative impact of noise is sufficient to impair the gearing of a large fraction of the population over the course of a lifetime. Noise exposure has also been known to induce tinnitus, hypertension, vasoconstriction and other cardiovascular impacts.

AQUATIC SYSTEM DEGRADATION: CHALLENGES FOR PROTECTION OF HUMAN HEALTH

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Environmental degradation is the deterioration of the environment through depletion of resources like air, water and soil. The primary cause of environmental degradation is human beings. Environment impact (I) is expressed by an equation I= PAT, here (P) expresses increasing human population, (A) is continually increasing economic growth or per capita affluence, and (T) stands for the application of resource depleting and polluting technology. Hydorsphere is an important ecological unit, degradation in physcio-chemical and metabolic property of water has direct impact on life. Any aquatic system has its own flora and fauna. Besides this, water acts as a natural habitat of many types of microorganisms. Some protozoan, bacteria and viruses present in water are pathogenic and causative agents of water borne disease. These pathogens enter water through domestic sewage. Sewage is contaminated with various dissolved and suspended particles, including organic matter, soap detergents, domestic wastes and other chemicals used in cleaning of homes. These matters act in polluting water. Most detergents contain phosphastes which are used to soften water. Organic matter introduced in water bodies act as nutrients for the growth of such pathogenic microorganisms. A general impression is that industrial pollutants are the cause of degradation of water resources. In fact, agriculture is the single largest user of freshwater resources, using a global average of 70% of all surface water supplies and agricultural pollution refers to biotic and abiotic byproducts of farming practices. Agricultural runoff is a deadly source of pollutants which can degrade environments, so much so that the EPA identifies agriculture as the primary source of water pollution. Fertilizers containing large amounts of phosphorus can cause explosions of algae in lakes. Dead alga is decomposed by microbes, and it soon results in a situation where these microbes use the available dissolved oxygen in the water. Plants, fish, and other organisms begin to die off. The water becomes acidic. Like acid rain, lakes become dead zones with conditions so toxic that neither plants nor animals can survive in such environments. An uncontrolled excavation of sand from banks of rivers is damaging the natural systems of filtration of water bodies. The total impact is accumulation of dead decaying organic matter in water bodies. India is agriculture based country. A major part of population earns directly or indirectly through agriculture. Agricultural wasted are introduced to all rivers and tributaries directly or by draining system coming from different villages. A basic fault in our community is still they have an uncivilized livelihood with carelessness for hygiene and ignorance towards basic problems and reasons for health. Today, India needs some basic policies to be implemented with strict administration as well as awareness so that we are able to restore safe water and keep ourselves free from many water borne diseases.

BROWNFIELDS: LAND DEGRADATION TO LAND OPPORTUNITIES. A CASE OF INDIAN SCENARIO

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Economic development has been the major focus of every nation across the globe. The cycle of three major pillars of holistic planning: physical, social and economic together contribute towards building overall structure for sustainable growth and development. Similarly the inherent property of resources paves the way for market force to utilize their potential in order to drive the life in a city. Land has been one source that gives us the maximum resources varying from food, minerals, habitat etc. It's the responsibility of humankind not only to commercially exploit this source but also to acknowledge its potential to serve us in all parameters.

The industrialization in cities and suburbs have contributed immensely to exploitation of this rich resource and leaving behind environmentally contaminated properties. All these orphan lands are considered as hazardous due to their former use like industrial or mining whereas most of the time they have enough potential to be re-used. These virgin lands absorb the waste of city's lifestyle and get abandoned for that. These abandoned lands or under-utilized properties that sit idle and undeveloped because of environmental contamination and associated liability concerns are popularly known as Brownfields. These abandoned lands are need of the city and people to facilitate platforms for urban development. The planning approach of acquiring more and more virgin land need curbing and simultaneously shifting focus to utilization of brownfields for urban land practices. This transformation in planning approach needs attention not only from experts but all the stakeholders involved in land development such as Policy makers, state governments, planners & experts, builders and developers and industrialists too.

The paper aims to analyze the different best practices of Brownfield development across the globe and analyze their applicability in Indian cities so as to rationalize the use of land resource from degradation to opportunity and guide the city planning approach to its right path.

Keywords: Economic development, Industrialization, Re-use, Environmental contamination, Brownfield, Policy makers, state governments.

CONSERVATION OF WILDLIFE IN INDIA SPECIALLY IN MADYA PRADESH

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Biodiversity is a modern term which simply means "the variety of life on Earth". This variety can be measured on several different levels. With a land mass of the 329 million hectares and cost lines of 7516 km, with oceans, lakes, rivers and forest. This paper discusses economic importance and protection of wildlife species in India. Wildlife conservation is essential for maintaining ecological balance of nature, food chain and also natural cycles such as carbon, Nitrogen etc. Wildlife conservation is a practice in which people attempt to protect endangered plant and animal species, along with their habitats. Indian government agencies dedicated to this practice and they can help to implement policies designed to protect wildlife. The wildlife conservation Act was enacted by the Government of India in 1972. This is paper shows that there are significant economic values attached to wildlife conservation.

A NEW CONCEPT OF FLOWERY PATH FOR ENVIRONMENTAL IMPROVEMENT

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As a result of high yielding varieties programme and intensive agriculture there of during 60's and 70's while the upstream impact was a higher production and self sufficiency in food grain production. It is very obvious from the fact that we are now producing 250 million tons of food grains in the country is now self-reliant in agricultural production. But at the same time these have been several downstream (negative) consequences of intensive agriculture. Mention may be made of deforestation deterioration of soil health, ground water depletion, and environmental degradation and residual toxicity of pesticides.

Indiscriminate use of pesticide, fungicide, herbicide, nematicide and heavy industrial gases and waste led to several disfunctonal consequences notably deposition of pesticide residues in food, feed and fodder, degradation of environment and loss of ecological balance are very alarming. This is why in order to thawart this negative trend the concept of flowery path of improving environment is proposed.

The authors are of the opinion that popularization of flower cultivation, growing flowering trees at railway station, bus stand, hospitals, court compounds, schools and colleges along with roads and railway tracks will be a little contribution towards healthy environment.

EVALUATION OF REMOVAL OF TDS, COD AND HEAVY METALS FROM WASTEWATER USING BIOCHAR

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In this study, we investigated the adsorption capacity of biochar. In conventional treatment, chemical precipitation has sludge generation problem for heavy metal removal. On the other hand, Biochar has no such problem occurred. Compared to inefficient removal TDS and Heavy metal with activated carbon, biochar can effectively remove all above. TDS was removed before biological treatment and it gave efficient removal. After TDS removal, COD removal in biological treatment was enhanced. The removal was mainly through a surface precipitation through biochar, which was confirmed by batch sorption experiments. The batch adsorption study describes the effects of solution biochar dose and contact time on TDS, COD and heavy metal removal efficiency from wastewater. The results for TDS, COD and heavy metal removal from wastewater gives good efficiency. Biochar dose for heavy metal removal was 0.1-5g/L and TDS, COD removal was 120-190g/L. Contact time was given an hour and minute. Adsorbent is mixing with certain temperature (25ºC) then shaking in reciprocating shaker equilibrium for 24h. The objective of this study is to utilize less expensive adsorbents for removal of TDS, COD and heavy metal.

Keywords: Biochar, Adsorption, Wastewater.

FERTIGATION: AN ECO-FRIENDLY TOOL FOR EFFICIENT FERTILIZER AND WATER MANAGEMENT

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Fertigation is the combined application of water and nutrients to a crop- a mix of fertilizer and irrigation. The incorporation of soluble fertilizers into the irrigation water is facilitated the integration and harmonization between the application of water and plant nutrients. Application can be targeted to specific areas, less equipment is used and fertilizer is applied into the soil, where it will be most effective. This means fertilizer and water is used at a lower rate and be more efficient, eco-friendly and inexpensive to suit the exact needs of the fruit plants. In present investigation in mango trees maximum scion height, canopy diameter and canopy volume were recorded with full doses of fertilizers with mulching through fertigati on. Maximum fruit set was found with 75% level of fertilizer application through fertigation with mulch while fruit yield was maximum in case of surface irrigation with 50% of the recommended doses of fertilizer through conventional practices. Minimum floral malformation was recorded with 50% level of fertilizer application through fertigation along with mulching. The maximum nitrogen, phosphorus and potassium content in leaf were found in the treatment of surface irrigation with 75% and 50% level of fertilizer application through conventional practices without mulch, while B-carotene and vitamin A were found higher with full doses of fertilizer application either with mulch or without mulch. Mulching with irrigation and fertilizer application also delayed panicle emergence. So, it concludes that fertigation increases the qualitative parameters in fruit crops as well as save the environment by saving water and fertilizers.

PHENOTYPIC PLASTICITY OF BODY SIZE AND OVARIOLE NUMBER IN DROSOPHILA IMMIGRANS

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Reaction norms of female body weight and Ovariole number were analyzed at seven growth temperatures (12 to 31^{o} C) in two geographical populations of Drosophila immigrans. The non-linear shapes of reaction norms demonstrate significant divergence at intermediate temperatures (17 to 21^{o} C) for both the traits. Among wild caught samples means and CV differ significantly between populations for both the traits. On the basis of observation, the trait variability can be explained can be explained mainly due to the temperature effect. The occurrence of significant divergence in reaction norms of both the traits in two geographical populations are in agreement with thermal climatic conditions of site of origin.

Keywords: Drosophila immigrans, body weight, Ovariole number, phenotypic plasticity.

QUALITY ASSESSMENT OF GROUND WATER IN SOME RURAL AREAS OF KANPUR

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Water Pollution is one of the most serious problems of living organisms. Kanpur is well known thickly populated industrial city of Uttar Pradesh. Water is the biggest and chief natural resource, necessary for conservation for survival of living organisms on earth. It is the biggest necessity for life and in developing countries like India ground water is the most important source for drinking, irrigation, and industrial purposes. But unfortunately due to wide spread over use of harmful chemicals in agriculture, industrial effluents, pollution of rivers etc. ground water is getting increasingly contaminated with pollutants.

A laboratory study was conducted for the quality assessment of ground water in some selected rural areas of Kanpur. For the experimental purposes, four water samples were collected from different locations of the city in the month of September 2014 (Two open well and two bore well). The results were analyzed with standard value prescribed. It was concluded that the sampling sites No. A to C showed that all the physico-chemical Parameters within the range of standard water quality as prescribed by (W.H.O.) and (ISI 10500-91) physico-chemically, the quality for drinking purpose. The results of present study also concluded that most of the physico-chemical parameters are within permissible limits except samples No. D.

Keywords: World Health Organization (W.H.O.), Physico-chemical Analysis, Industrial effluents, Physico Chemical Parameters.

SEASONAL VARIATION IN IMMUNE FUNCTION IN THE GARDEN LIZARD CALOTES VERSICOLOR (DAUDIN)

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The aim of the present work is to study the seasonal variation in immune function. The parameters considered are Total leucocyte count (TLC), Differential leucocuyte count (DLC) and Nitroblue Tetrazolium (NBT) reduction slide assay by leucocytes. Adult male garden lizards were selected for this study and the period of study was from April 2014 -Jan 2015. TLC was found to be in the range of 8810/mm3 to 16590/mm3. For DLC, Eosinophils, Basophils, Neutrophils, Lymphocytes and Monocytes were considered. Eosinophil count varied between 1460-4880/mm3; Basophil count 0 - 1080 / mm3; Neutrophil count 1220-4570 / mm3; Monocyte count 550-2560/mm3 and Lymphocyte count 2400-6770/mm3. NBT was found to be in the range of 5.47-117.71/mm3. TLC and NBT reduction slide assay was highest in the month of September.

STUDIES ON GENETIC VARIABILITY AND CHARACTER ASSOCIATION AMONG THE YIELD AND YIELD ATTRIBUTING COMPONENTS IN LENTIL (LENS CULINARIS)

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Lentil (Lens culinaris Medik.) may have been one of the first agricultural crops grown more than 8,500 years ago. Production of this cool season annual crop spread from the Near East to the Mediterranean area, Asia, Europe and finally the Western Hemisphere. It may have been introduced to the United States in the early 1900s. However, it grows well in limited rainfall areas of the world and is a rich source of protein. The crop has received little research attention to improve its yield and quality. Keeping in view the significance of lentil an effort was made to study the genetic parameters, character association and path coefficient analysis between yield and yield attributing characters of 21 lentil genotypes during 2013-2014 at JNKVV, Regional Agricultural Research Station, Sagar. The genotypes exhibited a wide range of variability for all the traits studied. High heritability accompanied by moderate to high GCV and genetic gain were observed for number of pods plant-1, number of branches plant-1, 100 seed weight and seed yield plant-1. Correlation studies indicated that number of pods plant-1, were positively and significantly correlated with seed yield at both phenotypic and genotypic levels. Path coefficient analysis showed that and number of pods plant-1 showed maximum and positive direct effect on seed yield.

EFFECT OF DIPLOSTOMULUM INFECTION ON FRESH WATER FISH HETEROPNEUSTES FOSSILIS IN DARBHANGA, BIHAR, A GLOBAL PROBLEM

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Fish is the master of aquatic life, which serves as hosts to a range of parasites that are taxonomically diverse and that exhibit a wide variety of life cycle strategies. Many of these parasites are passed directly between ultimate hosts whereas other needs a series of intermediate hosts. Parasites thrive primarily in a dynamic equilibrium with their host(s) and they are often overlooked in fish health assessments. The damage associated with the fish host is relative to the intensity of infection and severity of infection of parasite. Infection with parasite Diplostomulum metacercaria can lead to severe skin and other tissue pathology and change the haematological and biochemical parameters of H. fossilis which may result in host mortality.
Keywords : Diplostomulum, H. fossilis, Haematology, Skin.

TOXIC BLOOM FORMING BLUE-GREEN ALGAL BIODIVERSITY OF TRIPURA, INDIA

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Blue-green algae/ cyanobacteria grow in almost all types of known habitats including rice-fields, sub-aerial, thermal springs and many other specialized habitats. Bloom forming Blue-green algae have implications in fresh water bodies by their allelopathic behaviour as well as in forming toxic substances. In organically polluted water reservoirs they usually form dense blooms. In order to know the biodiversity of bloom forming Blue-green algae growing in the different water bodies of Kailashahar and adjoining area of Unakoti district of Tripura, India, water samples were collected from different water reservoirs of Kailashahar and adjoining areas and were analysed for various parameters and examined microscopically during last five years (2009-2013). Microscopic observation of water samples revealed the occurrence of total 29 strains of Blue-green algae belonging to 19 genera viz, Aphanothece (01), Aphanocapsa (01), Chroococcus (02), Merismpopedia (01), Synechococcus (01), Coelosphaerium (01), Microcystis (01), Arthrospira (01), Geitlerinema (02), Jaaginema (01), Limnothrix (01), Lyngbya (02), Oscillatoria (03), Planktothrix (01), Phormidium (04), Pseudanabaena (01), Spirulina (02), Anabaena (02) and Microchaete (01). Out of total 29 strains of 19 genera, 5 strains of 5 genera were bloom forming Blue-green algae. Results also revealed unique distribution pattern of Blue-green algae in aquatic habitat of North Eastern states and which is totally different from the rest part of India.
Keywords: Aquatic, Biodiversity, Bloom, Blue-green algae.

ENVIRONMENTAL POLLUTION- A STUDY

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Pollution may be defined as "an undesirable change in the physical, chemical or biological characteristics of our land and water that may or will waste or deteriorate our raw material sources" (Odum 1971). Any agent that causes pollution is called pollutant. All pollutants can be classified into two categories viz, primary and secondary air pollutants. Primary pollutants enter the atmosphere directly from various sources. Secondary pollutants are formed during chemical reactions between primary air pollutants and other atmospheric constituents. Pollutants are residues of the things we make use and throw away. Pollution increases not only as people multiply, the space available to each person becomes smaller, but also because the demands person are continually increasing so that each throws away more wastes year by year.

COST EFFECTIVE SOLUTION FOR CARCASS DISPOSAL IN INDIA

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To dispose of dead animals, specific sites (HaddaRorri sites) have been earmarked in villages and towns in India. However, there is no organized system for the disposal of carcasses. In the absence of an organized and scientific system of disposal of dead animals, it has become a major environmental hazard. While the skin is removed for its market value, the flesh is allowed to putrefy without any control resulting in highly repellent stench permeating into surrounding atmosphere. The dead animal is flayed for its hide and the remaining part is left behind to putrefy in open. As no enclosure is provided, this attracts vultures and dogs polluting the environment and creating health hazards. A nauseating stinking smell is emanated from these sites which vitiates the whole ambience of the area and even erodes the economic value of the surrounding land. These places are unguarded and stray dogs & predators consume the dead animals with every danger of spread of disease. Different technological options like rendering and composting have been studied and a cost effective environment friendly solution having a payback period of about 2.5 years have been arrived at.
Keywords: Carcass Disposal, Environmental hazard.

FOREST CONSERVATION AND USEFUL METHODS FOR THEIR CONSERVATION

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The forest is one of the major parts of the natural landscape. The forest resources are valuable as an integral part of the ecosystem, from the commercial point of view, and as providers of shelter to wildlife. Today forests provide the raw materials for over 5,000 products worth about 23 million dollars. They support industry which employs 1.3 million people. In fact, forests are still the natural habitats of several species of plants and animals, as well as of several tribal groups of the world. But, the most unfortunate setback came in the form of commercial exploitation, which resulted in mass destruction of forest cover year after year.

Originally, over two-fifth of the land area of the earth, exclusive of the Polar Regions, or about 1,200 million hectares was covered with natural forests. But, now more than one-third of this area has been robbed by man of its natural protective cover and has been turned into barren land. The history of the exploitation of forests is as old as man himself, but during earlier times it was balanced through a natural growth process because at that time forest cutting was done for personal or community use only. But with the expansion of agriculture, forest lands have been cleared. More destruction has been done after industrial revolution and urbanization. During the colonial period commercial exploitation began and this was the main cause of the depletion of forests.

ECOTOURISM: A SUSTAINABLE APPROACH FOR TOURISM DEVELOPMENT

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Tourism industry has always been dynamic in nature with a period of time according to the changing patterns of consumption and choice of the tourists. Earlier it has assumed as a considerable driving force of economic development. But due to the tourist's high patterns of consumption it became a serious matter for the developing countries. This ever increasing consumption led pressure on natural resources and damage to ecosystems in terms of increased pressure to build on agricultural land, create threats to natural sites, deforestration, loss of wetlands, disruption of wildlife habitats and increased pressure on rare species for providing the new facilities to the tourists.

In 1990s, the negative impact of tourism activities has been realised very seriously and a new concept has evolved known as Ecotourism. This new concept depicts the stage of equilibrium between environment and development. Ecotourism helps in reducing negative impacts of tourism development, encourage involvement of local communities, ensure economic benefits for local people and create awareness among local stakeholders.

Consequently, a vital need has emerged that should emphasize to minimise the mismatch between development and environment otherwise situation would be more difficult to handle in future.

Keywords: Ecotourism, Environment, Pattern of Consumption, Deforestration, stakeholders, Ecosystem.

PHYTOPLANKTON COMPOSITION AND REGIONAL CLIMATIC VARIATIONS IN A TROPICAL POND, KOTA, RAJASTHAN

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In natural water bodies, interactions amongst various components continued endlessly. Most common functional interaction of such water bodies are food interactions. Phytoplanktons depend on nutrients present in water. Simple models of plankton-nutrient populations often consist of ordinary differential equations, describing the time dependence of nutrients and Phytoplanktons in aquatic ponds.

A mathematical model has been developed for the formulation and simulation of real phenomenon by which predictions and forecasts can be made. These models developed using differential equations. Simulated freshwater model ponds have been used as ideal natural laboratories for the comparative assessment of physicochemical and biological parameters. The study was conducted at Kota, Western India (Rajasthan) carrying particular tropic structure and eutrophication dose during non-monsoon season (October 2003 to March 2004). The study emphasizes the local and regional climatic influence on plankton's species composition and diversity variation in freshwater pond ecosystem along with dispersal and grazing pressure.

Keywords: Pond, physical and chemical characteristics, water, regional climatic influence. Kota.

URBANIZATION AND ITS IMPACT ON URBAN HEALTH AND ENVIRONMENT

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Sustainable urban development as a concept is well understood, but this does not mean that it has become the leading principle of everyday life. No city today is environmentally sustainable. Only the types of unsuatainable development vary. In rich cities people on more carbon di oxide emmiting cars and use more energy. In poor cities they lack sewer systems or clean water, and their old, poorly maintained cars pour out pollution, thus exposing their citiezens to unacceptibly high health hazards. In addition, people are the ultimate source of environmetal pollution and degradation. As the number of people grows, the quality of the earth's environment can only fall. Environmental projects are marely holding actions that slow the rate of decline.

Local governmentsin developed and developing cities are confronted with too mant demands and too limited fiscal capacity to fulfil all urgent needs. In devloeping cities, lack of resources is the overriding bottle nack. In devloped citie, vested interests and sunken capital which does not allow rapid responses form an obstacle. And in all types of cities ignorance and neglect make it difficult to set the right priorities necessary to promote sustainable environmental urban development. Income growth both posses dangers and improves the opportunities for sollutions. It posses dangers because growing income means more and biggers cars, more housing, more travel, more use of sports facility or other leisure activities. Rich people are environmentaly more dangerous or risky than poor people, because poor people do not have the means to pollute in the same way. But poor people suffer more severely from environmental deficit, as lack of clesan drinking water or adequate sewer syatems creates serious health hazards. The risks for rich people are more indirect, and this may explain their low willingness to pay for more investment in the environment.

Urban environmental problems thus depend on stages of development. Poverty in basic consumer goods in developing cities creats a parallel poverty in environmental goods and thus becomes the enemy of the environmet. However, poverty is formost te enemy of the people. Poverty, dirty technologies and unhealthy living go together. The immidiate crisis and the global concerns can not be isolated. They are intertwined and district. Resources used to combat global warming can not be used against polluted water, or to reduce child mortality. The trade-offs between different goals enforce difficult choices on urban and national governments and on invidual people.

Keywords: Urbanization, Sustainable, fiscal capacity, environmental deficit, global warming.

OPPORTUNITY FOR WILDLIFE CONSERVATION THROUGH ENVIRONMENTAL EDUCATION

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During present study the wildlife of Madai range of Satpura Tiger reserve, Hoshangabaad, M.P. was selected to evaluate the involvement of Guide of Madai range of Satpura Tiger reserve, Hoshangabaad, M.P. The aim of present study to create awareness among the general public, guides, wildlife lovers regarding wildlife Protection Act.

Biodiversity of Lentil germplasm in Bundelkhand (M.P.)

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Lentil is an important crop of regions with a cooler temperate zones or winter season which have a warm winter and a hot summer. In India, Madhya Pradesh is a major lentil producing state with a wide range of indigenous germplasm of lentil cultivated in the remote tribal areas. Although lentil has been an important crop for centuries, very little attention has been paid in terms of conservation and exploration of lentil germplasm until recently. In an attempt to study biodiversity of lentil, different specimens of lentil were collected from different regions of Bundelkhand (M.P.), Jabalpur, Dindhori and Sehore districts. The collected samples were grown in the field of RARS, Sagar and their physiological, yield and pathological characteristics were studied. The collected samples differed significantly with respect to morphological characters such as seed colour, seed size, germination, plant height and seed weight. They were also screened against plant diseases like wilt and root rot and rust under natural conditions. At all stages of wilt and root rots, plant response to the disease was based on the percentage of dead plants. Collected samples show substantial inter- and intra-specific genetic diversity in the region and already has demonstrated its potential for wider adoption and commercial exploitation.

ESTIMATION OF INORGANIC SALTS CONTENTS PRESENT IN THE GROUND WATER OF THE INDUSTRIAL ZONE OF VISAKHAPATNAM

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The city of destiny, Visakhapatnam is surrounded by beautiful Bay of Bengal on one side and about 72 large scale industries undertaken by public sector on other side. The city was glorified with its land marks Viz Visakhapatnam steel plant, ESSAR Steel, BHPV, Hindustan shipyard, Rastiya Ispat Nigam Limited, NTPC Power Project, Simhadri Thermal Power Project, National Mineral Development, Ferro Scrap Nigam Ltd. The steel city is prone to effected by large number of industrial effluents though huge investments were allocated on the treatment plants, people are frequently experiences the problems with ground water. In this scenario we would like to present the total fluorides, chloride, nitrates and phosphates were estimated by random collection of ground water samples. In order to estimate leachates of the ground water the titrimetric methods were adopted.

COMPARATIVE ANALYSIS OF 1-AMINOCYCLOPROPANE-1-CARBOXYLATE (ACC) DEAMINASE IN SELECTED PLANT GROWTH PROMOTING RHIZOBACTERIA (PGPR)

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1-aminocyclopropane-1-carboxylate (ACC) deaminase promotes plant growth by sequestering and cleaving the ethylene precursor ACC to α-ketobutyrate and ammonium. Many plant growth promoting rhizobacteria producing 1-aminocyclopropane-1-carboxylate (ACC) deaminase as a source of nitrogen has an eminent role in plant nutrition. The present work deals with comparative analysis of ACCD producing plant growth-promoting rhizobacteria (PGPR) are Azospirillum lipoferum, Phyllobacterium brassicacearum, Pseudomonas fluorescens, Francisella tularensis subsp. holarctica OSU18 and Bacillus cereus. The sequence and phylogenetic analysis of ACCD producing PGPR species represents the common conserved domain belonging to the tryptophan synthase beta subunit-like PLP-dependent enzymes superfamily and closely related to each other. The predicted homology models of ACCD of PGPR have similar protein structure with similar folds often share similar function. This analysis represents the evolutionary conservation and same biochemical function of ACCD producing plant growth-promoting rhizobacteria. This analysis is very helpful to understand the biological function of PGPR species.

Keywords: ACCD, PGPR, evolutionary conservation.

EFFECT OF ELECTROMAGNETIC RAYS ON ANIMAL AND PLANT LIFE

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As we all know that electromagnetic radiations from cell phone and cell towers affect the life of birds. Radiation around a single cell tower may not be uniform. There may be hot and cold spots. Short term effects from cell tower radiation exposure may include, sleep disorders, poor memory, headache, anxiety, depression, appetite disturbance and restlessness. The reason why birds absorb more radiation is that birds' surface area is relatively larger than their weight in comparison to human body. Fluid content of birds is also less due to less weight that's why they get heated up very fast and also the magnetic field disturbs their navigation skills . One would never see a bee, sparrow, pigeon or any other birds flying and staying near the cell tower. The safe level of power density is 0.1mw/sq.mtr as measured by RUFF meter. Different cell sites emit different amounts of radiation. Due to Colony Collapse Disorder (CCD) bees cannot find their way back to hive. Electromagnetic rays disturb their cellular communication. We can see a sharp decline in bees and birds population due to increasing electromagnetic radiations especially in Kerala, Bihar, Uttar Pradesh and other parts of India and the world. A large number of swans, pigeons and sparrows are getting lost due to interference of the unseen enemy i.e. mobile towers. Several million birds die each year during migration due to disorientation caused by microwave radiation from these towers. Electromagnetic radiation also affects vegetables, crops and plants. Radiation can chock seeds, inhibit germination and root growth and overall growth of agricultural, crops and plants. We can also see the progressive deterioration of trees near these towers.

According to Albert Einstein "If the bee disappears from the surface of the earth, man would have no more than four years to live."

QUANTIFICATION OF NITROUS OXIDE EMISSION FROM RICE FIELDS TO SAVE THE ENVIRONMENT FROM GLOABAL WARMING

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Nitrous oxide has much greater global warming potential than CO_2. Global annual N_2O emissions from agricultural soil have been estimated to range between 1.9 and 4.2 Tg N, with about half arising from anthropogenic sources. The nitrous oxide gas was collected by closed chamber technique and its amounts were measured by a gas chromatograph with Electron Capture Detector (ECD) and Porapak N stainless steel column. The temperature for column, injector and detector were 45,120 and 300^0C, respectively. The average nitrous fluxes for rice were 0.57, 1.87, 2.37, 3.52 and 1.27 mg m^{-2} h^{-1} from control with crop, farmyard manure (FYM), green manure (GM), straw amendments and sulphur fertilizers, respectively. Among different growth stages of rice transplanting to tillering growth stage nitrous oxide flux was maximum in straw amendment, 5.79 mg m^{-2} h^{-1} followed by GM . Amendment, 2.45 mg m^{-2} h^{-1} , sulphur fertilizers, 1.29 mg m^{-2} h^{-1}, FYM amendment, 1.60 mg m^{-2} h^{-1}, and lowest in control crop, 0.53 mg m^{-2} h^{-1}. After that, during tillering to panicle stages nitrous oxide flux was highest in straw amendments, 3.58 mg m^{-2} h^{-1}, followed by GM amendments, 2.474 mg m^{-2} h^{-1}, FYM amendments, 2.53 mg m^{-2} h^{-1},sulphurus fertilizers, 1.78 mg m^{-2} h^{-1}, and the lowest was in control with crop, 0.79 mg m^{-2} h^{-1}. Similarly, during panicle initiation to reproductive growth stage nitrous oxide flux was highest in straw amendment, 2.52 mg m^{-2} h^{-1}, followed by FYM amendments, 2.28, mg m^{-2} h^{-1}, GM amendments, 2.24 mg m^{-2} h^{-1}, sulphurus fertilizers, 1.47 mg m^{-2} h^{-1}, and the lowest was in control with crop, 0.62 mg m^{-2} h^{-1}. During reproductive to ripening growth stage nitrous oxide flux was highest in straw amendments, 2.72 mg m^{-2} h^{-1}, followed by GM amendments, 2.47 mg m^{-2} h^{-1}, FYM amendments, 1.47 mg m^{-2} h^{-1}, sulphurus fertilizers 0.95 mg m^{-2} h^{-1}, and the lowest was in control with crop, 0.35 mg m^{-2} h^{-1}. Lastly ripening to maturity growth stage nitrous oxide flux was highest in GM amendments, 1.69 mg m^{-2} h^{-1}, followed by FYM amendments, 1.18 mg m^{-2} h^{-1}, straw amendments, 0.42 mg m^{-2} h^{-1}, sulphurus fertilizer, 0.43 mg m^{-2} h^{-1}, and the lowest was in control with crop, 0.38 mg m^{-2} h^{-1}. The results indicated that nitrous oxide emission was enhanced by undecomposed organic amendments (straw and green manure) as compared to well-decomposed organic amendments (farmyard manure) and sulphurus fertilizers.

ASSESSMENT OF WATER QUALITY OF TON'S RIVER USING BENTHIC MACROINVERTEBRATES

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Benthic macro invertebrates are best bio-assessment. The abiotic environment of the water body directly affects the population density and diversity of the macro benthic community. Benthic fauna are especially of a great significance for fisheries that they themselves act as food of bottom feeder fishes. The ton's river of Satna district in Madhya Pradesh was chosen to assess the impact of alternate of the flow regime on water quality, due to the formation of the dam. The present study deals with the population density, species diversity of aquatic macro invertebrate fauna sampling, pre-identified and identification of macro invertebrates.

EVALUATION OF MORPHOLOGICAL AND GENETIC INTER-RELATIONSHIP BETWEEN SEVERAL HEAT TOLERANT WHEAT GERMPLASMS

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The present investigation was conducted *to evaluate the eleven heat tolerant wheat germplasms including check* to study morphogenetic inter-relationship for yield and yield attributing characters. Analysis of variance showed that selected genotypes differed significantly for different quantitative characters. High genetic advance coupled with high heritability was observed for characters *viz.,* plant height and grains per spike indicating thereby the preponderance of additive gene action for these characters. The correlation analysis for yield and yield contributing characters indicated that grain yield per plot was positively and significantly associated with plant height, tillers per plant and grains per spike at genotypic level as well as at phenotypic level. Path analysis and Correlation analysis indicated that high canopy temperature depression and membrane thermostability can be powerful criteria for the screening of heat tolerance genotypes. The grouping of genotypes based on morphological diversity *i.e.* D^2 analysis and RAPD was not concurrent. The genotypes which exhibited low diversity at phenotypic level, exhibited higher diversity at molecular level indicated that the grouping of genotypes or diversity is independent of geographical location and ploidy level or even phenotypic markers.

Keywords: Wheat, heat stress, heritability, Genetic advance, Correlation, path coefficient, D^2 analysis, RAPD.

CONSERVATION AND MANAGEMENT OF WATER RESOURCES

Seva Ram Malik

Conservation of rivers & lakes

Rajeev Gandhi Watershed Mission Bhopal, Madhya Pradesh

Water is precious natural resources. It has compulsory role for living creation. Due to disturbance of water cycle and over exploitation of water scarcity is being seen in each area. Conservation and proper management of rain water, surface water and ground water can solve the scarcity. The enhancement of productivity is also be solved by the watershed management. Watershed management is best solution of waste and degraded land to get required production and enhancement of livelihood. Water can be used as renewal resources as coal, gas, oil are non renewal resources but water can recycled and used for different purposes.

STUDY OF LOCALLY AVAILABLE ETHNOMEDICINAL PLANTS USAGE BY TRIBALS OF BALAGHAT DISTRICT (M.P.)

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The forest of the Balaghat provide a large number of plants whose fruits, seeds, tubers shoots, leaves etc. make important contribution to the diet of tribals. These plants not only provide inexpensive food but several other useful products like medicine, fiber, fodder, dyes etc. they also provide useful genus for crop improvement. The study of wild edible plants is important not only to identify the potential sources which could be utilized as alternative food or in time of scarcity but to select promising types for domestication.

Balaghat district is mainly tribal dominated areas and most part of its cover with forest. Balaghat district forms a part of Satpura hills. Its lies between the latitude 21019' and 22024' north and longitude 79031' to 8103' east. The tribal people here are mainly dependent on agriculture and forest resources for their socio-economic requirements.

An ethnobotanical survey was undertaken to collect information from traditional healers on the use of medicinal plants in Balaghat district of Madhya Pradesh during July2012 to April 2014. The indigenous knowledge of local traditional healers and the native plants used for medicinal purposes were collected through questionnaire and personal interviews during field trips.

The investigation revealed that, the traditional healers used 72 species of plants distributed in 64 genera belonging to 38 families to treat various diseases. The documented medicinal plants were mostly used to cure skin diseases, poison bites, stomachache and nervous disorders. In this study the most dominant family was Euphorbiaceae, Fabaceae and leaves were most frequently used for the treatment of diseases.

This study showed that many people in the studied parts of Balaghat district still continue to depend on medicinal plants at least for the treatment of primary healthcare. The traditional healers are dwindling in number and there is a grave danger of traditional knowledge disappearing soon since the younger generation is not interested to carry on this tradition.

Keyword: Balaghat, Ethnobotanical, Euphorbiaceae, Tribal, Disease.

LONG TERM EFFECT OF RADIATIONS EXPOSURES ON HUMAN BODY

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Over the last few years, World Health Organization (WHO) shown its concern about the possibility of adverse health effects resulting from exposure to radiofrequency electromagnetic fields radiations, such as those emitted by wireless communication devices. International Agency for Research on Cancer (IARC) a part of WHO, classified radiofrequency electromagnetic fields as possibly carcinogenic to humans (Group 2B), based on an increased risk for glioma, a malignant type of brain cancer, associated with wireless phone use. It is observed that earth environment, fulfill with many types of radiations like as solar radiations, ionizing radiations (gamma-rays, neutrons, radio-nuclides), non-ionizing radiation (extremely low-frequency electromagnetic fields). Study of available literatures informed that radiofrequency electromagnetic field radiations related with, occupational exposures to radar and microwaves, environmental exposures associated with transmission of signals for radio, television and wireless telecommunication, personal exposures associated with the use of wireless telephone.

Keywords: IARC, glioma, WHO, radiations, carcinogenic, brain cancer

ECOTOURISM SUSTAINABLE TOURISM AND CONSERVATION OF NATURE

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Madhya Pradesh is endowed with a very rich spectrum of scenic and relatively undisturbed landscapes, forests, wildlife and cultural diversity. The state has the largest forest area (94, 669 sq km) in the country of which move than 10,000 sq km is under Protected Areas and the largest tiger population housed in the world famous tiger reserves. It is also home to several endangered species including the Gangetic Dolphin, the Ghariyal, the Great Indiann Bustered and the Kharmor amongst others. More than 80 percent of tourism in Madhya Predesh is centered on nature and wild life.

"Ecotourism" or Ecologically Sustainable tourism has been defined as responsible tourism to natural areas responsible tourism to natural areas that conserves the environment and improves the well being of local forest dependent communities.

Ecotourism also has potential to play an important role in creating environmental as well as cultural awareness amongst all the stakeholders local communities, tourists, government and the private sector. The focas shall be on conservation of natural resources through awareness building, diversification of tourism activities and destinations and local community participation.

MPEDB. :- 1. Encouraging public- people- private partnerships.

2. promoting involvement of youth, both urban and rural in various aspects of ecotourism development.

3. Strengthen, nurture and encourage the community's ability to maintain and produce, traditional housing and landscaping that use local natural resources in sustainable manner.

REPERCUSSIONS OF MOBILE PHONES ADDICTION AMONG TEENAGERS: SPECIAL STUDY AMONG STUDENTS OF SELECTED SCHOOL OF INDORE CITY OF MADHYA PRADESH

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The use of mobile phone is increasing day by day. Excessive use of using mobile phone causes dangerous effects from exposure of harmful radiation to psychological disorders as depression, addiction and insomnia among teenagers.

The objective of the present study is co assets the impact of excessive uses of mobile phone among teenager. That causes multiple disorders in physical and psychological health. To conduct the study, Multi variation random sampling has been taken from different schools selection studying of classe 8 to 12th standards. To assess the significance difference among students having excessive use of mobile phone, the data have been selected and analyzed with variable of study to find the significant differences. Present study took 3 point rating scaling method and t-Test to conclude specific difference. The study found that excessive use of mobile phone among teenagers cause many psychological and health disorders comparative to those using limited of studying purpose.

ASSESSMENT OF THE HEAVY METAL CONTAMINATION AND THEIR EFFECTS ON ENVIRONMENT AND HUMAN HEALTH FROM ELECTRONIC WASTE BURNING SITES

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Electronic waste is a major environmental issue as a carcinogenic pollutant in national capital region. Moradabad is an industrial city of North India for metal industry and is also called as peetal nagri or Brasscity. It is worldwide famous for the expert and manufacture of Brasswares. In present study an attempt was made to investigate the level of heavy metal pollution in surrounding environment from e-waste processing facility and further carried out to estimate the concentration of toxic metals (Pb, Cd, Cu, Zn, Cr and Ni) in the surface dust and the soil sample taken from the various e-waste burning sites. Traders estimated about half the printed circuit boards used in appliances end up in Moradabad and printed circuits boards wastes is thought to be the main source of heavy metal emission during e-waste processing and burning. Soils at sites, where e-waste is burned in the open air sample were collected and analysed for heavy metals. The result shows that the soil sample has highest concentration of Cd, Cu, Pb, Zu, Cr, Ni. The result also indicates that the population around and nearby areas of e-waste burning site have a very high risk of DNA damage and nonfunctioning of tumor suppressor gene from ingestion of air polluted with these toxic metal. The dismantling and disposal of e-waste in developing countries is causing increasing concern because of its impacts on the environmental and high risk for human health. Uncontrolled e-waste processing operations can be the causative factor for severe pollution for air, water and soil in nearby areas. The results obtained in above investigation shows a higher concentration of heavy metals as compared to permissible limit at polluted sites. The higher concentration of lead and copper originating from e-waste recycling can be the major cause for serious health hazardous problems and carcinogenic effects among affected population. An urgent need is required for the remediation of these heavy metals at their site of origin.

Key words: E-waste, Heavy Metal Pollution, Toxic Metals, DNA damage, Soil pollution.

WEB BLIGHT AN EMERGING PROBLEM IN LEGUMES

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Web blight of legume crops caused by R. solani (Kühn)is considered as a non- specialized plant pathogen; however, host specificity has been recognised at various levels. Rhizoctonia solani casual agent of web blight belongs to anastomosis group-1, intraspecific group IB . The pathogen is primarily soil borne and can survive for many years by producing sclerotia in soil and on plant tissue/ seed coat. R. solani also survive as mycelium by colonizing soil organic matter as saprophytes. The highest inoculums potential is noted in the top 10 cm soil and no inoculums are found below 40 cm. It was reported that 26-32 ^{0}c temperature, relative humidity near 100% and soil temperature 30-33^{0}c favoured the development. The collateral weed hosts play an important role in initiation and early spread of the disease to the main host . Integration of cultural practices, chemical control and biological control are effective tools for management web blight in legume crops.

IMPACT OF MICROBIAL ACTIVITY ON BIOSORPTION OF HEAVY METAL CONTAMINATED INDUSTRIAL EFFLUENTS

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Heavy metals are considered as one of the most abundant and hazardous pollutants in industrial effluents, which might cause serious problems to the sewage network pipelines. The deleterious effects of heavy metals on biological processes are complex and generally related to species, solubility and concentration of the metal and characteristics of the influent, such as pH, as well as presence and concentration of other cations and/or molecules and suspended solids. Metal toxicity results from alterations in the conformational structure of nucleic acids, proteins or by interference with oxidative phosphorylation and osmotic balance. The most common mechanisms by which metals are eliminated from wastewater treatment processes depend on precipitation, adsorption to suspended solids during primary sedimentation or adsorption to extra-cellular polymers. Use of bio-adsorbents such as bacteria, fungi, algae and certain agricultural wastes that emerged as an eco-friendly, effective and low cost material option could offer potential inexpensive alternatives to the conventional adsorbents. Different species of Aspergillus, Pseudomonas, Sporophyticus, Bacillus, Phanerochaete, have been reported as efficient chromium and nickel reducers. Pseudomonas spp. was found to be an efficient microbial agent for heavy metal absorption. The response of microorganisms towards toxic heavy metals is very important for reclamation of polluted sites. In present study an attempt was made to explore the heavy metals behavior in pollutant effluent solution by filtration. The behaviors of these heavy metals are characterized by microbial activity and physicochemical processes (e.g. binding and desorption) with effluent solutions. Another attempt was also be made to establish the range of conditions within which bioremediation is a good alternative to apply for Heavy metal bioremoval, while minimizing the impact on potentially bioavailable and toxic metal species.

Keywords: Heavy Metal Pollution, Biosorption, Pseudomonas spp., Bioremoval, Bioremadiation

RADIOACTIVE WASTE MANAGEMENT

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The safe disposal of radioactive waste presents one of the most difficult environmental problems faced by industrial countries. The important issues are safe custody of the received radioisotopes, surveillance for their safe applications in the department and the disposal of the radioactive wastes generated from human use of these radioisotopes. The radioactive waste disposals must take into account permissible concentrations applicable from the standpoint of community safety, ensure that the degree of dilution envisaged is achieved at the discharge point (from the institution into the sewage system), and the hazard to the general population is worst in the event of the sludge containing radioactive waste material being used as fertilizer.

Keyword: Radioactive, Nuclear Waste, Environment

INFLUENCE OF ECTOMYCORRHIZAL FUNGI ON GROWTH AND DEVELOPMENT OF *QUERCUS LEUCOTRICHOPHORA* SEEDLINGS

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Ectomycorrhizal (ECM) fungi are mutualistic relationships between plant and soil fungi. Ectomycorrhizal fungi consist of about 5000 species and profoundly affected forest ecosystems by mediating nutrient and water uptake, protecting roots from pathogens and environmental extremes, maintaining soil fertility and forest ecosystem. The Himalayan forests are mainly dominated by chir-pine and oak species. In the Kumaun region of central Himalaya, Quercus (Oak) species are associated with ectomycorrhizal fungi forming dense forests. Extensive human interferences like fire fragmentation, over grazing and collection of forest litter are directly affects the mycorrhizal production. Perhaps oak forests are degrading and destroying due to the loss of ECM species as most of the tree seedlings without these associations grow poorly because of the reduce capacity to acquire the soil resources needed for growth. In the present study, the effect of ectomycorrhizal fungi was observed on growth and development of major Indian Himalayan tree species, viz. ban oak (Quercus leucotrichophora). Associated ectomycorrhizal species influence the growth and development of specific tree species and showed their role in forest ecosystem development. In view of the significant contribution of ectomycorrhizal fungi to enhance plant growth, the pure cultures were used as a biofertilizer for enhancement as well as regeneration of oak forests in Himalayan region of Uttarakhand.
Key words: Ectomycorhizal fungi, Oak (Quercus leucotrichophora), Biofertilizer.

HOUSEHOLD SCALE CLEAN WATER DISINFECTION TECHNIQUE WITH CHLORINATION METHOD

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Disinfection is preventive efforts against the entry of pathogenic bacteria to the human body. Chlorination is one effort to give prevention with chlorine. The research objective was to determine of diffusion and mass transfer coefficients and then to develop of a chlorinated tool model. Effect of water flow rate on chlorine transport and granule size was studied to develop their relationship. The flow rates discharge used were 8 liters/minute, 14 liters/minute, and 20 liters/minute, whereas the granule sizes were 2.36 – 4.75 ml, 4.75-9.5 ml, and 9.5 - 16 ml. Diffusion coefficients and mass transfer determined by least summed of square of error. Diffusion coefficient and mass transfer used for disinfection technique was 0.4371 cm2 minute-1 and 0.0039-minute-1, as well as flow rate and granule size used was 9.5 ml - 16 ml and 8 liters/minute. Experiment testing of chlorination performed to ensure of them was potentially for chlorination. Raw water chlorinated then was found of free chlorine residual and the total coliform met the quality standards based on regulation the Ministry of Health of Republic of India about the terms of supervision and the quality of water.
Keyword: Disinfection, chlorine, total coliform, breakpoint chlorination.

MOSQUITO REPELLENT AND HUMAN HEALTH

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Mosquitoes are one of the most important insect pest that effect the health of humans and pet animals. Mosquitoes are very dangerous insects of phylum Orthopoda Class insecta and order deptera. Mosquitoes are flies in the family Culaceae over 3,500 species of mosquitoes exist worldwide are then 160 species have been documents in North America at least 62 species occur in New York, and 40 species occurs in India. This Indian Government is searching for various methods of eradicating Malaria.

Mosquito repellent is a substance applied to skin clothing fumigant or other surfaces which discourage insects from lending or climbing on that surface. There are so many mosquito repellent products available based on sound production particularly ultra sound(Inaudibly high frequency sound) There are so many mosquito repellent available in market which not only give harmful effect to human being but also on microclimate or environment . These mosquito repellent are chemicals or synthetically derived chemicals which have organic or inorganic heterocyclic chemicals which give harmful effect to humans and cause many diseases.

There is no such work which have been done at Chhatarpur district so present work or research is work focused on repellent. In this review of mosquito repellent, chemicals mosquito repellent are regarded as remarkable safety profile, but they are toxic against the skin and nerves system and causes diseases like rashes, swelling, eye irritation and some serious problems, through unusual including brain swelling in children anaphylactic shock and low blood pressure. Hence it is included that mosquito repellent are preferred over chemical mosquito repellent, control of mosquitoes is something of most importance in the present day with rising number of mosquito born diseases.

Present work based by natural method in which less money and less energy is consumed can be done by using weed and we can get more profit without environmental effect or environmental pollution. There are many method of preparing mosquito repellent from naturally occurring sources that repellent to certain mosquito some of this act as mosquito repellent while others only repellent like Basil (Occimum-sanctum) Caster oil (Riccinus –communis) Catnip (Mentha –pipereta) Eucalyptis , azadirecta-indica , Citrus-sinensis , Lavendula-angustifolia , Vernoni , Tegetis and Ageratum etc.

BIODIVERSITY OF MEDICINAL PLANTS OF SATNA DISTRICT OF M.P.

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The knowledge of biodiversity is necessary for planning sustainable growth, conservation of natural resources and to improve the degraded phytodiversity in and around the Satna district (M.P.). The botanical names, local/trade/vernacular names, habit, parts used and medicinal uses were noted during present investigation. The aim of the present work is to provide a complete comprehensive and upto date account of the medicinal plants of Satna district for the benefits of researchers to undertake studies on the prospects and potential of commercial exploitation.

BIODIESEL AN ALTERNATIVE SOURCE OF ENERGY & KEY TO REDUCE ENVIRONMENTAL POLLUTION

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Increase in carbon dioxide in the atmosphere is the result of burning of fossil fuel, deforestation, changes in land use, buldging population and mechanized life of human being.Annually 9 giga ton carbon dioxide is released in to the atmosphere and only 5 giga ton is absorbed by the plants which shows reduction in forest and accordingly plants.Rest 4 giga ton carbon dioxide still remains in the atmosphere which is responsible for global warming and ozone hole depletion. Constant increase of this gas will lead to the loss of biodiversity(animals & plants) by inviting UV rays through ozone hole.

India ranks in top 5 carbon dioxide emitter after US, Japan, Russia & China and going to be 3rd largest emitter by 2025.Main cause of this in India is also food production in agriculture for huge population by involving machines to be used indifferent agricultural operations like irrigation, harvesting, plant protection.storage etc. Keeping in mind the source of pollution, biodiesel is an alternate and Jatropha may be a boon for the country to cut the demand of fossil fuel as well as reducing carbondioxide and other green house gases thus present paper is focused on biodiesel from *Jatropha curcas* a highly adapted plant in the country

GLOBAL WARMIING

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Global means Land-Ocean temperature change. Global Warming and Climate Change both refer to the observed century Scale rise in the average temperature of the earth's climate system and its related effects. Certain human activities have also been identified as significant causes of recent climate change, often referred to as "Global Warming". Climate change is caused by factors such as biotic pressure, variations in solar radiation received by Earth, Plate tectonics, and Volcanic eruptions. Global Warming refers to surface temperature increases while climate change includes Global Warming and everything else that increasing green house gas level will affect evidence for Global Warming is taken from a variety of sources that can be used to reconstruct past climates.

Reasonably complete global records of surface temperature are available beginning from the mid-late 19th century. For earlier periods, most of the evidence is indirect- Global Warming is inferred from changes in proxies. Indicators that reflect climate, such as Vegetation, ice cores, dendrochoronology, Sea level change, and glacial geology. "Climate Change" can also refer generally to either cooling or warming trends at any point in earth's history. Possible responses to Global Warming includes Mitigation, climate engineering.

Keywords : Global Warming, Climate change, temperature, earth surface.

PLEASE SEARCH THE CONTEMPLATION THROUGH IN VEDIC LITERATURE IN CONTEXT OF MODERN SCIENCE

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We have created a mysticism on science. We have placed our ancient say as Vedic science in astonishment. Science is not a wonder, but it is the fundamental thought of life and society, which is sufficesworlding. It is a nice path of livelihood with nature. What would be technique supported by science it would be decided by society. The society which is most scientific that would be able to provide more fruitful scientific technique to the society and community.

Which green crop layer was started in China.

When our primeminster voted as Jai Javanand Jai Kishan.

When Tata have lanched his Nano car in January 2008.

All of above cited three factor were the striking factors of society, but unfortunately we have forgotten ourVedic literature in various kinds of scientific thought are formulated as Mantras, Sholokes etc. Now it is the time repeat and research our Vedic literature and to search out various kinds of scientific thought in them.

Keyword: Vedic science and Modern science.

DRINKING WATER QUALITY OF SELF-RELIANCE CAMPAIGN VILLAGES OF AROUND CHITRAKOOT DISTRICT, UTTAR PRADESH, INDIA

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Drinking water quality was carried out in Self-reliance campaign villages of around Chitrakoot District, Uttar Pradesh, India. The study was aimed at examining the various samples of ground water quality of the drinking water as it relates to public health. Fifty nine drinking water samples were taken from hand pumps water were analyzed for pH, electrical conductivity, chloride, total alkalinity, total dissolved solids, total hardness, salinity and E. coli. The results were compared with WHO and IS: 10500 standards. The usefulness of these parameters in predicting ground water quality characteristics were discussed. Thus an attempt has been made to find the quality of ground water in Chitrakoot district suitable for drinking purposes or not.

Keywords: Ground water, drinking water quality, alkalinity, total dissolved solids, chloride.

PHYSICO-CHEMICAL AND MICROBIAL STATUS OF PAISWANI RIVER, UTTAR PRADESH AND MADHYA PRADESH, INDIA

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The physico-chemical and microbial status of Paiswani River was investigated. Results obtained for physiochemical status showed that aside pH, conductivity, total hardness, alkalinity, total dissolve solid and dissolve oxygen at some of the sampling points, other physicochemical parameters investigated in this study were within WHO standards. Pathogenic organisms such as *Salmonella sp., Staphylococcus sp.*, *Pseudomonas aeroginosa* and non-pathogenic organisms such as *Eschericha coli* were among the organisms identified. The pathogenic organisms found in the river water could be agents of water borne diseases. The present study has shown the physicochemical and microbial status of Paiswani River.
Keywords: Physico-chemical status, microbial status, pathogenic organism, Paiswani River.

STUDY OF ZOOPLANKTON BIO DIVERSITY IN RELATION TO HYDROBIOLOGICAL FACTORS OF AMKHERA POND, JABALPUR (M.P.)

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Zooplankton are good indicators of changes in water quality, because they are strongly affected by environmental conditions and responds quickly to changes in water quality. Thus, the diversity and population dynamics of zooplankton is under control of number of factors like immediate physico-chemical environment, trophic status, pollution influence and all types of interactions among biotic communities. (Surve, et.al. 2004). The present paper deals with the study of monthly variations in the zooplankton population and their correlation with some physico-chemical characteristics of Amkhera pond water.
Keywords: zooplankton, physicochemical, water quality

STUDIES ON SEASONAL OCCURRENCE OF DIFFERENT DISEASES OF MANGO AND GUAVA IN REWA DIVISION OF MADHYA PRADESH

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Seasonal incidence of different diseases of mango was studied in the mango and guava orchard of Fruit Research Station, Kuthulia, Rewa (Madhya Pradesh) during 2007-12 to evaluate the outbreak or transformation of disease from minor to major incidence. The study was carried out in rainy, winter and summer season and the level of disease severity was recorded. Among the major diseases of mango, Anthracnose, Malformation, blossom blight were recorded during study period. Powdery mildew was not regularly present. However, if present then were in very less amount. Red rust was recorded in rainy season during 2008-12. Anthracnose and malformation were the two major diseases of mango that were continuously present and with high severity.

Seasonal incidence of different diseases of Guava was also noted in Pre- monsoon, monsoon and post monsoon season in Guava orchard. Among the different diseases of guava, incidence of anthracnose was major which occurred in all the seasons during 2007-08, 2008-09, 2009-10, 2010-11 and 2011-12. For incidence of guava wilt, it was observed that wilt usually starts during the month of August and its incidence increases up to November. Highest incidence of wilting takes place during the month of September-October. Anthracnose spots were regularly observed during pre-monsoon, monsoon and post-monsoon period during the study period. However, it was observed that during monsoon period severity of anthracnose was more in comparison to pre- and post-monsoon period. Incidence of phytophthora fruit rot was also recorded during 2007-12 and it was observed that phytophthora fruit rot was present during monsoon and post-monsoon season during the studied period of 2007-12.Some other diseases like die back, canker and algal spot were also studied during 2007-12. Die back was present mostly in monsoon and post-monsoon period mainly. Canker was also present in pre-monsoon period. However, during 2008-09 it was observed in small amount in pre-monsoon period. Algal spot was not observed during 2007-12 except in year 2008-09. In 2008-09, 5.7% algal spot was observed during monsoon period.From the above observations of different diseases of guava, this can be concluded that monsoon and post-monsoon period is major period for occurrence of different diseases in guava.

ENDANGERED MEDICINAL FLORA OF MAJHGAWAN FOREST OF SATNA (M.P.)

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Forest has been prime resource of a number of necessary commodities for the tribal living in and around them. This observation is a survey of the occurrence of twenty three endangered and threatened medicinal angiospermic plant species in various localities of Majhgawan forest of Satna district. In the present investigation an attempt has been made to study the habit and habitat, general taxonomy, floral characteristics and ethno-medicinal usages of various parts of these endangered plant species.

EFFICACY OF PLANT SECONDARY METABOLITES AGAINST *MALASSEZIA* SP. AND THEIR TARGET VALIDATION OVER MALA S1 USING MOLECULAR MODELING

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India is one of the twelve mega biodiversity regions of the world and nurtures plant diversity from algae to angiosperms. Certain secondary metabolites have Anti-fungal properties against Malassezia spp. causing Pityriasis versicolor, which is the most common infection known as Sehuwa (Hypopigmentation) in humans. As such, Geraniol is a commercially important terpene alcohol occurring in the essential oils of lemongrass (Cymbopogon flexuosus) has been tested against Malassezia sp through broth microdilution assay. The tested pathogen viz. Malassezia furfur 1878; M. restricta 7877; M. globosa 7966 and M. sympodalis 9974 were procured from CBS, Netherlands. The spectrophotometric analysis revealed efficient MICs against all test pathogens. Docking simulations ascertain active binding sites on Mala s1 a potent allergen found on the malassezia cell surface that could be targeted for therapeutic measures in disease pathophysiology. Additionally, geraniol down regulated Mala s1 gene expression profile as evidenced by qRT-PCR. Our findings indicate promising application of geraniol against Malassezia and establish Mala s1 as a key regulator of disease pathogenesis.

Keywords: Pityriasis versicolor, Cymbopogon flexuosus L., Geraniol, Mala s1, Malassezia spp., Skin diseases, Anti-fungal properties, Molecular docking.

DIVERSITY IN MONILIALES FROM AQUATIC HABITAT OF BUNDELKHAND, BANDA DISTRICT (U.P.)

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The present review highlights the diversity in aquatic Moniliales in different selected sites of Banda District Bundelkhand region, (U.P.) five fungal species belonging to moniliales of aquatic fungi were isolated, scanned, cultured and identified from selected sites. The most interested fungal species were Dimorphospora follicula, lammoniera aquatica, lammoniera cornuta, Spirospheara species and tetrachaetum species. Scrutiny of literature and relevant research monograph summurises the information on the diverse group of aquatic mycoflora in aquatic habitat. Taxonomic description, illustration, geographical worldwide distribution and occurrence of each recorded fungal species along with a simplified key are also provided

ROLE OF ENVIRONMENTAL TOXICANTS IN EPIGENETIC MODULATION OF LUNGS DURING ASTHMA PATHOPHYSIOLOGY

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Asthma and allergy are increasing worldwide at an alarming rate under the impact of environmental toxicants that include air pollutants, pesticides, industrial solvents etc. Bronchial asthma develops as an inflammatory disorder of lungs. It has been found to be associated with low expression of IL-6 and heightened expression of Socs3. IL-6 has been found to lower the expression of Socs3 and heighten the expression of Stat3 in asthmatic conditions, we hypothesize that IL-6 may play a crucial role in altering the epigenetics of Socs3 promoter. We studied the effect of IL-6 over H3 (Lys 23) and H4 (Lys 8) acetylation in asthmatic lung. Their association with Socs3 promoter was studied using Chromatin Immunoprecipitation (ChIP) Assay. The results revealed high expression of acetylated H4, whereas no change was observed in the acetylation pattern of H3 during asthma. High enrichment ratio of Socs3 promoter was observed in Ac-H4 of asthmatic lung. In contrast with this, low expression of Ac-H4 and insignificant enrichment of Socs3 promoter was found in case of IL-6 treated asthmatic lung. Our finding thus delineates the role of IL-6 in asthma pathogenesis by modulating the status of histones in Socs3 promoter region.
Keywords: Environmental toxicants, Asthma, IL-6, Acetylation, Epigenetics, Socs3 etc

PHYTOCHEMICAL AND ANTIMICROBIAL STUDIES FOR STANDARDIZATION OF HERBAL MEDICINAL PLANT *WOODFORDIA FRUTICOSA (LINN.)KURZ*

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In the present investigation Phytochemical and antimicrobial studies of *Woodfordia fruticosa Linn. Kurz.* has been carried out in different leaf and floral part of plant. Firstly this plant has collected from Manjgawa forest of Satna District and identified systematically. For the screening of phytochemical activity aqueous and ethanolic extract has been prepared. This extract has been subjected for the detection of the presence of photochemical constituents i.e. carbohydrate, alkaloid, protein, lipids etc. by using various qualitative test. These extracts were also subjected for the analysis of antimicrobial activity against different infectious microorganisms by well diffusion and disk diffusion method. The results of this analysis reported the presence of important phytochemical compounds in dhataki. Drug extract has showed highest antimicrobial property against Bacillus subtilis which is approximately 73% where as lowest activity has observed in Klebsiella pneumonia that is 22%; other microbes i.e. Staphylococcus aureus, Salmonella Typhi, Pseudomonas aeruginosa, Escherichia coli etc. showed moderate activity. The results of the study has very fruitful for the researcher working in this area and very helpful for standerization of drug.

FISH DIVERSITY AND THEIR LIMNOLOGICAL STATUS OF RIVERYAMUNA AT KALPI, DISTRICT, JALAUN, U.P., INDIA

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The present study reveals the fish diversity and their limnological status of river Yamuna at Kalp district Jalaun, U.P.. Various urban and industrial centers are located on the bank of river Yamuna, Kalpi i one of them. Four sampling station were selected on the Yamuna river for sampling purpose. Samplin for fish fauna and water quality analysis was done simultaneously till one year. Samples were taken fro October 2013 to September 2014. The collected samples were analysed for selected Physico-chemica parameters and collected fishes was indentified in the same time. It was observed that the recorded W.T was in range from 15.5°c to 31.5°c, pH from 7.60 to 8.70, Cond. from 330µS/cm to1060µS/cm, Turbidit from 26 to 200 NTU, T.D.S. from 458 to 675 mg/l and, T.H. from 84.5 to 148.9 mg/l, T.A. from 91.5 t 215.6 mg/l, Cl from 14.5 to 48.5 mg/l, SO_4 from 11.05 to 29.75 mg/l, PO_4 from 0.52 to 1.74 mg/l, NO from 0.38 to 4.6 mg/l, D.O. from 6.0 to 8.53 mg/l, B.O.D. from 3.25 to 12.00 mg/l and C.O.D. from 10.8 to 26.80 mg/l. Mostly physico-chemical parameters were found suitable for survival and growth of fis fauna. Recorded fishes are representing 29 species, which belongs to 21 genera of 10 families. It may b concluded that survival and growth of fishes in the Yamuna river is depend totally upon it's physico chemical parameters. Mostly parameters were found suitable for fish survival and reproductiv multiplication. Thus limnological status of fishes in the Yamuna river at study area was satisfactor during study period.

Keywords: Physico-chemical parameters, Fish diversity, Yamuna River Kalpi.

STUDIES ON THE BIOREMEDIATION AND GENE EXPRESSION IN MICROBES DURING HYDROCARBON MINERALIZATION

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Metagenomic Oil spills in sea including Indian Ocean cause destruction of marine life. Factors influencing the microbial community structure, the expression of genes involved in bioremediation and the subsequent rate of hydrocarbon mineralization has been high lightened in recent studies. In *situ* approach, where soils were fertilized in place to keep soil structure intact were developed that resulted in higher rates of hydrocarbon degradation especially in oceans that were polluted with very high rate of oil spells. One of the major approach for bioremediation is the reorganization of the microbial community and the study of increase in the expression of hydrocarbon degrading genes. However, the specific microorganisms and knowledge of functional genes that are associated with bioremediation are still unknown. In the present study We have designed the module for the study of bioremediation strategies targeting specific genes that could lead to more rapid bioremediation and could also serve as useful indicators of the oil spell pollution in ocean.

TRANSGENIC PLANTS: EFFECT TO THE ENVIRONMENT AND IMPACT ON HUMAN HEALTH

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A Plant which bears a foreign gene of desired function of other organism is called transgenic plant. During the last 20 years considerable progress has been made on isolation, characterization and introduction of novel genes into plants. The term GM foods or GMOs (genetically modified organisms) is most commonly used to refer to crop plants created for human or animal consumption using the latest molecular biological techniques. These plants have been modified to express their inherent character in the laboratory to enhance desired traits such as increased resistance to herbicides or improved nutritional content. The enhancement of desired traits has traditionally been undertaken through breeding, but conventional plant breeding method can be very time consuming and are often not reproduce accurately. Genetically modified (or GM) plants have attracted a large amount of media attention in recent years and continue to do so. Despite this, the general public remains largely unaware of what a GM plant actually is or what advantages and disadvantages of the technology has to offer, particularly with regard to the range of practical applications for which they can be used. From the first generation of GM crops, two main areas of concern have emerged, namely risk to the environment as well as human health. Adverse effects on the environment through the large-scale growth of GM plants may indirectly affect human health if consciously used by the human.
Keyword: Environment, Human health, Transgenic plant

PERIODATE OXIDATION METHOD USED FOR THE CONFIRMATION OF SEEDS POLYSACCHARIDE STRUCTURE FROM *CASSIA ALATA* LINN. PLANT

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Cassia alata Linn. plant (Caesalpiniaceae) occurs in Himalayan region of Northern India. Seeds yielded water soluble sugars as D-galactose and D-mannose in 2:3 molar ratio by GC, TLC, Column and paper chromatography. Present investigation mainly deals with the periodate oxidation studies for the confirmation of seed polysaccharide structure which was obtained by methylation studies. Periodate oxidation is one of the most important reaction in the structural study of non-ionic polysaccharide. Periodate oxidation was done with the help of sodium metaperiodate as oxidant. It consumed 1.16 moles of periodate ions with the simultaneous liberation of 0.23 moles of formic acid per mole of anhydrohexose sugars unit after 50 hrs at 4-8^{0}C. Presence of (1→6)-α-type and (1→4)-β-type linkages are also confirmed by the periodate oxidation results. The glycol groups undergo cyclic ester formation with oxidant and reaction is considered to be a dialdehyde type of oxidation. The earlier proposed seeds polysaccharide structure is confirmed of Cassia alata Linn. plant after methylation studies are confirmed by the periodate oxidation results.
Keywords: Periodate oxidation, Periodate consumption, Formic acid liberation, Cassia alata seed polysaccharide.

LIMNOLOGICAL STUDY OF RIVER BICHHIA, REWA, (M.P.)

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Changes due to anthropogenic activities like irrigation projects in riverine system caused disturbance in aquatic biodiversity reflected in fish and fisheries which is concerned with livelihood of lower income group people of riverine system. Simple ecological modelling tailored to local systems may provide a framework and some insight into explaining ecosystem response to dams and should give direction to mitigation efforts .So this investigation was for findings of quality of water through analysis of physico-chemical parameters, species diversity and abundance of aquatic biotic population. .Bichhia river is tributary of river Beeher of Gangetic basin, at present it was highly degraded after influx of water of Sone river into Beeher river from Bansagar Multipurpose Valley project in Deolond, Dist Shahdol. In present investigation, an attempt was made to assess variation in physico- chemical characteristics of river Bichhia river, District Rewa ,Madhya Pradesh. The water samples were collected monthly from five sites during January 2011 to December 2012 and analyzed for physico- chemical parameters. The investigation showed variation in temperature (16.8-32.9oC), transparency (2.7-27.0 cm), pH (5.6-7.8), alkalinity (96-386 mg l-1), free CO2 (1.6-34.9 mg l-1), DO (0.12-7.4 mg l-1), BOD (3.6-86.6 mg l-1), COD(34.9-54.4 mg l-1), chloride (54.7-80.9mg l-1), nitrate (9.36-12.96 mgl-1) and phosphate (8.6-11.36 mg l-1). Biological findings for plankton was 6745u-l to 45861u-l. Significant findings were presence of large filamentous species of Spirogyra, Spirulina, Anabaena. Oscillatria, Microcystis, Nostoc, Chara, and abundance of Rotifers, Species of Physa, Macrochlamys, Chironomids and Tubifix, absence of fish species of major carps indicative of degradation of quality of water of the river. From the investigation it is clear that there was marked variation in different parameters at different sampling sites during the different months of the year. The sites of the river was found to be highly polluted (BOD,3.6-86.6).Abundance of plankton(31121-86342/l), and absence of species of major carps from sampling sites was significant findings from the river, It was probably due to hydrological changes of river due to influx of water of Sone River into Beeher river through canal of Silpara barrage.

Keywords: Limnological Parameters, Bichhia river, BOD, Beehar River, Plankton

ENVIRONMENTAL DEGRADATION AND ITS EFFECT

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One of the big challenges opposite humanity is environmental degradation, including deforestation, desertification, pollution, and climate change – an issue of increasing concern for the international community. Environmental degradation increases the vulnerability of the societies it affects and contributes to the scarcity of resources.

Climate change will lead to an increase in the intensity and frequency of weather extremes, such as heat waves, floods, droughts and tropical cyclones. The people hardest hit by climate change and environmental degradation are those living in the most vulnerable areas, including coastal communities, small island nations, Sub-Saharan Africa and Asian delta regions. It is the poorest of the poor, who lack the resources to prepare, adapt and rebuild, that are most affected.Environmental degradation can lead to a scarcity of resources, such as water and farmable. This research paper indicates Environmental Degradation and its effect on earth in future.

VULTURE IDENTIFICATION, CONSERVATION AND AWARENESS

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Vulture has an important role in the natural environment. If it weren't for vultures, many parts of the world would look like junkyards of bones and rotten meat. They are nature's disposal squads or "incinerators". Vultures provide the society with a number of services, most notably disposal of carrion. Vultures also help to control livestock disease as brucellosis, tuberculosis and anthrax by disposing of infected carcasses. The dying out of the vultures would be an irreplaceable loss of a link in the food chain. They come to the rescue of man to dispose of carcasses when animals die during natural calamities such as floods, storms, drought and war. By cleaning carcasses of dead animals, they act as the sanitation department of the natural world. These services have an impact on human health, economic activity and on environmental quality. Vultures are important for their considerable cultural and religious significance that some communities attach to their role of disposing of human bodies, such as followers of the minority Parsi faith.

PREVENTIVE MEASURES OF ENVIRONMENTAL DEGRADATION

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The term environment means the circumstances or surroundings in which everything exists. Everything external to the organism is included in it. The organism may be a human, animal, plant, as well as surroundings. Also these organisms are dependent on each other for their sustenance and absence of any may lead to an imbalance in environment. This imbalance gives rise to various problems such as Water Pollution, Air Pollution, Noise Pollution, and Careless use of Natural resources. Further associated or resultant issues could be landslides, desertification, deforestation, water logging, urban flood and unfortunately change in ecosystem.

Environment and Development both act opposite to each other. This is related to the social aspect of environment because of which topic has gained importance in the recent past. For development to occur large scale industrialization is must which leads to concentration of population in an area, over exploitation of resources, improper waste management, demand for efficient transportation system all acting as the contributor to environment degradation. Evidently there remains a conflict between environment and development but with rise in urbanization, development cannot be stopped so an effort to strike a balance between the two is essential. Protection of environment thus becomes the responsibility of every individual, group, organization, NGO's, Govt., in order to strike the balance between nature and humans. There are several laws relating to the environmental protection and conservation which already exists in India and have been inacted by the central government like the Environment Protection Act 1986.

The study has tried to firstly discuss the aspects of degrading environment highlighting practices that can be adopted in order to suggest preventive measures for the same. These measures could range from raising awareness on environmental issues to rain water harvesting and waste segregation at house hold level.

Keywords : Environmental Pollution, Urban Development, Sanitation

BIODIVERSITY AND PREVALENCE OF CESTODE PARASITES OF CAPRA HIRCUSIN AND AROUND DHULE DISTRICT, (M.S.), INDIA

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Rearing of goats is mainly done for obtaining meat. It plays an important role in providing animal protein for the diet. Theyalso serve as an intermediate host for a number of parasites.Cestodes found in gut are acquired by eating contaminated food or water. The effect of these parasites is mainly dependent on the number of parasites and nutritional status of the animal they are infecting. Cestode Parasites are a major cause of health problems in goats. The pathogenic effects of these parasites may be sub-clinical or clinical. The clinical symptoms are weight loss, reduced food intake, diarrhea and reduced yield. Due to parasitism, the animals become susceptible to other health problems which can lead to death. They caused the increase of mortality rate and the decrease in livestock productions (Soulsby, 1986).Keeping in mind the economic importance and food value of the goats, the author has decided to carry out the work on Biodiversity and prevalence of Cestode parasites of Capra hircus.The scope of the experiments is to understand the core sources of infection, in order to eradicate, control and prevention of an existence cestodes, it is essential to know the identification of worms so as to reduce impact factor and degradation.

The present study deals with the diversity and prevalence of cestodes infection in Capra hircusduring period of June 2013 to May 2014 in and around Dhule District (M.S.)

Out of 254 hosts intestinesamples examined, 101(39.76 %) found to be infected with the cestode parasites, total 829cestode parasites were collected. Four genera i.e. Moniezia, Aliezia, AvitellinaandStilesiahave been reported. Stilesiashow the highest incidence, intensity and density of infection followed byAliezia, Moniezia,Avitellinaspecies show respectively.

The incidence of infection was found more in winter followed by monsoon and summer season respectively because of favorable conditions for the development of larvae in the host and availability of intermediate host.

Keyword: Biodiversity, prevalence, Cestodes and Capra hircus.

ASSESSMENT OF OCCUPATIONAL HEALTH PROBLEMS IN SMALL SCALE INDUSTRIES WITH SPECIAL REFERENCE TO GWALIOR CARPET INDUSTRY

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The aim of the study was to assess the impact caused on the health of weavers and their productivity in the Gwalior carpet industry. Noise level, light intensity, temperature and humidity were measured with the help of sound level meter, lux meter and thermohygrometer, respectively at the workplace and the result were subjected to One Way Analysis of Variance. A pretested Questionnaire was used to evaluate the health problems among different weavers working in the carpet industry.

Carpet weaving under high temperature and high humidity or strenuous physical activities has a high potential for inducing heat stress to the workers. High relative humidity's may cause some physical disorder, as relative humidity of the air directly affects temperature perception. The observed humidity and temperature at the workplace was beyond the limits sets by ASHRAE, 2004. The high humidity at the carpet units may cause different symptoms among the weavers. They get tired sooner at higher temperature and high humidity which decrease their work performance and hence productivity. Extremely low (below 20%) relative humidity may also cause eye irritation and moderate to high levels of humidity have been shown to reduce the severity of asthma. Moreover, due to low and high temperature weavers adopt different harmful postures to retain and loose heat from their body that develops constriction of back muscles. This may lead to poor circulation of blood in the workers legs which may develop into back pain and joint pain among the workers during different seasons. Although most workers have adapted themselves to heat exposure and have taken action to find relief, the government sector must consider heat as a health hazard along with other industrial pollutants that threatens the health of workers as well as the public.

The management of heat stress at the workplace requires efforts from all stakeholders and not placing the burden only on the employees themselves. The stakeholders should include the employer as well as responsible government agencies both at the local and central levels. To begin such an effort, it may be useful to develop a framework for identifying how climate change could affect the workplace; workers; and occupational morbidity, mortality, and injury.

Keywords: health, temperature, humidity, management

WATER POLLUTION AND ENVIRONMENTAL HEALTH

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Water pollution caused industrial waste products released into lakes, rivers, and other water bodies, has made marine life no longer hospitable. Humans pollute water with large scale disposal of garbage, flowers, ashes and other household waste. In many rural areas one can still find people bathing and cooking in the same water, making it incredibly filthy. Acid rain further adds to water pollution in the water. In addition to these, thermal pollution and the depletion of dissolved oxygen aggravate the already worsened condition of the water bodies. Water pollution can also indirectly occur as an offshoot of soil pollution – through surface runoff and leaching to groundwater.

SOCIO-CULTURAL STUDY OF THE FOREST RESERVE OF PANNA DISTRICT IN MADHYA PRADESH, INDIA

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Indian wild life is to be saved by conserving the Indian forests. Central India is very rich in biodiversity and tribal communities are dependent on forests. Human is the dominant creature on this planet and he can choose to wipe out most of the species just by accelerating resource use. Positive action is required to save wildlife; it requires changes in our life style. In this paper the ecological, sociopolitical and cultural aspects of wild life conservation have been studied. A rich biological diversity and tourism potentials have raised various national parks and wild life sanctuaries which has boosted up the tourism industries. The Satpura range is a range of hills in central India. Today we recognize that anthropogenic pressures of various types have an impact on wild life. We have to understand and pursue wildlife conservation to ensure survival of all the diverse species living on this earth. In this fight of protecting wildlife, the needs of impoverished human and animals are sometimes taken as being in competition. Project tiger is a wildlife conservation project initiated in India in 1972 to protect the Bengal tigers. Panna National Park is situated in the central Indian state of Madhya Pradesh at a distance of around 57 km from one of the best-known Indian tourist attraction in India, Khajuraho. Panna region which is famous for its diamonds, is also home to some of the best wildlife species in India and is one of the better Tiger Reserves in the country. The study area for the current study is one of the oldest forest reserves which constitutes a large forest block of the central highland region. The study deals with the structure, composition and biological diversity of Panna Forest division in Madhya Pradesh. The forest enclaves of this region provide habitat to several endangered species.
Key words: Central India, anthropogenic, wildlife conservation, Panna, biological diversity

COMPARATIVE RESPONSE OF CHEMICAL FERTILIZER (NPK) AND BIOFERTILIZERS ON PIGEON PEA (CAJANAS CAJAN L. MILL SP.)

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A field experiment was conducted in black cotton soil of Dhar District, during the season 2010 to 2011 and 2011 to 2012. The responses of pigeon pea (Variety IPCL – 85) for inoculation with *Rhizobial* strains were studied. The strains of *Rhizobium sp*. taken from Biotech. Research Center, Dhar and its mix culture R-1, R-2 and R-3 were prepared and applied. As a result the treated experimental group found improved plant height, number of branches and more grains yield obtained. Thus better results and more income generated through Biofertilizer than NPK control.
Keywords: *Rhzobium sp*., Inoculation, Pigeon pea

CINEMA AND ENVIRONMENT: AN OPTIMISTIC APPROACH FOR CREATING AWARENESS TOWARDS CLIMATE CHANGE

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The film industry has been consistently serving the society by producing a number of films based on different themes viz. social, religious, cultural, science and fiction etc. Having a panoramic view of the other world cinema, since early ninetieth century, they have been reflecting various dimensions of our life. Hence the films are just like the mirrors of our life. Cinema has a great impact on people and it plays an important role in our lives even more than just entertainment. It contributes towards fulfillment of social, emotional, cultural and spiritual needs of the society. Gradually it has been shouldering the responsibility of educating the society by widening its role.

Climate change is much talked about but not fully comprehended by the lay person. However, in a world combating the adverse effects of climate change, it becomes essential to educate and sensitize the general public and films have long been an effective tool. The films make visual appeal, lasting impact and communicate climate change properly, when issues are raised through popular films; The masses understand it better.

Visual media is now recognized as one of the most powerful, engaging and emotive ways to sensitize audiences towards the cause of environment conservationism. Besides providing an important historical record of the planet's endangered plants and animals films illustrate the sheer beauty of the natural world, inspiring an entire generation of conservationists across the globe. At the hour when the nations look forwards for achieving the goals of green and clean planet, how can the visual media be lagged behind? Also it is equally interesting to know that how far it has succeeded in supporting the peoples on environmental issues? That is why the present paper focuses on the efforts of the cinema in creating awareness in the society towards climate change through film making.

Keywords : film industry, environment conservation, visual media

AVIAN DIVERSITY IN URBAN LANDSCAPE

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In last two decades as a result of a limitation of protected areas in providing habitat for many wildlife species. Birds are the best monitors of environment change. The population is generally concentrated in urban areas with the development of modern civilization. Climate change is a subject of concern now a day. Hence there is a need to monitor common birds of a locality to assess the degree of such change of environment sustainable development.

The area of Gwarighat ward is chosen as study of urban habitat. This is a residential area near gwarighat of Narmada River. Though diversity of bird's species is less in urban area. They too play a significant role in biodiversity conservation as there are abundant zones. Urban area need to pay more attention towards preserving habitat not only in urban area but along the urban fringes as they provide suitable corridors for various activities of birds & conservation.

Keywords: urban, corridors, sustainable

EVALUATION OF AWARENESS PROGRAMME ON PRACTICES OF BIOMEDICAL WASTE MANAGEMENT AT *LAL DED* HOSPITAL, SRINAGAR

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In accordance with the rules of Bio Medical Waste (Management and Handling), every hospital generating BMW needs to set up requisite BMW treatment facilities. Inadequate management of biomedical waste can be associated with risks to healthcare workers, patients and communities at large. Biomedical waste has become a serious health hazard in many countries, including India. Careless and indiscriminate disposal of this waste by healthcare establishments and research institutions can contribute to the spread of serious diseases such as hepatitis and AIDS (HIV) among those who handle it and also among the general public. The present study pertains to the biomedical waste management practices at *Lal Ded* Hospital, a premier healthcare establishment in Srinagar.

The study shows that infectious and non-infectious wastes are dumped together within the hospital premises, resulting in a mixing of the two, which are then disposed of with municipal waste at the dumping sites in the city. All types of wastes are collected in common bins placed outside the patients wards. For disposal of this waste the hospital depends on the generosity of the Municipal Corporation, whose employees generally collect it every 2 or 3 days. The hospital does not have any treatment facility for infectious waste. The laboratory waste materials, which are disposed of directly into the municipal sewer without proper disinfection of pathogens, ultimately reach to different surface water bodies.

All disposable plastic items are segregated by the rag pickers from the hospital as well as municipal bins and dumps. The waste is deposited either inside the hospital grounds, or outside in the community bin for further transportation and disposal along with municipal solid waste. The open dumping of the waste makes it freely accessible to rag pickers who become exposed to serious health hazards due to injuries from sharps, needles and other types of material used when giving injections. The results of the study demonstrate the need for strict enforcement of legal provisions and a better environmental management system for the disposal of biomedical waste in the *Lal Ded* Hospital, as well as other healthcare establishments in Srinagar.

FOREST IS THE GOOD INDICATION OF THE GLOBAL HEALTH

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One of the most important threats to the earth's water system involves massive changes in land use patterns, especially widespread deforestation. The destruction of a forest can affect the hydrological cycle in a given area. Water is stored in the forests of the earth-especially the tropical rain forests. Forests themselves produce rain clouds, partly because of evaporation. Therefore, need escape and conserve forest for our global health.

ACCUMULATION OF PESTICIDES IN WATER AND SEDIMENTS OF TIGHRA RESERVOIR, GWALIOR, MADHYA PRADESH

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Environmental pollution by pesticides is a major environmental concern. This study investigated levels of organochlorine and organophosphorus pesticide residues in water and sediment samples from eight sampling sites of Tighra Reservoir which serves as drinking water source to Gwalior city. Samples of surface water and sediments (0–3 cm) were collected from eight sampling stations using grab technique and replicated twice per season. The combination of gas chromatography and mass spectroscopy with different ionization techniques was used for determination and identification of the pesticides. The residues of pesticides were varied between different locations. The organochlorine and organophosphate pesticide residues in water and sediment samples were relatively higher than the desired level of CPCB in these samples. The concentration of diazion (0-16.32 ng/l), dichlorovos (0-22.3 ng/l), ethion (0.005-6.85 ng/l), malathion (0-36.24 ng/l) and Organochlorine compounds: total BHC (0-0.864 ng/l), endosulfan (0-8.02 ng/l), were high in water as compared to sediment samples. Heptachlor, HCB, DDT, DDD which are totally ban pesticides were also present in the samples but in less concentration. There was a positive correlation between the physcio chemical parameters like temperature, pH, phosphorus and nitrates and pesticidal residues at various sites. Results obtained confirm the presence of different pesticide residues representing different chemical classes in the reservoir water.

MANAGEMENT EDUCATION AND AWARENESS OF ENVIRONMENT ISSUES

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Environmental resource management is the management of the interaction and impact of human societies on the environment. It is not, as the phrase might suggest, the management of the *environment* itself. Environmental resources management aims to ensure that ecosystem services are protected and maintained for future human generations, and also maintain ecosystem integrity through considering ethical, economic, and scientific (ecological) variables.[1] Environmental resource management tries to identify factors affected by conflicts that rise between meeting needs and protecting resources. It is thus linked to environmental protection and sustainability.

Environmental resource management can be viewed from a variety of perspectives. Environmental resource management involves the management of all components of the biophysical environment, both living (biotic) and non-living (abiotic). This is due to the interconnected and network of relationships amongst all living species and their habitats. The environment also involves the relationships of the human environment, such as the social, cultural and economic environment with the biophysical environment. The essential aspects of environmental resource management are ethical, economical, social, and technological. These underlie principles and help make decisions.

HISTOCHEMICAL EFFECTS OF MANCOZEB ON LIVER OF ALBINO MICE

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Pesticides are both a boon and bane for civilization. Along with solving the problem of food crisis for the growing population it causes serious health hazards. The current observes the histochemical effects with different doses of mancozeb, a fungicide of ethylene-bis-dithiocarbamate group widely used against diseases of field crops, fruits and ornamentals (Worthing, 1991) in the liver of albino mice. It is the most commonly used fungicides in commercial use for the last 50 years in India and M.P. Though it has low acute toxicity; yet its breakdown product ethylene thiourea causes major toxicological concern and was found to have toxic effects in number of experimental animals. Three groups of Swiss albino mice were used wherein distilled water at 0.1ml per mice per day orally was used in group I as control while the same volume of mancozeb dissolved in distilled water at a dose level of 4.2mg/kg/bw and 6.4 mg/kg/bw were administered consecutively for 6 days a week for 4 weeks in group II and III respectively. The histochemical analysis of the samples of the 31st day revealed significant decrease in the intensity of stain for protein and glucose content while increase in the intensity of stain for lipid content was seen in group II and III as compared to the control values. The results of the present work indicate marked alterations in the content of protein, glucose and lipid in mancozeb exposed albino mice.

Keywords: Liver, mancozeb, mice, histochemical.

EVALUATION OF LC $_{50}$ VALUE OF MONOCROTOPHOS FOR FRESH WATER *LABEO ROHITA*

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Agricultural runoff or the water from the fields that drains into water bodies is major water pollutant as it contains fertilizers and pesticides. Fishes exposed to different concentrations of organophosphorous pesticides. The fresh water teleost Labeo rohita belongs the family Ciprinidae , commonly called Rohu or Bhodhari, is one of the major carps of India is being affected by monocrotophos works as systemic poison. The Lc_{50} value estimated for Labeo rohita against monocrotophos is 0.2319 mg/l, with the lower limit of 0.116 mg/l and upper limit 0.4002 mg/l.

Keywords: Labeo rohita, Monocrotophos, Lc_{50} value.

PHYSICO-CHEMICAL PROPERTIES OF WATER OF YAMUNA RIVER AT HAMIRPUR (U.P.) INDIA

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Asia as a whole region faces severe stress on water availability primarily due to high population density pollution is one such serious issue for many countries since there are many transnational water bodies that spread the pollutants across the entire region due to rapid anthropogenic activities.

The water pollution is change of physical and chemical characteristics due to addition of many substances in to water. Normally water is never pure in a chemical sense. The chief sources of water pollution are domestic sewage, industrial effluents, agricultural discharges, industrial wastes from chemical industries, fossil fuel, algal bloom and pathogenic bacteria.

The investigation on physico-chemical properties of water of yamuna river at Hamirpur (U.P) in India during winter season of session 2012 has revealed that the distribution and bioaccumulation of lead (Pb) in water sediments and fish fauna indicated that the concentration of lead is derived from industries at kalpi sewage water flyash from industries at Sumerpur near Hamirpur (U.P)

Keywords: Pollutants, Fresh water, Pollution.

DISTRIBUTION OF BENTHIC MACROINVERTEBRATES AND ITS CORRELATION WITH BIOLOGICAL PARAMETER FROM NARMADA RIVER JABALPUR, INDIA

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Narmada River is the fifth largest river in India and the largest west flowing river of Indian peninsula. Benthic Macroinvertebrates are those organisms that live on or inside the deposite at the bottom of a water body. Macroinvertebrates are most frequently used component of water quality, for ease of study Benthic macroinvertebrates were collected from specific station (Bargi Dam, Gwarighat) of Narmada River from June 2014- December 2014. During the present investigation carried out, about Six (6) species of Class Pelecypoda and Five (5) species of class odonata were recorded throughout the June 2014 - December 2014. A total of thirty seven (37) species of Benthic Macroinverebrate fauna belonging three phyla (Annelida, Arthropoda And Mollusca), Six (6) class (Oligochaeta, Gastropoda, Pleycopoda, Odonata, Tricoptera, Crustacea) and Four (4) family (Baetidae, Chironomidae, Heptagenidae, Chironomidae) were found in Narmada river during the study. The maximum density was recorded in June and minimum in post monsoon season. All Benthic macroinvertebrates (Phylum – Annelida (Oligocheata) , Arthropoda (Crustacea), Mollusca (Gastropoda and Pelecypoda) showed negative correlation with pH , D.O., B.O.D. alkalinity, chloride and Total hardness showed Negative correlation with molluscs, Phosphate showed negative correlation with Arthropods Benthic Macroinvertebrate.

Keywords: Benthic Macroinvertebrates, Biological parameters.

AIR POLLUTION AND ENVIRONMENT

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Air pollution is by far the most harmful form of pollution in our environment. Air pollution is cause by the injurious smoke emitted by cars, buses, trucks, trains, and factories, namely sulphur dioxide, carbon monoxide and nitrogen oxides. Even smoke from burning leaves and cigarettes are harmful to the environment causing a lot of damage to man and the atmosphere. Evidence of increasing air pollution is seen in lung cancer, asthma, allergies, and various breathing problems along with severe and irreparable damage to flora and fauna. Even the most natural phenomenon of migratory birds has been hampered, with severe air pollution preventing them from reaching their seasonal metropolitan destinations of centuries.

Chlorofluorocarbons (CFC), released from refrigerators, air-conditioners, deodorants and insect repellents cause severe damage to the Earth's environment. This gas has slowly damaged the atmosphere and depleted the ozone layer leading to global warming.

SEASONAL DISTRIBUTION AND PERIODICITY AMONG THE AQUATIC FUNGAL FLORA FROM BAGHAIN RIVER DISTT, BANDA (U.P.)

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The present study is an attempt made at Baghain River, Distt Banda (U.P.), India to know the Seasonal Distribution and Periodicity Among the Aquatic Fungal Flora From Baghain River Distt, Banda (U.P),during November 2008 to December 2009. Water samples were collected, scanned and were poured in petridrishes by adding crystalline pencilline to inhibit the bacterial growth through baiting technique using numerous baits as hempseeds , grains , human nails and dead ants etc. for fungal population . On critical examination , identification and purification of aquatic fungi. It is came to know that some members of Phlyctidiaceae, Rhizidiaceae, Cladochytridiaceae, Chytridiaceae, Megachytridiaceae, Blastocladiaceae, Saprolegniaceae, Pythiaceae and Moniliaceae are laying over there . Maximum number of fungal species was recorded during rainy season while lowest number of fungal species was observed in summer but In autumn season have only rare or few occurrence.In this site dominant species is Achlya klebsianna followed by Saprolegnia diclina, Rhizophydium species, Nawkowskiella elegans and Saprolegnia species, occurred in the month of August, September, October, and November, i.e. during rainy and autumn seasons. Lowest occurrance of the fungi are A. cornuta, A. oligicantha, Allomyces arbuscula, Blastocladiopsis parva, Lamonniera cornuta, L. aquatica, Protoachlya species, R. herderi, R. petersenii, S. anisospora and Spirosphaera species. Among all of them Achlya klebsianna shows maximum frequency. and A. cornuta, A. oligicantha, Allomyces arbuscula, Blastocladiopsis parva, Lamonniera cornuta, L. aqutica, Protoachlya species, R. herderi, R. petersenii, S. anisospora and Spirosphaera species, shows minimum frequency .These recovered fungi were purified and isolated on YPSS and YPG cultured medium then examined and identified with various relevant literature.

SOIL-TRANSMITTED HELMINTHIASIS AMONG SCHOOL CHILDREN IN AURANGABAD MUNICIPAL CORPORATION SCHOOL, AURANGABAD (M.S.) INDIA

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A study was randomly conducted from one school of the local Aurangabad Municipal corporation school in Aurangabad to determine the prevalence and intensity of soil-transmitted helminth infections in school children of mean age 9-10 years. Stool samples from 86 school children were analyzed using Kato-Katz technique.81 (94.18%) were infected by soil-transmitted helminths, Ascaris-lumbricoides 42 (48.83), Trichuris- trichura 13 (15.11%), hookworm 10 (11.62) respectively. Multiple infections were recorded in 16 (18.60%) of participants, while 05 (05.81%) have no infection at all. The prevalence in males 49 (94.23%) was generally higher than that of females 32 (94.11%). Differences in the levels of infection between the sexes were not significant. The study show that subjects had high prevalence of infection for Ascaris-lumbricoides.
Keywords: Soil-transmitted helminths, AMCA school, children, prevalence

ENVIRONMENT SECURITY UNDER MGNREGA SCHEME WITH UNDERSTANDING FINANCIAL SUPPORT IN INDIA

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Mahatma Gandhi National Rural Employment Guarantee scheme (MGNREG Act 2005), has support as innovative and reconstructive help to the environment at all over India Level. MGNREGA scheme aims enhancing livelihood security at national level through the providing 100 days employment to rural household in every year. In India 70 per cent population is work in primary sector or engaged its related work, there is need for study the activists scheme performance in a prime sector of the India economy. Present research paper is tried to on the scheme works and its positives impacts on environment security. Scheme works are largely focus on improving water resources, land improvement, soil conservation with sustainable protection. As we know that water is the blood of environment, the scheme managed the irrigation system and improvement, renovation of traditional water bodies, land development and drought proofing. This scheme provisions have capacities to generate the ground water recharge, soil, biodiversity conservation, sustaining food products, halting land degradation and building resilience to current climate risk such as moisture, stress, delayed rainfall, drought and floods. The scheme will gives excellent outcomes after the better supporting of financial budget for scheme. The present research paper is try to show the MGNREGA scheme's environmental effects with sustainable employments to households and its need of financial grand. Present research paper is shows the scheme performance through employment and budget with impacts on environment.
Keywords: Environment security, Scheme provisions, benefits of scheme, financial impacts, rural improvements, impacts on BPL/APL, wages role.

DIVERSITY OF ZOOPLANKTON COMMUNITY IN FRESH WATER POND HABITAT BEOHARI, SHAHDOL (M.P.)

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Zooplanktons are myriads of diverse floating and drifting animals with limited power of locomotion. The zooplankton plays an important role to study the funnal biodiversity of aquatic ecosystem. They do not only form an integral part of the lentic community but also contribute significantly. The present study aims to explore zooplankton community with relevance to biochemical characteristics of fresh water temporary pond at Beohari, Shahdol (M.P.). The present study was carried out for the period of one year from October 2013 – September 2014. During the present investigation 24 species of zooplankton were identified. Zooplanktons were represented by four groups' *viz* Protozoa, Rotifera, Cladocera and Copepoda. In which four (4) species belonging to Phyla Protozoa, Ten (10) species of Rotifera, Six (6) species of Cladocera and four (4) species of Copepoda were recorded. Zooplankton diversity was maximum during months from Feb- May. The density of zooplankton has significant positive correlation with surface water, temperature, P^H and light. The study helps in better understanding for the management of the fresh water pond fish culture.
Keywords: Zooplankton, fresh water habitat, positive correlation

THE ROLE OF NGOS IN NATURAL CONSERVATION

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Global warming and climate change and other natural calamities have proved that our ignorance and neglect have gone far. Nature conservation has to be taken seriously by people in general and scientists, policy makers, government in particular. To aware nature conservation, NGOs and voluntary organization could play important role through various activities and projects per new of respective localities.

In our country, there are more than 22 lacs NGOs are working in different sector but for nature conservation and environment they are comparatively few. They should be supported by government and other nodal agencies through proper funding. Madhya Pradesh has enormous natural of resources and need to be protected through support and awareness by NGOs and other voluntary organizations. Narmada River pollution, deforestation and environment protection are such major issues that must be addressed. There should be more policies that motivate and encourage NGOs.

PHYTODIVERSITY OF ETHANOMEDICINAL PLANTS AT CHHATARPUR DISTRICT

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The nature has provided the store house of remedies to cure all ailments of mankind. The present attempt is to review and compile updated information on various aspects of some common herbaceous plants at Bundelkhand region .Chhatarpur district is an urban area of bundle-khand region. The type of vegetation found here in very rare because this region is surrounded by two or their rivers (Ken , Urmil & Dhasan) some of them have meditational importance .There are more than 50 plants belonging to 12 families have been given which have medicinal properties against diabetes ,high-blood pressure ,gout ,skin allergies asthma ,fever and inflammations. The members of family Fabaceae,Euforbiaceae , solanaceae and Moraceae have more important plans then others.

CONSERVATION OF WILDLIFE IN INDIA SPECIALLY IN MADYA PRADESH

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Biodiversity is a modern term which simply means "the variety of life on Earth". This variety can be measured on several different levels. With a land mass of the 329 million hectares and cost lines of 7516 km, with oceans, lakes, rivers and forest. This paper discusses economic importance and protection of wildlife species in India. Wildlife conservation is essential for maintaining ecological balance of nature, food chain and also natural cycles such as carbon, Nitrogen etc. Wildlife conservation is a practice in which people attempt to protect endangered plant and animal species, along with their habitats. Indian government agencies dedicated to this practice and they can help to implement policies designed to protect wildlife. The wildlife conservation Act was enacted by the Government of India in 1972. This is paper shows that there are significant economic values attached to wildlife conservation.

Endangered medicinal flora of Majhgawan forest of Satna (M.P.)

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Forest has been prime resource of a number of necessary commodities for the tribal living in and around them. This observation is a survey of the occurrence of twenty three endangered and threatened medicinal angiospermic plant species in various localities of Majhgawan forest of Satna district. In the present investigation an attempt has been made to study the habit and habitat, general taxonomy, floral characteristics and ethno-medicinal usages of various parts of these endangered plant species.

AVIAN FAUNA OF SATNA CITY AND ITS SURROUNDING AREA.

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An annual study was undertaken to explore the avian fauna diversity of four different locations of Satna district of Madhya Pradesh. A total number of 67 species were observed belonging to 14 different orders and 34 different families. Family Sturbidae comparing of Myna and starling is at the top. It was recorder that wetland areas were preferred over agricultural area which in turn was preferred over anthropologically disturbed areas by the birds. Some of the birds like Black Ibis, Quail, francolin, White Neck Stork were rarely seen and hence need to be conserved. The continuous change in the agriculture practices like extensive use of machines, fertilizers, pesticides, new hybrid variety of plants, cutting of trees, hunting of birds are great challenge for the birds to survive. Hence, it is necessary to monitor these areas systematically in rapidly changing environment.

PRELIMINARY STUDY ON THE ICHTHYOFAUNAL DIVERSITY GANGULPARA DAM OF DISTRICT BALAGHAT (M.P.)

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Fishes are important ecological link in the food chain. They are also important indicators of water quality, ecosystem and health. Because of habitat loss, siltation, water pollution, dam, mining and human development, fish diversity has been reduced. The ichthyofaunal studies were under taken in year 2014 with help of fisheries department. The result of present study reveals the occurrence of 7 species belonging into 2 orders, 2 families and into 6 genera in which member of Cyprinidae family were dominated in comparison to others.

SEASONAL CHANGE IN DIVERSITY OF THE ZOOPLANKTONIC COMMUNITY AT BAKIA BARAZ SATNA MADHYA PRADESH

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The Bakia baraz is very famous Baraz in Satna district. Present study deal with the seasonal variation of this water body study of collection and identification of zooplankton done with monthly. A total 65 species of zooplankton, 9 species belong to Protozoa, 31 species of Rotifers, 14 species to Cladocera, 08 species to copepods and only 3 species of Oligochacta was recorded during present study.

EFFECT OF NOISE POLLUTION ON HUMAN HEALTH

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Noise is a sound of random nature; it is defined as an unpleasant, unwanted and undesirable sound. Noise pollution is unwanted sound. Noise health effects are the health consequences of elevated sound levels. Elevated work place or other noise can cause hearing impairment, hypertension, scheme heart disease, annoyance, sleep disturbance changes in the immune system birth defects etc. have been attributed to noise exposure. Although some pres by cusis may occur naturally with age, in many developed nations the commutative impact of noise is sufficient to impair the gearing of a large fraction of the population over the course of a lifetime. Noise exposure has also been known to induce tinnitus, hypertension, vasoconstriction and other cardiovascular impacts.

ASSESSMENT OF WATER QUALITY OF TON'S RIVER USING BENTHIC MACROINVERTEBRATES

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Benthic macro invertebrates are best bio-assessment. The abiotic environment of the water body directly affects the population density and diversity of the macro benthic community. Benthic fauna are especially of a great significance for fisheries that they themselves act as food of bottom feeder fishes. The ton's river of Satna district in Madhya Pradesh was chosen to assess the impact of alternate of the flow regime on water quality, due to the formation of the dam. The present study deals with the population density, species diversity of aquatic macro invertebrate fauna sampling, pre-identified and

BIOLOGICAL PARAMETER FOR WATER QUALITY CRITERIA WITH SPECIAL REFERENCE TO BIO-INDICATORS

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The bioindicator is one of the most effective way to communicate information regarding water Quality criteria. There are twenty one pollution tolerant species of phytoplankton, 8 belong to Chlorophyceae, 3 to Cynophyceae, 2 to Euglenophyceae and 9 to Bacillariophyceae were identified. Whereas certain species of Protozoans, Rotifers and Crustaceans were also observed from two selected water bodies of Satna city. The present paper reports will be highly significant and useful in order to create a general awareness in the people to prevent water pollution and improve biological parameters for water quality.

ENVIRONMENT AND RHEUMATOID ARTHRITIS

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The links between autoimmune diseases, infections and the environment are complex and mysterious. The development of autoimmune diseases like rheumatoid arthritis (RA) depends on the interaction between genetic background and a number of environmental factors. RA is a chronic inflammatory autoimmune disease characterized by a distinctive pattern of bone and joint destruction.IL-3, a cytokine secreted by Th cells, functions as a link between the immune and the hematopoietic system. We previously demonstrated the potent inhibitory role of IL-3 on osteoclastogenesis, pathological bone resorption and inflammatory arthritis. Here, we investigated the novel role of IL-3 in development of regulatory T (T reg) cells. We found that IL-3 in a dose-dependent manner increases the percentage of $Foxp3^+$ T reg cells indirectly through secretion of IL-2 by non T reg cells. These IL-3 expanded T reg cells are competent in suppressing effector T cell proliferation. Interestingly, IL-3 treatment significantly reduces the severity of arthritis, and restores the loss of $Foxp3^+$ T reg cells in thymus, lymph nodes, and spleen in collagen-induced arthritis (CIA) mice. Most significantly, we show that IL-3 decreases the production of proinflammatory cytokines IL-6, IL-17A, TNF-α and IL-1, and increases the production of anti-inflammatory cytokines IFN- and IL-10 in CIA mice. Thus, we provide the first evidence that IL-3 play an important role in modulation of T reg cell development in both in vitro and in vivo conditions, and suggest its therapeutic potential in the treatment of rheumatoid arthritis (RA) and other autoimmune diseases.

BIODIVERSITY OF MEDICINAL PLANTS OF SATNA DISTRICT OF M.P.

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The knowledge of biodiversity is necessary for planning sustainable growth, conservation of natural resources and to improve the degraded phytodiversity in and around the Satna district (M.P.). The botanical names, local/trade/vernacular names, habit, parts used and medicinal uses were noted during present investigation. The aim of the present work is to provide a complete comprehensive and upto date account of the medicinal plants of Satna district for the benefits of researchers to undertake studies on the prospects and potential of commercial exploitation.

WOUND HEALING ACTIVITY OF METHANOLIC EXTRACT OF *TEPRUSIA PERPUREA* (LINN.)

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Research work was undertaken to evaluate Wound Healing activity of methanolic extract of Teprusia perpurea Linn. The methanolic extract of Teprusia perpurea (300mg/kg/day) applied topically, was evaluated for its wound healing activity in albino wistar rats (150-200gm b.w.), using Excision and Incision wound models for 16days and 10days respectively. Wound healing activity was studied by determining wound breaking strength (g), percentage of wound contraction and period of epithelization. Methanolic extract treated animals exhibit 96.07% wound contraction when compared to control which was 88.54%. Extract treated wounds are found to epithelize faster as compared to control. Significant ($P<0.05$) increase in the wound breaking strength (280.31 ± 6.521) was observed. 5% Betadine ointment was used as a standard. Teprusia perpurea methanolic extract showed significant wound healing activity when topically administered on rats thus, supporting this traditional use.

Keywords: Betadine ointment, Excision wound, Incision wound, Period of epithelization.

CONSERVATION AND MANAGEMENT OF WATER RESOURCES

Seva Ram Malik

Conservation of rivers & lakes

Rajeev Gandhi Watershed Mission Bhopal, Madhya Pradesh

Water is precious natural resources. It has compulsory role for living creation. Due to disturbance of water cycle and over exploitation of water scarcity is being seen in each area. Conservation and proper management of rain water, surface water and ground water can solve the scarcity. The enhancement of productivity is also be solved by the watershed management. Watershed management is best solution of waste and degraded land to get required production and enhancement of livelihood. Water can be used as renewal resources as coal, gas, oil are non renewal resources but water can recycled and used for different purposes.

''महाराष्ट्र के यवतमाल जिले के वणी क्षेत्र मे कोयला शक्ती संसाधन की स्थिती एवंम संर्वधन ''

योगेंद्र एस.नगराळे एवं एच.डी.लांजेवार

गोंडवाना विश्वविद्यालय, गडचिरोली महाराष्ट्र,
भूगोल विभाग, जे. एस. पी. एम. कॉलेज, धानोरा, गडचिरोली, महाराष्ट्र

आज विश्व मे प्रकृती के सभी शक्ती संसाधन अत्यंत आवश्यक एवं महत्वपुर्ण हैं। कोयला एक शक्ती संसाधन है जिसका निर्माण 300 सौ करोड साल पुराना है। विश्व मे भारत कोयला क्षेत्र मे 5 वे स्थान पर है। कोयले द्वारा ही भारत मे औद्योगिकरण बढा है। कोयला मुख्य बिजली का स्त्रोत है जिसके लिए सबसे ज्यादा कोयला भूगर्भ से निकाला जाता है। पाश्चात्य देशोंकी तूलना मे आज भी हम कोयले द्वारा निर्मित औश्णीक विद्यृत उर्जा पर ही निर्भर है। कोयला द्वारा महाराष्ट्र मे 70 फिसदी बिजली का निर्माण होता है।

महाराष्ट्र के यवतमाल जिले मे वणी एक प्रसिद्ध कोयला क्षेत्र है, जो 'काले हिरों का शहर' नाम से परिचीत है। यहॉ निलजई, मुगोंली, घुग्गुस, कोलगांव, नायगांव, उकणी, कोलारपींपरी, पिंपलगांव, जुनाद, राजुर, घोन्सा और कुंभारखनी कोयलाखदाने है। यहॉ लाखों मिलीयन टन कोयला भूगर्भ से निकाला जाता है। यह कोयला क्षेत्र भारत सरकार की निगरानी मे है,यहॉ वेस्टर्न कोलफिल्ड लिमीटेड पश्चीम कोयलाक्षेत्र द्वारा कोयले का उत्पादन किया जाता है। वणी क्षेत्र मे कोयला खदानोंसे दिन रात कोयले का उत्पादन तेजी से बढ रहा है,खदानों का विस्तार हो रहा है जिस कारण कोयले की गुणवत्ता पर असर हो रहा है। वणी क्षेत्र मे कोयला नष्ट हो रहा है। कोयले की हानी को देखते हुए भविष्य मे इसके बचाव के लिए अभी से उपचार किया जाना चाहिए। पुरे भारत मे कोयला नष्ट होने की कगार पर है जिसका अध्ययन करना जरुरी है ताकी आनेवाले समय मे कोयला संसाधन को बचाया जा सकता है।

बिज संज्ञा. शक्ती संसाधन,खनिज संपदा,कोयलाखदान ।

गंगा घाटी की बिगड़ती पारिस्थितिकी–एक अध्ययन

विभा वासुदेव
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प्राचीनकाल से ही भारत की कलकल बहती नदियों ने अनेक सभ्यताओं को जन्म दिया और आज भी प्रमुख नगर नदियों के किनारे बसे हैं। ऋग्वेद में कहा गया है ''जल औषधि है, जल रोगों का शत्रु है, यहीं सब रोगों का नाश करेगा।'' जल जीवन्त जगत का प्राण है व पृथ्वी को मिला प्रकृति का सबसे अनुपम उपहार है। परन्तु वर्तमान समय में आधुनिकता की आंधी में हम जो प्रतिदिन विकास की एक नयी छलांग लगा रहे हैं वहीं हमारी पवित्र नदियों के विनाश में व उन्हें प्रदूषित करने में अहम भूमिका निभा रहे हैं। प्रस्तुत शोध पत्र में गंगा घाटी क्षेत्र की पारिस्थितिकी संकट के कारणों की खोज कर उन्हें दूर करने हेतु सुझाव प्रस्तुत किए गए हैं।

पर्यावरण प्रदूषण–प्रदूषण का स्वरुप व परिणाम

श्रीमती रंजना गौतम
केशरवानी महाविद्यालय, जबलपुर (म.प्र)

पर्यावरण प्रदूषण जनजीवन के लिये प्राण–घातक है। यह सृष्टि और प्रकृति के लिये अन्यायपूर्ण और दुस्साहस है। अतः पर्यावरण के प्रति हम समय रहते हुए आव यक कदम नहीं उठाते है, तो इसके गंभीर परिणाम उत्पन्न होंगें, जो कि कुछ समय बाद वह हमारे वश में नहीं होंगें तथा परमाणु ऊर्जा से उत्पन्न होने वाले वायु प्रदूशण की रोकथाम के लिए अंतर्राश्ट्रीय ऊर्जा संघ के नियमों का सख्ती से पालन किया जाना चाहिए तथा पर्यावरण प्रदूशण से बचने हरित क्षेत्र एवं जंगलों का विकास करना अति आवश्यक है।

जैव–विविधता और इसका संरक्षण

शीला नायक
संस्कृत विभाग, शासकीय महाराजा महाविद्यालय, छतरपुर म.प्र.

जैविक विविधता का अर्थ है पृथ्वी पर उपस्थित अनेक प्रकार के जीव–जंतु उनके आकार–प्रकार व्यवहार जीवनचक्र और प्रकृति में उनका योगदान। ब्लूव्हेल मछली से लगाकर सूक्ष्मदर्शी,जीवाणु,मनुष्य से लेकर फफून्द और सैकड़ों लाखों में बिखरा प्रकृति का यह जीवित खजाना मनुष्य के विकास का गवाह है और उसके भविष्य की निधि भी है। पादपों,जन्तुओं और सूक्ष्मजीवों के विविध प्रकार और विभिन्नता ही जैव विविधता है।

इस विशाल संसार में हमारे चारों ओर असंख्य जीवन विद्यमान है। इनमें से अनेक को हम अपने चक्षुओं से बिना किसी कठिनाई के देख पाते हैं, परन्तु अनेक जीवों को देखने के लिये हमें सूक्ष्मदर्शी अथवा अन्य यन्त्रों की सहायता लेनी पड़ती है। 50 लाख से 3 करोड़ प्रकार के जीवधारी हमारी पृथ्वी पर विद्यमान हैं। भारत जैव–विविधता की दृष्टि से बहुत अधिक धनी है। इसके जीवमंण्डल कृषि पशुपालन मछली उद्योग,वनविद्या तथा औषधि उद्योग आदि सभी अच्छी स्थिति में है। साथ ही इसकी सांस्कृर्तिक विविधता जो विभिन्न धर्मो,जातियों भाषाओं बोलियों रीतिरिवाजों,पर्वो आदि में परिलक्षित होती हैं। औषधि का देशज तंत्र,पुराने लोगों की बुद्विमत्ता तथा उनका ज्ञान भी जैव विविधता को आधार देते है।

लगातार बढ़ती हुई जनसंख्या एवं इसकी भोजन तथा अन्य पदार्थे की बढ़ती हुई मांग ने पहले से ही पृथ्वी के प्राकृर्तिक संसाधनों को भारी अपहरण किया है। नगरीय क्षेत्रों की बृद्वि,बांधों,भवनों तथा सड़कों का निर्माण कृषि के लिये वन क्षेत्रों को नष्ट करना,खदानों की खुदकाई आदि कुछ ऐसे उदाहरण हैं जिन्होंने प्रकृति पर सीधे ही आक्रमण किया है जिससे प्राकृर्तिक संसाधनों में स्थिर कमी आई है। नगरीकरण व औद्योगिकीकरण और रासायनिक खादों एवं कीटनाशकों के अधिक उपयोग के कारण उत्पन्न हुये प्रदूषण ने हमारी मिट्टी,जल एवं वायु को नष्ट कर दिया है। परिणाम स्वरूप वन्यजीवन कठिनाई में पड़ गया है। इसके अतिरिक्त मनुष्य ने अपने लाभ एवं लालच के कारण जानवरों का अनियंत्रित शिकार एवं उनकी तस्करी की है।

21वीं शदाब्दी में औद्योगिक सभ्यता के बढ़ते हुये अभावों के कारण असख्य जातियों के भविष्य को संकट में डाल दिया है। जिससे उनके एक साथ विलुप्त होने का खतरा बढ़ गया है। बिगड़े हुये पर्यावरण से मानव ही नहीं अन्य जीवधारी भी आतंकित है जिनकी सहनशक्ति हमसे कम है। जैव विवधता एक ऐसा संसाधन है जिसे फिर से बनाया नहीं जा सकता, इसका विलुप्तीकरण हमेशा के लिये हो जाता है। आज ऐसा कोई भी तरीका नहीं है जिससे लुप्त हुये पौधों और जन्तुओं को फिर से उत्पन्न किया जा सके। अतः जैव विविधता का संरक्षण किया जाये। भारत में सुरक्षित क्षेत्रों द्वारा वनस्पति जगत और प्राणी जगत को संरक्षण का इतिहास बहुत पुराना है। वन्य जीवन के संरक्षण का एक अच्छा तरीका है कुछ जानवरों वृक्षों तथा पुष्पों को राज्य या राष्ट्र के प्रतीक के रूप में घोषित कर दिया जाये। जैसे–कमल और पीपल को क्रमशः राष्ट्रीय पुष्प और वृक्ष माना जाता है। टाइगर और मोर क्रमशः राष्ट्रीय पशु व पक्षी हैं।

संस्कृत साहित्य में कवि कालिदास ने जगह–जगह पर जैव संरक्षण पर जोर दिया–

''न खलु न खलु बाणः सन्निपात्योडयमस्मिन् मृदुनि मृगशरीरे तूलराशीविवाग्निः।''

(अभिज्ञान शा.1/10)

अर्थात सुकुमार मृग के शरीर पर रूई के ढेर पर अग्नि के समान यह बाण न चलाइये।

प्रदूषण का मानव जीवन पर प्रभाव

प्रमोद पाठक एवं पुष्पा दुबे
हिन्दी विभाग, शासकीय कन्या महाविद्यालय, छतरपुर म.प्र.
हिन्दी विभाग, शासकीय स्वशासी महाराजा महाविद्यालय, छतरपुर (म.प्र.)

पर्यावरण एक व्यापाक शब्द है जिसका तात्पर्य समूचे भौतिक एवं जैविक विनय से है जिसमें जीवन की स्वाभविक प्रवृत्तियों का विकास होता है। इसे हम जीव मण्डल भी बोल सकते है जो जलमण्डल, स्थलमण्डल तथा वायुमण्डल का योग होता है। सामान्यतः पर्यावरण का अभिप्राय मात्र भौतिक या प्रकृति प्रदत्त कारक से लगा लेते हैं। लेकिन पर्यावरण शब्द में भौतिक, सांस्कृतिक तथा आर्थिक सभी प्रभावशील कारक सम्मिलित है। भौतिक पर्यावरण का अभिप्राय प्रकृति द्वारा बनाये कारकों से होता है जिस पर प्रकृति का सीधा नियंत्रण है जैसे सूर्य का प्रकाश, वनस्पति, जीवजन्तु इत्यादि। सांस्कृतिक पर्यावरण के अन्तर्गत मानव निर्मित कारकों को रखा जाता है जिन पर मानव का नियंत्रण होता है जैसे भवन, उद्योग इत्यादी। तुलनात्मक रूप से भौतिक पर्यावरण की सर्वोच्च सत्ता है तथा भौतिक पर्यावरण का वर्चस्व ही मानव जीवन के लिये अनुकूल है।