Climate Change and Global Health Management

Editor

Prof. Ashwani Kumar Dubey (FIASc; FESW; FSLSc)

(Zoology, Ichthyology, Biochemistry, Free Radical Biology,
Toxicology & Stress Monitoring)

The Editor

DR. ASHWANI KUMAR DUBEY(FESW, FIASc., FSLSc.) is a Leading Scientist, Environmentalist, Academician and current Researcher, in the beginning of 21st century in India. He is serving as Executive Director, Godavari Academy of Science & Technology, Environment and Social Welfare Society, Chhatarpur 471001 India. *He is dedicated to Environment, Education, Art and Sciences & Technology entire India since bi-millennium.* And he has delivered 6327+ Academic Lecture on relevant topics of Life Sciences and a distinguished fellow of the learned societies. He has born in Village Nahdora near UNESCO heritage Khajuraho in July 01, 1970. He is a graduate & Post Graduate of Government Maharaja College, Chhatarpur Madhya Pradesh and obtained his Ph. D. at Vikram University, Ujjain Madhya Pradesh, India at the age of 25. During this period his research field was Biochemistry, Free Radical Biology, Toxicology and Stress Monitoring. *He has devoted his life in Academic and Scientific research because of not having fulltime employment. Twenty Research papers have been published in International, National Journals*, Proceeding and in *Book.* Four Book published by Astral International; Eighty abstract in Souvenir/Abstract book. Seven Interdisciplinary academic article in Standard Magazine, *Two Scientific talk broadcasted by All India Radio. Eighty + Research paper presented in International and National Conferences/ Seminar/ Symposium as Invitee lecture and Delegates*.

After completing his Ph.D. he spent 2 years worked as a **Scientist (R&D)** in the Rank Industries Ltd., Nellore, in Andhra Pradesh State. During this service period his field was Pathological and Water Quality Assurance (Aquaculture). He was appointed as an **Assistant Professor of Zoology** at RBS College, Rajnagar, MP in 1998 and managed the College through a major transformation of its research and teaching. He played a major role in the design and construction of a new Fisheries Demonstration Centre at Godavari Estate, Nahdora-Khajuraho, India. In 2004 became the **Guest Professor**, in Higher Education Department, Government of Madhya Pradesh. For most of his career his research interests have focused on the Biodiversity, Environmental Impact Assessment and Bio-Resources Conservation. In 31 December, 2016 Joined as **Officer, Information Technology**, Maharaja Chhatrasal Bundelkhand University, Chhatarpur, MP with Responsibilities of Digital Financial Literacy Campaign, Research and Development, Cultural, UGC. Presently serving as **Professor & Head,** Department of Zoology, **Dean** Faculty of Science, **Chairman,** Board of Studies in Shri Krishna University, Chhatarpur, MP.

His personal interests include Reading, Writing, Traveling and Photography.

Dr. Ashwani is widely regarded as one of India's foremost experts on Zoology & Environmental sciences. He awarded many prestigious awards by National and International institution. He is in editorial board member of Research Journals in India, America, United Kingdom, Egypt, France, Syria, Nepal, Iraq, Sudan, Malaysia and Japan. And he is member of The Indian Science Congress Association, Government of India and Advisor of Research Board of America, USA.

Research output: Proposed peroxidative theory of mucous secretion in *Heteropneustes fossilis* published in Comp Biochem Physiol C Pharmacol Toxicol Endocrinol. 1995 Nov., 112(3): 309-13.

Currently: Honored for **Innovative and Dedicated Scientist** 2019.

ESW 7th Annual National Research Conference on

Climate Change and Global Health Management

01 & 02 February, 2020 at Khajuraho.

Organized by

Environment and Social Welfare Society, Khajuraho, Madhya Pradesh

Under Govt. of MP., Firms & Society Act 1973 Reg. No. SC2707/2K

Accredited by JAP Govt. of MP & NITI Ayog Govt. of India

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In Association

Bhopal Chapter, Bhopal, The National Academy of Sciences India

Zoological Survey of India, Ministry of Environment, Forest and Climate Change, Government of India

Assisted by

Godavari Academy of Science and Technology, Chhatarpur, MP

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07th Annual national research conference: 2020

Climate Change and Global Health Management

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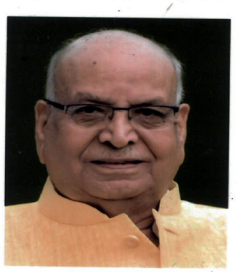
Secretary to Governor

सत्यमेव जयते



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क्रमांक 036/राजभवन/2020
भोपाल, दिनांक 25 जनवरी, 2020

संदेश

प्रसन्नता का विषय है कि एनवायरमेंट एंड सोशल वेलफेयर सोसाइटी द्वारा खजुराहो में सातवीं वार्षिक दो दिवसीय शोध संगोष्ठी का आयोजन किया है। संगोष्ठी में क्लाइमेट चेंज एंड ग्लोबल हेल्थ मैनेजमेंट विषय पर चिंतन सराहनीय पहल है।

ऊष्मीकरण के कारण पृथ्वी का दूषित होता पर्यावरण संपूर्ण विश्व के समक्ष एक ज्वलंत समस्या है। इस कारण आज पृथ्वी से करोड़ो जीव-जन्तु एवं वनस्पतियाँ विलुप्त और कई विलुप्त होने की कगार पर हैं। कोई भी राष्ट्र या व्यक्ति इसके दुष्प्रभावों से मुक्त नहीं है। पर्यावरणीय समस्याएं देश की सीमाओं के बंधन से मुक्त हैं। इन विकराल समस्याओं के समाधान के लिये राष्ट्रीय एवं अन्तर्राष्ट्रीय साझा प्रयासों की आवश्यकता है। ताकि हम विरासत में अपनी आने वाली पीढ़ियों को एक स्वच्छ एवं स्वस्थ पर्यावरण दे सकें।

आशा है संगोष्ठी का चिंतन जलवायु परिवर्तन समस्या और समाधान नई दृष्टि और दिशा का दर्शन करेगा। इस अवसर पर प्रकाशित स्मारिका विषय विशेषज्ञों और वैज्ञानिकों के लिए संदर्भ ग्रंथ हो संग्रहणीय होगी।

शुभकामनाएँ।

लालजी टंडन
(लाल जी टंडन)

डॉ कैलाश चन्द्र
निदेशक
Dr Kailash Chandra
Director

भारत सरकार
भारतीय प्राणि सर्वेक्षण
पर्यावरण, वन एवं जलवायु परिवर्तन मंत्रालय
Government of India
Zoological Survey of India
Ministry of Environment, Forest and Climate Change

Message

Greetings,

I am pleased to acknowledge that the Environment and Social Welfare Society, Khajuraho, Madhya Pradesh is organising the **ESW 7th Annual National Research Conference on Climate Change and Global Health Management** on 1st & 2nd February 2020. The goals of the conference are to discuss the most exceptional breakthroughs in Conservation and Natural Resource Management and also to bring both young and experienced scientists from all regions of the world collectively and to open up avenues for research collaborations at the national and global level.

Climate change is known to be a significant factor for degradation of biodiversity in recent times, primarily impacting the communities in both physical and socio-economic ways. Habitat loss, fragmentation and degradation of land, invasive alien species and overexploitation of natural resources, including plants and animals, are amongst the primary threats faced by biodiversity globally and in India.

Climate change also increasingly affects people's health and well-being and is increasing the frequency and intensity of heatwaves, droughts, extreme weather conditions and modifying the transmission of food-borne, water-borne and zoonotic infectious diseases, resulting in significant impacts on global health. I hope that the conference may lead to formulating the strategies and policies in context with climate change and global health management.

I convey my best wishes to **Dr Ashwani Kumar Dubey, Organizing Secretary** of the conference and his entire team of the organising committee of **ESW 7th Annual National Research Conference on Climate Change and Global Health Management** for all the success of the conference.

Dr Kailash Chandra

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कृषि भवन, कमरा संख्या 101, नई दिल्ली 110001

Indian Council of Agricultural Research
Krishi Bhawan, Room No. 101, New Delhi 110001

ICAR

डा. अ. अरुणाचलम / Dr. A. Arunachalam
सहायक महानिदेशक (अंतर्राष्ट्रीय संबंध)
Assistant Director General (International Relations)

MESSAGE

With global emphasis on sustainable development, climate change emerged as the major challenge that every country is addressing systematically to mitigate and/or adopt to enable resilience. In India, agriculture is the pivotal sector for ensuring food and nutritional security, and supports 18% of world human population on only 9% of world's arable land and 2.3% of geographical area. Despite the phenomenal growth witnessed in agricultural sector driven by Green Revolution technology that has made a significant dent towards ensuring food security, the subsequent stage of growth faces a serious challenge in terms of sustainability. In such a situation a renewable and lasting alternative, "sustainable agriculture" integrating environmental health, economic profitability, and social and economic equity, has to emerge for successful agricultural revolution.

In such context, conceptualizing sustainable agricultute based on sustainable area which is a combined reflections of crop suitability, productivity, economics of crop production and social acceptability has direct bearing on resource management. It is one of the mile stone in standardizing agro-technologies for arresting/reversing land degradation, combating climate change and achieving the targets of producing food grains for 2030 and 2050. Further sustainable area based agriculture is capable to spare adequate land for industry and infrastructure.

I appreciate the efforts the Environment and Social Welfare Society and Dr. A.K. Dubey in parricular, for putting up a theme based National Conference on Climate Change and Global Health Management, which is an excellent attempt towards sensitization and enhanced awareness on the subject. I am sure the Conference shall discuss on the comprehensive overview about the subject and shall recommend workable solutions for the policy makers to absorb in the enabling to achieve sustainable development goals including food security and health.

Dated the 23rd December, 2019
Place: New Delhi

(A. Arunachalam)

Phone: 011-23385065 Email: adgir.icar@gmail.com; arun70@gmail.com

Dr. Narmada Prasad Shukla
(MSc, PhD, MBA)
Member, Expert Appraisal Committee (Thermal Power, Coal Mines and Infrastructure 2)
Ministry of Environment and Forest & Climate Change, Govt. Of India,
Former Chairman, MP Pollution Control Board

Date: 10/01/2020

Massage

I am very happy to learn that Environment and Social Welfare Society, Khajuraho, Madhya Pradesh is organizing its 7th Annual National Research Conference on "Climate Change and Global Health Management" on 1st & 2nd February 2020 at World Heritage Site Khajuraho, Madhya Pradesh. It is a great privilege for me to be part of this conference.

Climate change is the biggest global health threat of the 21st Century. Risk to human health from climate change would arise through a variety of mechanism. According to the Intergovernmental Panel on Climate Change, extreme temperatures can lead directly to loss of life, while climate-related disturbances in ecological systems can indirectly impact the incidence of infectious diseases. On the other hand, warm temperatures can increase air and water pollution, which in turn harm human health. Thus, it is important to raise awareness of potential health impacts of climate change and action needed to reduce likelihood of adverse health outcomes to all key stakeholders.

I sincerely hope that this forum will cover and discuss the all the aspects related to impact of climate change on global health and also identify the gaps to streamline its effective management. Recommendations of this conference would be supportive for strategizing suitable measures.

I express my heartiest greetings and wish everyone productive and useful deliberations.

(N. P. Shukla)

डॉ० राजेन्द्र प्रसाद केन्द्रीय कृषि विश्वविद्यालय
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No. ...../ Dr.RPCAU (VC)

Date : 27/12/19

MESSAGE

I am delighted to know that the Environment and Social Welfare Society, Khajuraho, Madhya Pradesh is organizing its 7th Annual National Research Conference on **"Climate Change and Global Health Management"** during 1st & 2nd February, 2019 at World Heritage site Khajuraho, Madhya Pradesh.

As we know, the climate change has now been a global phenomenon with increasing frequency and intensity of heat waves, droughts, extreme rainfall and severe cyclones in many areas and affecting the transmission of food-borne, water-borne and zoonotic infectious diseases, resulting in large impacts on health. Moreover, these phenomena form parts of a wide pattern of consequences of global environmental change in term of loss of biodiversity and ecosystem stability. Hence the current situation and challenges call for a transformation in the way we manage our environment with respect to health and well-being. The 7th Annual National Research Conference on **"Climate Change and Global Health Management"** will provide a proper platform for discussion and deliberation on the impact of climate change on global health and strategy for its effective management.

I hope the outcome of this conference will go a long way in stimulating interest among scientists and policy makers in planning research strategy to combat the adverse effect of climate change for a healthy world population.

I wish for successful publication of the **Souvenir** and grand success of 7th Annual National Research Conference on "Climate Change and Global Health Management".

Srivastava

(R. C. Srivastava)

रानी दुर्गावती विश्वविद्यालय
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प्रो. कपिल देव मिश्र
कुलपति

Prof. Kapil Deo Mishra
Vice-Chancellor

Jan. 04, 2020

MESSAGE

It gives me immense pleasure to learn that the Environment and Social Welfare Society, Khajuraho is going to organize its ESW 7th Annual National Research Conference on "Climate Change and Global Health Management" on 01 & 02, February, 2020.

The subject matter of the conference is of great importance and very much relevant with the burning issue of climate change in global scenario and its impact on the health of mankind of the planet. I hope the various issues raised in the conference related to environment science will go a long way to strengthen the management of the global health.

I wish a grand success of National Research Conference.

(Kapil Deo Mishra)

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

महात्मा गाँधी चित्रकूट ग्रामोदय विश्वविद्यालय, चित्रकूट
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District -Satna (M.P.) - 485 334, INDIA
(Established by the Govt. of Madhya Pradesh through legislature by Act No.09 of Year 1991)
Grade 'A' Accredited by 'NAAC'

Prof. N. C. Gautam
Vice-Chancellor

Ref. VC/2020/75/5
Date : 11-01-2020

Message

I am happy to learn that Environment and Social Welfare Society is organizing ESW 7th Annual National Research Conference on "Climate Change and Global Health Management" on 1-2 February 2020 at Khajuraho, Madhya Pradesh, India.

Climate change affects the social and environmental determinants of health– clean air, safe drinking water, sufficient food and secure shelter. Between 2030 and 2050, climate change is expected to cause approximately 250 000 additional deaths per year, from malnutrition, malaria, diarrhoea and heat stress. The direct damage costs to health (i.e. excluding costs in health-determining sectors such as agriculture and water and sanitation), is estimated to be between USD 2-4 billion/year by 2030.

Areas with weak health infrastructure – mostly in developing countries – will be the least able to cope without assistance to prepare and respond. Reducing emissions of greenhouse gases through better transport, food and energy-use choices can result in improved health, particularly through reduced air pollution.

Climate change affects social and environmental determinants. Although global warming may bring some localized benefits, such as fewer winter deaths in temperate climates and increased food production in certain areas, the overall health effects of a changing climate are likely to be overwhelmingly negative.

Pollen and other aeroallergen levels are also higher in extreme heat. These can trigger asthma, which affects around 300 million people. Ongoing temperature increases are expected to increase this burden.

All populations will be affected by climate change, but some are more vulnerable than others. People living in small island developing states and other coastal regions, megacities, and mountainous and polar regions are particularly vulnerable. Facing the contemporary challenges of climate change and health Management. It is an appropriate time to contemplate these issues to create sensible strategy to overcome the climatic impact on human health.

I appreciate the efforts of ESW Society for organizing the conference. I extend my best wishes for the grand success of the conference.

11.01.2020
(N.C. Gautam)

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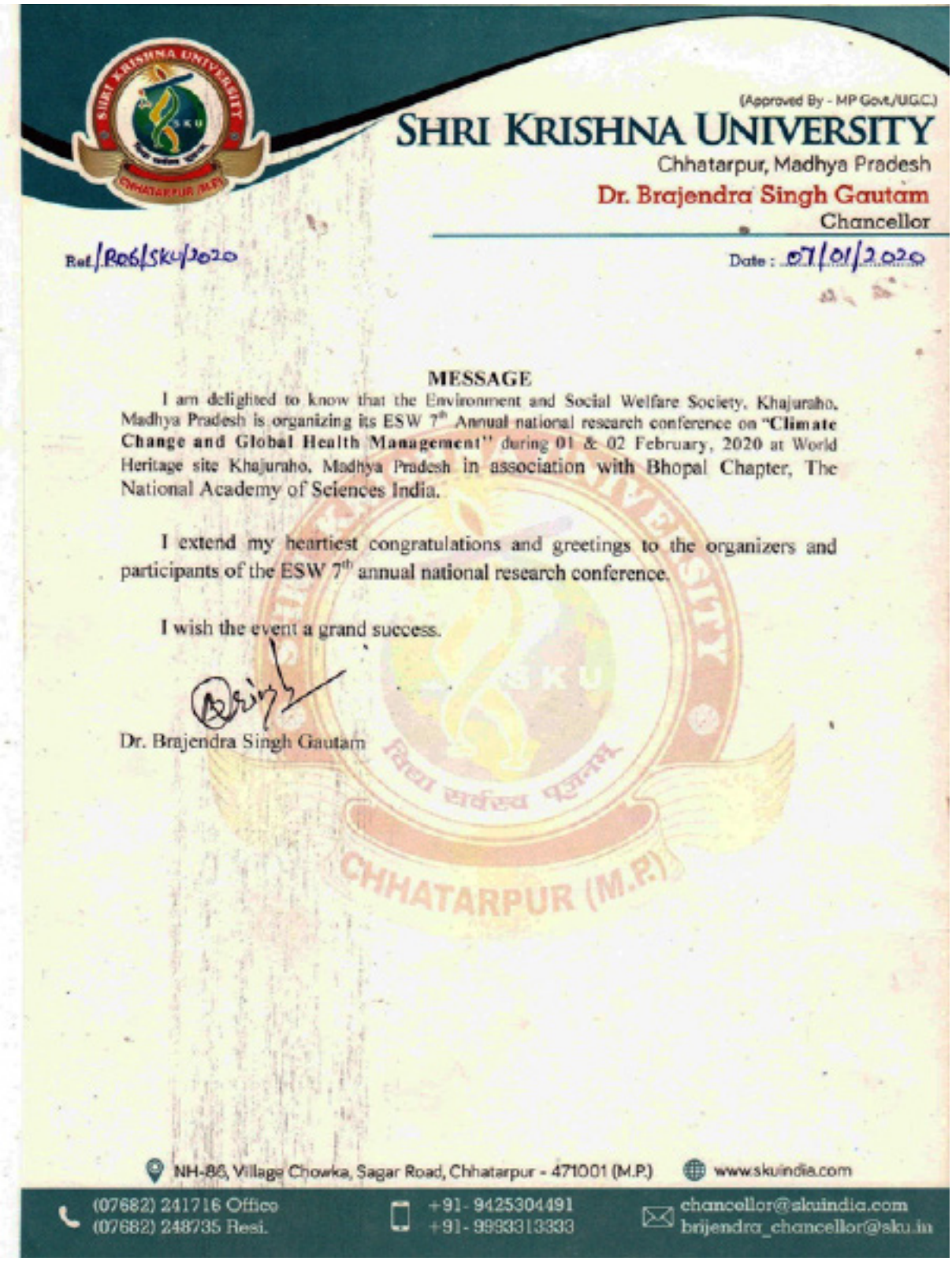

(Approved By - MP Govt./UGC)

SHRI KRISHNA UNIVERSITY

Chhatarpur, Madhya Pradesh

Dr. Brajendra Singh Gautam
Chancellor

Ref./RG/SKU/2020

Date : 07/01/2020

MESSAGE

I am delighted to know that the Environment and Social Welfare Society, Khajuraho, Madhya Pradesh is organizing its ESW 7th Annual national research conference on **"Climate Change and Global Health Management"** during 01 & 02 February, 2020 at World Heritage site Khajuraho, Madhya Pradesh in association with Bhopal Chapter, The National Academy of Sciences India.

I extend my heartiest congratulations and greetings to the organizers and participants of the ESW 7th annual national research conference.

I wish the event a grand success.

Dr. Brajendra Singh Gautam

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Acknowledgement

This is an honor for Environment and Social Welfare Society, Khajuraho, organize its The ESW VII Annual National Research Conference on "Climate change and Global health management", to be held during 01 & 02 February, 2020 at World Heritage site Khajuraho, MP, India assisted by Godavari Academy of Science & Technology, Chhatarpur, MP.

I am Thankful to Dr. Niraj Kumar, Executive Secretary, The National Academy of Sciences India, Allahabad, UP, Dr. Kailas Chandra, Director, *Zoological Survey of India*, Government of India, Ministry of Environment, Forest and Climate Change, Kolkota, West Bengal and **Ms. Annie Durrant**, Psychologist, 5, Tan Lan, Llanfrothen, Penrhyndeudraeth, Gwynedd, LL48 6SG, Wales, UK. for Support this conference to ESW Society to organize this Conference.

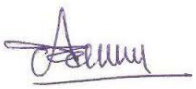
I am thanking to National institute Shri Krishna University, Chhatarpur, MP and Society of Life Sciences, Satna, MP. And International institute Technology Basha Research Corporation, Singapore.MONACHUS, Group of Scientific Research and Ecological Education, Hortensiei Alley, No. 8, 900518, Constanta, Romania."Dr.Fawaz Azki" Geological Museum, Kismin, Syria.for its Association in VII ESW ANRC-K 2K20.

It is my privilege and pleasure to express my profund gratitude to our Chief Guest Maharaja Pushpraj Singh Ju Deo, Member Indian Wild Life Board, Govt. of India, Member of Parliament (1990) and Former Education Minister. Guest of Honour Mr. C. B. Tiwari, Home Ministry, Govt. of India, New Delhi. Dr. Arunachalam, Ayyanadar**,** Principal Scientist in Forestry, Indian Council of Agricultural Research, New Delhi. Dr. Nandita Pathak, Social Enterpreneor, New Delhi.

I am heartily thankful to honorable Key note speaker Prof. H. S. Sharma former Professor and Head, Department of Geography, University of Rajasthan, Jaipur**.** 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 the Conference.

I am heartly thankful to Dr. Kanhaiya Tripathi, Former OSD to the President of India, Govt. of India. Prof Ramesh C Gupta Former Vice Chancellor, Radha Govind University India & Former Pro Vice chancellor Nagaland Central University, India who have kindly consented for Valedictory function & Award Ceremoney of this ESW VII ANRC-K 2K20

I am especially thankful to all delegates who actively participated in this Conference. I am thankful to Electronic and Print Media. I am profoundly thankful to my Board of Director and All members of ESW Society for their invaluable cooperation, and those entire person who are directly or indirectly concerned with this conference.



Dr. Ashwani Kumar Dubey

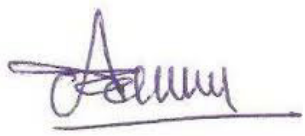
EDITORIAL

Climate change is the defining issue for the 21st century. Climate variables affect the air people breathe, the water they drink, the food they eat, and even where they are able to live. Extreme weather events are becoming the norm and records are constantly being broken, with the past three years ranking as the hottest since records began.

In the historic 2015 Paris Agreement on Climate Change, countries made important commitments to cut greenhouse gas emissions and scale up adaptation to climate change. But more needs to be done. As many have noted, the world is recklessly late in agreeing to take action.

The ESW VII Annual National Research Conference on ”Climate change and Global health management”, to be held during 01 & 02 February, 2K20 at UNESCO Heritage site Khajuraho, MP, India. The theme is “To take some positive steps towards improving our climate change and global health management for future generation” which will underpin the need for collaboration and cooperation of individuals from a wide range of professional backgrounds.

The ESW Conference will strive to offer plenty of networking opportunities, providing you with the opportunity to meet and interact with the leading professionals as well as sponsors and exhibitors. And also to provide a platform to Educational Administrators, College Principals, Deans, Readers, Head of Departments, Professors, Assistant Professors, Scientists, Environmentalist, Stakeholders, Researchers, Young scientists and Students to disseminate knowledge related to Nature Conservation, Resource Management and possible solution by Technological Approach.



Dr. Ashwani Kumar Dubey

About Environment & Social Welfare Society, Khajuraho

Environment & Social Welfare Society (ESW Society) *Dedicated to Environment, Education and Sciences & Technology entire India since bi-Millennium* is an ISO 9001:2015 certified organization of the India. Now it's worldwide known by its impact. ESW Society has been to develop relationship between Environment and Society envisions the promotion of Education and Sciences among the University, College and School students as well as in the society for Environment and Social welfare as well as Human Welfare.

It is registered under the society Act 1973, Government of Madhya Pradesh, India on 31 January 2000 with No SC2707. It was affiliated by Nehru Yuva Kendra Sangathan, Ministry of Youth Affairs and Sports, Government of India. It accredited by Madhya Pradesh Jan Abhiyan Parishad, Government of Madhya Pradesh, since 2013, also enrolled in Navankur Yojana with enrollment number NV2016CHH0062 Dated 29/09/2016. It is also registered with NGO-PS, Government of India And having The NGO-Partnership System, Portal (NGO-DARPAN), NITI Aayog, (National Institution for Transforming India), Govt. of India. ID MP/2014/0076324.

Object of The ESWSociety:

1. To establish, arrangement and management all around development in the field of Education and expansions of educational institutions.
2. To develop Ideal morality, Character building in the Children according to Indian tradition and Culture.
3. All around development of the Children. Arrange training programme to establish Self Employment Centre.
4. To organize Seminar for Environmental management, Pollution control, and establish Awareness centre for the same.
5. To make awareness for Social welfare. Check against Animal cruelty and to protect against cruelty and Tyrany.
6. Open animal house for improvement of animal health and provid necessary facility for them.
7. To highlight modern Technology, Computer, Games & Sports, Music, Art, Literature, and various languages Hindi, English, Urdu, and other foreign languages in the field of Education.
8. Establish Research Centre

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Language: English & Hindi
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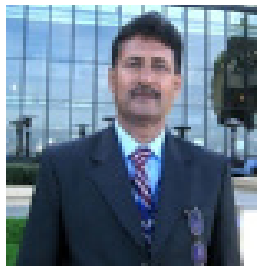

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Invited

Climate change with reference to India are we prepared for impacts of climate change?

H. S. Sharma
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The biggest story in Environmental Science today is Global Warming and Climate Change. Newspapers, Media and various reports have been creating a great deal of anxiety about our future because of global warming and the resultant climate change. It is being projected that climate is changing at a rapid pace because of human activities. However, supremacy of Nature is still evident. Global temperature is increasing that is likely to cause devastation. 11000 scientists of 153 countries in 2019 declared climate emergency (GEO Science Journal, 2019).It has been noted by this team that mean temperature of earth has increased to 0.74^0 C & mean sea level by 0.13M during last century. The World Metrological Organization (WMO) has released a new report (2019), that the global concentration of C_{02} in the atmosphere has touched to 407.8 ppm against pre industrial mark of 280 ppm .

Climate change is a dynamic phenomenon. It has been changing ever since the Earth was born about 4.5 billion years ago. Some times the change has evolved time periods of tens of thousand years to a few thousand or even hundred years. There are also records of climate change at a much faster rate in a few decades Climate changes during the last two centuries are evident that over the last century the average temperature has increased about 0.60 C around the world. A Closer look at 19th and 20th century temperature record shows three distinct trends.

- Warming trend – Late 19th century till 1940
- Cooling trend – 1940 until 1970's
- Warming trend – 1976 onwards

The paper has the following objectives:

- To analysis the trend of climate change at the National Level
- The study of Temporal variation and rainfall variation in Rajasthan

India experienced severe drought during 1987, 2002 and 2009 with deficient monsoon rainfall. Heat wave condition was experience in coastal areas of Andhra Pradesh in 2003.In 2005 India experienced very heat wave conditions in June over northern eastern parts.Mumbai experienced unprecedented rainfall of 94 cm within a period of 8 hours on 26 July, 2005. Heavy flooding is also recorded in Gujarat. India experienced heavy rainfall in August 2006 over north-west India especially Barmer in Rajasthan desert but in 2015 monsoon has been very weak through out India. However in 2016, there is experienced normal, below normal and heavy rain in western Rajasthan. 2019 monsoon in India prolonged for usually a longer period till the end of October.

Climate change projections made for India indicate an overall increase in temperature by 1 to 4^0C and precipitation by 9-16% towards 2050s (Krishna Kumar et al., 2011). However, different regions are expected to experience differential change in the amount of rainfall that is likely to be received in the coming decades. Another significant aspect of climate change is the increase in the frequency of occurrence of extreme events such as droughts, floods and cyclones.

All of these expected changes will have adverse impacts on climate sensitive sectors such as agriculture, forest and coastal ecosystems and also on availability of water for different uses and on human health. Historical trends also show a noticeable increase in mean temperature in the country though there is no discernible trend in the rainfall during the last several decades. However, regional variation in behaviour of monsoon rainfall was observed over the years.

Key Word Index: Climate change, India, monsoon

Role of Biofules and biotechnology in climate change and greenhouse gas mitigation

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The United Nations Framework Convention on Climate Change (UNFCCC) warned that global warming and related climate change issues are close to a point of no-return, which will bring deleterious consequences to many regions in the world. During Conference of the Parties (COP21), at Paris Climate Conference, (2015) a legally binding and universal agreement on climate change was achieved, with the aim of keeping global warming below 2 °C. In order to constrain warming to such a level, the current annual 3% CO_2 emission growth rate needs to transform rapidly to an annual decrease rate of from 1 to 3% for decades. New technologies will have to be developed and deployed at a rapid rate, especially for the key power generation and transportation sectors.

Increasing level of population growth, industrialization and prosperity is leading to extensive use of energy, 88 per cent of which comes by burning of fossil fuels. CO_2 is major contributor of greenhouse gases. Besides this three major non-CO_2 group of gases– CH_4, N_2O and fluorinated gases (F-gases), including CF4, HFCs and SF6 also contribute to the GHG emissions.Anthropogenic emissions of greenhouse gaseshave led to increasing atmospheric concentrations, the primary cause of the 0.8 ºC warming the earth has experienced since the industrial revolution.

More than 3800 zettajoules (one zettajoule = 1×1021 joules) of solar energy are annually absorbed by Earth's atmosphere and surface, from which only 0.05% is captured through photosynthesis. Photosynthetic organisms like plants and some microorganisms such as algae, microalgae and photosynthetic bacteria absorb and incorporate CO_2, initially originated from atmosphere, via photosynthetic processes.

International Energy Agency (IEA) defines biomass as any plant matter, serving directly as a fuel or delivering fuels, electricity or heat. Bio-based energy sources preserve the environment by reintegrating carbon dioxide, released from their combustion, into photosynthetic cycle, thus avoiding net CO_2 buildup into atmosphere.The sustainable transition of the economy from fossil-based commodities to biomass-based alternatives is the biggest research challenge for the next decades.

Global biomass feedstocks are classified into three general groups of agricultural raw materials : a) amorphous sugars (e.g., starch, simple sugars like glucose, etc.), b) Lignocellulosic or woody biomass (the nonedible portion of biomass, e.g., bagasse, corn Stover, grasses, wood, etc.) and wood residues from wood product industry, including paper mills, sawmills and furniture manufacturing, which are currently the largest biomass source for energy production, and c) Triglycerides (e.g. vegetable oil). Oil triglycerides are obtained from various renewable feed stock lipid resources, such as

seeds of nonedible plants like *Jatropha*, palm kernel, pongamia etc., edible vegetable oils (sunflower, rapeseed oil), animal oils or fats and wastes of cooking oils. They address substantial challenges related to energy security, socioeconomic development, economic prosperity, environmental sustainability and climate change mitigation. Economic sustainability requires long-term profitability, minimal competition with food production and competitiveness with fossil fuels. A single biofuel satisfying all aspects completely does not exist.

Research in biomass production, which is convertible to transportation biofuel, utilizing high yield crops that grow on arid land ideally requiring little nutrients, less water, fertilizers and energy input, has been carried out during last 20 years at University of Rajasthan, Jaipur (Kumar et al. 2018). Crucial issues, some uncertainties, constraints and consequences emerged that could influence bioenergy's future, re-evaluating large-scale bioenergy potentials. They comprise greenhouse gas balance of bio-energy and climate change, economic and population growth, environmental implications of large-scale bio-energy use, land use, availability and degradation, population and food demand. Biotechnology can also produce a variety of alternative energy sources from different biomass feed stocks and enhance crop production supplying bio stimulators and superior soil and plant conditioners. Details shall be presented.

Reference:

Kumar, A., Ogita, S., Yau, Y.-Y. (Eds.) (2018). Biofuels: Greenhouse Gas Mitigation and Global Warming Next Generation Biofuels and Role of Biotechnology Springer, Heidelberg, Germany. pp.432. ISBN 978-81-322-3761-7**2.**

Key Word Index: UNFCCC, International Energy Agency, Biotechnology

Climate change and global health

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Many scientists predict disaster, disease, loss of nutrients, pollution, excessive heat , high humidityand annihilation. They also say about sea level rise. Glacier melting and water pollution. Some research, often manipulated or rather haphazard and incomplete are cited as proof. To any geologist who studies palaeocimate these are like pseudo-science. The truth is being distorted. Actually we are in a period of interglacial and it is not human interference. Most of the time the earth's atmosphere had more co2 and the life on earth had flourished. IIf low lying land will be submerged some high altitude land and permafrost region will be livable. Cops and fruits will grow better. There will be more wetlands and all know wetlands support life better than arid areas. I FEEL THE OVERALL EFFECT WILL BE A WARMER AND HEALTHIER EARTH

Key Word Index: Climate change, global health, India, disaster

Climate effects & Food Security - New Entries: Thorny Cactus Pear – New choice: Food, Feed & Human Pharmacy

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Due to abnormal climatic diversities current dimension of food security circle needs reasonable expansion, extension and enlargement .Boundary of our planet is define and limited, thus time has come to search new entries and look beyond conventional sources of food; in search of such agents cactus pears seems to be an ideal one which deserves a relook .There is no doubt, Since ages, cactus bears colorful flowers and fruits yet because of its thorny nature it was always looked with suspension. This fear psychology has hampered to exploit cactus potentials resulting scanty literature resulting for utilization. By and large scientific world has ignored this plant. It is only in 80's when data on cactus Pear started to pour and today we know physicochemical characteristic of its various vegetative parts, chemical nature of its colorful pigments, to go further we have data on total phenol, flavonoids, sugar and minerals present in juice, pulp, leafy pad. A part from above it is interesting to note that a number of amino acid like, proline, glutamine, taurine, serine, alanine, glutamine acid, methonine, lysine, cystine together with reduced glutathione have been identified in various parts of cactus pear.

With the presence of bioactive molecule like amino acids, phenols and vitamins and large number of minerals like Ca, Mg, Fe, Na and K it is logical to think of its biological role. In fact in recent time an increased interest in its antioxidant activity and health improving capacity has been registered. To name few it exhibits neuro-protective actions against the oxidative injuries induced in cortical cell culture, it decreases platelet activity their by providing beneficial actions on cardiovascular system which also include spasmolytic effect on the coronary arteries and promoting circulation, strengthening the heart muscle eventually every form of cardiovascular diseases, it gives its best performance in treating cardiac rhythm disorders and mitral value prolapsed which involves in weakness in heart value. Its protective spectrum is very wide which include; anticancer, antiviral, anti inflammatory, anti diabetic, anti hyperlipidemic and hyper cholesterotmic. Prickly pear cactus has been also used to treat; ulcers, allergies, fatigue, rheumatism, anti uric and diuretic.

On the functional food & nutriceutical front, it is good source of fiber, juice is rich in minerals and pulp is now part of specialize, ice cream, jelly, candy, margaritas and many more.

While to look in to its art of "inside" actions, it is very interesting to re-observe its chemical profile with presence of sulfur amino acid taurine in significantly high concentration (572.1mg/L of cactus pear pulp). Taurine chemically; 2- amino ethane sulfonic acid; has convincing role in protective effect of various organs dysfunctions. It is more or less now established that taurine protective actions are mediated through its antioxidant character or osmo-regulation, stabilization of cell membrane, as well as management of cations specially Ca^{+2} . It is involve in "host defense" and also refer as megavitamin to functional nutriceutical because of all these known beneficial activities of taurine, it is perhaps logical to conclude that taurine is the major contributor to antioxidant and other beneficial properties of cactus pear.

A part from cactus Pear role in human welfare it is the only feeding and watering resource for animals during drought seasons. With its "in sane" nutritional quality, ability to prevent and cure aliments; with such wonderful gift of nature we can proudly say; we have ourselves a magical super food with care and cure ; cactus pear and for sure this plant can be analogies to the multiple uses of Aloe Vera or even more in coming decades.

Key Word Index: Climate effects, Food Security, Thorny Cactus Pear, Food, Feed, Human Pharmacy

Mitigating environmental problems with Homa Therapy And the impacts on Human Health and Agriculture

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Pollution of the atmosphere, the soil, and water resources patterns is one of the biggest problems of our time and it affects all areas of life including human health and agriculture. In this situation it seems plausible to make use of every method including traditional knowledge which may help to overcome these problems (as it was suggested in the Convention on Biological Diversity (known also as the Rio Convention).

Homa Therapy with Agnihotra as its basic tool comes from ancient Vedic Knowledge and has wide-reaching beneficial effects on our whole environment, means on our atmosphere, on the soil, and on our water resources. Bacteria in air are reduced, water purified, and beneficial bacteria in soil prosper whereas harmful microbes are controlled.

The medicinal power of plants which is now reduced because of pollution is again restored in Homa Atmosphere, and also biodiversity is increased.

But this method has to be understood and evaluated in terms of modern science. This will be done - the method will be explained, and its application in solving environmental problems in different areas will be shown.

The presentation will give an overview on the research done so far on future research suggested about how Agnihotra and Agnihotra Ash help to mitigate problems of the pollution of our atmosphere, the soil, and water resources.

Also the impact of an environment purified by these methods on human health and on plants will be shown.

We are creating a healthy microclimate with Homa Therapy methods – and if more and more people are joining these efforts, climate disasters can be avoided.

Key Word Index: Pollution of Soil, Water, Atmosphere; Biodiversity; Human Health; Agriculture

Climate change and Himalayan flora and fauna- impact, monitoring, vulnerabilities and adaptations

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Climate change is one of the most important global environmental challenges and the many types of impacts are needed to be understood and assessed, vulnerabilities needed to be addressed, while adaptation strategies have to be developed. The Himalayan ecosystem not only provides mountain goods and services but also biodiversity, community diversity and cultural diversify.

The eastern Himalayan region is considered to be one of the mega hotspots of the world. Due to increase in temperature, change in vegetation, rapid deforestation and scarcity of drinking water, habit destruction and corridor

fragmentation may lead to be a great threat to extinction of world flora and fauna. A recent study suggested that a quarter of land animals and plants, altogether 1 million species, could be extinct by the middle of this centaury.

Huge anthropogenic pressures have led to destruction of mountain forests. In the Himalayan mountain systems, the timberline/tree line and snowline represents two most recognizable biological boundaries. Global warming associated with upward migration of altitudinal boundaries and consequent change in the snowline position and its biodata is an important factor for initiating long term monitoring in the Himalayas.

Agriculture is highly dependent on weather and changes in global climate have major effects on crop yield and food supply. Weather also impacts soil and plant growth; and animal growth and development. Horticulture is an important source of income of the Himalayan people. Irregular rainfall and snowfall; change in climatic condition; and rising temperatures affects fruit production. Global warming is a key threat to biodiversity. Global warming represent perhaps the most pervasive of the various threats to the planets biodiversity, given its potential to affect even areas far from human habitation. The present study is focused on damages caused by global warming on the flora and fauna of Himalayan region of Jammu and Kashmir. .

Key Word Index: Flora, fauna, Global warming, threat, environment.

Role of Open Universities to achieve Sustainable Development Goals Perspectives from Developing Countries

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Higher Education is expected to play a central role to achieve the Sustainable Development Goals (SDG). It has brought systems of Higher Education at the forefront of development agenda across the world. It is now well realized and understood that , Universities have to play an increasingly proactive role to address the issues of SDGs.Further, article 12 of the Paris Agreement calls for effective mechanisms for climate change education, training, public awareness, public participation and public access to information. However this task is challenging specially in developing countries where the target groups to be addressed are vulnerable, poorly capacitated to adopt new practices, depend on highly climate sensitive livelihoods and largely live in remote and rural areas. The conventional ways of capacity building, fail to serve the educational requirements of such target groups

During the past few years Indian Universities have launched several initiatives for Curriculum Development, Programme Delivery and Community Outreach Programmes to address the issues of sustainability. Open and Distance Learning systems are ideally positioned to address these issues primarily because of their flexible and innovative ways of functioning. This paper critically examines the role of Open Universities in the context of sustainable development, reviews the initiatives taken by them and explores the future course of action.

Climate change mitigation potential of India in the renewable energy sector: Issues and policies for its management

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Addressing the G-20 summit in Buenos Aires, Argentina, in 2018, Prime minister of India stated that the strategies to deal with the climate change are rooted in the Indian Vedas. So, addressing the problem of climate change might be the new phenomenon to the changing world but it has always been in the Indian soil since time immemorial. But what exactly is the problem of climate change?

Climate change is one of the most critical global challenges of our times. Recent events have emphatically demonstrated our growing vulnerability to climate change. Climate change impacts will range from affecting agriculture – further endangering food security – to sea-level rise and the accelerated erosion of coastal zones, increasing intensity of natural disasters, species extinction, and the spread of vector-borne diseases.

One of the most common variants is the global warming. Global warming is a phenomenon of climate change characterized by a general increase in average temperatures of the Earth, which modifies the weather balances and ecosystems for a long time. It is directly linked to the increase of greenhouse gases in our atmosphere, worsening the greenhouse effect. Due to the impact of the global warming, the average temperature of the planet has increased by 0.8º Celsius (1.44° Fahrenheit) compared to the end of the 19th century. Each of the last three decades has been warmer than all previous decades since the beginning of the statistical surveys in 1850.At the pace of current CO_2 emissions, scientists expect an increase of between 1.5° and 5.3°C (2.7° to 9.54°F) in average temperature by 2100. If no action is taken, it would have harmful consequences to humanity and the biosphere.

Various initiatives at the world level has been organized from time to time. Like for example, on 23 September, 2019, the Secretary-General of the United Nations António Guterres hosted the Climate Action Summit in New York. He appealed to all the leaders of the world to come concrete, realistic plans to enhance their Nationally Determined Contributions (NDCs) by 2020, in line with reducing greenhouse gas emissions by 45 percent over the next decade to net zero emissions by 2050.

Key Word Index: Climate change, India, Renewable energy, Issues and policies, management

ABSTRACT

Aloe sp. – The genus that groups about 500 species of medicinal plants

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Aloe sp. are sub-tropical species of the Asphodelaceae Family. Naturally, they grow in northern, eastern and southern Africa (including the African islands - Madagascar), around the Mediterranean and the Red Seas, in the Arabian Peninsula, India, China and in the Indian Ocean islands.

On the Globe there are about 500 species, some of which are common in our homes as ornamental plants in pots of different sizes and shapes, pleasant in shape of their leaves.

Under various uses, these plants have been used since ancient times by Egyptians, Persians and other Oriental peoples, Romans and Greeks, Africans, Aztecs, etc. Mentioned in holy books, *Aloe* species have been and are used by all peoples of the globe.

Named by the ancient Egyptians the *"plant of immortality"*, the name *Aloe* comes from the Arabic language *"aloeh"* meaning *"crystalline and bitter sap"*. The most well-known species is *Aloe vera*, rich in natural substances (vitamins, oils, minerals, sugars, hormones, amino acids, enzymes, etc.) that give it excellent medicinal properties.

It is an excellent 100% natural "doctor" for any lesser or greater affection: *a)* in combination with propolis and mint form an excellent toothpaste, who get rid of any dental or oral problem; *b)* in combination with cranberry, apple, citrus, peach, and other plants, is an excellent natural remedy for kidney, muscle, bone, digestive, cutaneous, ocular, immune disorders...and the list goes on; *c)* is an excellent natural treatment for any type of cancer. Eliminating surgery and killing chemotherapy, aloe-therapy not only cleanses the body from all cancer cells, but also restores it; *d)* is an excellent detoxifying and regenerating whole body.

This plant is successfully used in our International Center of Geo-Bio-Medical Research / in our International Clinic G.M.S.A. in treating different serious or less serious health problems. Bio-medical problems of the skin and its formations, of the uro-genital apparatus, of the blood and of the cardio-vascular apparatus, of the osteo-articular and muscular system, of the nervous system and of the brain, problems caused by cysts, tumors, nodules, etc., problems of the endocrine system, problems of the broncho-pulmonary system, problems of the oral cavity and of the digestive tract, problems related to demineralization and avitaminosis, problems related to the general detoxification of the body and its complete recovery have been solved in our international clinic.

Key Word Index: Aloe, holy plant, plant of immortality, natural treatment.

Generation of free radicals and oxidative stress in mitochondria

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Oxidative stress refers to the imbalance between free radicals and their stabilizing agent's anti-oxidant enzymes in the body. The reactive oxygen species and free radicals can be produced by normal cellular metabolism and reacts with bio molecules like protein, lipid, DNA etc. ROS causes cellular damage. At low concentration the free radicals plays a vital role in cell signaling process and normal physiological functioning but their high concentration causes damage to cell. The anti-oxidant prevents cell from harmful effects of free radicals by donating its own electron to free radicals. The reactive oxygen species are generally peroxide, superoxide, hydroxyl radicals, and singlet oxygen. The ROS are produced from pollutants, tobacco, smoke, drugs, etc. The high level of reactive oxygen species or free radicals causes various disorders in human being. The main site of free radical generation is the mitochondria. Here, the respiration continually takes place in the presence of oxygen. The anti-oxidants are responsible for the lowering the amount of free radicals in the body.

Key Word Index: Reactive Oxygen Species (ROS), Anti-oxidants, Oxidative Stress, Mitochondria

Development of a novel Zebrafish Model for the study of diabetes mellitus

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Diabetes mellitus is a metabolic disorder characterized by hyperglycemia and alterations in carbohydrate, fat and protein metabolism. DM is often accompanied with several complications such as atherosclerosis, neuropathy and cataract formation. The National Health Policy 2017 of India aims to increase screening and treatment of 80% of people with diabetes and reduce premature deaths from diabetes by 25% by 2025. Zebrafish (*Danio rerio*) exhibits many features of vertebrate models apart from physiological and anatomical characteristics of higher organisms that attracted scientists all over the world for its use in biomedical researches. Zebrafish exposed to diabetogenic agents such as alloxan monohydrate (AM), streptozocin (STZ) and glucose water solution (GLU-W) to induce diabetes mellitus (DM), and if left normal after induction of DM then it has been observed that subjects metabolised the elevated glucose level and showed high degree of glucose homeostasis. Exposure of 100 mg of AM/100 ml and 200 mg of AM/100 ml for 30 mins are not capable to induce DM in the subjects whereas exposure of 300 mg of AM/100 ml and 400 mg of AM/100 ml for 30 mins are able to induce DM in the zebrafish. Mortality has been recorded in the group treated with 400 mg of AM/100 ml. Overall, dose of 300 mg of AM/100 ml for 30 mins is found to be suitable to induce DM in the subjects. Zebrafish showed diabetic when treated with AM thenafter 1% GLU-W minimum for 30 mins but when the subjects left normal after induction, blood glucose level went down with respect to time. It was also observed that when the subjects kept in different GLU-W (1%, 2% and 3%) for minimum 21 days then 21 days required for inducing DM in the subject treated with 1% GLU-W treated subjects whereas 1% and 2% GLU-W showed diabetes just after 7 days and 4 days onwards. Streptozocin (0.35mg/gm of body weight) exposed with its booster dose was found to maintain diabetes in the subject for

21 days without any mortality which may be helpful for the researchers' working on secondary complications of DM taking zebrafish as a model.

Key Word Index: Diabetes mellitus, Zebrafish, Alloxan monohydrate, Streptozocin, Glucose water solution

Avian Diversity around the Chandhara-Manibugh wetland in Pampore Kashmir Himalayas

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The study on the ecology of avian diversity was carried out from 2016-2019 in the Chandhara area which is a historical site of Pampore (saffron town)in Kashmir about 13 km from headquarter Srinagarand also a birth place of renowned Princess-Poetess Habba Khatun, wife of the King Yousuf shah E Chak. The area has a Chandhara-Kranchu wetland (33°, 452 , 32 North latitude and 74R", 552 , 35 East longitude) seen from the north of Chandhara's Galchabal sideand positionedon the west of link road joining Chandhara and Kranchu to Galander side. It is spread on an area of 16 acres with nearby fields of paddy are grown by the populations of Chandhara and Kranchu villages. It has Chandhara village on its south named as Waganhud and small village Kranchu on the north side. Besides, other diverse land use by way of willow/ popular plantations, orchards and saffron cultivation add spectrum of food and niches to this fragile and productive ecosystem, paying a way for its rich and varied avifauna. The plateau area in its vicinity from south to north side is famous for the farming of cash crop saffron (Kesar).The wetland is fed by a small spring called 'Goonjan Nag', considered as a prone site of snakes by local population, located on the eastern side of Chandhara-Kranchu link road. Besides, this wetland is fed by seasonal rains and snow melt water. It also receives outflow water from an irrigation channel found at some distance towards its north western side. It is bordered by paddy fields on its northwest and southern sides. However, the Chandhara- Kranchu wetland adequately buffers the permanent bird refuges for night feeding on the left over paddy after harvesting. The wetland recorded a total of above forty (40) species of birds belonging to seventeen (17) families with mainspecies of avifauna belonged to Rallidae, Alcedinidae and Anatidae. Birds like Moorhen **(***Gallinule chloropus),* Whiskered Tern (*Chlidoniashybridus*), Great Reed Warbler (*Acrocephalusarundinaceus*), Rufous backed Shrike (*Laniusschach*), Little Bittern (*Ixobrychusminutus*), Pond Heron (*Ardeolagrayii*), Dabchick/Little Grebe (*Tachybaptus rufficollis*), Small Blue Kingfisher (*Alcedoatthis*), Water rail (*Rallusaquaticus*) and Rudy breasted crake (*Porzana* fusca),White breasted Kingfisher (*Halcyon smyrnensis*), and

Yellow headed Wagtail (*Motacillacitreolacalcarata*). The six Bar-Headed Geese were first time seen in November-December 2017 and were labelled as 'rare'.There number goes to 23 in November 2019 after heavy snowfall in the first week of November in the Kashmir valley Besides, other included Mallard (*Anasplatyrhynchos*),Teal (*Anascrecca*), Gadwall (*Anasstrepera*), Greylag Goose (*Anseranser*),Bar headed geese (Anserindicus),Ruddy Shelduck (*Tadornatadorna*), Common Teal (*Anascrecca*), Northern Pintail (*Anasacuta*), Eurasian Wigeon (*Anas Penelope*), Garganey (Anasquerquedula), Northen Shoveler (Anasclypeata),Common Pochard (Aythyaferina), White-eyed or Ferruginous Pochard(Aythyanyroca), Red-Crested Pochard(Nettarufina), Pheasant tailed Jacana (Hydrophasianuschirugus), Pond Heron (Ardeola*grayii*), Blue Throat (*Erithacussvecicus*), Pipit (*Anthus novaeseelandiae*), common Common Snipe (*Capella gallinagogallinago*), Little Egret (*Egrettagarzetta*), Grey Heron (*Ardeacinerearectrirostris*) and Pied Wagtail (*Motacilla alba*), Pied Kingfisher (*Cerylerudis*), Small Blue Kingfisher (Alcedoatthis), Marsh Harrier (*Circus aeroginosus*), European Lapwing (*Vanellusvanellus*), Great Tit (*Parus major*) and Common Starling (*Sturnus vulgaris). Keeping in view the ecological importance and other waterfowl abode Chandhara-Manibughshould be visited regularly in order to recognize the aspects of ecology and conservation of waterfowl in these delicate wetlands for the long term management*.

Key Word Index: Avian Diversity, Chandhara-Manibugh wetland, Pampore, Kashmir, Himalayas

Climate Change and Global health Management

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Climate Change is increasingly affecting people's health and wellbeing. Different kinds of natural calamities have become common and natural patterns have changed drastically in the past few decades. Numerous problems resulting in health challenges such as the heatwaves, extreme rainfall, glacial meltdowns, droughts and severe cyclones have increased significantly in recent times. Apart from this, the pattern of transmission of different kinds diseases have changed due to climate change resulting in impacts on health. Increasing temperature escalates the spread of various diseases, especially those transmitted by mosquitoes. South Asian region is regarded as one of the most vulnerable places in terms of effects of climate change. Apart from the environmental changes in the region, there has been spreading of different diseases. But the health facilities and system is not prepared to tackle these challenges. For example, in the summer of 2019, Dengue was widespread in the capital city of Nepal, Kathmandu. The disease was unheard of in the city in the past years, as Kathmandu did not used to be as hot and the Dengue mosquitoes were not found in the city. But last year, its spread was epidemic, but the city lacked health professionals and facilities to properly handle the situation. This is just an example, which, in recent times has become a problem in many parts of the world. Thus, while trying to tackle various challenges of climate change, its impact on health management should be given a priority, and plans and policies to create solutions for these problems should be sought out.

Key Word Index: Climate Change, Global Health, Diseases, South Asia

Potential fishing zone advisories: A promising tool for precise fishing

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Marine fisheries is important and sunrise sector in India it provide livelihood to millions of people and contributing to the food security of the country. Marine fisheries play a vital role in economy with vast marine fisheries resources in tern of 8118 km coastline, 2.02 million km^2 Exclusive Economic Zone (EEZ), 0.503 million km^2 Continental shelf having immense scope for development of fisheries to strengthen the food security, generate employment opportunity and earn foreign exchange with the ultimate objective of improving socio economic status of fisheries and other people engaged in the sector. The estimated marine fish landing of India was 3.69 million tonnes in 2017-2018. Potential fishing zone advisories are liable and short term forecast on the fish aggregation zone in the open sea. PFZ forecasting by Indian National Centre for Ocean Information Service (INCOIS) would be useful to fishermen in searching the productive fishing ground with respect to time and energy spent in fishing operation in the sea. INCOIS disseminates PFZ advisories in local languages three time a week to the entire coast line of India by fax, phone, internet, email, newspaper and radio broadcast. These advisories indicate the likely availability of fish stock for next 2-4 days. Satellite derived chlorophyll and sea surface temperature (SST) information over the Arabian Sea and Bay of Bengal are the basic inputs for generating this information. Adaption of PFZ advisories will help us to bring blue revolution by various ways such as it helps to locate the productive fishing ground, reduction in search time by 30-70% and catch per unit effort is also high in PFZ.

Key Word Index: Marine fisheries, PFZ advisories, Precise fishing, Blue revolution.

Planktonic Biodiversity and its importancerole in fish production on Majalgaon Dam reservoir, Maharashtra State, India.

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Majalgaon Dam was 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 useof 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 33 species of phytoplanktons, 29 species of zooplanktons and 11 species of fishes were identified.

The importance of plankton in fisheries is well established. It has been clearly demonstrated that the zooplankton constitute the only food for the fish fry and the adult fish not only eat them, but also select them as a delectable item.Thus zooplankton have a direct bearing in the fish industry. In India, several studies were conducted in reservoirs elucidating the

characteristics of zooplankton.The zooplankton peak was found during summer followed by winter and rainy season.Microfauna (zooplankton) was observed about four groups as Rotifera observed about eleventh species, Copepoda observed about nine species, Cladocera observed seven species and Ostracoda observed about two species.

The macrofauna or fish fauna were observed at the Majalgaon Dam reservoir. There is culture of fish with quick growing varieties of fishes including Indian Major Carps, exotic species have been popular in recent time. There is abundance of the species such as *Labeorohita, Cirrhinamrigal, Catlacatla, Cyprinuscarpio, Silver carp, Wallagoatta, Mystacenbelusarmatus, Notoptemus chital, Puntuesticto, Channastaitus, Mystusseenghala, Mystuscavaassius, Eutroplussuratensis, Belonconcila, Chela, Tilapia Mossambica, Rohteealfrediana, Gobiusgiuris,* etc.Fish is economically a very important group of animals beside being used as food. Fish liver is an important source of oil containing Vitamins A and D, several minerals and protein.

Key Word Index: Phytoplanktons,zooplankton, pollution, fish production.

Climate change: Towards resilience and sustainability

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The threat of climate change looms large over the sub continent and India is an exception in no way. Most of the countries including ours have a large percentage of the arable land under rain fed conditions. The rainfed regions are more prone to be hit by rising temperature Due to the rising temperature there has been a melting of glaciers, rising of sea-level leading to inundation of the coastal areas, changes in precipitation patterns leading to increased risk of recurrent droughts and devastating floods, threats to biodiversity, an expansion of pest and a number of potential challenges for public health (IPCC, 2007).

Climate change is now largely being recognized as an important threat for the agricultural sector worldwide. Due to the increase in concentration of Green House Gases in the atmosphere the global temperature has been rising. The temperature has increased by 0.76^0 C in the period 1906-2005 (Pathak et al, 2012). The effects of Global warming may result in reduce of yields of crops like wheat, Paddy, maize and important fruit crops. Even the livestock, fisheries, insects pests will have to bear the burnt of the rising temperature. In the short/medium term (up to 2025), rural poor communities will be more strongly affected by the impact of extreme events than the impacts of changing means (Corbera *et al*., 2006). Most of the countries including India are facing the problems of rising temperature, melting of glaciers, rising of sea-level leading to inundation of the coastal areas, changes in precipitation patterns leading to increased risk of recurrent droughts and devastating floods, threats to biodiversity, an expansion of pest and a number of potential challenges for public health (IPCC, 2007). The global sea level has risen at the average rate of 1.8mm/year during 1961-2003; the rate has been faster during 1993-2003 (@3.1mm/year). Floods that use to occur every 100 years are predicted to start coming every 5-25 years in many parts of the world. The failure of corn crop in USA in 2012 which resulted in dramatic increase of prices in that year was not due to the drought that occurred that year. The yield of the crops had already been decimated earlier in the season when during the pollination period of the plants overnight temperatures failed to drop and so the plants did not produce ears of corn.

Climate change is not an instantaneous phenomenon. It is the result of decades of excessive use of chemicals coupled with our faulty agricultural practices. The indiscrimate use of chemical during green revolution period no doubt increased our production but it also brought with it various health hazards, the pollution of air, water and land. Such was the intensity of the hazard that huge tracts of land turned unfertile due to salinity, water bodies became polluted and risk of deadly disease increased manifold. All of us knew the cancer turn which runs from Punjab to Ganganagar in Rajasthan carrying patients suffering from cancer. Now, agriculture represents a unique case which contributes to climate change as well as gets affected by it. There are various agricultural practices which contribute to green house gases in the atmosphere furthering the process of Climate change. The use of chemical fertilizers that release huge amount of gases, submerged paddy cultivation, the Jhum cultivation practised in north east also emit green house gases which increase the temperature of the earth thereby leading to climate change. Agriculture resilience is about equipping farmers to absorb and recover from shocks and stresses to their agricultural production and livelihoods. It is the ability of the peoples, communities, governments and systems to withstand the impacts of negative events and to continue and grow despite them.

Key Word Index: Climate change, worldwide, green house gases

Gangetic fish diversity: Current scenario and future prospects for their sustainability

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The river Ganges is the largest river in India and the fifth longest in the world (2550 km). This contribution focuses on the diversity of fish population and their conservation aspects in the biggest freshwater zone of India. In this connection, current distribution and abundance of freshwater fishes of river Ganges was documented and described 143 freshwater fish species in the all stretches of the river. The rivers which are tributaries in the upper stretch of river Ganges, are rich and important habitats of ûsh to breed and spawn as protected areas in consultation with local communities. In the middle and lower stretches of the river Ganges the conservation strategies for ûshes must take into account the life history traits and habitat requirements of migratory species. Biological characters of the many species are still unknown and therefore studies are needed. Of the 143 freshwater ûsh species, about 20% of ûsh species in Ganges were assessed as threatened category following IUCN Red List Criteria. More number of threatened ûshes found in upper stretch (26%) followed by lower (23%) and middle (20%). A total of 10 exotic ûsh species were recorded from the river Ganges and distributed in all stretches of Ganges. The relative abundance was recorded highest for *C.carpio* (50.14%) followed by *O.mosambica* (25.82%) and *C.gariepinus* (12.29%). *C.carpio* was distributed in all the stretches of the river. In the upper stretches alone three species viz., *C.carpio* (3.02%), *C.carpio* var. specularis (0.14%) and *O.mykiss* (0.27%) were recorded whereas in the middle stretch 7 species viz., *C.gariepinus* (0.04%), *C.idella* (0.22%), *C.carpio* (1.76%), *H.nobilis* (0.03%), *H.molitrix* (0.01%), *O.mossambicus* (0.98%) and *O.niloticus* (0.31%) and in the lower stretch 5 species viz., *C.carpio* (0.21%), *H.nobilis* (0.02%), *H.molitrix* (0.04%), *O.mosambica* (0.17%) and *Ptrerigoplichthysanisitsi* (0.01%). A total of 59 species were recorded from the Turtle Sanctuary located in the middle stretch of river Ganges. Alterations of the hydrological pattern due to various types of hydro projects was seems to be the largest threat to fishes of Ganges. Indiscriminate and illegal fishing, pollution, water abstraction, siltation and invasion of exotic species are also threatening the fish diversity in the Ganges and as many as 29 species are listed under threatened

category. The study advocates a need to identify critical fish habitats in the Ganga basin to declare them as conservation reserves to mitigate the loss of fish diversity from this mighty large river.

Key Word Index: River Ganges–Freshwater fish diversity–Distribution–Abundance–Conservation issues–India

Impact of global warming on aquatic ecology

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Biological diversity refers to the variety of plants, animals and microorganisms that exist. Biodiversity is important as it helps to keep the environment in a natural balance. An ecosystem which is species-rich is more resilient and adaptable to external stress. In a system where species are limited, the loss or temporary reduction of any one could disrupt the complex food chain with serious effects on other species in that same system. Once biodiversity is sufficient, if one nutrient cycling path is affected another pathway can function and the ecosystem - and the biological species it supports - can survive. Elsewhere, tropical rainforests, in particular, have provided many beneficial products, from natural medicines to biological control agents for agriculture. The status of our biodiversity has always been dynamic. Over millions of years, under natural conditions, some species have increased in variety or numbers and others have been reduced or lost.

The Asian continent, encompassing an area of 17,139,000 square miles (44,390,000 square kilometers), almost occupies 30% of the world's land area. Asia covers such an enormous area and contains so many mainland countries and island nations including India. India (20.5937° N, 78.9629° E) has the total area of 3,287,263 sq km land: 2,973,193 sq km water, bordering the Arabian Sea and the Bay of Bengal, between Burma and Pakistan. Water is one of the most vital factors in the existence of the organism on this planet. The risk that China and India will be facing severe water shortages due faster economic growth, global warming, climate change, and demands of growing populations by mid century.

We need to preserve as many individual species as possible and also preserve as many types of ecosystems, because each one serves a different and important function with global warming.

Key Word Index: biodiversity, conservation, environment, ecosystem, global warming.

Conserving resources through resource conserving technologies

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The environment today is threatened by the rising temperature, pollution of soil, air and water bodies, land degradation, loss of bio diversity, decreasing yield of crops, increased incidences of flood and drought and hunger and malnutrition. The RCTs bring many possible benefits including reduced water and energy use (fossil fuels and electricity), reduced greenhouse gas (GHG) emissions, soil erosion and degradation of the natural resource base, increased yields and farm incomes, and reduced labor shortages.

The agriculture sector is also witnessing a real fatigue with declining factor productivity, decreasing human resources, rising cost of inputs and labour that has made this sector non remunerative. Thus, there is dire need of an

energy, water and labour efficient alternate system that helps to sustain soil and environmental quality, and produce more at less cost.

The various resource conservation technologies practiced all across the globe and across a variety of climatic, soil and geographic zones have proved to be energy and input efficient, besides addressing the emerging environment and soil health problems. The technologies involving zero or minimum tillage, direct seeding and sowing across the slope, bed planting, residue management, crop cover, growing leguminous crops, precision farming, site specific nutrient management, crop rotation and diversification, use of organic manures and soil test based fertilizer recommendation have potential for improving productivity and soil quality, mainly by soil organic matter (SOM) build-up, growth of soil micro organisims and increased nitrogen fixation. Water conservation through farm ponds and other artificial water harvesting structures have the potential to conserve this precious resource as well as recharge the ground water table in water scarce rainfed regions of the country. Research studies have revealed that laser land results in about 25% reduction in irrigation water application and an increase of about 30% in wheat yield as compared to conventional practices (non-laser leveled field). Cover crops also reduce the problem of soil erosion. Beside their above-ground functions, cover crops fulfill important functions below the ground. Their root systems contribute to preventing soil compaction, tapping soil moisture from deeper horizons below the root zone of the main crops or recycling nutrients such as nitrates, potassium, calcium and magnesium that are easily leached to deeper soil horizons.

Key Word Index: Environment, Threatened, Temperature, Pollution, Soil, Air, Water, Land degradation, loss of biodiversity.

Effect on female reproductive hormone of Wistar rat: UV Induced Hyperthyroidism

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UV-B radiation emitted by sun and environmental pollution being the most abundantly found all over the place in the world affecting both animal and human health. The present study demonstrated that UV-B exposure induced hyperthyroidism and their changes on ovarian hormone. In addition, we investigated the protective effect of antioxidants (Ascorbic acid and Curcumin).In this experiment, animals divided into four groups. First group was control,second group was UV-B treated, and third group was UV-B + Ascorbic acid, and fourth group UV-B + Curcumin. After experiment collect blood and centrifuge then stored serum in -20ºC and use hormonal estimation. Although the results of this study UV-B induced hyperthyroidism andascorbic acid and curcumin showed the protective effect on thyroid and ovarian hormones.

Key Word Index: UV-B, hyperthyroidism, ascorbic acid, curcumin, Wistar rat

Reproductive hormones alteration in Hypothyroidism in *Swiss albino* mice

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The economy of developing nations like India is agriculture based and the problem of pest id big challenge to farmers and science as well. After independence the food scarcity was the major problem due to population explosion. To full fill the food requirement Dr. M.S. Swaminathan introduced the 'Green Revolution' in 1961 that was mainly focused upon the pesticide use to enhance the production.In 1996-97 the demand for pesticide in India is estimated to be about Rs. 22 billions that is about 2% of word market. This indiscriminate use of pesticide causes problem to plants and animals including humans and environment as well. In this investigation the toxic dose for chronic exposure of cypermethrin an insecticide is given to male mice orally. After experiment mice were sacrificed and blood collected for serum and concentration of thyroid hormones was estimated and found that the mice undergo hypothyroidism on exposure. The hypothyroid condition also affects reproductive hormonal concentration and causes toxicity in reproductive organs. The finding of this investigation concluded that the thyroid hormones plays important role in growth and metabolism and also maintained the proper reproductive physiology. In case of thyroid alteration the normal physiology of reproductive organs are also altered. The purpose of this investigation to aware the farmers to stop the indiscriminate use of pesticides because the overuse of different pesticides affects the human health globally. The accumulation of pesticides either through direct exposure or through biological magnification is acts as slow poison that affects the human health globally.

Key Word Index: Cypermethrin, thyroid hormones, reproductive hormones, hypothyroidism.

Study ofcyclic changes of Wistar Rat: Radiation Induced Hyperthyrodisim

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Hyperthyroidism is one of the most common occurring thyroid conditions in the world. Hyperthyroidism is affected by various environment factors including drugs, toxin, chemicals, radiations etc. UV-B radiations are the important radiation of Sun and generated toxic effect on animals and their physiological process. The present study UV-B exposure induced hyperthyroidism and their changes on estrous cycle. In this experiment, animals divided into two groups. Female Wistar rat were exposed to UV-B radiation daily fifteen days and after interval of one week alternate duration of experiment collect blood and centrifuge then stored serum in -20ºC. During experiment vaginal smear were collected and stain with crystal violet and studied different phases of estrous cycle under microscope. This study for the first time establishes a direct link between UV-B exposure and enhanced estrous cycle thereby enhances diestrus phase of Wistar rats.

Key Word Index: UV-B, hyperthyroidism, cyclic changes, Wistar rat

Natural reservation "Fântânia-Murfatlar" – "OASIS" of potential medicinal plants in Dobrogea, Romania

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Fântânia-Murfatlar reservation is one of the first declared natural reserves on the territory of the present Dobrogea Region - Romania, with a special scientific and practical importance. The geographical position of Dobrogea in southern Europe, the presence of the Black Sea, the soil structure, the special climate of the Dobrogea Region, the history and geological evolution of the Dobrogean territory, have influenced, over the geological and paleontological time, the geological and biological characteristics of this natural reserve. Since its official declaration as a nature reserve, Fantanita-Murfatlar has attracted the attention of many Romanian researchers but also from other countries, who have been interested in studying its unique biodiversity.

From a taxonomic and biogeographical point of view, the reserve is home to 515 species of plants of which many Pontic, Balkan, Sub-Mediterranean, Eurasian elements. The limestone slopes and limestone plateau of Sarmatian age, covered by a layer of chernozem, which forms the reserve, are "covered" by plant species (trees, shrubs and grasses), many rare (some, rare for Romania!) and endemic with a special value, or described for the first time in Romania from this reservation, as well as infraspecific taxa that give a special value to this flora. All of these species have potential therapeutic value, and can be successfully used to treat different conditions. Future studies and research within our International Center of Geo-Bio-Medical Research will further demonstrate this.

Located near the access roads and the human settlements (about 21 km from the Constana Municipality and in the vicinity of the city of Murfatlar), the reservation has become very badly affected, many rare and endemic species being endangered.

Key Word Index: Fântâniþa – Murfatlar, natural reservation, medicinal-rare-endemic plants, Dobrogea, Romania.

An Inventory of Butterflies in riparian vegetation along river Narmada at Hoshangabad

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The word *riparian* is derived from Latin word '*ripa*', meaning river bank. Plant habitats and communities along the river margins and banks are called riparian vegetation. The riparian vegetation is rich in biodiversity. This vegetation has important features and resources for the survival of animal communities, providing high humidity, temperatures that are cooler and more stable than that of the surrounding landscape, low light incidence and abundant food resources. Butterflies are especially dependent on specific resources associated with environments with high humidity and abundant

food resources. Butterflies respond quickly to environmental and climatic changes are relatively easy to monitor. Therefore, butterflies are good models for ecological studies. A stretch of ten kilometers along river Narmada from Hoshangabad to Bandrabhan was trecked and studied several times from 2014 to 2019. The photographs of butterflies were clicked during these visits. In this paper an inventory of butterflies found in the riparian vegetation of river Narmada is given along with type of vegetation and host plants. 58 species of butterflies were observed out of them 07 species belong to family *Papilionidae*, 11 species belong to family *Pieridae,* 10 species belong to family *Lycaenidae,* 22 species were of family *Nymphalidae* and 08 species of *Hesperidae* are reported in this paper. Some host plants of these butterflies are also recorded in this paper.

Key Word Index: Butterflies, Riparian region, Narmada, Hoshangabad.

On Local Perception of Climate Change and Its Impact on Birds in Kashmir

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Weather is of major significance for the population dynamics of birds, but the implications of climate change have only recently begun to be addressed. There is already compelling support that birds have been affected by recent climate changes. The metabolic rate of birds is not only affected by weather (e.g. cold weather requiring increased energy expenditure for body maintenance) but also exerts other direct and indirect effects on bird behaviour. The extreme weather events, like prolonged frozen spells and droughts, can have catastrophic effects on bird populations, including long-term effects on whole cohorts. Birds are generally admired for their beauty, songs, and the beauty of their near miraculous ability to fly without recognizing their role direct or indirect to the Ecosystem Services. Birds are marvelous indicators of environmental health which offer humans pleasure, joy and spiritual motivation. The main reason to study climate change and its impact on birds is to promote understanding of the ecosystems that support all life on earth, including human beings. In this study, a well designed and validated questionnaire was used to collect the information from a sample of 400 local people from Kashmir valley. The main aim of this paper was to find out the perception and approach of local people towards climate change and its impact on birds. The data collected from the survey was analyzed using standard statistical tools. The result of our study revealed from people perception that increase in temperature, unpredictable rainfall, increase in frequency of disaster and decrease in food production has direct impact of birds. Further, the study revealed that local people showed interest towards birds, nature and wildlife preservation. Finally, to cope with climate change impact, it was suggested that education programmers be introduced among the people to increase awareness about the role played by birds in our lives, significance of wildlife conservation and management amidst changing climate.

Key Word Index: Climate change, Perception, Approach, Birds, Kashmir, Preservation, Statistics

Life Skills and Education

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Life skills are abilities for adaptive and positive behavior that enable individuals to deal effectively with the demands and challenges of everyday life. Described in this way, skills that can be said to be life skills are innumerable, and the nature and definition of life skills are likely to differ across cultures and settings. However, analysis of the life skills field suggests that there is a core set of skills that are at the heart of skills-based initiatives for the promotion of the promotion of the health and well-being of children and adolescents.

Life Skills are listed below:

- Decision making
- Problem Solving
- Creative thinking
- Critical thinking
- Effective Communication
- Interpersonal relationship skills
- Self-awareness
- Empathy
- Coping with emotions
- Coping with stress

Key Word Index: Life skill, positive behavior, Self-awareness

Morphometric based prioritization of sub-watersheds of Banne watershed for Natural Resource Conservation, Chhatarpur District, (M.P.) India

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Morphometric analysis gives quantitative information of a drainage basin. The objective of the present study of Banne watershed, Chhatarpur district of Madhya Pradesh, India is to compute various morphometric parameters and to prioritize its sub-watersheds. The work has been carried out with the significance of IRS-P6 LISS III data and Digital elevation model for the assessment of drainage pattern and extraction of morphometric parameters. Geologically the study area is a granitic terrain traversed by variously oriented joints and fractures. Basin has been divided into11 sub-watersheds; Morphometric parameters have been calculated for each sub-watershed to prioritize Banne Watershed.

In the prioritization process, the basin (sub-watershed), displaying lowest compound value of Morphometric parameters, is ranked as Ist and belongs to "high" priority category and was considered as high priority for adopting conservation measures as well. The rank and prioritization decreases with increasing compound values of morphometric parameters. The suitable locations for conservation measure structures in prioritized sub-watersheds were also identified for the appropriate soil and water conservation plan.

Key Word Index: Banne watershed, Chhatarpur, Geologically

Decentralized Access Control with Anonymous Authentication of Data Stored and data compression in Clouds with the help of ECC and Haff-man

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Here we are representing the methodology and implementation in decentralized access control with anonymous authentication of data stored in clouds were all the drawbacks related to data stored in clouds system are eliminate by the application of various security level in the clouds system .These implementation will help to secured data in clouds system from various Wrapping attacks, Malware - Injection attacks, Flooding attacks, Browser attacks, and also Accountability checking problems .Protection of data over the clouds system must be main goals. We identify the root causes of these attacks and propose specific solutions. With the use of this method we can reduce data compression and type environmental solution.

Key Word Index: Malware

Genetically Modified Crops: Concerns and Issues

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The biggest challenge before biologists and scientists is to feed and heal the world with existing resources that are fast diminishing. Creating genetically modified (GM) crops is one among several innovative approaches that have not attained the popular success, the scientists claimed them for few decades back. Most concerns about GM crops and specially food crops fall into three categories *i.e.* environmental hazards, human health risks, and economic concerns. While the human health issues are of utmost importance, the environment and economical feasibility are the deriving support in present day society that is well aware of the concept of coexistence and harmony between biotic and abiotic factors. Long term environment and health monitoring programs in favor of GM plants either do not exist or are inadequate to convince the masses. There is a growing concern that introducing foreign genes into food plants may have an unexpected and negative impact on human health. It has been reported that one third of all eukaryotic proteins lack a three dimensional structure and the term 'intrinsically disordered protein' has been introduced to describe such proteins. These disordered segments of proteins may result in allergenicity, in multi faceted forms which may be the possible cause of various harmful health effects. Besides, there are evidences that GM crops are sometimes ill adapted to the challenges

facing global food and agriculture systems, and have failed to materialize the goals outside the lab, or have unraveled when faced with the real world complexities of agricultural ecosystems, and needs of farmers. Environmental hazards include the unintended harm to non targeted organisms. Non GM advanced methods of plant breeding are already delivering the sorts of traits being expected from GM crops, including resistance to diseases, flood, salinity and drought tolerance. Further, GM crops are also supposed to restrict innovation due to intellectual property rights owned by a handful of multinational corporations. One cannot afford to ignore potential benefits of genetic engineering and its allied technologies, as they have been looked at as feeding, healing and fueling the world in the coming times of resource depletion and innovation. In order to avoid unintended harm to human health and the environment because of our enthusiasm for this powerful technology, all must move with conscience and care. The paper deals with the issues pertaining to GM crops with a critical and analytical outlook, so that doubts and fears regarding their uses be taken up and answered.

Key Word Index: Genetically Modified Crops, biologists, scientists

Noise Pollution in Big Cities: Law Helplessness

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Human beings are taken to be the most important species on this earth. For the long lasting survival of this species, these human beings create a society surrounding them and that society develops according to the environment within them and in the environment gifted to them by God through nature. In a healthy environment, some healthy minds develop. For a healthy mind, a healthy physical being is required and it is possible only if we have a healthy environment. Now what do you mean by a healthy environment? Is it restricted to a healthy food only? No, it's not. Rather it extends up to the fresh air, hygienic water and pollution free earth. But, the tragedy is, being part of the highly polluted cities, we lack in having a safe and sound environment. Our civilization which was originated from foot movement has now grown up to jet airs. This journey from foot to air has no doubt blessed us with great technology but also disguised us with polluted society.

When one burns, he is not only seen by us but also heard by us. His voice seems to be very pleasant to our ears. But when he grows up, speaks for his demands, enjoys on fulfillment of demands, the ways of his enjoyment (music, parties, vehicles) become causes of noise. The other aspect also, the baby born in our society today knows the definition of noise as he burns in a noisy environment which is a regular part of our lives.

Years from now, a lot of people living in big cities e.g. Bombay, Delhi, Hyderabad, Agra, Ludhiana, Nasik and a long list, are suffering from this disease of noise pollution although we all know that a less noisy environment will constitute a better health in all ages. Despite stringent laws in hand, the problem is getting higher and higher. In the past thirty years, noise in all areas especially the urban areas have been increasing rapidly and having numerous effects on the human environment.

In this paper, I tried to touch three aspects:

- General aspects e.g. causes and effects of noise pollution
- Legal aspect e.g. laws available, role of judiciary and their success in controlling noise pollution
- Suggestions and steps to solve the problem of noise pollution

The focus of the study is that slowly, insensibly, we seem to accept noise and the physiological and psychological deterioration that accompanies it as an inevitable part of our lives. Although we often try to set standards for some of the most major sources of noise, we often are unable to monitor them.

Key Word Index: Noise Pollution, healthy mind, Bombay, Delhi, Hyderabad, Agra, Ludhiana, Nasik.

The threat of climate change and global warming

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The threat of climate change and global warming is now recognised worldwide and some alarming manifestations of change have occurred. The Asian continent, because of its size and diversity, may be affected significantly by the consequences of climate change, and its new status as a 'hub' of livestock production gives it an important role in mitigating possible impacts of climate variability on animal health. Animal health may be affected by climate change in four ways: heat-related diseases and stress, extreme weather events, adaptation of animal production systems to new environments, and emergence or re-emergence of infectious diseases, especially vector-borne diseases critically dependent on environmental and climatic conditions.

To face these new menaces, the need for strong and efficient Veterinary Services is irrefutable, combined with good coordination of public health services, as many emerging human diseases are zoonoses. Asian developing countries have acute weaknesses in their Veterinary Services, which jeopardises the global surveillance network essential for early detection of hazards. Indeed, international cooperation within and outside Asia is vital to mitigating the risks of climate change to animal health in Asia.

Key Word Index: Threat, Climate change, global warming, worldwide

Human Rights and Khap Justice

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Had Vedpal an iota of doubt about the authority of Chandigarh High Court in his mind he could not have lost his life. His fault was that he fully relied in the authority of High Court in rescuing Sonia his legally married wife back. Sonia's father wrongfully confined her in his house. July 23rd 2009 will be treated as black day in the history of Indian human rights. Just 21 days after when decision in Nazi Foundation case was delivered by division bench of Delhi High Court comprising A.P Shah CJ and his companion judge S. Murlidahr. J. Decision is a mile stone in post independence era of human rights. The barbaric behavior of the villagers of Singhwal in Zind district of Haryana one of the most prosperous states of country has not only given a jolt to the justice dispensing system of the country but has tarnished the image of the country beyond repair. What the world thinks of us is that there exist in India an extra constitutional authority in the form of Khap Panchayat which can overrule the directives of High court and Supreme Court.

Judiciary had a formidable role in reforming society through a series of land mark judgments. Apex court on a public interest litigation directed Tamilnadu government to restrain itself from withdrawing all the criminal cases against the notorious bandit poacher and sandal wood smuggler Veerappan and grant him general amnesty. Even it protected the rights of non citizens. In Chairman Railway Board v Chandrima Das reported at (2000) 2 SCC 465 the Apex court awarded exemplary damages to Bangladeshi woman whose right to life and liberty was infringed by the employees of the Railways.

Key Word Index: High Court, Indian human rights, Supreme Court

Biological Control of Mosquito Larvae with Larvivorus Fishes

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Biological control of mosquito larvae with predators and other biocontrol agents would be a more-effective and eco-friendly approach. The Selection of a biological agent should be based on its self replicating capacity, preference for the target pest population in the presence of alternate natural prey, adaptability to the introduced environment, and overall interaction with indigenous organisms. Biological larviciding for the control of mosquito borne diseases is feasible and effective only when breeding sites are relatively few or are easily identified and treated. Larval control appears to be promising in urban areas, given that the density of humans needing protection is higher than the limited number of breeding sites. Fish have been employed for controlling mosquito larvae. Different types of fish have been used so far in this operational technique. However, use of fish of indigenous origin is found to be more appropriate in this operation. This review presents information on different carnivorous fish species and the present status of their use in mosquito control and provides a ready reference for workers involved and interested in mosquito research.

Key Word Index: Biological control, mosquito larvae, predator, biocontrol agents

Threatened Freshwater Fishes of District Jabalpur, Madhya Pradesh, India

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A total of 23 species of freshwater fishes belonging to 5 orders, 10 families and 20 genera from the Jabalpur district were reported as threatened. Jabalpur district is situated in the heart of Madhya Pradesh State and located between 23°10' North latitude and 79°59' East falling in the river basin of ancient and holy river Narmada. The district encompasses a total area of 5211 sq. km. A number of rivers snake through the district forming the part of Narmada basin. Some of the rivers that form an important part of the topography of Jabalpur district are Narmada, Hiran and Vanganga. In fact, Narmada is the principal river of the district. It originates from Maikal Range and enters the Vindhyas and Satpuras at Marble Rocks Gorge at Bhera Ghat about 22 kms away from Jabalpur city.

The study of Fish diversity of Jabalpur district is of utmost important from geographical view point. In the past various workers have studied fish fauna of the district. Our revisionary studies and the more material made available through recent surveys has revealed that the number of species existing in the district are 123 which belonging to 9 orders,

23 families and 68 genera (Ojha and Thilak, 2008). Out of which 23 species comes under IUCN category and termed as endangered fish species.

Key Word Index: Threatened fresh water fishes, IUCN, endangered, Jabalpur (MP).

Avifaunal diversity and conservation with special reference to anthropogenic pressure in Jiwaji University Campus, Gwalior, Madhya Pradesh, India

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Birds are the eminent creature of nature they used different types of habitat for feeding, nesting, and sheltering purposes. They are a group of endothermic vertebrates with a high metabolic rate, a four-chambered heart, and a strong lightweight skeleton. Avifaunal diversity plays a very important role in determining the health of an ecosystem. The present study was carried out in the Jiwaji University campus which spread over an area of 225 acres midst of the city. The study was conducted over a period of 12 months from July 2018 to June 2019. The bird species were recorded using point counts and line transects method where ever possible for studying avian diversity, population abundance and the impact of anthropogenic pressure on regional avian diversity. Anthropogenic pressure was observed in Jiwaji University Campus given value on a scale of 0 to 5 through personal observation. A total of 52 species belonging to 32families and 13order were recorded during the study period. Of these, 25 species belong to the order Passeriformes which accounted for 45% of the total species, making it the order with the highest number of species. A total of 8% species accounted for migratory and 4% species of near threatened were recorded. This study provides baseline data for monitoring the avifauna in the University campus and demonstrates the importance of university campuses in bird conservation.

Key Word Index: Avifauna, Diversity, Anthropogenic pressure, Shannon diversity, Jiwaji University.

Climate change, its impact on water resources and implication to ecosystem functioning

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Challenges due to climate change pose huge threat to water, food security and the well being of 1.3 billion population in India. India, in the past, has experienced several extreme weather events leading to devastating impacts. The distribution and occurrence of water in the country is variable due to the consequences of increase in temperature, shift in precipitation patterns and melting of snow cover. The impact of climate change on water resources also vary significantly in different regions of the country, therefore, can not be generalized. In this study, we present a comprehensive study of the impacts and implications of climate change specially focussed on occurrences of droughts and floods. The study has been complemented by two case studies to understand the extended ramifications of extreme climatic conditions over ecosystem productivity and vegetation condition in all major river basins of India. The study will facilitate the understanding of the current and future challenges due to climate change and help decision makers to frame

sustainable policies and risk management plans.

Key Word Index: Climate change, water resources, ecosystem, temperature

Occurence of common trinket snake *Coeloganthus helena helena* (Daudin, 1803) (Colubridae: Colubrinae) in residential area, Dehradun, Uttarakhand

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The present communication deals with the occurrence of Common Trinket Snake *Coelognathus helena helena* (Daudin, 1803) belonging to family Colubridae in Sirmor residential area of western Dehra Dun city and its systematic account, distribution, habitat, food & feeding, breeding, behaviour and conservation status. It is beautifully coloured non-venomous constrictor snake, brownish with black cross bars lodged with white ocelli on anterior part, two longitudinal blackish stripes on sides of posterior part, two parallel black stripes on neck, a black streak each below and behind eye and whitish below.

Key Word Index: Common Trinket snake, Dehradun, Uttarakhand.

Sighting Asian koel *Eudynamys scolopaceus scolopaceus* (Linnaeus, 1758) (Cuculiformes: cuculidae) at Shikohabad (Firozabad district, Uttar Pradesh) in off season

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Recently Asian Koel *Eudynamys scolopaceus scolopaceus* (Linnaeus, 1758), belonging to family Cuculidae under order Cuculiformes (Cuckoos), a female which was brownish, spotted and barred with white (male glistening black), was sighted in winter season in a residential area at Shikohabad (Firozabad district, Uttar Pradesh) which is unusual and hence interesting as the bird is commonly seen during summer months visiting fruit-bearing trees like mango, litchi, oleander etc. with its characteristic shrieking crescendo call '*kuoo-, kuoo-kuoo*' by male (female's differ '*kik-kik-kik*'), in northern India. It is a famous brood parasite and lays its 1-2 egg in the nests of crows (House Crow and Jungle Crow), coincident with that of its host's time. They, also sometimes, parasitize nests of other hosts (Long-tailed Shrikes and Common Mynas).

Key Word Index: Sighting Asian Koel in off season.

Efficient Removal of As (lll) using graphene based biopolymer nanoparticles in coalfield effluent of Haldibadi, Manendragarh (Chhattisgarh).

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The haldibadi coalfield is the most important and active mining region of manendragarh. Various coal mines discharge their effluent in hasdeo area. The life line of the around Hasdeo area manendragarh city. Toxic metal in in coalfields effluents is important issue in water and waste water treatment effect on human health. Toxic impurities of heavy metal found in coal effluents Pb, Hg, Ni, Sn, Cd, Sb, As, Cr. These pollution it is one of the major environment challenges today. Of all technologies that have been proposed to remove contaminants. Adsorption is recognized worldwide as an attractive option due to its versatility and economic. Graphene based biopolymers nanoparticles give excellent results in the removal of toxic metal ion from water and wastewater. Due to their unique structural characteristic and great adsorption capacity for toxic metal ion. Graphene, a two dimensional nanomaterial having single atom graphite layers. and have its unique physico–chemical Properties.

Graphene based biopolymers nanoparticles was prepared through emulsion crosslinking method. And used as an efficient adsorbent for removing As (III) from waste water. The biopolymer nanoparticles were characterized by X-ray diffraction, Transmission electron microscopy, FTIR, AAS, Vibrating sample magnetometer, the impacts of PH, Contact time, adsorbent dosage, Temperature were investigated. The adsorption mechanism, Kinetics and thermodynamic were analyzed.

The Adsorption performance dependent an adsorbent dosage, A lower dosage favors a higher Adsorption quantity implying a strong adsorptive potential for graphene and graphene oxide biopolymers nanoparticles The adsorption quantity reached 779.26 mgcg -1 , given the dosage 100 mgCL -1 , The adsorption is monolayer chemisorption in terms of thermodynamics. The adsorption is an exothermic and spontaneous process. The present work focused on the efficiency of the adsorption is considered.

Key Word Index: coal effluent treatment, graphene and graphene oxide, grapheme composite materials, adsorption, heavy toxic metals [Arsenic (III)] Thermodynamics, Kinetics, AAS.

Ecofeminism and Its Impact on Environment

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Women have long been neglected in the process of development; a secondary role is usually assigned to them whether in taking part in crucial issues related to development as beneficiaries of the process itself. Women's participation in the development is a positive concept, elated to their ambitions and aspirations that symbolizes their conviction about their personalities in relation to society. An analysis of the past efforts at development of women only reflects discontent with respect to their status and their position in this paper. The relationship between women and environment attains

significance because women are perceived as role of efficiently managing natural resources and possesses a valuable knowledge base, they have been completely marginalized from processes that seek to formulate strategies for use and management of these resources. In this process of marginalization they have further lost status and power, by using access to resources and control over their manpower. Women play a predominant role in activities relating to natural resources and the degradation of these resources has a disproportionately affected them. Also, women's consciousness of ecological issues makes them better managers of natural resources. Tis association between women and natural resources exist because of their socioeconomic role, which requires them to provide food, fuel, fodder, and income for the surrounding resource base. Therefore, women who interact with it for want of survival feel the impact of environmental degradation more actually. Ecofeminism claims that the domination of women and of nature are intrinsically interconnected as a movement, as a ecofeminist theorist use a framework that confronts issues of gender, race, class, and nature.

Key Word Index: feminism, environment, natural resources, environmental degradation.

Bacterial culture of tomato extract (Aerobic condition) on media staining and identification (*Escherichia coli and Bacillus cereus*)

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The study was carried out to isolate the *Escherichia coli and Bacillus cereus* bacteria associated with spoiled tomato were sold in markets of Bhopal city in two months September and October. Sample was collected from four different markets in September and October. Collected samples were processed by using standard plate count. Four samples of spoiled tomato were collected from four different markets in Bhopal in September and October. *Escherichia coli*were dominantly found in September and October in different markets. *Escherichia coli* and *Bacillus cereus* bacteria were identified by usingMorphology and Gram-negative and Gram-positive staining techniques. *Escherichia coli* and *Bacillus cereus* bacteria belonging to different genera. In September month number of colonies *Escherichia coli* and *Bacilluscereus* was 32 and 26 in Bharat Talkies market, 28 and 19in Budhwara market, 15 and 8 Jawahar chowk market and 9 and 5 in Saket Nagar Market; in October month *Escherichiacoli* and *Bacilluscereus*number of colonies was 28 and 23 in Bharat Talkies, 19 and 10 in Budhwara, 12 and 8 in Jawahar chowk and in aSaket Nagar is 5 and 3.

Key Word Index: Spoiled, Bacteria, Staining, Colonies.

An evaluation of Bioaccumulation Factor for heavy metals in Navalpur Son River with reference to fish tissues, Shahdol division in central India

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The concentrations of heavy metals (Cu, Zn, Fe, Pb and Hg) were measured in the Muscles, liver, gills, kidney and gonad of fish species collected from Navalpur Son River, Shahdol district, Shahdol division in central India. The levels of heavy metals varied significantly among fish species and organs. Muscles possessed the lowest concentration of metals. The essential metals as Cu were accumulated mainly in liver and gonad, Zn accumulated mainly in Gills and Liver, Fe were accumulated in all organs with little bit fluctuation in concentration while Pb accumulated mainly in gill, liver and gonad and highest concentration of Hg found in mainly Muscle, Liver and Gonad. The concentration of metals in the present fish organs within the permissible limits given by WHO and FAO but in case of Pb and Hg these are higher than the limits. This is also noticeable that the concentration of metals is higher in summer seasons while lowest concentrations are found in winter. This study reveals that fishes found in this site are not suitable for human consumption it may cause severe health hazard because of high concentration of lead and Mercury and the Bioaccumulation Factor values of the heavy metals analyzed in this study showed that bioaccumulation has occurred in the fish in the alarming rate.

Key Word Index: Heavy metals, Bansagar dam, Fishes, health threats, Bioaccumulation Factor

Removal of Silver and Gold nanoparticles form Low Cost Adsorbent Material Synthesized from Cotton

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The extensive use of chemicals for various purposes in day-to-day life have resulted an unwanted environmental contamination with diverse range of organic and inorganic pollutants.[1, 2] These pollutants have adverse effect due to their ability to disrupt the normal physiochemical processes in the body.[3] Similarly, nanomaterials are also considered as an emerging contaminant as its environmental fate is not very well studied. Nanomaterials have been at the forefront of research from diverse fields due to its significant catalytic, optical, biological and material applications. Hence, developing cheap and efficient materials for their removal form water solution is currently an attractive area of research. We have utilized hydrothermal carbonization to generate carbon fibers at low temperature by using cotton. After post modification, the materials were successfully employed for the adsorptive removal of nanoparticles with different capping agents from the aqueous solution. Results suggest that the developed material shows enhanced adsorption capacity for removal of silver and gold nanoparticles at moderate pH.

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Key Word Index: nanoparticles, Cotton, environmental contamination

H^+ - integrated *Vorticella* stalk contraction performance

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Vorticella stalk contraction worked upon protein folding dynamics and was greatly influenced by [H^+] gradients by involving physico-chemical principles of mathematical models for regulation annotation through which the laws of energy dissipation regulated enzyme-kinetics in their colloidal viscous cytoplasmic medium of existence inside the spasmoneme of the stalks, thus reflected biochemical nature of protons in controlling contractile system along the length by regulating rate of protein folding dynamics.

Key Word Index: *Vorticella*-stalk, protein-folding-dynamics, [H^+] gradients, enzyme-kinetics.

Ecological Studies on Endangered Vulture Species in Geedgarh, Raisen (M.P).

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Vultures are important components of ecosystem for cleaning the dead carcasses and provide healthy environment to other living beings. Vultures are nature's most successful scavengers and they provide an array of ecological, economic and cultural services. As the only known obligate scavengers, vultures are uniquely adapted to a scavenging lifestyle. An exhaustive survey was done in the Geedgarh, Raisen, Madhya Pradesh from September to December 2019. The study was devised with the general objective of assessing the Status and population estimation of vultures, Monitoring of roosting ,nesting and feeding sites ,Awareness creation among local communities and medical survey at study site .From the nine and seven species found in india and Madhya Pradesh respectively , four species of vulture viz; Long-billed Vulture (*Gyps indicus*) Egyptian Vulture (*Neophronpercnopteris*) White-rumped Vulture (*Gyps benghalensis*) and Cinereous Vulture (*Aegypiusmonachus*) are found in geedgarh. We recorded 05 White-rumped, 03 Egyptian Vultures, 14 long billed Vultures and 03 Cinerous Vulture in the Geedgarh during the SEP-DEC 2019 field season. We concluded our medical survey at Dewanganj and where we found that Diclofenac is totally replaced by Meloxicam and Paracetamol

Injection. Vultures, choose their habitat on the basis of good availability of water, food, roosting, nesting and feeding sites. In this area anthropogenic activities should be retricted .They require various conservation measures to maintain their population.

Key Word Index: Ecologiy, Endangered Vulture, Geedgarh, Raisen

Effect of Climatic variabilty on insect pest infestation in vegetables and their Integrated management for safer vegetable production

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Increase in the frequency of climate extremes, especially temperature and rainfall, are likely to influence the distribution, establishment and epidemiology of insect-pest and diseases in various crops. Due to climatic variability heavy infestation of white fly in tomato and chilli, fruit and shoot borer in brinjal, DBM in cauliflower, Bacterial wilt in Solaneceous vegetables, leaf curl disease in tomato/ potato, attack of Stemphylium blight in Onion become major problem in the present scenario. Change in environmental conditions is strongly associated with the crop losses caused by insect-pest and diseases because the environments directly or indirectly influence the growth, survival and dissemination of the causal organism. Keeping the infestation of above insect-pest and diseases, Krishi Vigyan Kendra, Sagar planned and conducted on farm trails from 2013-16. Each trail was conducted on an area of 0.40 ha and the same area adjacent to the trail plot was kept as farmer's practices.

Soil health is determined by a complex balance of physical, chemical and biological parameters therefore it is almost impossible to develop single or simple soil health indicator. Soil microbes are key for various soil functions most importantly function related to plant growth. In soil, microbes' works for soil formation through residue recycling and various other specific actions. Application of vermicompost increased the microbial activities and thus has a positive effect on the performance of vegetables especially in tomato, chilli and brinjal due to a higher number of branches and fruits. Application of plant growth promoting bacteria (Rhizobium, PSB, Azatobactor) with vermicompost reduced the demand of nutrients and also increased production of various crops. Vermicompost enrich with *Trichoderma viride* helped in controlling soil borne pathogens.

Improved practices i.e. seed sowing on raised bed nursery, poly mulching, installation of drip-fertigation system, application of Vermicompost and neem cake were undertaken in various trails. IPM practices i.e. installation of Yellow sticky trap (50 No.), Blue sticky trap (50 No.) and Pheroman trap (20 No.) for monitoring and trapping of sucking pest and pod borer, foliar spray of Neem beam 1500 ppm, Lastraw (1.0 L/ha) and need based spray of insecticide were done at 10 days interval for management of insect- pest. These improved practices reduced the insect pest and disease incidence by 85 per and given 15-25 q /ha more yield of vegetables. In the additional cost of Rs. 12500 per ha in technology demonstrations plots of vegetables given Additional net return of Rs. 48,600 per hectare to the farmers. The use of IPM practices and organic inputs management also gave higher benefit cost ratio 3.95 as compared to 2.50 under farmers practice in the corresponding years. The results from the current study clearly brought out the potential of IPM and organic production technologies for vegetable cultivation in the Sagar district of Madhya Pradesh.

Key Word Index: Climatic variability, insect pest, vegetables, integrated management

Comparative study of antibacterial activities and phytochemical analysis of medicinal plants on isolated strains of soil bacteria

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The bioactive compounds present in leaves of *Ocimum sanctum, Azadirachta indica* and *Aloe vera* shows good antibacterial activity. The extract of these plants under study, were used against bacteria isolated from the semi–arid soil, identified as *Escherichia coli, Bacillus subtilis, Bacillus cereus, Pseudomonas fluorescence* and *Staphylococcus aureus*. The phytochemical analysis showed the presence of metabolites such as saponin, flavonoid, alkaloids, carbohydrates, glycosides, tannins and oil phenolics responsible for the antibacterial activity of these plants. Diffusion and dilution methods have been performed to examine the comparative antibacterial activities of extract of plants. Among all the extract *Azadirachta indica* showed maximum zone of inhibition against *S. aureus*, whereas *O. sanctum* showed maximum zone against *E. coli* and *A. vera* against *P. fluorescence*.

Key Word Index: Phytochemical analysis, antibacterial activity, metabolites, diffusion and dilution.

Study of Water quality and pollution status of Kunda River at Khargone in Madhya Pradesh

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A systematic study has been carried out in years from April 2016 to March 2017 to assess the water quality of Kunda river in 5 different sampling stations with special reference to Biological Oxygen Demand B.O.D and Chemical oxygen Demand C.O.D. Sample collection for seasonal variations has been done once in a month at all five sampling stations. The B.O.D values are observed to be maximum in summer seasons whereas low in rainy season. Similarly higher values for C.O.D were recorded in summer seasons too. The higher values are due to unwanted human acts, discharge of effluents directly or indirectly into the river. Other human activities also add on to the situation like washing clothes various holy rituals etc. Preventive measures are to be taken to overcome the current situation of this river.

Key Word Index: B.O.D, C.O.D, effluents, Kunda River

Rural People's Perception on Significance of Insect Pollinators: A Sample Survey

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The main purpose of writing this paper was to examine and document rural people's perception on the significance of insect pollinators and their current status. Pollination and pollinators present important ecosystem service for human well being. The enhancement of agricultural yield needs understanding of farmers' perceptions and knowledge on pollination services and the significance of insect pollinators' for agricultural production among other key production and management factors considered. In the present study, for the collection of data, simple random sampling was adopted, household surveys of 100 house hold heads, focus group discussion, and direct field observation method was used. The study revealed that 72.5% of farmers understudy reported that their main source of information on insect pollinators was family, 58.5% reported they were aware of climate change, 83.5% reported that they believe there is an impact of agricultural inputs on insect pollinators and 56.5% reported that they have no idea about the decline in insect pollinators year wise. It was concluded that most of the farmers did not know about the beneficial insect pollinators and their importance for agricultural productivity and maintenance of ecosystem integrity so there is an urgent need to awareness farmers about the significance of insect pollinators. It was recommended from our study that government should strengthen the extension department and giving continual training to the farmers on pollination and pollinators' significance, its role, impacts of deforestation and chemical use, and why conserve insects.

Key Word Index: Ecosystem services, Perception, Knowledge, Insect pollinators, Pollinators conservation, Kashmir

Preparation of mitotic chromosome in insect brain cells (Larval Brain): Drosophila

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Mitotic chromosome cytology plays an essential role in many areas of *Drosophila* research. It is routinely needed for characterization of the mitotic phenotypes elicited by mutations affecting chromosome structure and/or behavior.Transfer actively crawling third instar larvae into drops of saline (0.7% NaCl in distilled water) placed on a siliconized slide. Make drops of about 50 and place 1-3 larvae in each of them.A major objective of the present study was to analysis cell cycle in the sub-population of cells that divides mitotically in larval brain ganglia by labeling the S-phase cells and chasing the label in individual chromosomes at metaphase stage. Our data on the labeling of metaphases in brain ganglia of Drosophila larvae present unusual and intriguing features which defy simple.Compared to our failure to define the mitotic cell cycle parameters in brain ganglia of D. melanogaster, Steinmann presented a computer-simulated typical labeled mitoses curve for brain ganglia of D. virilis larvae.

Key Word Index: Mitotic chromosome, metaphases, Drosophila, Gwalior

Climate change and health management – the biggest health threat of 21st century

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The health impacts of climate change include increases in heat-related illnesses and death; extreme weather-related injuries and mortality; aggravated chronic illnesses; spread of infectious diseases: vector -, zoonotic-, water- and food- borne diseases; increases in asthma, respiratory allergies, and chronic respiratory disorders; growing malnutrition and child development complications; increases in stress-related and mental health disorders; growing health impacts related to both population displacement and migration; as well as climate-triggered instability and conflict. The healthcare sector is also just beginning to understand that climate change will have major impacts on health care costs, services and delivery.

Even as it begins to grapple with climate change's impacts, the health sector itself is paradoxically making a significant contribution to climate change. Through the products and technologies it deploys, the energy and resources it consumes, the waste it generates and the buildings it constructs and operates, the health sector is a significant source of carbon emissions around the world, and therefore an unintentional contributor to climate change trends that undermine public health.

At the same time, because the health sector is a major economic, political and moral force in most every society, it holds the potential to play a leadership role in addressing climate change everywhere.

An engaged health sector of millions of health professionals, professional associations, hospitals, health systems, health NGOs, ministries of health and international organizations can help broaden and deepen the worldwide movement to address climate change, moving the world toward a healthy, low carbon development path.

HCWH is working to address this urgent issue in three key areas:

1. We are developing projects to educate and engage health professionals around the world on health impacts of climate change, including our bi-weekly Climate and Health News Service.
2. We are working, through the Global Green and Healthy Hospitals Network, to reduce the health sector's climate footprint.
3. We are collaborating with leading health organizations around the world to advocate at both the national and global levels for a low carbon development path that will reduce the negative health impacts of fossil fuels, saving both money and lives locally and globally.

To achieve these goals we are working closely with a number of major national and international health organizations to build a Global Climate and Health Alliance that will amplify the voice of the health sector on this most critical issue.

Key Word Index: Climate change, health management, 21st century

Natural Resources Depletion due to Anthropogenic Activities of Bichhiya Watershed, Rewa District, M.P. Using GIS Technique

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A natural resource may be defined as a supply of raw materials that are furnished by nature, and bring a country.

Natural resources are very much value for supporting agriculture, forestry, mining and human settlement. These are also having social, ecological and cultural uses and values. As with most environmental concepts, natural resources cannot be considered in isolation from other components of the environment. status of water resources, land evaluation for irrigation, cropping pattern and land use are the important factors that influence soil and water use efficiency, not only for optimizing agricultural production but also for control of the twin problems of soil and water which are usually associated with overuse and mismanagement in a unit Natural Resource planning

The present study envisages on changes takes place in Natural resources of Bichhiya watershed in Rewa District. Geospatial Technique includes Remote Sensing Satellite images and GIS analysis integrated with accuracy of GPS. Methodology adopted includes interpretation of LISS-III satellite images of year 2005 and 2015 using ArcMap Software and create landuse change matrix. Classification schema of NRSC,Hyderabad is adopted for landuse/landcover classification. Major classes at level-I under schema are Builtup, Agriculture, Forest, Wasteland and water body. Results shows that Builtup increase during 2005-2015 from 11.52 Sqkm to 15.57 Agriculture decrease from 422.29 Sqkm to 414.96 Sqkm, Forest change from 53.12 Sqkm to 52.95 Sqkm Slight decrease,wasteland change from104.01Sqkm to 103.17 Sqkm and water body class Increase from9.72 Sqkm to 14.03 Sqkm.

Key Word Index: Natural Resources, Anthropogenic Activities, Watershed, Rewa, Madhya Pradesh, GIS Technique

Catecho-O-methyltrasferase Va158Met polymorphism and ovary cancer risk

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Catechol-*O*-methyltransferase (COMT) is a ubiquitous enzyme that catalyzes catechol estrogens to form methyl conjugates, and detoxifies the catechol estrogens. Regulation of COMT activity may modulate the biologic effects of estrogen and play an etiological role in ovary cancer. COMT gene is present on chromosome 22q11.2, several polymorphisms are reported in COMT gene, but the most widely studied and clinically important polymorphism is Val158Met (rs4680;472G->A) polymorphism. Numerous case-control studies have evaluated the role COMT Val 158Met polymorphism as a risk factor for ovary cancer but the results remained inconclusive, hence present meta-analysis was designed to find out correct assessment. Odds ratios (ORs) with 95% confidence intervals (CIs) were used as association measure. Statistical analysis was performed with the software program MetaAnalyst and Mix.

In the current meta-analysis, 8 case control studies with 1,403 ovary cancer cases and 2,874 healthy controls were included. The results indicated no significant association between COMT Val158Met polymorphism and ovary cancer risk using allele contrast, co-dominant, homozygote, dominant and recessive modes (allele contrast model—OR(A vs. G) = 1.08, 95% CI = 0.91-1.28, p = 0.09; co-dominant model—OR(AG vs. GG) = 1.03, 95% CI = 0.83–1.27, p = 0.77; homozygote model—OR(AA vs. GG) = 1.14, 95% CI =0.82-1.59, p = 0.44; dominant model—OR(AA+AG) vs. GG-= 1.06, 95% CI = 0.84–1.35, p = 0.60; recessive model—OR(AA vs. AG+GG) = 1.08, 95% CI = 0.87–1.35, p = 0.44). In conclusion, results of present meta-analysis supports that the COMT Val158Met polymorphism is not a risk factor for ovary cancer.

Key Word Index: COMT, Va158Met, Ovary Cancer, polymorphism

A Study on Present Status and Significance of Dal Lake, Kashmir

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The Dal lake has been a star attraction for the tourists who visit Kashmir valley every year and it continues to be the main source of economy for the people in its catchment area as well as the most favourite spot of the whole Kashmir valley. It has been the center of Kashmiri civilization and is among the most beautiful National heritages. The Dal lake has played an important role in the economy of J&K through its attraction of tourists and its utilization as source of food and water. Dal lake is a fresh water lake and traditionally the vegetable markets of Srinagar have been supplied from the famous floating gardens and irrigated land within the lake area. In this paper, a well designed questionnaire was used to know about the benefits of Dal lake and its present status. The study revealed that Dal lake has shrinked to a great extent due to encroachments and negligence of government. The discharge of effluents, sewage, sediments and other nutrients has make this lake eutrophic (nutrient rich) which results in decrease of oxygen supply of lake and ultimately its death. Finally, it is recommended that if timely measures are not taken to mitigate these severe effects on Dal lake, the Dal lake will die of its own death. There is an urgent need of taking serious steps at individual, community and at government level to save beautiful National heritage Dal lake of Kashmir.

Key Word Index: Kashmir, Dal Lake, Eutrophication, limnology, Empirical study, Heritage

Fish population density, diversity and ecology of Maan reservoir Jirabad Dhar (M.P.) India

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The Maan irrigation project was developed under the Narmada Valley Development project. Dam was constructed on the river Maan near village Jirabad district Dhar, it was drought prone area now about 1500 hectares of agriculture land covered under the command area of reservoir where 87% tribal farmer communities used water for domestic irrigation and fishculture Freshwater fish density and diversity was meagerly studied so that there was no proper documentation on fresh water fish resources of M.P. In the present studies 36 species belonging to 21genera, 10 families and 4orders were recorded the family Cyprinidae was dominant group with the highest density and diversity while family Notopteridae and family Centropomidae had shown the lowest density and diversity during the course of study. The ecological parameters temperature, transparency TDS, pH, D.O. Alkalinity, BOD, hardness, chlorides were analyzed to determined the water quality status, the quality of water was under the limits of ICMR and WHO recommendations and suitable for fish culture and domestic purpose.

Key Word Index: Ecological, fish density, fish diversity, genera, tribal communities

MTHFR gene polymorphism and neurological disorder susceptibility

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Methylenetetrahydrofolatereductase (MTHFR) is crucial enzyme involved in folate metabolism. A number of studies have examined the association of MTHFR C677T and A1298C polymorphisms as risk factor for neurological disorders i.e. epilepsy and Alzheimer's disease (AD), but the results were contradictory.To find out exact association, meta-analyses of published case control studies of epilepsy and AD were performed. The pooled odds ratios (ORs) with 95% confidence intervals (95% CIs) were used to evaluate the association. All statistical analyses were performed by MetaAnalyst programs.

Meta-analysis of 12 case controlarticles (investigated epilepsy case) showed significant association between C677T polymorphism and neurological disease in different genetic models (allele contrast model- T vs C: OR =1.29, 95% CI = 1.08–1.52, p = 0.004; homozygote model -TT vs CC: OR = 1.48, 95% CI = 1.19–1.82, p =0.0003; dominant model-TT + CT vs CC: OR = 1.20, 95% CI = 1.05–1.38, p = 0.008).

Meta-analysis of 41 case control articles showed significant association between MTHFR gene C677T polymorphism with neurodegenerative disorders (AD) in all genetic models (allele contrast model- Tvs C OR= 1.29, 95 % CI= 1.07–1.56, p =0.003; homozygote model - TT vs CC OR= 1.31, 95 % CI= 1.16–1.48, p=0.001; dominant model- TT +CT vs CC OR= 1.29, 95%CI =1.19–1.40, p =0.0004)

In conclusion, results of present meta-analysis suggested that C677T polymorphism of MTHFR gene is significantly

increases the neurological disorder susceptibility.

Key Word Index: Methylenetetrahydrofolatereductase, enzyme, **neurological disorder**

Pollution status of Anchar Lake Kashmir, India

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The present study was carried out from Jan 2019 to December 2019 to assess the pollution status of Anchar lake, Kashmir India. Anchar lake, an urban shallow basin lake with a maximum depth of 2.6 meters was getting modified as a result of cultural, eutrophication due to anthropogenic pressure, siltation and effluents released from Shere Kashmir Institute of Medical Sciences (SKIMS). The physico-chemical characteristic assessed at seven selected sites for pH, conductivity, temperature, depth, DO, total hardness, calcium hardness, magnesium hardness, free co_2, sulphate, phosphate, iron, ammonical nitrogen, sodium and potassium. The rate of pollution varies from site to site with maximum in area receiving waste waters from skims, yet the impacts has been clearly observed throughout the lake, resulting in undesirable changes being accompanied by wide environmental degradation. The present study reveals that site seven near SKIMSwas highly nutrient rich with respect to other sites.

Key Word Index: Pollution, Anchar Lake Kashmir, India

Climate Change and Children's Health

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As Climate Change may alter the frequency, timing, intensity, and duration of weather events it is making extreme weather events worse over the last several decades, including more intense and frequent heat waves, less frequent and intense cold waves, and regional changes in floods, drought, wildfires, and above all drastic environmental changes with increasing pollution of all kinds.Atmospheric carbon dioxide levels, which have remained steady at 180 – 220 ppm for the past 420,000 years, are now close to 370 ppm and rising with this'Global Climate Change' is a phenomenon that is now considered strongly associated with human activities. The effects of climate change vary among regions, and between different generations as well as between children, women and men. It seems that everyone is affected by these changes but surprisingly not equally. Besides, all these extreme weather and climate events are posing serious threats to the health and welfare of people as climate change has the potential to influence the earth's biological systems with rampant vector-borne, water-borne and food-borne diseases especially vulnerability to climate change is more severe on children, already suffering from malnourishment and hunger, as climate change is potentially leading to resurgence of some of the deadliest

illnesses on earth. Several common infectious diseases are known to be affected by climate variation as those transmitted by insect vectors are particularly sensitive that risks being exacerbated by changing climate. Though the insect-borne pathogens are serious enough, but it is not the only way that climate change could impact human diseases especially in children. Increased precipitation, another result of climate change, is believed to increase the spread of water-borne and food-borne infectious diseases may show increased outbreaks and flourish in the wake of heavy rainfalls, flooding and elevated temperatures. Further, it is feared that the melting of permafrost soils in polar regions due to climate change induced global warming could release ancient viruses and bacteria that may be capable of coming back to life The bacterial and viral infections kill around 429,000 people each year more than 80 percent of whom are children under five. As 'Children' are the very important entities of our society so their health, growth and nourishment need to be looked after and handled with proper care to protect them from the ripple effects of climate change influencing everything from air quality to water contamination and food safetywhich have been directly attributed to the deaths of 1.7 million children worldwide each year attributable to living in an environment made unhealthy by climate change.

Key Word Index: Climate Change, weather, floods, drought, wildfires

The PROFISH program for the climate polluted by industries

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The term "sustainable development" was used for the very first time by Brundtland commission (USA) that emphasized an inter-linkage among economic development, environmental degradation and population pressure, threatening the carrying capacity of Earth. After the domestication of animals and agrigarian practices the industrial revolution largely during 18th and 19th centuries was single reason that resulted into findings of Brundtland commission as massive industrialization urbanization were the apparent consequences along with all their disadvantages. The most deteriorating effects of urbanization and thereby the swelling population that have been largely affective upon the fisheries resources and forest are considered here. The PROFISH vision of word bank is discussed here as an example of sustainable food resource and sustainable wealth enriching people.

Key Word Index: PROFISH, sustainable fisheries, climate, environment, urbanisation

Role of dietary flavonoids in the management of cardiovascular diseases and blood pressure

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In both developed and developing countries cardiovascular disease is the main cause of death. Flavonoids are a major class of polyphenols. They contain C_6-C_3-C_6 structure consisting of two aromatic rings that are linked together by three-carbon unit to form an oxygenated heterocycle. Flavanones, flavones, flavanols, isoflavones, flavonols, and

anthocyanidins are major classes of flavonoids. Quercetin had the most constant blood-pressure lowering effect in human and animal studies. Rutin has shown effective thrombolytic activity i.e., prevent the formation of blood clots by blocking the enzyme PDI (protein disulphide isomerase). FDA (Food and Drug Administration) has established that flavonoids provides a safe and inexpensive drug that could reduce clots and helps in saving many lives. In this review use of flavonoids in preventive treatment of cardiovascular disease is reviewed.

Key Word Index: Flavonoids, cardiovascular disease, blood pressure, quercetin, rutin etc.

Role of Bioindicators in Aqua-environmental Ecosystem

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Planktonic biocommunity are minute heterogenous assembly of plant (phytoplanktons) and animals (zooplanktons). The most commonly present phytoplanktons and zooplanktons of Indian water bodies are Bacillariophyceae, Cynophyceae, Chlorophyceae, Xanthophyceae Euglenophycea, Protozoans, Rotiferens, Copepods and Cladocerans. These organisms are actively participated in food chain and remain suspended in all natural aquatic environmental bodies. They are regarded as bioindicator organism of aqua-environmental chain because these species are highly sensitive to changes in their surrounding medium, which can provide valuable information about temporal and spatial changes of health status, assessing the impacts of specific environment and assessing the viability of anthropogenic measures of the ecosystem. They serve to detect changes both in the form of positive and negative impacts. The present research study explores various type of such biomonitor organism present in Betwa river of Bundelkhand region which play a pivotal significant balancing role in sustainable development and conservation of aquatic ecosystem.

Key Word Index: Aqua-environmental chain, Phytoplanktons, Zooplanktons and Bioindicator.

Traditional knowledge and holistic science for human welfare

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At present we are facing many Man Made problems in each and every field of life on Earth Environmental Degradation, Climate change, Fatal Health Hazards, Due to anthropogenic unbalanced activities, Water pollution, Soil Pollution, Food Toxicants Etc and so on. All above are causing Mental Tension, Blood Pressure, Kidney Failure, Hepatic Disorders, Cancer and Failure of vital Organs. Treatment Process of There Diseases causing so many side effects. At present Situation about Human health is Alarming.

Therefore, Some Holistic Science is the need of the day to protect our life quality on earth planet.

Meditation, Yoga and Herbal Medicinal and Traditional Knowledge is the only Solution to save healthy life on earth planet. Because Yoga and Meditation Improves Our Physiology of the body and it balances Metabolic Disorders and play an important role in longevity of life Herbal Medicinal Knowledge in also Very Useful for us.

This is the Holistic approach to save our life and health.

Key Word Index: Earth, Environmental Degradation, Climate change, Fatal Health Hazards, Anthropogenic, Holistic approach

Use of yeast and sugar solution in mosquito trap for effective mosquito attraction

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A number of commercial devices are available to capture or kill mosquitoes. They contain a volatile synthetic organic insecticide, usually an organophosphate or pyrethroid of low grade of mammalian toxicity. Moreover, risks of resistance development by insects and human healthdue to toxic residues. Prolonged use of many of such substances may be harmful to human health. Therefore, Mosquito traps were used to prevent mosquitoes and hazardous chemicals and ecofriedly. In the present study, yeast and sugar solution were used to increase the effectiveness of these traps to attract mosquitoes. On the basis of designed experiments and obtained data from the above test, it was found that 25% more insects were trapped in the solution based trap compared to the normal trap. The percentage of mosquitoes remained 65%, while in controlled traps the percentage of mosquito was 48%.

Key Word Index: Mosquito Traps, Mosquito Repellent, Toxicity, Hazardous Chemicals, Yeast and Sugar Solutions.

An Environmental Effects of Air Pollution in Delhi

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Air pollution in urban and rural India is a growing public concern and city of Delhi is one of the most studied city with a disproportionate the scale of air pollution and the fact that is among the top ten most polluted cities in the world. Air pollution is a complex problem. There are various sources of Pollutants dust, transport, and industrial emissions. A comprehensive set of strategies is required to tackle the problem, and our vision for the future in Delhi is to work on all of these. In the transport sector, which is taking many steps to work towards azero carbon city and to ensure 25 percent of all new vehicles in Delhi electricity by 2024.My study for the future of India is to see the political leadership at national level fully acknowledge air pollution as a health emergency and act upon it.

Key Word Index Air pollution, Industrial emission, hydrocarbon.

Climate change and human health management

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Environmental degradation poses a significant threat to human health worldwide. Harmful consequences of this degradation to human health are already being felt and could grow significantly worse over the next 50 years. Because environment and health are so intimately linked, so too should be environmental and health policies.

Climate change, together with other natural and human-made health stressors, influences human health and disease in numerous ways. Some existing health threats will intensify and new health threats will emerge. Not everyone is equally at risk. Important considerations include age, economic resources, and location.Public health can be affected by disruptions of physical, biological, and ecological systems, including disturbances originating here and elsewhere. The health effects of these disruptions include increased respiratory and cardiovascular disease, injuries and premature deaths related to extreme weather events, changes in the prevalence and geographical distribution of food- and water-borne illnesses and other infectious diseases, and threats to mental health.There should therefore be a commitment to create more interdisciplinary approaches in the development of our knowledge about climate change and its many interconnected impacts on human health. Key issues that should be covered include poverty, migration, conflict, jobs, security and demographic change as well as specific forecasts about likely physical outcomes, including particular types of pathogens that may affect the country, and the effect of climate change on water supplies. Another important concern is how best we can communicate to governments and their agencies and to the broader community.

Key Word Index: Environmental Degradation, Interdisciplinary Approaches, Interconnected Impacts on Human Health

A Statistical Analysis of Public Consciousness of Drinking Water Safety and Contamination Accidents in South Kashmir, Kashmir

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Access to safe drinking-water is vital as a health and development issue at national, regional and local levels. Kashmir has experienced many drinking water pollution accidents in the past several decades and there has been great effort made from government, academia, and nongovernmental organizations in Kashmir to face the challenges of drinking water pollution events. However, owing to the governing structure of Kashmir society, public participation has not

been well-developed with respect to environmental protection. In this paper, a well-designed validated questionnaire was used to collect the information from a sample of 400 respondents selected randomly to understand public awareness about drinking water safety and water contamination accidents in South Kashmir of Kashmir valley. We explored in this study the degree of public satisfaction with drinking water quality, public trust of drinking water safety, and public awareness about drinking water problems and solutions. The results of our study revealed that 81.5% of respondents were satisfied with the quality of their drinking water, 72.5% of respondents paid special attention to drinking water quality and contamination accidents, especially regarding potential damage to the human body and health, the influence scope, and the causes of accidents were accessed. The study further revealed that 68.5% of respondents solved drinking water problems by themselves only few respondents complained to the health department. Statistically, Age and sex did not play significant roles in the degree of public satisfaction with water quality. There was a significant difference in the satisfaction between urban and rural residents. Respondents with higher education levels had greater awareness than those with lower education levels in the study area with respect to water quality and water pollution accidents. Finally, our study suggested policy instruments to enhance awareness of drinking water quality.

Key Word Index: Kashmir, public awareness; drinking water safety; water contamination accidents, Statistics

Information and Communication Technology and its impact on agricultural development

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Information and Communication Technology (ICT) is the key to the successful operation and management in any development area. Nowadays teaching and learning process is effectively being done by the use of ICT services. Extension of education, communication and training are considered to be the most important factors in the agricultural sector. Information need is ever changing therefore different approaches, tools and technologies have emerged with time. Agriculture being the most constantly developing field, its development thus depends on continuously improving existing practices as well as on the development and adoption of innovations. Utilization of the emerging technology benefits the teaching and learning process in the agricultural field. Moreover, due to the latest trends in ICT, youth agro-based farmers and entrepreneurs are very much interested to enter this field. This technology has provided not only new approach but also has become a great source of information to larger groups in the remote areas. Needless to mention that ICT has brought a revolution in our daily lives. It has not only impacted our personal life but also our professional life as well, where agriculture is no exception. The present paper is an attempt to highlight the important role of ICT in the agricultural field. The modern communication technologies that help in bringing the latest research straight from the labs to the fields, thus revolutionizing the agricultural process and bridging the gap as well.

Key Word Index: Information and communication technology ICT, Agriculture, Development, Entrepreneurs, Innovations

Climate change and human health

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In the early 1990s there was little awareness of the health risks posed by global climate change. This reflected a general lack of understanding of how the disruption of biophysical and ecological systems might affect the longer-term wellbeing and health of populations. There was little awareness among natural scientists that changes in their particular objects of study – climatic conditions, biodiversity stocks, ecosystem productivity, and so an- were of potential importance to human health. Indeed, this was well reflected in the meagre reference to health risks in the first major report of the UN's Inter governmental Panel on Climate Change (IPPCC), Published in 1991.

Subsequently, the situation has changed. The IPCC Second Assessment Report (1996) devoted a full chapter to the Potential risks to health. The Third Assessment Report (2001) did likewise, this time including discussion of some early evidence of actual health effects. That report also highlighted the anticipated health impacts by major geographic region.

The IPCC was established by WMO and UNEP 1988.

Climate change will affect the health of urban populations. It represents a range of environmental hazards and will affect populations where the current burden of climate-sensitive disease is high – such as the urban poor in low-and middle-income countries. Understanding the current impact of weather and climate variability on the health of urban populations is the first step towards assessing future impacts. In this paper, we have reviewed the scientific evidence for the effects of temperature, rainfall and extreme events on human health.

Key Word Index: global climate change, biophysical, UN's Inter governmental Panel on Climate Change

Natural Resources Conservation

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Anything on the Earth that is necessary for the survival of human beings and satisfies human needs is called a resource. Natural substances found on the Earth that are used without much alteration are called Natural Resources. These are of two types – Renewable and Non – Renewable. The word Renewable means something that can be renewed or refilled within a much shorter period of time. The ones which cannot be renewed or take a long period of time to get replenished. Wind, water and solar energy are some examples of Renewable Resource, whereas coal, petroleum and natural gas are some of the Non-Renewable Resource. We kept using the resources from the origin of our community, but there are some major concerns. In early times, the population was low and the human needs were limited. They could fulfil all their needs from their surroundings. With scientific and technological advancement, human beings started using resources on a larger scale. The increase in population and rising demand for various goods and minerals has already caused damage to many valuable resources. The solution of this problem is to conserve resources. Using Natural Resources carefully and giving them time to get renewed is called Conservation of Resources. We can do this by sustainable development of resources. Sustainable development means development that takes place without damaging

the development. Every resource has its own type of conservation such as conservation of land resources, soil conservation and conservation of water resources which have been discussed the manuscript.

Key Word Index*:* Earth, Renewable, Non Renewable, Sustainable development

Negative Environmental Impact due to Invasive Species, *Pistia stratiotes, in a Fish Pond of Rewa (M.P.)*

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This study was for Invasion of *Pistia stratiotes, a free floating freshwater invasive aquatic weed in* Bansagar colony pond (24°322 N 81°182 Eÿþ / ÿþ24.53°N 81.3°Eÿþ / 24.53; 81.3) having 2.5 ha water spread area within municipal area of Rewa town. *It is found throughout the tropics and subtropics. It was observed that a dense mat of weed spread on the surface of the pond within three years which had clear water body till 2012 and rapid vegetative reproduction has allowed Pistia stratiotes to cover the entire pond from shore to shore in the form of dense mat and has inflected a severe impact on the environment and economy of the pond. Dense thick mats of Pistia stratiotes has caused lower concentration of dissolved oxygen and has blocked air–water interspace and prevented sunlight* from reaching underlying water. The cumulative effect of the plant in reference to fisheries in the pond has affected the livelihood of the fish farmer of the pond. In this study (*2012-2015),* invasion of the *Pistia stratiotes and fish biodiversity with fish yield in reference to temperature, DO, BOD, COD Nitrate, Phosphate has been studied for findings of cause of flourishing the invasive plant and loss of fisheries.*

Key Word Index*: Environmental impact, Fish Pond, Invasive plant – Pistia stratiotes, Fisheries.*

Natural Resource Mapping of Banda District of Bundelkhand Region Using Remote Sensing and GIS Technique

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India has several natural resources like forest, water, and mineral/geology which have significant importance in national economy and as well as to livelihood of the people (Sathaye et al. 2012; Srivastava 2006). Geospatial techniques provide a better mean for mapping and exploration of the natural resources.

The results showed that Banda region has major types of rocks Bundelkhand Granitic Complex (BGC), alluvium and quartz veins. The region mostly covered by alluvium, which is composed of sand/silt and clay. The district is dominated by agriculture land and has low forest cover. Among the blocks of the district, Badokhar block has high agriculture (83.9%)

followed by Tindwaree (81.8%), Jaspura (74.1%), Mahua (68.4%), Narainee (70.7%), Bisanda (74.9%), Kamasin (61.8%) and Baberu (82.9%). Narainee and Bisanda block of the district have high forest cover. Currently (2014) district has total 1193 km long canal network, 460 Govt. hand pumps, 3034 wells, and 1094 bore wells, distributed over the entire land of district. The region has only 4.5% of area is covered by the surface water bodies.

As per the agriculture dominant region, water resources management, well supported irrigation network, agroforestry and better transportation is the prime need of district development and sustainability. It is observed that the geospatial techniques provide a best option for mapping the natural resources for the sustainable development. Regular monitoring with high resolution satellites data of available natural resources is recommended for the future planning and management.

Key Word Index: Natural Resource, Bundelkhand, Remote Sensing

Roll of human dimensions in wildlife management in North Madhya Pradesh, India

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Human dimensions research is a broad field of exploring human wildlife interactions by understanding attitudes, beliefs, values, behavioral intentions and behaviors. Such research can help managers understand public attitudes toward various species or habitats. The study of HD can focus on identifying types of conflict, the first step toward conflict resolution. HD researchers explore behavioral intention to support or oppose certain management actions, thus allowing managers to better understand the various interest group viewpoints and levels of support for proposed actions. The incidences of killing of leopard by public have been hitting headlines of news media along with or their poaching. It is a challenge to ensure the peaceful coexistence of leopards among high densities of humans Research indicates that even in such high human density areas, attacks on humans and domestic animals in most cases can be kept to very low levels. The Present study on Human dimension in wildlife managementwill be conducted in northern Madhya Pradesh, for conservation of Tiger, Crocodile and Great Indian Bustard. It's lies between the latitude of 25°43'44"N – 26°20'25"N and longitude 77°39'23"E – 78°40'30"E in the Plateau of Central India. It has an area of about 5,214 sq. km and is surrounded by six districts namely; Gwalior, Morena, Bhind, Datia, Shivpuri and Sheopur. Northern Madhya Pradesh is having many protected areas. Some important protected areas selected for study are, National Chambal Sanctuary, Madhav National Park, Kuno-Palpur wildlife sanctuary, Ghatigaon Bustard Sanctuary. These protected areas are the key natural resources of this region.

Key Word Index: Human dimensions, wildlife, research priorities, distribution per regions

Taxonomic study of an interesting rare tapworm from freshwater edible fish of central India

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During the cesto-piscian study of Central India. We come across this very important district Jhansi. Twenty four fresh water fish, *Clarias batrachus* were examined at Parichha dam, district Jhansi (U.P.) India, twenty of them yielded twenty nine parasites in its intestine. Parasites were unsegmented tapeworms which were preserved in 5% formalin in the laboratory these parasites were thoroughly washed, stained, mounted and ultimately identified as a member of family Capingentidae Hunter, 1930.

Key Word Index: Taxonomic, rare tapeworm, Fresh Water Fish, Capingentidae, Central India

Maggots in the Mouth, Oral *Myiasis* a rare case report from district Jhansi Bundelkhand region of Uttar Pradesh, India

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The present investigation on oral *Myiasis* parasites of Jhansi (District hospital) Bundelkhand region of Uttar Pradesh. The patients reported was laborer residing in rural area, with low socioeconomic background and lack of awareness on oral health. It is primarily caused by the invasion in the human body tissues by larvae of Dipteran flies. It is associated with poor oral hygiene, alcoholism, senility, severe halitosis, hemiplegia patients and mouth breathing during sleep. Here we reported the oral*Myiasis*, in 55-60 years old patients in rural area Jhansi (District hospital) of Bundelkhand region of Uttar Pradesh, India

Key Word Index:: Parasites, Oral *Myiasis*, Bundelkhand Region, U.P. India

Taxonomic study of piscian tapeworm from fresh water fish, *Clarias batrachus* from Ganga river,.Prayagraj (U.P.) India

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Twelve fresh water fish, *Clarias batrachus* were collected from Ganga river, Prayagraj (U.P.) for study of tapeworm parasites. After thoroughexamination we obtained eight parasites from their intestine morphological character of tapeworm parasites which in quite different from all the reported species so for.

Key Word Index: Taxonomic study, tapeworm, fish, Prayagraj, India

Environmental impact of open cast mining with special reference to road side plants.

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Mining is a major economic activity in many developing countries. Operations whether small or large scale are inherently disruptive to the environment, producing enormous quantities of dust wastes that can have deleterious impacts for decades. Mine and stone crushing industry in India has been growing rapidly due to increasing demand from the construction industry and the present emphasis on developing the country's infrastructure. In present investigation effects of deposition of dust on roadside plant and its impact on leaf has been studied on some selected roadside plants species at Jhansi-Allahabad highway. The variation in terms of dust deposition with species specific result observed during the entire study. Decreasing of leaf pigment concentration indicate the positive impact of dust pollution. Species like *Ficus hispida, Calotropis procera, Butea monosperma, Ficus benghalensis,* are shown the maximum deposition of dust on their leaf surface. Our observation may be helpful to find out some species which is resistant or to cope with open cast mining generated dust pollution in and around mining areas and adopt also for the beautification of highways.

Key Word Index: Open cast mining, Dust pollution, Chlorophyll, Carotenoid, Protein.

Unusual presentation of post viteiolage depigmentation without superficial and deep cutaneous injury.

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A 45 years old male patient was seen with 6 weeks duration of depigmented macules on his body. Examination revealed multiple patterned, circumscribed, depigmented macules involving trunk and limbs. A few punctuate and linear depigmented macules were present on the right knee and the leg due to close contact with a few drops of the same acid. The patient claimed appearance of lesions after a family quarrel, due to acid exposure. Different acids were patch tested such as dilute sulphuric acid, concentrated sulphuric acid, glacial acetic acid, hydrochloric acid, dilute acetic acid, muriatic acetic acid and sodium bisulphate. Among all the tested acids hydrochloric acid showed positive results.

Key Word Index: Vitriologae, vitiligo, clinical study, case report.

Potable water challenge: preserving a global resource

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Water is arguably the most important natural resource, essential both for human survival and for the effective functioning of many industries. As climate variability impacts the availability of freshwater, and economic growth puts pressure on global water supplies, households as well as industrial, energy and agriculture sectors are increasingly likely to experience supply disruptions in the near and long term. Global water stresses are not only a serious challenge for society and the environment, but can also be viewed as a sustainable investment opportunity. The recent data attributes towards the status that only 2.5% of the world's water is fresh, yet the US depends on it for nearly 90% of withdrawals for public and industrial use. At the same time, groundwater, which is present under the earth's surface and makes up 30% of all freshwater, is under wide-spread stress. The human cost of water scarcity is likely to be high. The Organisation for Economic Cooperation and Development (OECD) estimates that about 1.5 billion people today live in areas seriously affected by shortages, predicting that it will rise to 4 billion by 2050, accompanied by a 50% increase in the demand on water resources. This is the time not only to think about to save this resource but several measures would have to be taken by the general peoples and society for defining some measures to save potable water otherwise situation for potable water will be horrible.

Key Word Index: global resource, human survival, freshwater

Indole-3-Carbinol enhances antitumor activity in combination treatment with Doxorubicin and Cyclophospamide

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Doxorubicin (DOX) and cyclophosphamide (CP) are commonly used chemotherapeutic drugs for breast cancer (BC) treatment. However, their undesired toxicity is always a concern for clinicians towards successful therapy. Indole-3-carbinol (I3C), a glucosinolate present in cruciferous vegetables has proven its multiple roles in cancer control without any apparent toxicity. Therefore, we aimed to investigate the potential antitumor effects of Indole-3-carbinol (I3C), with DOX and CP combination.

Key Word Index: Doxorubicin, cyclophosphamide, chemotherapeutic drug

Toxicological Effects of Arsenic Trioxide Exposure on Haematological and Biochemical Profile in Catfish, *Clarias batrachus*

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Arsenic is a widespread ubiquitous toxicant in the world and its toxicity in chemical form, with inorganic forms being referred more toxic than the organic form. In modern age, Arsenic is a major environmental pollutant and exposure occurs through agricultural, environmental, medicinal and occupational sources. The toxicity of arsenic trioxide has been shown in catfish, *Clarias batrachus* and the data suggest that the inorganic forms of arsenic showing the highest toxicity level. The impact of toxicity of arsenic trioxide on certain haematological and biochemical parameters (SGPT and SGOT) of the catfish, *Clarias batrachus* has been analysed following exposure of lethal concentration (LC_{50} value- 84 mg/l) of arsenic trioxide for 24, 48, 72 and 96 hours. The 50 fishes (10 in control group and 40 in experimental group) were selected for haematological and biochemical studies and blood samples collected from cardiac puncture for the next 96 hours in the interval of 24 hours.The result indicate that the RBC, Hb, Platelets, PCV, MCV and MCH value were decreased, fluctuation in differential leucocytes count and increased in the number of WBC and serum glutamate oxaloacetate transaminase (SGOT) and serum glutamate pyruvate transaminase (SGPT) were observed in both control and arsenic trioxide exposed catfish. The level of SGOT and SGPT were significantly increased to control value during the treatment of arsenic trioxide. The haemopoietic cells and their activities were decreased due to arsenic contamination. The higher number of white blood cell counts represent some abnormalities due to physical stress, damage or infection in body tissues and leukaemia also. In biochemical study, SGPT and SGOT are extremely specific indices of hepato-cellular injury. These enzymes exhibit two types of response i.e., initially the SGPT and SGOT level increases as a protective response against toxicity and stress by increasing the rate of metabolism. The investigation indicates that arsenic trioxide exposure may affect the haematological and biochemical profiles.

Key Word Index: Arsenic trioxide, *Clarias batrachus*, RBC, WBC, SGPT and SGOT.

Assessment of water quality and diversity of fish spesics of selected ponds at Chhatarpur city, Madhya Pradesh, India

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The present study deals with the water quality and ichthyofuana of Pratap Sagar Pond and Sankat Mochan Pond. Six months period of water quality parameters such as PH, Temperature, Total Hardness. Alkalinity, Total Dissolved Solids (TDS), Turbidity and Dissolve Oxygen (DO) and diversity of Ichthyofauna have been studied for a period of January to June 2019 and were investigated to access the suitability of these ponds for fish and fisheries practices. All the physico-chemical parameters determined, revealed that the fluctuations in water PH, Temperature, Total Hardness, Total Alkalinity, TDS (Pratap Sagar Pond), turbidity, and DO were within the permissible limits (WHO). On the other hand TDS of Sankat Mochan Pond were higher than permissible limit (WHO). Altogether 7 fish species belonging to 2 family and 2 orders were found to be present in the Pratap Sagar and Sankat Mochan Pond among fish species Cypriniformes dominated the selected ponds.

Key Word Index: Pratap sagar pond, Sankata Mochan Pond, Water quality, Fish diversity

Assessment of water quality parameters: A Review

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Water is one of the vital needs of all living beings. It is one of the most important compounds that profoundly influence life. Humans need water in many daily activities like drinking, washing, bathing, cooking etc. If the quality of water is not good then it becomes unfit for drinking and other activities. The quality of water usually described according to its physical, chemical and biological characteristics. Hence it becomes necessary to find the suitability of water for drinking, irrigation and industry purpose. Rapid industrialization and indiscriminate use of chemical fertilizers and pesticides in agriculture are causing heavy and varied pollution in aquatic environment leading to deterioration of water quality and depletion of aquatic biota. Due to use of contaminated water, human population suffers from water borne diseases. It is therefore necessary to check the water quality at regular interval of time. Parameters that may be tested include pH, Temperature, Hardness, Conductivity, Alkalinity, Total Dissolved Solids, Turbidity, Salinity, Nitrates and Phosphate.

Key Word Index: p^H, Temperature, Hardness, Alkalinity, Total Dissolved Solids, Turbidity, Conductivity

Cosmic Rays and Climate Change

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In this study it has been observed that the Earth's climate could be affected by changes in cloudiness caused by variations in the intensity of galactic cosmic rays in the atmosphere. When the Sun is active, its magnetic field is better at shielding us against the cosmic rays coming from outer space, before they reach our planet. By regulating the Earth's cloud cover the Sun can turn the temperature up and down. The galactic cosmic ray warming hypothesis is based on the premise that galactic cosmic rays can "seed" clouds, and clouds reflect sunlight. So if there are fewer galactic cosmic rays reaching Earth, the hypothesis says there will be fewer clouds, more sunlight reaching the Earth's surface, and thus more global warming. So more solar activity means a stronger solar magnetic field, which means fewer galactic cosmic rays reaching Earth, which hypothetically means fewer clouds and more warming.

Key Word Index: Galactic Cosmic Rays, Neutron Monitor, Global Surface Temperature etc.

Aquatic biodiversity of the Yamuna river at Kalpi stretch, Uttar Pradesh, India

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Variety of biotic communities living in aquatic ecosystem constitutes the characteristics and functioning of the ecosystem. The study of aquatic biodiversity of any aquatic body reflects their pollution status. Yamuna, the largest tributary of river Ganga, is famous and holly river of India faces a serious problem of pollution. To evaluate the pollution status aquatic biodiversity of the Yamuna River at Kalpi stretch was studied for a period of one year. Four sampling stations were selected for sampling purpose. Collected samples were evaluated for flora and fauna specially phytoplankton, aquatic macrophytes, zooplankton and fishes. Flora and fauna of studied water was presented by phytoplankton including members of Chlorophyceae, Euglenophyceae, Bacillariophyceae and Cyanophyceae, aquatic macrophytes belonging to 8 families, zooplankton including members of Protozoa, Rotifera, Cladocera and Copepoda and fishes belonging to 10 families. In these recorded species of different group of flora and fauna some pollution indicator species like *Scenedesmus quadricauda, Stigeoclonium tenue, Ankistrodesmus falcatus, Chlorella vulgaris*, *Euglena viridis*, *Synedra ulna, Cyclotella meneghiniana, Navicula viridula, Nitzschia*, *Oscillatoria limosa, O. tenuis, O. chlorina, Phormidium uncinatum, Microcystis aeruginosa* of phytoplanton, *Eichhornea*, *Potamogeton* and *Cyperus species* of aquatic macrophytes, *Brachionus* species and *Keratella* species of zooplankton and *Clarias batrachus* fish were also presented along with clean water species. Presence of both pollution indicator and clean water species shows that water of Yamuna River at Kalpi stretch was moderately polluted during course of study.

Key Word Index: Yamuna River, flora, fauna and Kalpi.

Water deficit tolerance response by gene expression analysis in Indian weedy rice biotypes

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Weedy rice (*Oryza sativa spontanea* F.) has become a major threat to rice cultivation especially in direct seeding of rice is practiced. Weedy rice can be regarded as biosimilar having similar attributes to cultivated and wild rice. Adverse effects of water deficit on rice cultivars have been documented by many researchers in India or elsewhere. Weedy rice can be a good genetic source for developing drought-tolerant as well as weed-competitive rice cultivars. Therefore, objective of this study was to evaluate the gene expression and identify their functions in controlling reactive oxygen species (ROS) levels in weedy rice. Based on the our screening results, three weedy rice biotypes WR-23, WR-27 and WR-30 possess significant degree of tolerance under water deficit condition. Three weedy rice biotypes along with two check cultivars like IDB-1 (drought tolerance) and IR-64 (stress susceptible) were grown in plastic pots at control conditions. Water deficit was created 15 days after germination, and sampling was done at wilting point and 15 days after plant revival. The RT-PCR analysis was done using 13 gene-specific primers. The analysis indicates possible involvement of these genes in tolerance mechanism against drought stress. Results showed that drought-tolerant weedy rice could be a more suitable genetic resource for the development of rice cultivars having enhanced drought tolerance. The gene involved in antioxidant defence pathways play a significant role in drought tolerance and these biotypes can be utilized potentially in rice breeding programme for crop improvement against water deficit stress either through classical breeding programme or through biotechnological interventions.

Key Word Index: *Oryza sativa spontanea* F., reactive oxygen species, drought tolerance, stress susceptible

Present Climate change and Patterns of Biodiversity

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Climate change refers to any change in climate over time, whether due to natural variability or as a result of human activity. Now it has been well recognized that Earth's energy flux is not in balance. Earth's surface was getting warmer affecting the elements of climate system. The climate itself was changing. By 1995 it became evident that the main culprit was Carbon Dioxide emissions produced by the burning of fossil fuels. If the emissions continue to grow at current rates it is almost certain that atmosphere levels of carbon dioxide will double from pre industrial levels during current century and it is quite possible that levels will triple by the year 2100.As a result of this Earth has been suffering from 'FEVER' and we have to act sincerely to cure it .Climate change has become the prime issue which is threatening the sustainability of world's environment. It has also affected the livability, health and economy of the globe. The forth assessment report of the Intergovernmental Panel on Climate Change (IPCC) stated that "continued GHG emissions at or above current rates would cause further warming and induce change in the global climate system during 21st century, that would very likely be larger then those observed during the 20th century. Predictions are there that that climate change will bring about increase in temperature s across the world which will ultimately lead to changes in average

temperatures and rainfall patterns. It will have profound impacts on phenology, pollination patterns. Crop flowering, productivity and leaf fall .It will cause the risk of extinction of species. It is estimated that 15-37 %of wild plant diversity will be lost by2050 due to climate change. We must remember that tropics and subtropics are more affected and may face problem of decreased food production. India and other developing countries would be among the most seriously affected by climate change.

Therefore there is an urgent need for creating bibliographic information in searchable databases. This will reduce the time spent in data gathering and support the provision of information on climate change to public and policy makers. Let us return to our natural ecosystem rather than a new arrangement may be termed as **'human –dominated techno -ecosystem'**

Key Word Index : Climate change, Biodiversity

Aesthetic Beauty in Ecotourism in India

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Ecotourism and Tourism both offer new prospective to the global tourism industry. Present research scholars are calling for change. The learners must go out and experience Nature in a thoughtful International manner. The purpose of present study is twofold. Firstly, it seeks to promote education by offering guidelines in ecotourism as a new subject for study, Secondly, the most importantly; it seeks to raise awareness of the role we must play in preserving our world. The learn biodiversity refer to the wealth of life on the Earth. UNESCO has many goals for sustainable development. Caring for natural resources is important but human lives are important as well. Climate change is a global concern as its consequences affect the whole planet. Environment Education Programmes (EEPs) should be arranged to know about climatic change and its effect on humanity as well as cultured heritage. There are mkany places in Bundelkhand that may be paradise on Earth.

Key Word Index: Ecotourism, Sustainable development, Bundelkhand, Climate change, Biodiversity

Alpha Biodiversity of Family Geometridae (Lepidoptera: Insecta) in Veerangana Durgavati Wildlife Sanctuary, Damoh, Madhya Pradesh.

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The present study has made an attempt in order to explore and document the species composition of family Geometridae of Veerangana Durgawati Wildlife Sanctuary (VDWLS) Damoh, during 2009 to 2011. During field study, 169 samples of Geometer moths were collected from various localities during different seasons which yielded small

collection of 16 species and 15 genera under three subfamilies viz., Ennominae, Larentiinae and Sterrhinae. The subfamily Ennominae represented as most diverse group when compared to the other subfamilies like Larentiinae and Sterrhinae. The species diversity was also calculated by using Biodiversity calculator software. The result shows the species richness (S) is 16, Shannon's diversity index (H') is 2.5206, Berger-Parker dominance (BP) is 0.1775, Simpson's diversity (D 2) is 0.09429 & Margalef Richness index is 2.924.

Key Word Index: Geometridae, Lepidoptera, Alpha biodiversity, Moths, Veerangana Durgavati Wildlife Sanctuary, Damoh, Madhya Pradesh.

Environmental pollution and its preventive measures in India

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The interrelation ship which exists among and between water, air, land, human beings and plants, other living creatures and organisms is called the environment. Pollution to the environment is becoming a global issue and is a serious problem all over the world which causes terrific loss to human health and other living beings. Environmental pollution has been considered as main threat to humans and plants globally. It needs the participation of researchers at all levels from time to time to address and revive the problem seriously. The assessment of research output is all important step in highlighting national and international contribution and collaboration in this field. In India concentration of environmental pollution has become the serious issue. The major factors towards this pollution are industrialization and urbanization together with increasing population demands. This causes the burden to the environment of India. The main objective of this study is to analyze the factors that affect the quality of environment in India and to provide a reliable knowledge to find out the solution and preventive measures.

Key Word Index: Environmental pollution, Preventive measures, India

Environmental Factors Verses Vultures Mortality in Bundelkhand Region, India

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Bio magnifications of diclofenac cause vulture's mortality by feeding animal carcass. This causes rapid collapse of vulture's population. Apart from diclofenac most of the Vulture mortality caused by the environmental factors. The propose of study was to find out the reasons behind unnatural vulture mortality. Study was carried out in Bundelkhand region during the year of 2015 to May 2019. This region was flourishing with vulture's population and species diversity, due to availability of nesting trees, cliffs and Monument. Data supported by 700D SLR cannon Camera and Binocular. Despite to the ban on drug diclofenac in India from 2006 and years of awareness programmes vulture's population decreasing continue. Seasonal variation like increases in temperature, high wind velocity, heavy rainfall, and cold weather in winters causes vultures mortality. Increase in temperature causes 45% vulture mortality due to dehydration, 15% due

to heavy rainfall, 17% due to high wind velocity and 21% due to cold weather in winters. Total mortality recorded 28% (2015-16), 38% (2016-17), 34% (2017-18), and 35% (2018-19) that is increases year after year due to environmental factors. Study concluded that changing environment like increase in temperature, heavy rainfall, and high wind speed delayed the breeding process and juvenile death. It also causes low productivity and reproductive success. High wind speed causes fledgling death when they learn to fly. Therefore quick action needed for the protection and conservation of vulture population like, establishment of vulture restaurant, prevent mining, prohibit anthropogenic activity to their natural habitat. Promote in-situ breeding; declare breeding territory as vulture safe zone, Awareness activity like workshop on vulture, through news, among the villagers.

Key Word Index: Vultures, Bundelkhand region, Environmental factors, Mortality, Conservation

Diversity and abundance of human pathogenic fungi in opportunistic patients

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Pathogenic fungi are a growing health concern worldwide, due to the opportunistic nature. Fungi are everywhere. There are millions of different fungal species on earth. Fungal diseases are often caused by fungi that are common in environment. Mycotic infections have become very frequent in recent years. Normally mycosis occurs in compromised individuals. The aim of the study is to determine the fungal biodiversity causing diseases in patients. In present investigation 111 patients were screened for the presence of the fungal infections and 27 different species of fungi were isolated from various clinical samples.

Key Word Index: pathogenic, opportunistic, compromised, biodiversity, investigation.

An estimation of vulture (*Gyps* species) mortality during breeding using Kaplan-Meier survival analysis in Bundelkhand region, India

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Bundelkhand Region has been a home to critically and globally endangered vulture population for a long time. Life sequence of Vulture breeding is completed with six phases- Aerial display, nest site selection and Construction, Nest Defense/Aggression, Courtship display, allo-preening and copulation, brood and parental care. The purpose of the study is to estimate the factors responsible for vulture (Adult, Sub-Adult, Fledgling, and Juvenile) mortality using Kaplan-Meier survival analysis. This study was conducted in some of the areas of Uttar Pradesh and Madhya Pradesh which belong to Bundelkhand region. The region extends between the latitude 23R”35’.26" and 78R”.82’ longitudes. It is an area of about 70,000sq km. This region is prosperous with vulture’s population and species diversity, due to availability of nesting trees,

cliffs and Monument. Data collections were carried out during breeding period from September 2015 to May 2019, using 700D SLR cannon Camera and Binocular. Kaplan Meier survival analysis was done by using IBM SPSS software version 20 and map of study area created by using QGIS Desktop 2.18. the result showed that the survival rate of juvenile (38.778) was low in comparison to adult (40.579) and sub adult (49.879), Log Rank value of comparison of all groups was 3.392 which was not significant at the level of P>.335. The study revealed that each year about 30% mortality recorded in adult, 45% mortality of Sub-adult. The highest mortality about 65 % recorded in Juveniles due to dehydration, falling when learning to fly, strong wind, food deficiency, destruction of habitat, removal of nest. They nested almost exclusively in the colonies of cliffs and ruins; however in areas, where cliffs are absent, they have been recorded nesting in trees. Therefore, there is an urgent need to take necessary action to increases the reproductive success of vulture in Bundelkhand region.

Key Word Index*:* Breeding, Vulture, Kaplan-Meier Survival analysis, Log Rank

Study on Prevalence, Incidence and Risk Factors of Diabetes

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Diabetes is one of the most common globally prevalent health emergencies of the 21st century. Its increase cannot be attributed to a single cause, but rather, to a combination of demographic, lifestyle and clinical factors. Diabetes can cause long term complications that can affect whole body of an individual. It is a major cause of disability, reduced quality of life and even death of the individual. In this study we determine the prevalence, incidence and risk factors of diabetes in local population. Diabetes is no longer a disease of the elderly, but is a major cause of morbidity and mortality affecting youth and middle-aged people.

Key Word Index: Diabetes, prevalence, morbility, mortality

Development of a novel Zebrafish Model for the study of diabetes mellitus

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Diabetes mellitus is a metabolic disorder characterized by hyperglycemia and alterations in carbohydrate, fat and protein metabolism. DM is often accompanied with several complications such as atherosclerosis, neuropathy and cataract formation. The National Health Policy 2017 of India aims to increase screening and treatment of 80% of people with diabetes and reduce premature deaths from diabetes by 25% by 2025. Zebrafish (*Danio rerio*) exhibits many features of vertebrate models apart from physiological and anatomical characteristics of higher organisms that attracted scientists all over the world for its use in biomedical researches. Zebrafish exposed to diabetogenic agents such as alloxan monohydrate (AM), streptozocin (STZ) and glucose water solution (GLU-W) to induce diabetes mellitus (DM), and if left

normal after induction of DM then it has been observed that subjects metabolised the elevated glucose level and showed high degree of glucose homeostasis. Exposure of 100 mg of AM/100 ml and 200 mg of AM/100 ml for 30 mins are not capable to induce DM in the subjects whereas exposure of 300 mg of AM/100 ml and 400 mg of AM/100 ml for 30 mins are able to induce DM in the zebrafish. Mortality has been recorded in the group treated with 400 mg of AM/100 ml. Overall, dose of 300 mg of AM/100 ml for 30 mins is found to be suitable to induce DM in the subjects. Zebrafish showed diabetic when treated with AM thenafter 1% GLU-W minimum for 30 mins but when the subjects left normal after induction, blood glucose level went down with respect to time. It was also observed that when the subjects kept in different GLU-W (1%, 2% and 3%) for minimum 21 days then 21 days required for inducing DM in the subject treated with 1% GLU-W treated subjects whereas 1% and 2% GLU-W showed diabetes just after 7 days and 4 days onwards. Streptozocin (0.35mg/gm of body weight) exposed with its booster dose was found to maintain diabetes in the subject for 21 days without any mortality which may be helpful for the researchers' working on secondary complications of DM taking zebrafish as a model.

Key Word Index: Diabetes mellitus, Zebrafish, Alloxan monohydrate, Streptozocin, Glucose water solution

Depleting ground water: A challenge for regulators and hydrogeologist

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Groundwater is one of the most significant water sources in India accounting for 63% of all irrigation water and over 80% of the rural and urban domestic water supplies.United Nations Educational, Scientific and Cultural Organization (UNESCO) World Water Development Report states that India is the largest extractor of groundwater in the world. India is a groundwater economy. At 260 cubic km per year, our country is the highest user of groundwater in the world - we use 25 percent of all groundwater extracted globally, ahead of USA and China. Fifty-four percent of India's groundwater wells have deteriorated over the past seven years and 21 major cities are expected to run out of groundwater by 2020. Thus, India faces a dual challenge: to regulate the rising demand for groundwater while refilling its sources. The vast majorities of groundwater pumps is unmetered, thus it creates excessive withdrawal of groundwater. Groundwater is the largest liquid freshwater resource of the Earth. It plays a crucial role in human fuel and global food security by supporting irrigated agriculture. At present, India is undergoing a "groundwater drought".

Key Word Index: ground water, hydrogeologist

Limits of tolerance in homoeothermic animals

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Some animals are homeothermals. They can regulate their temperature in some specific range. The body temperature of eutherian mammals lies in between 36 to 38 degree Celsius. In birds it is 39 to 42 degree Celsius and in monotremes and marsupials it is 30 to 35 degree Celsius. The normal body temperature of human beings is 36.5 to 37.5degree Celsius i. e. 97.7 to 99.5 degree Fahrenheit. More than this is fever and less is hypothermia. The environmental temperature varies from place to place within world as well as within in any country. The homeothermal animals can tolerate a limit of temperature and maintain their homeothermy but in extreme conditions of temperature they affected adversely. It is observed that the peoples lie in which temperature conditions becomes adjusted. Sudden change of temperature is more harmful than continuous variation in any direction. Many events show that the economically poorer persons or who lived in less protected conditions of temperature were more affected with temperature change. It is a hypothesis that economically poorer persons have more limit of tolerance in comparison to person lives in protected environmental conditions.

Key Word Index: Homeothermal, limit of tolerance, temperature range, protected temperature conditions.

Remediation of Heavy Metals in Drinking Water and Wastewater Treatment Systems: Processes and Applications

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In small quantities, certain heavy metals are nutritionally essential for a healthy life. The heavy metals linked most often to human poisoning are lead, mercury, arsenic and cadmium. Other heavy metals, including copper, zinc and chromium are actually required by the body in small amounts, but can also be toxic in larger doses. They have the ability of dissolving in wastewaters and when discharged into surface waters, they can be concentrated and travel up the food chain. They can also seep into groundwater, hence contaminating drinking water, thereby harming the consumers of that water. The enactment of several water legislations and guidelines worldwide coupled with the need for environmental sustainability has necessitated the need for several stringent regulations for drinking water supply and wastewater discharge. To achieve unpolluted drinking water distribution and wastewater discharge, several technologies and processes for heavy metal remediation are currently in use. This review was therefore aimed at elucidating the major available technologies for heavy metal remediation in water, with emphasis on their processes and applications. Currently, no one of the existing technologies for heavy metal remediation (chemical remediation, phytoremediation or microbial

remediation) is without some form of merits and demerits. There is therefore a proposed need for the utilization of safe and economical multiple/integrated approach for heavy metal remediation. The application of this may offer enormous public health, environmental and cost benefits.

Key Word Index: Heavy metals, remediation, water

Need to review snake bite mitigation protocol.

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Snakes evolved from lizards in late Jurassic age about 135 million years ago, that is more than 100 million years much before ancestors of humans appeared on earth. There are about 3600 described species of snakes throughout the world. India is represented by about 283 species of snakes. Out of these only 60 species are venomous. All 60 species are not deadly venomous. Most snake bite death are due to four species , Cobra, Krait, Russel's Viper and saw scale viper hence called four major snakes are Habitat encroachments and habitat destruction by human being have forced many wild animals including snakes to enter in human settlements. This has resulted in serious problem of human-snake conflict. Snakebite is a major medical hazard at worldwide level. According to an estimate 46,000 people die per year from snake bites. Most of these incidences of snakebites have been reported from agricultural fields, forests and houses situated near the forest areas and agricultural fields. Normally snakes do not attack human beings until unknowingly human come in close vicinity of snake ignorantly in spite of their alarming signals (hissing etc.). Due to fear of snakebite people immediately kill snake when they encountered. Safe snake rescue have been found to reduce human snake conflicts. Snake awareness and rescue programmes have significantly reduced snake man conflict.

Snake bite death is because of venom produced by venom glands Snake venom is normally mixture of proteins and is a glandular secretion evolved by nature over the successive evolution to help snakes in feeding and digestion. It immobilizes the prey so that in absence of any appendages it can feed prey easily. It also helps in digestion as venom causes softening and lyses of tissues..An antivenom aimed at the four most dangerous snakes is the main treatment.The polyvalent antivenom produced in the country targets the 'big four' snakes.

A new challenge related to snake bite treatment: Why are so many people still dying from snake bites?

Although, antivenom aimed at the four most dangerous snakes is the main treatment but a recent study from a group of scientists from IISc Bangaluru in an effort to determine the efficacy and effects of commonly used antivenom treatment has come out with a serious report that "Commercial antivenom used in India is not as effective as perceived. They have estimated that around 46,000 people die due to snake bites in India and three times as many victims (1.4 lakh people) are left with some permanent disabilities every year. There are some species which are mildly venomous other than the big four which are medically important but neglected. The polyvenom produced from these big four is ineffective in the case of mildly venomous species. Further, there was a significant difference in the venoms of monocled cobra species found in West Bengal and Arunachal Pradesh. The former was more neurotoxic (destructive to nerve tissues) while the latter was more cytotoxic (toxic to cells). More shockingly so, the antivenom was found to be inefficient against the common krait from north India, which is one of the 'big four. Very little is known about the infection caused by the oropharyngeal bacteria inoculated in the victim along with phangs. These toxic bacteria cause severe tissue damages.

These developments related to snake bite mitigation and management that exist today suggest need to review the snake bite treatment protocol so that incidences of snake bite may not become fatal. Further it is urgently required to study proteomics of venom of a species from different geographical locations to increase efficacy of treatment.

Key Word Index: Snake, Viper, Jurassic age, Cobra, Krait, Russel's Viper, Snakebite

A study of correlation between solar wind parameters and geomagnetic parameters during solar cycle-24

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This paper consists of a correlative study between the solar wind parameters (i.e. solar wind plasma speed in km/ sec. and solar wind plasma temperature in kelvin) and geomagnetic parameters (i.e. geomagnetic disturbance index A_p and geomagnetic activity index K_p) during complete solar cycle-24 for the time period 2007 to 2017. We show the correlation between solar wind plasma speed with geomagnetic disturbance index A_p and solar wind plasma speed with geomagnetic activity index K_p and solar wind plasma temperature with geomagnetic disturbance index A_p and solar wind plasma temperature with geomagnetic activity index K_p. Then we observed good correlation between various parameters. The coefficient of correlation for solar wind plasma speed Vs geomagnetic disturbance index A_p ($r = 0.6894$) and for solar wind plasma speed Vs geomagnetic activity index K_p ($r = 0.7192$) and for solar wind plasma temperature Vs geomagnetic disturbance index A_p ($r = 0.7649$) and for solar wind plasma temperature Vs geomagnetic activity index K_p ($r = 0.8053$). Then we observed positively correlation between various parameters and geomagnetic activity has initially display quiet activity.

Key Word Index: geomagnetic disturbance index $A_{p,}$ geomagnetic activity index $K_{p,}$ Disturbance storm time (Dst)

Biochemical studies of zinc sulphate on certain organs of a fresh water teleost Mystuscavacius

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Small quantities of zinc are required for the normal development and metabolism, but if its level exceeds the physiological requirements, it can act as a toxicant. Fish population is an important component of the food chain any effect of such pollution would in the due course, have adverse influence on the nutritive value of fish and on man through their consumption. The present study was undertaken to evaluate the effect of zinc sulphate on protein and glycogen on exposure to three sublethal concentrations i. e., 2.0mg/l, 2.5mg/l and 3.0mg/l for a period of 10 and 20 days. Glycogen is one of the immediate fuel reserves and important constituents which can be influenced by stress. In our study glycogen level in the liver and kidney tissues were decreased when exposed to sublethal doses of zinc sulphate. Zinc sulphate caused depletion in liver and kidney protein at all exposure levels.

Key Word Index: Mystuscavacius, Biochemical, zinc sulphate, glycogen, protein.

Comparative Preliminary phytochemical and HPTLC fingerprints profile of *Gmelina arborea* and *Oroxylum indicum* leaf

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Gmelina arborea belongs to family Verbenaceae is an important medicinal plant. It is commonly known as "Gambhari" and found throughout the India. Traditionally, the various parts of the plant are used in treatment of human diseases *viz.* anemia, alopecia, leprosy, skin diseases, urinal disorders, and also in preparation of Ayurvedic formulation. *Oroxylum indicum* family Bignoniaceae common name is Sonapatha. It is also available in National Park of Assam, India. It is a large medium sized tree 12-15 meter (40 feet) height. Leaves are green in colour and are two to five inch long. Traditionally whole plant of Sonapatha is used to cure various ailments such as diarrhoea, dysentery, diaphoretic (excessive sweating), stomach disorder, anthelmintic, worms and heart disease. The paper deals with the pharmacognostical evaluation of leaf *Gmelina arborea* and *Oroxylum indicum*. The pharmacognostical study includes macroscopic, fluorescence analysis and physico-chemical tests. The preliminary phytochemical evaluation shows the presence or absence of alkaloids, carbohydrates, proteins, resins, flavonoids, saponins and tannins. The data obtained in the present study will serve as valuable tool for identification, authentication and detection of adulteration, standardization and quality control of the drug.

Key Word Index: Pharmacognostical, phytochemical, fluorescence, HPTLC, standardization.

Human impact on wetland ecosystems: A case study of twin Himalayan Wetlands of Jammu region, Jammu and Kashmir, India.

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Surinsar and Mansar are two wetland of national and international importance and are under severe threat due to increased anthropogenic pressures within the lake ecosystem as well as in the catchment. These twin lakes are lifelines for inhabitants of Surinsar and Mansar area. It is home to a wide range of aquatic and terrestrial flora and fauna. The catchment area is mostly associated with agricultural activities. However, these two water bodies and their surrounding areas are facing increasing threats from habitation and encroachment, deforestation, increased tourist influx, agricultural activities, pollution problems, solid waste dumping, increase silt load, water abstraction, religious activities, trash fish extinction and winter mortality. This paper reviews some of the adverse socio-economic, cultural and religious activities that exert pressure on these lakes. Conservation action should be taken by maintaining of water level in all season and implying the protection laws and government initiatives, planning, managing and monitoring, pollution control, environmental education and awareness for the protection and conservation of wetlands.

Key Word Index: Surinsar and Mansar, lifeline, anthropogenic pressure, pollution and conservation

Enthnobatnical survey and medicinal properties of an endangered plant Ruta graveolens L.

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There are different types of live forms including plants, animals, micro organisms present on earth. This type of variation is called biodiversity. On earth all living organisms have their own importance absence of any one of them would create imbalance in the eco system due to human selfishness or climate change many species of these life forms became endangered and one them is Ruta graveolens also known as Rue or herb of grace hindi name for this plant is Sitab or Satab. Sitab belongs to the family of Rutaceae. It was grown as an ornamental plant and also has medicinal values. Ruta graveolens is a herb with bluish green leaf with strong scent. It grows mainly in hot and dry soil. Since many ages, These plants are used for the traditional treatments like in Ayurveda, Homeopathy and Unani. Rue is also used in all of these Traditional methods of treatment due to the present of different types of photochemical like Rutin, Quercetin etc. Presence of various secondary metabolites such as flavonoids, Alkoloids, terpenodis, saponins and carotenoids. In Indian traditional medicine, Plant are used in stomahic, antispasmodic, cough, colic, headache etc. It is proved by research that Rue has pharmacological functions including antiflammatory, analgesic, antiandrogenic, antihyperglycemia, anti-gout and anticancer activities among others survey of Ruta graveolens is done in and all around the Bhopal city. In the survey I discussed with different age group and both genders According to a survey, Ruta graveolens is known by mainly early age people and adult women. According to a survey Ruta graveolens use to glance of children and animals that produce milk, incensation (Dhuni) to child, It was also found that this plant is used in diablerie and exorcise ghost. So the conclusion of this survey is that Ruta has a lot of medicinal value and it is used as a traditional medicine and on the other hand it is also believed that most people used this plant as a part of their superstitious beliefs.

Key Word Index: Enthnobatnical, endangered plant, biodiversity

Phytochemical and pharmacological activity of achyranthusaspera

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Achyranthesaspera Linnis belongs to (Amaranthaceae), commonly knownn as apamarga, this is a commonly available plant in India. It is also known as Latjira, and Prickly chaff. Different parts of the Achyranthesaspera have different pharmacological activity. The plant have pungent, astringent, pectoral and diuretic activity. It is used inpiles and skin eruption. The leaves of plants are used in the treatment of gonorrhea, and excessive perspiration. The extract of leave isused for leprosy and the heated extract used for tetanus. The rootis reported to be useful in cancer. The extraction of the root is used for stomach troubles and aqueous extract is used in bladder stones. The flower tops are employed for the treatment of rabies. The seeds are used in hydrophobia.The plant *Achyranthesaspera* revealed the presence of medicinally important bioactive compounds. The preliminary phytochemical screening of extracts of *Achyranthesaspera* showed the presence of phytochemicals such as alkaloids, carbohydrates, flavonoids, proteins, amino acids, tannins, phenols, steroids, glycosides and saponins.

Key Word Index: *Achyranthesaspera*, phytochemical, solvent extraction, bioactoive compound

Assessment of Microbiological status of groundwater of selected villages of Raisen district, Madhya Pradesh

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The contamination whether it is chemical or biological in drinking water is a major water quality concern throughout the world. The main objective of the present study was tocharacterize the bacteriological quality of water for 32 sampling sites in 16 villages of Raisen district. Coliform count is the major tool to determine the bacteriological contamination of water. It was done for Total coliforms and Faecal coliforms by using Multiple Tube Fermentation Technique method. The results revealed that 13 sampling samples were contaminated with Total coliforms and 5 groundwater samples were contaminated with faecal coliforms bacteria.The results were analysed by comparing with drinking water standard IS10500 (2012). The presence of the total and faecal coliforms in groundwater samples make unsuitable for drinking purpose, which can render the consumer more vulnerable to health risks. Therefore, it is necessary to take some essential measures to ensure safe drinking water quality by local authorities for people.

Key Word Index: Total coliforms, faecal coliforms, multiple tube fermentation technique, physico-chemical, health risk.

A Study on Impact of Climate Change on Soil Health

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Climate change is supposed to adversely impact natural resources, and in many settings these impacts are already evident globally. The impact of human activities to the climate change comes as a result of excessive emission of greenhouse gases (GHGs) into the atmosphere. Soils are intricately linked to the climate system through the carbon, nitrogen and hydrologic cycles. Because of this, altered climate will have an effect on soil health. Soils are also important to food security and climate change has the potential to threaten food security through its effects on soil properties and processes. The most recent report of the Intergovernmental Panel on Climate Change (IPCC) indicates that the average global temperature will probably rise between 1.1°C and 6.4°C by 2090 – 2099 as compared to 1980-1999 temperatures, with the most likely rise being between 1.8°C and 4.0°C. Climate change also influence global precipitation patterns, altering both the amount of precipitation received and the distribution of precipitation over the course of an average year in many locations. The climate change effects environment including the soil. The study of soil-climate interactions in a

changing world is critical to addressing future food security concerns. In this paper, we discuss the effect of green house gases on human and soil health. Further, it was suggested that government and other relevant non-governmental organizations should organize and or support conferences, workshops and seminars directed at exposing the people on the need to reflect climate change causes and effect related to environmental contents.

Key Word Index: Climate change, Food security, Greenhouse gases, Natural resources, Soil health.

Influence of Climate Change on Sericulture in Kashmir Valley

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Climate change is the statistical distribution of weather patterns when that change lasts for external period of time. It has badly impacted natural resources as well as the livelihood of the society, and in many settings these impacts are already noticeable. The rise in global atmospheric temperature mainly depends on increase in concentration of greenhouse gases like CO_2 (carbon dioxide), CH_2 (methane) and NO_2 (Nitrous oxide). The exact effect of climate change on soil heath and sericulture industry is based on prediction of several researchers. The temperature may rise from 0.5 to 4.0 ºC in the various parts of the country in next few decades from accumulation of anthropogenic greenhouse gases in the atmosphere which may change practices and economy of sericulture drastically in temperate zones. The climate changes impacts can be seen in J&K because of limited adaptive capacity, as J&K faces frequent floods, storms and dry weather. In this paper, we discuss the effect of climate change on sericulture in Kashmir valley. Finally, it was recommended that government and other relevant non-governmental organizations should organize programs to expose people to face effects of climate change on agriculture.

Key Word Index: Climate change, Natural resources, Sericulture, Soil heath.

Correlation of sunspots with climate change

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The earth's climate is generally defined as the average weather over a long period of time. The sun is fundamental source of energy for earth and also primary driver of earth's space weather. Sunspots are the areas on the sun where the magnetic field is about 2500 times stronger than the earth's, much greater than anywhere else on the sun. The number of sunspots varies approximately 11year solar cycle. In this study the relationship between sunspots and climate change has been discussed. It is found that the sunspot number during 1976-2006 shows correlation with the simultaneous variation in global mean temperatures.

Key Word Index: Space weather, Sunspot, Climate change, Solar cycle.

Climate Change and its Impact on Global Food Security

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Climate change could potentially halt on-going process towards a world without hunger. A robust and unified global pattern is detectable of the impacts of climate change on crop productivity that could have consequences for food availability. The resistance of whole food systems may be at risk under climate change because of short term variability in supply. However, the potential impact is less clear at regional scales, but it is likely that climate variability and change will exacerbate food insecurity in areas currently vulnerable to hunger and under nutrition. The evidences supports the need for considerable investment in adaptation and mitigation actions towards a "climate-smart food system" that is more resilient to climate change influences on food security. The main purpose of writing this paper was to discuss the impact of climate change on global food security.

Key Word Index: Climate change, Crop productivity, Food security, Vulnerable.

Dietary and hormonal manipulation in advancing maturation for quality seed production of Indian Major Carps and Catfishes

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With the steadily growing importance of culture fisheries, the fish culturists should improve the technique necessary for securing basic requirement, the production of young ones (fry and fingerlings) for stocking. Hence, the artificial propagation technique needs constant refinement for obtaining quality fish seed at the desired times of the year. Recent advances in fish endocrinology have led to a better understanding of the hormonal factors involved in the control of gamete production, mode of their action and regulation of their secretion during different stages of reproductive cycle. Environmental stimuli like photoperiod and temperature are perceived by the brain which releases gonadotropin-releasing hormone (GnRH) that binds specifically to receptors in the pituitary gonadotrops and stimulates secretion of gonadotropic hormone (GtH- I, II) which enhance gonadal development and final maturation. GtH-I functions at the target sites in two ways- it induces synthesis and secretion of estradiol-17 â during pre-vitellogenic phase which, in turn, induces vitellogenesis or yolk production during post-vitellogenic phase, GtH-II triggers the synthesis of 17á,20â - dihydroxyprogesterone (17,20-P) responsible for the final gonadal maturation leading to ovulation and spermiation. The recent identification of three GnRH (GnRH 1, GnRH 2 and GnRH 3), kissproteins, two kiss genes (kiss-1, kiss-2) and two kiss receptors (GPR54)- kiss 1r and kiss 2r as well as cytochrome P450 aromatase gene (CYP19) in brain and gonads (ovary and testis) have given better insight into mechanism of hormonal interactions in fish reproduction. Role of pheromones are also gaining importance in advanced phases of reproduction involving the synchronization of maturity, attraction of prospective mates, triggering spawning behaviour and release of gametes.

Role of nutrition in broodstock management for quality seed production in fishes has been appreciated during the recent years. Success of induced breeding depends on proper gonadal maturation because fishes reared without adequate food supply do not show full maturity. Also, the breeding of females and males do not synchronize under improper rearing conditions. Induced breeding of fishes for mass-scale seed production has been achieved successfully by employing pituitary gland extract (PGE) (hypophysation) and different synthetic GnRH-based drugs and antagonist dopamine administration in carps, Atlantic salmon, goldfish, *Chanos Chanos*, *Tinca tinca* and a number of catfishes inhabiting Indian waters. Interestingly, dietary as well as hormonal manipulations have resulted in the advancement of maturity in the Indian carps and catfish by 2 months under pond conditions giving scope for re-maturation and multiple breeding of the same fish in subtropical region of the country for better gamete output. Thyroxine (T_3, T_4), cortisol and hGH treatments resulted in better larval survival under hatchery conditions. Even thyroxine (T_3, T_4) treatment (dietary/ intramuscular administration) in the female broodstocks resulted in better larval survival in carps and catfish. Modern fish industry is highly specialized exploring more and more possibilities to manipulate reproduction. In spite all the recent advances in reproductive physiology, we are still far behind to understand the basic mechanism (s) involved in process of fish propagation in nature. Knowledge on nutrition and reproductive endocrinology periodically refines the technology of production of quality gametes for the expansion of aquaculture.

Key Words Index: Fisheries, Photoperiod, Temperature, Thyroxine

Perception and Awareness towards Influence of Climate Change on Human Health among Rural People in North Kashmir: A Sample Survey

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The present study conducted in North Kashmir of Kashmir valley aimed to study the perception and awareness of rural people towards the influence of climate change on human health. The climate threat increases from various interactions between environments, economic, social, religious and political systems at present. The climate change directly or indirectly affect the living of the society as climate change cause storms and other form of extreme weather which effect agricultural production as well as human health. In this study, a well-designed validated questionnaire was used to collect the information from a sample of 400 people selected randomly from rural areas of North Kashmir to get the Participant's perception at small scale. The data collected was analyzed using standard statistical tools with the help of SPSS (version 21) software. The results obtained from our study revealed that increase in temperature, unpredictable storms has direct influence on human health as climate change and health are significantly associated. Further, respondents in majority were aware of the climate change and its impacts on health but they do not identify how to adopt climate changes. Finally, it was concluded from our study that the socio-economic profile of people and awareness regarding health have to be modified to handle climate change impact as climate change causes major disruptions in human life.

Key Word Index: Climate Change, Human Health, Kashmir, Perception, Rural, Statistics

Study on physico-chemical and heavy metal analysis of water in Umrar Dam on Umrar River in Umaria district, Shahdol division in central India

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This paper deals with the Physico-chemical parameters and heavy metal analysis of Umrar dam in Umaria district, Madhya Pradesh. Monthly Changes in Physical and Chemical Parameters such as Water Temperature, Turbidity, Total Dissolved Solids, pH, Dissolved Oxygen, Free Carbondioxide, Total Hardness, Chlorides, Alkalinity, Phosphate and Nitrates were analyzed for a period of one year from 2016 to 2017 simultaneously, heavy metal analysis also done in three seasons (summer, Rainy and winter) of the year. All Parameters were within the permissible limits but result related to heavy metals is not satisfactory. Copper is not found in dam water whereas Copper (Cu) is one of the metal, which are essential to human health as well as aquatic life and the concentrations of Fe, Hg and Pb are higher than prescribed limits of WHO and Indian Standard which is responsible for many health hazards related to polluted water. So, the results indicate that the Dam is polluted and cannot be used for Domestic, Irrigation and Fisheries without treatment.

Key Word Index: Umrar Dam, Heavy metals, Physico-Chemical Parameters, Pollution, Health hazards, Fisheries, Irrigation.

Climate change and global health issues

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The biggest global-health threat of the 21st century is climate change and its impact on abiotic and biotic components of ecosystems. Protecting public health from Climate Change is a big issue before us. Climate attributes should be studied, monitored and recorded so as to resolve health issues. Educate/empower/engage all citizens to foster a better understanding of the public health consequences of climate change and take actions to reduce/eliminate those consequences. To mitigate the ill effects of climate change some measures like assessing and improving the capacity of existing public health preparedness, response, and recovery programs should be planned to respond to climate-related impacts and direct resources where needed. Present paper deals with all these issues and probable solutions, especially in Indian context.

Key Word Index: public health, climate change, abiotic and biotic components, mitigation

Climate Change Impact Studies on Rainfall Patterns for Past and Present Century – A Case Study

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In the twentieth century many recent studies show changes in rainfall patterns of India as well as changes in weather conditions. These are due to global climate changes, decrease in rainfall duration and rainfall amount and increase in rainfall intensity. In the present paper an attempt has been made to describe Climate change impact studies on rainfall patterns for the past and present century (1901 to 2013) of Sagar region. The rainfall data for a period from 1901 to 2013 have been collected from the District Land Record Department of Sagar and Indian Meteorological Department, New Delhi. The results of 113 years old historical rainfall records of Sagar region have been computed by statistical and time series analysis techniques. Results are also discussed for the future climate change scenario in rainfall patterns of the study area.

Key Word Index: Climate Change, Rainfall Pattern, Statistical Parameter, Time Series Analysis

Seasonal variation of rotifers (Phylum Rotifera) in a village pond, Simaliya, District Kota, Rajasthan

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Rotifers (phylum Rotifera) are also called wheel animalcules. It is a small group of microscopic pseudocoelomate animals found in fresh water resources. In this paper a study regarding seasonal variation of Rotifers is presented. This investigation was conducted in village pond, Simaliya, district Kota, Rajasthan (India) for two years from March, 2017 to February, 2019. The samples of water from the pond were collected in morning from four sampling sites and filtered using standard plankton net (Number 10, mesh size 150 micrometer). Plankton biomass was preserved in 5% formalin and segregated groupwaise and then identified using standard keys. Counting was done using Sedgwick-Rafter counter cell. During the study period 31 species of 16 genera are listed which were found in the river during different seasons. Species dominance and abundance are also discussed in the paper.

Key Word Index: Abundance, dominance, Plankton, River Chandloi, Rotifers, seasonal variation.

Ethno-botanical study on traditional medicinal plants used by the tribes of Chitrakoot region of Madhya Pradesh for their health.

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The Ethno-botanical study on traditional medicinal plants was conducted from May 2018 to April, 2019 in Chitrakoot region of Madhya Pradesh and documented different types of traditional medicinal plants used by the indigenous peoples. The study was focused on identifying medicinal plants, disease treated, part of the plant used, methods of preparation of drug, administration of drug etc. The data was collected using interview and questionnaires by selecting traditional healers using sampling method. A more than forty medicinal plant species were collected and identified from Chitrakoot region, which are utilized by the various tribal and folk communities of Chitrakoot region for the treatment of their different ailments and diseases, such as for cuts and wounds, leucorrhoea, snake bite, sex tonic, skin disease, etc. It is under threat due to the over exploitation for wood and destruction of natural habitats. The authors have carried out a detailed study on plant documentation of folklore traditional knowledge found in Chitrakoot region during the year 2018-2019.

Key Word Index: medicinal plants, Chitrakoot, indigenous peoples

Study on the home range in highly and low provisioned bisexual group of Rhesus (*Macaca mulatta*) around Kamadgiri parikrama, Chitrakoot (M.P.)

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Rhesus macaque (*Macaca mulatta*) non-human primate found abundantly in city and temple area of Madhya Pradesh. With the expansion of human settlements and consequent decline of the habitats most monkeys of the country have compelled to become ecological refugees, it is also true for Rhesus macaque. Chitrakoot is ancient, religious and spiritual place of India with much of its historical background. Field observations were carried on focal troops of rhesus monkey living in Kamadgiri parikrama area of Chitrakoot. The artificial feeding of rhesus monkey in these areas usually leads to change in behavioural strategies, both at the level of individual activity and physical growth rate. The variability in the frequency of provisioning directly affects the ranging of particular troop. During the present investigation data on troop size, troop composition male-female sex ratio and home ranges were obtained and correlated with each other. The variability in the frequency of provisioning directly affects the ranging pattern of a particular troop. The changes in the home range of rhesus monkey population are influenced by many factors including food resources, human interventions, animal fertility, emigration etc.

Key Word Index: Rhesus macaque*, Macaca mulatta,* primate, monkey, Kamadgiri, food resources, human interventions, animal fertility, emigration.

Lantana camara: A challenging weed for weed control

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India's biological diversity is one of the most significant in the world. It has rich floristic diversity, which is due to its characteristics geographic location and wide range of physiographic and climatic conditions. But some foreign invasive notorious weeds is encroaching in the each habitat. *Lantana camara* is a notorious, noxious and invasive weed belonging to verbenaceae family. The ability of some natural plants compounds to effectively inhibit the development of other plant has suggested, that they may be used as herbicides. These allelochemicals offer great potential for pesticides because they are free from problems associated with present pesticides. Allelochemicals are present in leaves, stem, roots and flowers of *Lantana* but leaves are the major source of allelochemicals. Allelopathic chemicals from *Lantana camara* are able to repel other plant. Phytotoxicity of *Lantana camara* could be exploited for weed control.

Key Word Index: Allelochemicals, *Lantana camara*, weed

Effect of SIDCUL industrial estate effluent on behaviour and morphology of tailless fresh water flea *Simocephalus vetulus* (Crustacea-Cladocera)

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Intense industrialization in India led to release of toxic effluents in surface water bodies causing deleterious effects on fresh water flora and fauna. *Simocephalus vetulus* a tailless fresh water flea is an important member of zooplankton community and base of the food chain of fresh water aquatic ecosystem. Fresh water tailless flea *S. vetulus* exposed to 5%, 10%, 15% and 20% of SIDCUL effluent of Haridwar Showed remarkable changes in behaviour like phototaxis, geotaxis, avoidance, activity, appendage movements, swimming, feeding and morphology specilly in cuticular coloration. Intensity of effects was found dose and duration dependent. Role of *S. vetulus* in environmental monitoring has been discussed.

Key Word Index: Behaviour, Industrial effluent, *Simocephalus vetulus*, Tailless water flea.

Alteration in Serum Parameters in *Clarius batrachus* (Linn.) due to Lead Nitrate in Yamuna River of Brij Region, Mathura, U.P.

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Present study deals to observe the effect of Heavy Metals especially Lead Nitrate on Biochemical parameters on Fish *Clarius batrachus* inhabitant in Yamuna River of Brij Region Uttar Pradesh. This compound is abundantly found in study area due to several Anklet factories, Paint factories, brass-Tap factories, Tannery Industries and untreated domestic waste. Four different sites *viz.* Keshi Ghat, Vishram Ghat, Gokul Barrage Ghat and Farah Ghat of Yamuna River in Brij Region (Mathura) were selected as sampling site. The water samples and fish were collected from all specified sites.The lead Nitrate concentration in water samples was measured by AAS technique at two different seasons (pre-monsoon and monsoon) during study period. For experimentation, fishes were caught from different sites and blood serum was collected for the biochemical studies than it carried to departmental laboratory and biochemical estimations were done. Serum parameters such as Total protein, Albumin, and Globulin were preferred under present study. Observation and results showed that all the serum parameters *viz.* Total serum Proteins, Serum Albumin, Serum Globulin were declined continuously from different sampling sites of downstream to Keshi Ghat. The decline of serum proteins values due to extensive proteolysis, inhibition of RNA synthesis and disturbing the protein metabolism.

Key Word Index: *Clarius batrachus*, Lead Nitrate, Atomic absorption Spectroscopy, Pollutant

Effects of Increased Temperature on aquatic fungal Diversity

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Climate warming and loss of biodiversity are two main risk factors for freshwaters. Aquatic hyphomycetes are fungi which play a key role in the transformation of organic matter in streams. To determine the impacts of temperature rise and aquatic hyphomycete diversity on plant-litter decomposition, we manipulated fungal assembly composition at two rates of diversity (four and eight species) at 16 ^{o}C ambient temperature and two temperature rise regimes varying at 8 ^{o}C: abrupt versus incremental 16 to 24 ^{o}C increase. The effects on leaf-litter decomposition, development of fungal biomass and fungal reproduction were evaluated. The increase in temperature affected more the fun gal biomass or reproduction on the structure of fungal assemblages and leaf decomposition. Though evidence of some redundancy between fungal species has been found. assembly composition has emerged as the major factor controlling fungal biomass and reproduction under various temperature regimes.

Key Word Index: plant-litter decomposition, aquatic hyphomycetes, biodiversity, warming

Eco-friendly management of urban mosquito vectors transmitting deadly disease to humans

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Aedes aegypti and *Aedes albopictus* mosquitoes are the primary vectors of several deadly arboviraldiseases such as dengue, chikungunya, Zika, yellow fever etc.These vectors have invaded and established worldwide causing vector-borne diseases that killsmillions of peoples globally. In India, the majority part of the country is affected bythese vector-borne diseases. Till date,arboviral diseases have no effective treatment for cure and completely rely on vector controls. The larval and adult mosquito control involves utilization of several insecticides and techniques. Every year 250 million tons of insecticide are poured into the environment which resulted in deleterious impact on the environment and living organisms directly or indirectly. Larvicide are the main controlling tools for *Aedes* vectors *i.e.* temephos, *Bti*, IGRS& many. Several insecticides developed resistance in mosquitoes and eventually out of the control programme. In search of environmental friendly larvicide, we developed several larvicidal formulations from plant oils namely, citronella, eucalyptus, pine and clove. On these formulations, different mosquito vectors, *Aedes aegypti, Aedes albopictus* and *Culex quinquefasciatus* were tested in the laboratory for larvicidal activity according to WHO (2005) protocol. Pine and eucalyptus oils were most effective producing quick larval mortality at 60-80 ppm in comparison to citronella. They were effective under long-term field evaluations and produced 100% mortality for 2 weeks post-application. The study showed that these larvicides can be used to control larval mosquito populations alternatively to temephos or IGRs to manage insecticide resistance in a cost-effective way.

Key Word Index: Mosquito, Insecticidal management, Resistance, Herbal insecticides, Larvicidal formulations

Climate change impact on reinforced concrete structures: A review

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Earthquakes Durability of reinforced concrete (RC) structures is affected by certain environmental conditions and operational actions which can reduce their lifetime significantly. Atmospheric CO_2 is a major cause of reinforcement corrosion in bridges, buildings, wharves, and other concrete infrastructure in India and most other countries. The increase in CO_2 levels associated with global warming will increase the likelihood of carbonation-induced corrosion, and it leads to cross-section reduction, climate change produces changes in temperature and humidity and fatigue induces nucleation and propagation of cracks in the rebars. When considered together, pitting corrosion nucleates cracks while environmental factors affect the kinematics of chloride ingress and corrosion propagation. Moreover, temperature rises will increase corrosion rates.

Clearly, the impact of climate change on existing and new infrastructure is considerable, as corrosion damage is disruptive to society and costly to repair. The paper describes a probabilistic and reliability-based approach that predicts

the probability of corrosion initiation and damage (severe cracking) for concrete infrastructure subjected to carbonation and chloride-induced corrosion resulting from elevated CO_2 levels and temperatures. The atmospheric CO_2 concentration and local temperature and relative humidity changes with time over the next 100 years in India. It was found that carbonation-induced damage risks can increase by over 400% over a time period to 2100 for some regions in India and other countries. Damage risks for chloride-induced corrosion increase by no more than 15% over the same time period due to temperature increase, but without consideration of ocean acidity change in marine exposure. Corrosion loss of reinforcement is not significant. The results were most sensitive to increases in atmospheric CO_2.

Key Word Index*:* Structural reliability, Climate change, Corrosion

Air Pollutants-Particulate Matter to Nanomaterials: A Global Health Challenge

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Rapid increase in population and industrialisation has severely deteriorated the air quality. Population in mega cities like Delhi and nearby areas are the main sufferers of air pollution. The main sources of air pollution are industrial and vehicular emission as well as burningof crop residues. During winter season, these emissions produce a thick cloud of smoke and cause major threats to human health. Industrial and vehicular emissions primarily include suspended particulate matter (SPM), which pose major health problems, as they can get deep into the lungs and even into the bloodstream.Nanoparticles, smaller than SPM have more serious consequences, as they may even cross the blood-brain barrier. Environmental agencies have advocated the need todetermine safety of consumers to engineered nano-materials in various products. Also, there are concerns about the health of plants and animals in the regions whichare located close to the sites, where nano-materials are discharged and disposed. Occupational health hazards due to inhalation ofinorganic particulate matter have similar impacts like engineerednano-scale particles. Several reports suggest that Ultra Fine Particles (UFPs) are much moretoxic than equivalent micron-sized materials at similar doses. Risk assessment due to suspended particulate matter and various air pollutants have been well established.There is an urgent need to explorethese established protocols for the development of appropriate risk assessmentstrategies to address unanswered questions on human and environmental health.

Key Word Index: Air Pollution, Suspended Particulate Matter, Nanomaterials, Risk Assessment

Analysis of Environment Protection Act and Policy in India

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Word "Environment" is most commonly used describing "Natural" environment and means the sum of all living and non-living things that surround an organism, or group of organisms. Environment includes all elements, factors, and conditions that have some impact on growth and development of certain organism. Environment includes both biotic and a-biotic factors that have influence on observed organism. The research work is based on the data collected by the secondary sources such as Books, Articles, Journals and Newspapers the collected has been analyzed through suitable techniques at different places. This paper deals with various aspects of environmental protection law and policy in India such as Causes, sources and effects of environmental pollution, various legislation for protection of environment, Role of Indian Judiciary in Environmental Protection etc.

Key Word Index: Pollution, Pollutant, Environment, Atmosphere Policy.

The most important useful and medicinal plants in shahdol Madhya Pradesh

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Medicinal plants grow naturally in any rangeland in so many countries around the world. Increasingly, medicinal species that reside in natural areas have received scientific and commercial attention. Over centuries, cultures around the world have learned how to use plants to fight illness and maintain health or as food purpose. But we still know little about the treasure trove inhabiting our wild places around our habitat. The present study based on scientific literature in order to identification medicinal plant in Shahdol region was conducted. The result of our work showed there are many different medicinal plant in differ plant family. And many people, local people even had not sufficient knowledge about them. Identify and evaluate the plants in each community is the first and the most important step for use and protection them.

Key Word Index: Medicinal plants, scientific literature, natural areas.

HINDI

महर्षि वाल्मीकि रचित महाकाव्य रामायणकाल की पारिस्थितिकी, पर्यावरण और जैवविविधता

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पौधों, जानवरों, सूक्ष्मजीवों, मिट्टी, पानी इत्यादि के साथ पृथ्वी पर मौजूद सभी जीवित प्राणियों, अर्थात् विभिन्न जीवन रूप, उनके जीन और पारिस्थितिक तंत्र पृथ्वी की जैव विविधता बनाते हैं। इसलिए प्राचीन भारतीय महाकाव्य रामायण में वनस्पतियों और जीवों, पारिस्थितिकी, पर्यावरण, जैव विविधता, भूगोल और वानिकी के संदर्भ हैं, जिनमें बड़ी संख्या में पौधों की प्रजातियां हैं। रामायण में जैव विविधता के मूल्य और आश्चर्य को खूबसूरती से वर्णित किया गया है और प्रकृति की महिमा के शानदार वर्णन से भरा हुआ है। यह दोप्रमुख घटनाओं, जैसे रामा के जंगल में चौदह वर्ष निर्वासन और सीता को लंका में कैद से बचाने के लिए घूमता है। नैमिशरान्या, चित्रकूट, दंडकारण्य और पंचवटी में घने जंगल थे जो वन्यजीवन में घिरे थे। इसके अलावा, रामायण भौगोलिक दृष्टि से बहुत सही है। राम के मार्ग पर हर साइट अभी भी कई पौधों और जानवरों की प्रजातियों के साथ पहचाना जा सकता है जिनका उल्लेख रामायण में अभी भी एक ही स्थान पर हुआ था। महाकाव्य के चरण में क्षेत्र का एक व्यापक तलछट शामिल है जो आज के उत्तर प्रदेश से मध्य प्रदेश, महाराष्ट्र, कर्नाटक तमिलनाडु, कन्याकुमारी और रामेश्वरम के बीच समुद्र से परे श्रीलंका तक फैला हुआ है। इस क्षेत्र में चार प्रमुख पारिस्थितिक तंत्र अर्थात् उष्णकटिबंधीय पर्णपाती जंगलों, शुष्क और नम पर्णपाती जंगलों, हिमालय के अल्पाइन क्षेत्र और भौगोलिक वितरण, मुख्य वनस्पति और जीवों, जल तत्वों के विवरण के साथ श्रीलंका के सदाबहार उष्णकटिबंधीय वर्षा वन शामिल हैं। इस प्रकार, वाल्मीकि के रामायण में वनस्पतियों और जीवों की प्रामाणिकता महाकाव्य काल और आज के बीच अयोध्या से श्रीलंका के राम के मार्ग की बदलती पारिस्थितिकी और उनके पर्यावरण महत्व के अध्ययन के लिए एक आकर्षक स्रोत है। पेपर रामायण में वर्णित पौधों का ज्वलंत खाता प्रस्तुत करता है जो क्षेत्र के पारिस्थितिक विकास को विकसित करने के लिए उपयोगी होगा और आगे के शोध के लिए एक प्रोत्साहन होगा।

मुख्य शब्दः रामायण, पर्यावरण पर्यटन, पारिस्थितिकी, पर्यावरण, जैव विविधता, वन प्रकार, वनस्पति, जीव

पर्यावरण संरक्षण और भारतीय संस्कृति

भुवनेश्वर सिंह मस्तैनया
शिक्षा संस्थान
बुन्देलखण्ड विश्वविद्यालय झांसी (उ॰प्र॰)

स्वच्छ पर्यावरण को हमारे देश में प्राचीनकाल से वरीयता दी गई। सच तो यह है कि हमारा भारतीय दर्शन पर्यावरण संरक्षण की दृष्टि से जितना समृद्ध है, उतना किसी अन्य देश का नहीं। पर्यावरण संरक्षण का भरतीय दर्शन इतना व्यावहारिक है कि यह हमारी जीवन शैली से जुड़ा हुआ है। यहीं कारण है कि सभी सामाजिक–सांस्कृतिक परंपराओं व प्रथाओं के मूल में कहीं न कहीं पर्यावरण सुरक्षा को

महत्व दिया गया है। भारत में प्राचीनकाल से सूर्य पृथ्वी, जल, वायु, अग्नि, वनस्पतियों, व सरिताओ और सरोवरों आदि को पूजनीय मानने है। सूर्योपासना, ग्रहों की अभ्यर्थना, अग्निपूजा एवं वृक्ष पूजा आदि की परंपराएं विकसित कर हमने सदैव पर्यावरण संरक्षण को आगे बढ़ाने का काम किया। पर्यावरण संरक्षण के साथ–साथ हमारे देश में जैव विविधता को संरक्षित रखने और से समृद्ध बनाने पर भी पूरा ध्यान दिया गया। यही कारण है कि भारतीय संस्कृति में जीव–जंतुओं को हानि पहुंचाने तथा उनका भक्षण करने की अनुमति नहीं है। जीवों की उपयोगिता के अनुरूप हमने उन्हें धार्मिक और सामाजिक मान्यता प्रदान की और भारतीय समाज में आज भी पूज्य हैं। राजस्थान का विश्नोई समुदाय आज भी काले हिरनों को शुभ मानकर इन्हें पूजता है तथा इनकी रक्षा के प्रति कृतसंकल्प रहता है। भारत के अनेक आदिवासी क्षेत्रों में पशुओं) वृक्षों व वनस्पतियों आदि को पूजने की प्राचीन परंपरा है। इतना हीं नही आदिवासियों के वस्त्र तक प्रकृति के अनुरूप रंग–बिरंगे होते हैं। इनकी जीवन–शैली में प्रकृति का पूरा प्रभाव दिखता है। हम नाग को नाग देवता कहकर 'नागपंचमी' जैसा त्योहार अकारण नहीं मनाते। पर्यावरण की दृष्टि से इसका अपना अलग महत्त्व है। सर्प वायुमंडल में विद्यमान जहरीली गैसों को आत्मसात कर वातावरण को प्रदूषित होने से बचाते हैं। हमारे भारतीय दर्शन में पर्यावरण को ईश्वर के प्रतिरूप के रूप में सम्मानित व संरक्षणीय माना गया है। तैत्तरीयोपनिषद् में कहा गया है– 'ईश्वरीय आत्मा से आकाश की, आकाश से वायु की, वायु से अग्नि की और अग्नि से जल तथा जल से पृथ्वी की उत्पत्ति हुई। पृथ्वी ने वनस्पति उपजाई, अन्न दिया और मानव जाति सहित असंख्य जीव–जंतुओं को पैदा किया। इस सृष्टि में प्रत्येक जीव–जंतु की अहम भूमिका है।' गीता में भगवान् कृष्ण का कथन है कि वृक्षों में मैं पीपल हूं और मत्स्य पुराण में पेड़ों को पुत्रों की संख्या से अभिहित करना पेड़ों के महत्व को स्पष्ट करते हैं। हमारी संस्कृति में नीम को पूर्ण चिकित्सक, आंवले को पूर्ण भोजन, पीपल को शुद्ध वायुदात्री, पाकड़ और वट के युग्म वृक्षों को जल संग्राहक एवं वट को पूर्ण धर माना गया है। भारतीय संस्कृति में त्योहारों का विशेष महत्व है। अपनी प्राचीन एवं पारंपरिक संस्कृति को जानने के साथ–साथ विभिन्न त्योहारों में वट, पीपल, नीम, आम के पेड़ों, केला एवं तुलसी के पौधे की पूजा तथा गाय, कुत्ता, चिड़ियों यहां तक कि कौवों आदि को भोजन खिलाना हमारी संस्कृति का अंग है। यह हमारी प्रकृति एवं मनुष्य के विभिन्न सहभागियों के प्रति जागरूकता का द्योतक है। नदियों एवं पहाड़ों का मानवीयकरण करके हमने उसमें जीवंतता ही नहीं पैदा की वरन् उन्हें अपना हिस्सा बनाया।

हिंदू मान्यताओं के अनुसार प्रकृति एवं पुरुष के संयोग से जीवन विकसित हुआ। प्रकृति को मां एवं पुरुष को पिता माना गया है। संतानोत्पति में पिता का योग तो होता है, किंतु उसे गर्भ में एवं बाद में भी पालने का कार्य मां अर्थात प्रकृति करती है। इस कारण प्राणीजगत् चर एवं अचर सभी की मां पृथ्वी है। पूरे विश्व का लालन–पालन करने के लिए पृथ्वी पर प्रकृति–जन्य वे सभी चीजें, जो उसमें जीवन के लिय आवश्यक हैं, पृथ्वी पर मनुष्य, पशु–पक्षी, पेड़ पौधे एवं अन्य सभी जीव–जंतु एक ऐसे प्रकृति प्रदत्त चक्र से बंधे हुए हैं, जिसमें वे अपने जीवन को सफलतापूर्वक चला सकें। कभी–कभी, दैविक आपदाओं, प्रकृति–जन्य बदलाव के कारण या कभी मानवीय क्रिया–कलापों के कारण प्रकृति–चक्र टूटते हैं, जिससे पर्यावरण असंतुलित होता है और सभी प्राणी असंतुलन से प्रभावित होते हैं। इस असंतुलन से पैदा हुई विसमताओं के कारण बड़ी–बड़ी सभ्यताएं समाप्त हो गईं पशु–पक्षियों, पेड़–पौधों एवं अन्य जीवों की पूरी जाति समाप्त हो चुकी हैं। वर्तमान में भी, पेड़–पौधों एवं पशु–पक्षियों की कई प्रजातियां समाप्त हो चुकी हैं। या समाप्त होने के कगार पर हैं और इसमें बहुत बड़ा योगदान मानव–जाति के क्रिया–कलापों का है। मनुष्य के क्रिया–कलापों में मुख्य रूप से युद्ध के कारण प्रयोग किए गए रासायनिक एवं आणविक हथियारों ने प्रकृति को दुष्प्रभावित किया है। इस प्रयास में प्रकृति का आवरण छिन्न–भिन्न हुआ है, जिससे प्रकृति का संतुलन बिगड़ा है। लेकिन वर्तमान में जहां सुख–सुविधा के लिए प्रयुक्त होने वाली सामग्री तथा विद्युत आदि के निमाण, उत्पादन के लिए कार्यरत कल–कारखानों, ताप विद्युत–गृहों से निकलने वाली विषैली गैसों, दूषित पानी तथा अन्य विषाक्त पदार्थों में भी प्रदूषण फैल रहा है, वहीं दूसरी ओर इन्हें रोकने या कम करने वाले पेड़ों और पौधों को अंधाधुंध काटने के कारण प्रकृति प्रदूषण रोकने में सफल नहीं हो पा रही है।

''आदिवासी महिलाओं के आर्थिक–सामाजिक विकास में वन संसाधन की भूमिका'' (सतना जिले के मझगवाँ ब्लाक के संदर्भ में)

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भारत की अधिकांश जनसंख्या गाँवों में रहती है और कृषि कार्य कर अपना जीविकोपार्जन करती है। गाँवों के अतिरिक्त वन क्षेत्रों और उसके आस–पास निवास करने वाली आदिवासी जनजातियां जीविकोपार्जन के लिये सीमित क्षेत्र में कृषि कार्य करती है, इसके अलावा ये जनजातियां वन क्षेत्रों से विभिन्न प्रकार वनस्पतियों और उनके उत्पादों को एकत्र कर इनकी बिक्री करके प्राप्त आय से अपना भरण–पोषण करती है। वन क्षेत्रों में वनस्पतियों और अन्य उत्पादों को इकट्ठा करने में आदिवासी महिलाओं का विशेष योगदान रहता है। आदिवासी महिलाएं जहाँ एक ओर वन उत्पादों को एकत्र कर अपना भरण–पोषण और आर्थिक सशक्तीकरण का मार्ग तय कर रही हैं, वही दूसरी ओर इन आदिवासी महिलाओं का वनों के संरक्षण और संवर्धन में भी विशेष योगदान है। इस तरह कहा जा सकता है कि वन्य क्षेत्रों का जितना संवर्धन और संरक्षण किया जोयगा उतना ही आदिवासी महिलाओं की सामाजिक और आर्थिक उन्नति होगी। कुल मिलाकर वनों के संवर्धन और संरक्षण तथा आदिवासी महिलाओं की सामाजिक और आर्थिक उन्नति के बीच सह सम्बंध पाया जाता है। प्रस्तुत शोध के माध्यम से शोधार्थी वनों के संरक्षण और संवर्धन तथा आदिवासी महिलाओं के सामाजिक आर्थिक उन्नति के बीच सह सम्बंध का पता लगाने का प्रयास करेगा।

मूल शब्द– सहसम्बंध, संवर्धन, संरक्षण, वन्य क्षेत्र, आदिवासी महिलाएं, सामाजिक और आर्थिक उन्नति।

''जल स्त्रोतों के संरक्षण में जनजागरूकता कार्यक्रमों की भूमिका का अध्ययन'' (सतना जिले के संदर्भ में)

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जल है तो जीवन है और जीवन है तो कल है, लेकिन अब यह कल सुरक्षित कैसे रहे? इसको लेकर बड़ी बहस की और बड़े प्रयासों की जरूरत है। घटते संसाधन और बढ़ती जरूरतों के हिसाब से पानी का संचय वक्त की जरूरत के साथ ही जिम्मेदारी भी बन गई है। बस इसके लिए क्या और कौन सा प्रयोग सरल, सटीक रहेगा, यह सोचना और तय करना है। उपयोगिता की दृष्टि से भूजल, सतह पर पीने योग्य उपलब्ध जल संसाधनों के मुकाबले अधिक महत्वपूर्ण है। भारत के लगभग 80 प्रतिशत गाँव, कृषि एवं पेयजल के लिये भू–जल पर ही निर्भर हैं, और दुश्चितां यह है कि विश्व में भू–जल अपना अस्तित्व तेजी से समेट रहा है। भू–जल और अन्य जल स्त्रोतों के संरक्षण के लिये आम जनता को जन–जागरूकता कार्यक्रमों के द्वारा सचेत किया जा सकता है। प्रस्तुत शोध के माध्यम से भू–जल और अन्य जल स्त्रोतों के संरक्षण में जन–जागरूकता कार्यक्रमों का क्या योगदान है, शोधार्थी इसका पता लगाने का प्रयास करेगा।

मूल शब्द– जल स्त्रोत, संरक्षण, जन–जागरूकता कार्यक्रम, भूमिगत जल, संसाधन, दुश्चितां और अस्तित्व।

पर्यावरण अध्ययन में कॅरियर निर्माण की सम्भावनाँ,

महेन्द्र कुमार
शिक्षा संस्थान, बुन्देलखण्ड विश्वविद्यालय, झाँसी

हम प्रतिदिन समाचार पत्र, टी0वी0 या न्यूज पेपर के माध्यम से यह सूचना अवश्य सुनते हैं कि आज प्रकृति ने उस जगह पर अपना सन्तुलन स्वयं बनाया। हम यह भी जानते है कि प्रकृति जब अपना सन्तुलन स्वयं बनाती है तो वह बड़ा बीभत्स होता है तो क्यों न ऐसी व्यवस्था को अपनाया जाये जिसमें प्रकृति को स्वयं अपना सन्तुलन कम से कम बनाना पड़े किन्तु यह कैसे सम्भव है। हम अत्यधिक स्वार्थी होते जा रहे हैं अपने थोड़े से भी फायदे के लिए हम प्रकृति का बड़ा अहित करने को तत्पर रहते हैं, यह स्वार्थ सिद्धता हमने अपने परिवार, पड़ौस, विद्यालय एवं समाज से ही सीखी है इसको समाप्त तो नही किया जा सकता किन्तु कम जरूर किया जा सकता है जिसके लिए हमें कॅरियर निर्माण के विभिन्न क्षेत्रों में पर्यावरण अध्ययन को महत्व देना होगा। ऐसी भी नही है कि हम इसके प्रति जागरूक नहीं है सब जानते हुए भी पर्यावरण अध्ययन के विषयों के प्रति निम्न मानसिकता सर्वोपरि है जिसको बदलना होगा अन्यथा पृथ्वी पर मानव जीवन की संकल्पना स्वतः बदल जाएगी। अतः छात्रों को पर्यावरण अध्ययन में कॅरियर निर्माण के क्षेत्रों की जानकारी कराते रहना चाहिए। विभिन्न क्षेत्र जैसे–

- प्रबन्धन एक कॅरियर के रूप में
- आपदा प्रबन्धन में शिक्षा एवं रोजगार
- औषधीय पौधों का उत्पादन
- पर्यावरण पत्रकार
- पर्यावरण गैर लाभकारी संगठन नेता
- रीसाइक्लिंग समन्वयक
- जमीनी स्तर के आयोजक ————————————।

वैश्विक जलवायु परिवर्तन के समग्र – प्रभाव एक अध्ययन

अनिता शिन्दे
श्री उमा गर्ल्स कॉलेज

जलवायु परिवर्तन के कारण पृथ्वी का दुषित होता पर्यावरण आज सम्पूर्ण विश्व के समक्ष एक ज्वलंत समस्या है। कोई भी राष्ट्र या व्यक्ति इसके दुष्प्रभावो से मुक्त नही रह सकता है इसके परिणाम स्वरूप आज विस्थापन, संघर्ष, भुखमरी, प्राकृतिक सौदर्य संस्कृति का विनाश तथा राष्ट्रीय असुरक्षा की भावना को पोषण देने वाली समस्या, दृष्टिगोचर हो रही है। ये समस्याएँ देश की सीमाओं के बंधन से मुक्त है। अतः इन विकराल समस्याओं के समाधान के लिए राष्ट्रीय एवं अन्तराष्ट्रीय सांझा प्रयासो की आवश्यकता है। ताकि हम विरासत मे अपनी आने वाली पीढीयों को एक स्वैच्छा एंव स्वस्थ पर्यावरण दे सके।

जलवायु परिवर्तन और मानव स्वास्थ्य

आशीष कुमार तिवारी
हिन्दी विभाग श्री कृष्णा विश्विद्यालय, छतरपुर

विश्व स्तरीय जलवायु का प्रभाव मानव जीवन पर गंभीर रुप से पड़ता हैं। यह भी सच हैं कि मानव शरीर अपने वातावरण के अनुसार अपने आप को ढाल लेता हैं,इसकी भी अपनी एक सीमा होती हैं। एक सीमा के बाद जलवायु परिवर्तन मानव शरीर पर अपने प्रभाव डालने लगता हैं। गर्म वातावरण अत्यधिक सर्द वातावरण के मुकाबले स्वास्थ्य पर प्रतिकूल प्रभाव डालता हैं। जैसे मलेरिया, फाइलेरिया, ड़ेंगू ज्वर, चिकनगुनिया इत्यादि ज्वर के प्रकोप में वृद्धि मृत्यु दर में बढ़ोत्तरी कर देते हैं।

जलवायु में होने वाले परिवर्तन रोगाणुओं में रोगाणु वाहकों में ऐसे परिवर्तन कर सकते हैं जिससे बिल्कुल नई प्रकार की बीमारियां उत्पन्न हो जाती हैं, जिनकी जानकारी से हम बिल्कुल अनभिज्ञ होते हैं। यहीं बीमारियां महामारी बनकर पूरे विश्व को अपनी चपेट में ले सकती हैं।

जलवायु परिवर्तन के होने वाले गम्भीर परिणामों के हम सब स्वयं ही दोषी हैं। वायु,जल, ध्वनि, मृदा इत्यादि प्रदूषण हम मानवों के द्वारा स्वार्थलोलुपता में फैलाए गए हैं और वहीं प्रदूषण स्वयं हमारे लिए ही घातक बन गए हैं। हम सभी को मिलकर प्रदूषण नियंत्रण, संतुलित जलवायु के लिए प्रयास करने होंगें। इन विषयों पर सोचकर समस्या समाधान हेतु एक सफल रणनीति बनानी होंगी, जिससे अपने वातावरण को संतुलित करके मानव जीवन को सुरक्षित कर सकें।

राष्ट्रकवि मैथिलीशरण गुप्त ने अपनी कृति 'भारत–भारती' में मानव समस्याओं पर मर्मान्तक वेदना का अनुभव करते हुए हम सबको चेतावनी देते हुए लिखा हैं––––

"हम कौन थे, क्या हो गए हैं, और क्या होंगें अभी।
आओ विचारें, आज मिलकर यह समस्याएं सभी।।"

पर्यावरण प्रबंधन

विदुषी शर्मा
इंदिरा गांधी राष्ट्रीय मुक्त विश्वविद्यालय
इंटरनेशनल ह्यूमन राइट्स आर्गेनाईजेशन
केंद्रीय हिंदी निदेशालय, भारत सरकार, दिल्ली
Email: drvidushisharma9300@gmail-com

प्रकृति ईश्वर है, सर्वशक्तिमान है, सर्वत्र है, जीवन दात्री है, जीवन रक्षक है, पोषण कर्ता है, सृजन कर्ता है किम बहुना प्रकृति सर्वस्व है। प्रकृति को यदि पर्यावरण की संज्ञा दी जाए तो कोई अतिश्योक्ति नहीं होगी। अनादि काल से ईश्वर की प्रत्येक रचना इसी पर्यावरण से उत्पन्न, पोषित, पुष्पित, पल्लवित, सुरक्षित और संरक्षित होती ही चली आ रही है। पौराणिक काल में हम प्रकृति को, पर्यावरण को स्वयं से पुननिर्मित होने का समय प्रदान करते थे। हमारी जरूरतें, इच्छाएं सीमित मात्रा में होती थी। परंतु आज के भूमंडलीकरण के दौर में पर्यावरण की दशा अत्यंत शोचनीय बनती जा रही है क्योंकि हम जरूरतों और इच्छओं में अंतर नहीं कर पा रहे हैं। We are not able to differentiate our NEEDS and WANTS जो कि हमारी आने वाली पीढ़ियों के लिए एक खतरा बन सकती है। वर्तमान में पर्यावरण

प्रबंधन हमारे समाज के प्रत्येक व्यक्ति का पुनीत कर्तव्य बन जाता है। इसी क्रम में पर्यावरण प्रबंधन से संबंधित विभिन्न बिंदुओं, प्रमुख घटक, पर्यावरण प्रबंधन की आवश्यकता, इसके प्रमुख उपाय तथा सरकारी स्तर पर सहयोग एवं आवश्यकता, विशेषज्ञों के सुझावों पर गंभीरता से चिंतन, मनन किया जाएगा ताकि इस वैश्विक समस्या के शोध परक कुछ उपाय, हल प्राप्त किए जा सके जो भविष्य में हम सभी के लिए लाभकारी, कल्याणकारी सिद्ध हो सकें।

मुख्य शब्दः पर्यावरण, प्रबंधन, पोषणकर्ता, सृजनकर्ता, सर्वस्व, अतिश्योक्ति, अनादिकाल, पल्लवित, पुष्पित, संरक्षित, पुनर्निर्मित, पौराणिक

Hilights of ESW

Brief Report of

ESW III International research conference on

"Ecotourism & Environment"

Organized by: Environment & Social Welfare Society Khajuraho-471606 MP, India.

In association with: Sher-e-Kashmir University of Agricultural Sciences and Technology of Kashmir, Jammu & Kashmir, India

on 29 to 31 July, 2018

Website: www.godavariacademy.com **and** www.ijgsr.com

Honourable Jenab Khurshid Ahmad Ganai, IAS, Hon'ble Advisor to the Governor,

Jammu & Kashmir inaugurated ESW 3rd International research conference

A PRELUDE: After the success of 2nd International research conference on "Strategy for Human Welfare on Nature conservation and Resource management" **ESW 3rd International research conference on "Ecotourism & Environment" 2018** organized by Environment & Social Welfare Society, Khajuraho,

Madhya Pradesh, India during 29 to 31 July, 2018 at Paradise of Earth, Kashmir, Jammu & Kashmir, India.

OBJECT: To provide a platform to Vice Chancellors, Educational Administrators, College Principals, Deans, Head of Departments, Professors, Readers, Associate Professors, Assistant Professors, Scientists, Environmentalist, Researchers, and Young scientists to disseminate knowledge related to Eco-tourism and Environment.

GOAL: Global warming in the major issue in the world. Sustainable Development Goals and its associated targets keeping in mind ESW Society, India President Dr. Ashwani Kumar Dubey has called for action on Quality Education; Clean Water and Sanitation; Climate Action; Life on Land; Peace, Justice and Strong Institutions; Partnerships for the Goals, and Nature conservation to be taken in close coordination with global action on The *Transforming our world: the 2030 Agenda for Sustainable Development*.

THEME: Take some positive steps towards improving our **Eco-tourism & Environment** for future generation.

INAUGURAL FUNCTION: The **ESW III International research conference inaugurated on 29 July, 2018 by Chief Guest** Honourable Jenab Khurshid Ahmad Ganai, IAS, Hon'ble Advisor to the Governor, Jammu & Kashmir; President Prof Nazeer Ahmad, Honourable Vice Chancellor, Sher-e-Kashmir University of Agricultural Sciences and Technology of Kashmir, Srinagar, Jammu & Kashmir; International Speaker, Dr. A. Hameed Khan (Senior Scientist) National Center for Medical Rehabilitation Research, National Institute of Health, Bethesda, Maryland, USA; Guest of Honour Honourable O P Sharma, Director Ecology, Environment & Remote Sensing, Jammu & Kashmi; Prof M. Yousf Zargar, Research Director SKUAST-K and Dr. Ashwani Kumar Dubey, President Environment & Social Welfare Society, Khajuraho, Madhya Pradesh, Fellow/Member of Environment & Social Welfare Society Khajuraho, India, Mrs. Vandana Dubey, Managing Director, Godavari Academy of Science and Technology, Chhatarpur, MP and other distinguished guests, participations from various part of countary and Four hundred fifty + listener including media were participated in conference.

Released Souvenir "Ecotourism & Environment" by Guest

Online Souvenir Volume I & II released with Message of Honourable Governor, Jammu & Kashmir, Rajbhawan, Srinagar, Mahamahim N. N. Vohra, Honourable Chancellor Dr Brajendra Singh Gautam, Shri Krishna University, Chhatarpur, Dr. Kailash Chandra, Director, ZSI, Ministry of Environment and Forest, Govt. of India, Kolkata, Prof Nazeer Ahmad, Honourable Vice Chancellor, Sher-e-Kashmir University of Agricultural Sciences and Technology

of Kashmir, Srinagar, Jammu & Kashmir, Prof. Priyvrat Shukla, Vice Chancellor Maharaja Chhatrasal Bundelkhand University, Chhatarpur. MP and Mr. Goel Abioui Mohammad, Ibn Zohar University, Morocco. Abstract with three hundred twenty two research Abstract which included from various part of countary including India, USA, Taiwan, Romania, Nepal and State of India viz. New Delhi, Madhya Pradesh, Uttar Pradesh, Chhattisgarh, Maharashtra, Rajasthan, Gujarat, Uttarakhand, West Bengal, Bihar, J&K.

Released Book "Sustainable development of Ecosystem, Wildlife and Heritage conservation for Human welfare" edited by Dr. Ashwani Kumar Dubey by Guest

Honourable Jenab Khurshid Ahmad Ganai, IAS, Hon'ble Advisor to the Governor, J&K, addressed on Possibilities of eco-tourism in India as well as internationally.

Prof Nazeer Ahmad, Honourable Vice Chancellor, focused on Eco-tourism and impact of environment on it.

Dr. A. Hameed Khan (Senior Scientist) delivered Key note address on the Impact of human genome project on climate change

Dr. O P Sharma highlighted on highlighted on various ecological aspect including biodiversity.

Prof M. Yousf Zargar focused on environmental issue.

Dr. Ashwani Kumar Dubey, Executive Director, ESW Society and Organizing Secretary of The International research conference addressed the role of ESW Society in Ecotourism and Environment also focus on annual report of the ESW Society, Khajuraho.

TECHNICAL SESSION: After the inauguration, the technical session held research paper and poster presented in the technical session.

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

Research Needs in Ecotourism, Research Needs in Environment conservation, Action plane for Ecotourism and Environment, Policy in Ecotourism and Environment conservation, Sustainable Ecotourism Development, Guide and Ecotourism, Role of NGO in Ecotourism, Community based Ecotourism, Role of Biodiversity in Ecotourism, Needs of Stakeholders for Ecotourism International and National Heritage conservation, Assessment of Environmental impacts of Ecotourism, The Existing Knowledge of Ecotourism, Biological and Ecological Impact of Tourism, Pollution in Tourism area, Environmental study of Tourism area, Natural resource management, Wildlife and Forest conservation and Technological Approach Lab to Land.

VALIDICTORY & AWARD CEREMONY ON 31 JULY:

Honourable O P Sharma, Director Ecology, Environment & Remote Sensing, Jammu & Kashmir was the Chief Guest, Prof M. Yousf Zargar, Research Director SKUAST-K President, Dr. A. Hameed Khan, Senior Scientist, National Center for Medical Rehabilitation Research (NCMRR) National Institute of Health, Bethesda, Maryland, USA and Dr. Ashwani Kumar Dubey, President Environment & Social Welfare Society, Khajuraho, Madhya Pradesh were the Guest of Honour of the Valedictory and award ceremony of the conference and other eminent scientists were present on this occasion.

AWARD CEREMONY:

Lifetime Achievement Award: Dr. S. K. Bhatnagar, Director, Bio-Medical Research Centre, Gwalior, Madhya Pradesh, India

ESW Excellency Award: Prof M. Yousf Zargar, Research Director SKUAST-K

Best Scientist Award: Dr. A. Hameed Khan, Senior Scientist, National Center for Medical Rehabilitation Research (NCMRR) National Institute of Health, Bethesda, Maryland, USA

Global Green Earth Care Award: *Karruna Santoshasing Pardeshi, Department of Zoology. Abasaheb Garware College, Pune, Maharashtra, India*

Social Innovative NGO National Award: Mr. K. Vasudevan, Saai Jnana Aanandam Foundation, Bangalore, Hareesh V. Chaitanya Foundation, Bangalore, Mrs. Alizabeth, Elizabath Integrated Charitable Trust, Bangalore, Mrs. Geetha, Elizabath Integrated Charitable Trust, Bangalore, Dr. Sudha, Bangalore, Raghaveni V. Universal Charitable Trust, Bangalore.

Best Paper Oral Presentation Award in each technical session awarded to Shazia Lone, Mustafa Malik, Dr. Zahoor Ahmad Baba, Loni Rafia. Dr. Omi Laila, Dr Umar Faiyaz

Best Poster Presentation Award in each technical session awarded to Jahangir Ahmad, Dr. Samira Khan, Dr. Sajjad ul Akbar Wani

ESW Recognition Award: Dr. Khursheed Dar, Dr. Nisar Ahmad Ganai, Dr. Imtiyaz Murtaza, Dr. Salim Mir, Dr. Veenapani Dubey, Dr. Sajjad Ul Akbar Wani and Dr. Isfaq Abidi

Fellowship of ESW Society Awarded to Dr Shamim A. Benday, Dr. Khursheed Ahmad, Dr. Malik Asif, Dr. Sajjad Ul Akbar Wani

Medal of Appreciation: Dr. Shazia Loni, Asif Rafiq Rath, Ishfaq Ahmad Bhat, Mohammad Rafiq, Mis Asma, Dr. Omi Laila, Dr. Malik Asif, Miss. Mansha Gul, Miss. Irtaza, Mr. Arif Ahmad Najir, Miss. Sabika, Miss. Aina Bhat, Miss Azbia Fatima, Mr. Mohd Yonus Khan, Mr. Mohd. Masood A. Bhat, Mr. Imtiyaz, Mr Imtiyaz Ahmad,

Membership: Dr. Sangeeta Pandit, *Pune, Maharashtra, India*

Certificate of Paper presenter and Participants given by the Chief Guest.

Mementos presented by Mrs. Vandana Dubey, MD Godavari Academy of Science and Technology to our entire Guest.

Event supported by: AlFajer, Srinagar, Jammu & Kashmir

Vote of thanks by Dr. I Q Khan, SKUAST-Kashmir

RECOMMENDATIONS:

- We summarized recommendations for Ecotourism & Environment as follows

- Promotion of ethnic cuisines, nutritional herbal snacks at tourist destinations
- Generation of sustainable livelihoods based on utilization of local resources say wicker willow basketry.
- Nature interpretation museums showcasing natural heritage diversity of state.
- Conservation of pristine beauty of water springs and lakes
- Rejuvenation of drying of fresh water springs
- Atlas of ecotourism destinations and ecofestivals in 3 regions, Tesutsav in Jammu, Chinrotsav in Kashmir, Floral festival in spring
- promotion of Adventure tourism
- Use of ecofriendly infrastructure and solar panels on newly built buildings.
- Fall tourism to mark fiery red look of Chinars, golden yellow look of Birches in Kashmir.
- Biodiversity awareness melas on 22nd May

450+ participants were present in this International research conference

News Gallery:

National news paper, Local news paper and electronic channel covered this event promptly.

Indian Classical Dance & Music Festival Khajuraho-2018

To conserve, promote and develop the Indian's culture in the Students and Artist of School, College, Cultural Institute and University Environment and Social Welfare Society organized Indian Classical Dance & Music Festival Khajuraho-2018 In Association with Godavari Academy of Science & Technology, Chhatarpur, Madhya Pradesh with entry Free for Audience At Khajuraho, Madhya Pradesh on 15 & 16 December, 2018 to give platform at UNESCO heritage Khajuraho, Madhya Pradesh.

Brief Report with Recommendation of

ESW VI Annual National Research Conference

"Heritage conservation and Natural Resource Management"

Organized By: Environment & Social Welfare Society Khajuraho-471606 MP, India.

In association with:

BER Chapter, Chitrakoot, The National Academy of Sciences India, Uttar Pradesh,

Zoological Survey of India, Govt. of India,

Maharaja Chhatrasal Bundelkhand University, Chhatarpur, MP

Assisted by: Godavari Academy of Science and Technology, Chhatarpur, MP

on **30 & 31 January, 2019**

Chief Guest, Commander Dr Bhushan Dewan, Mumbai, Maharashtra, **Key Note Speaker** Dr. Nandita Pathak, Social Entrepreneur, Founder Director Udyamita Vidyapeeth JP Foundation at Social Work, Satna, Madhya Pradesh, **President** Dr. S Sambath, Regional Director Jabalpur, ZSI, Government of India inaugurating ESW 6th National Conference

A PRELUDE: After the success of **V ESW National conference on "**Sustainable development of Eco-system, Wildlife and Heritage conservation for Human welfare**"** The **VI ESW Annual National conference on "**Heritage conservation and natural resource management**"** Organized By ESW Society Khajuraho during 30 & 31 January, 2019 at UNESCO World Heritage Khajuraho, India.

Object: To provide a platform to Vice Chancellors, Educational Administrators, College Principals, Deans, Professors, Readers, Associate Professors, Assistant Professors, Scientists, Environmentalist, Researchers, Young scientists and Post Graduate Students to disseminate knowledge related to Heritage conservation and natural resource management**.**

Theme: To take some positive steps towards improving our Earth for future generation.

Goal: The moral obligation to act sustainably as an obligation to protect the Natural processes that form the context of human life and culture, emphasizing those large biotic and abiotic systems essential to human life, health, and flourishing culture. Ecosystems, which are understood as dynamic, self-organizing systems humans have evolved within, must remain 'healthy' if humans are to thrive. The ecological approach to sustainability therefore sets the protection of dynamic, creative systems in Nature as its primary 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.

INAUGURAL FUNCTION: The **ESW VI Annual National Conference inaugurated on 30 January, 2019 by Chief Guest Commander Dr Bhushan Dewan**, Mumbai, Maharashtra **Key note speaker** Dr. Nandita Pathak, Social Entrepreneur, Founder Director Udyamita Vidyapeeth JP Foundation at Social Work, Satna, Madhya Pradesh **Special Guest Honourable Swapnil Wankdade** (IAS), Sub Divisional Magistrate, Rajnagar, Prof. K. K. Sharma, Former Vice Chancellor, MDS University, Azmer, Rajasthan Dr. Shivesh Pratap Singh, Secretary BER Chapter, NASI, Chitrakoot and Fellow/Member of Environment & Social Welfare Society Khajuraho, India, Mrs. Vandana Dubey, Managing Director, Godavari Academy of Science and Technology, Chhatarpur, MP and other distinguished guests, participations from various part of India listener including media were participated in conference.

Released Souvenir by Guest

Souvenir released with message of Dr. Kailash Chandra, Director, ZSI, Ministry of Environment and Forest, Govt. of India, Kolkata; Prof R. K. Sood, President, Indian National Science Academy, New Delhi; Dr. R. C. Srivastava, Vice Chancellor, Dr. Rajendra Prasad Central Agricultural University, Pusa, Bihar; Dr. S. N. Pandey, Pro-Chancellor, The Global Open University, Nagaland, Dimpur, Nagaland; Dr. Brajendra Singh Gautam, Chancellor, Shri Krishna University, Chhatarpur, MP; Prof. N. C. Goutam, Vice Chancellor, Mahatma Gandhi Chitrakoot Gramodaya Vishwavidyalaya, Chitrakoot, MP; Prof. Kapil Dev Mishra, Vice Chancellor, Rani Durgavati Vishwavidyalaya, Jabalpur, MP; Prof. Priyvrat Shukla, Vice Chancellor Maharaja Chhatrasal Bundelkhand University, Chhatarpur and Mr. Ramesh Bhandari, IAS, Collector, District Chhatarpur, MP., with sixty seven research abstract which included from various State of India viz. West Bengal, Jammu & Kashmir, Uttar Pradesh, Punjab, Rajasthan, Maharashtra, Panjab, Gujarat, Bihar, Chhattisgarh, Uttarakhand, Chennai, Madhya Pradesh and from abroad Nepal.

Chief Guest Commander Dr Bhushan Dewan, Mumbai, Maharashtra addressed on World heritage conservation.

Key note speaker Dr. Nandita Pathak, Social Entrepreneur, Founder Director Udyamita Vidyapeeth JP Foundation at Social Work, Satna, Madhya Pradesh **address Key note on Natural resource management.**

Special Guest Honourable Swapnil Wankdade (IAS), Sub Divisional Magistrate, Rajnagar, focussed on River conservation. He said that we should protect our natural resourced especially River from we get Water.

Special Guest Dr. Shivesh Pratap Singh, Secretary BER Chapter, NASI, Chitrakoot focused on value of natural resources.

President Dr. S. Sambath, Scientist "D", Regional Director Jabalpur, ZSI, Government of India addressed on Wild life conservation.

Dr. Ashwani Kumar Dubey, Executive Director, ESW Society and President & Organizing Secretary of The National conference delivered his presidential address emphasized the role of ESW Society in Heritage conservation and natural resource management and also focus on annual report of the ESW Society, Khajuraho.

TECHNICAL SESSION: After the inauguration, the Technical session held thirty one Research paper & four posters presented in the two days technical session.

The general topics covered in the conference will be as under

Research Needs in Heritage conservation and Natural Resource management.

Policy in Heritage conservation and Natural Resource management.

Action plane for Heritage conservation and Natural Resource management.

Sustainable Development of Heritage conservation and Natural Resource management.

Role of NGO in Heritage conservation and Natural Resource management.

Community based Heritage conservation and Natural Resource management.

Needs of Stakeholders for Heritage conservation and Natural Resource management.

International and National Heritage conservation.

The Existing Knowledge of Heritage conservation and Natural Resource management.

Biological and Ecological Impact of Heritage conservation and Natural Resource management

Wildlife and Forest conservation.

Technological Approach Lab to Land.

Tourism, Importance of tourist, Tourist need, Eco-Tourism in India.

Eco-Tourism in India, Aquatic, Terrestrial and Areal Ecosystem and its conservation measure. Bio-diversity conservation, Water Conservation, Land degradation and Forest Conservation. Animal Behavior and Wildlife Conservation, Endangered, Threatened and Endemic Species Conservation, Conservation issue in India.

Participants of ESW VI Annual National Research Conference

CULTURAL PROGRAMME: To conserve, promote and develop the Indian's culture, ESW Society arranged cultural event with the national conference.

SCIENTIFIC EXIBITION: An exhibition was arranged by Rajesh Jatoliya along with conference to highlight Wildlife conservation. Researchers got opportunity with delegates and scientist to discuss their needs and publication in the reputed journals.

CELEBRATION OF 19th FOUNDATION DAY OF ESW & AWARD CEREMONY ON 31 JANUARY: Chief Guest Prof. K. K. Sharma, Former Vice Chancellor, MDS University, Azmer, Rajasthan President Dr. K. S. Tiwari, Former Director, IGNOU, Bhopal MP Special Guest Dr. S. Sambath, Regional Director Jabalpur, ZSI, Government of India, **Honourable Swapnil Wankdade** (IAS), Sub Divisional Magistrate, Rajnagar, Mr. K. P. Singh, IFS, Prof. Bhartendu Prakash, Prof. Brij Gopal, Mrs. Sandra Jones & Mr. Jonathan from Wales, UK, and Mr. Nicolus Yoga Expert, France were graced the 19th Foundation Day of ESW and award ceremony of the conference and other eminent scientists were present on this occasion.

Children Congress Session was arranged along with this conference. Hundred students and teaching faculty from Delhi Public School, Chhatarpur, Under the aegis of DPS Society, New Delhi were attended and interacted with technical session. Dr. K. S. Tiwari Former Professor of Chemistry discussed on Polythene and Plastic management; Issues and challenges. Professor K. K. Sharma of Zoology focused on biodiversity and snake and Frog conservation

National Amazing Godavari Memorial Award (NAGMA) 2019 in the field of Education & Science awarded to **Commander Dr Bhushan Dewan**, Mumbai, Maharashtra

Best Paper Oral Presentation Award in each Session awarded to Ramesh Sharma, Chief Editor, Open Eye, Bhopal. Vikash Parmar, Research Scholar, Vikram University, Ujjain, MP. Santosh Kumar, Research Scholar, Mahatma Gandhi Chitrakoot Gramodaya Vishwavidyalaya, Chitrakoot, MP., Rajneesh Kumar Verma**,** Asst. Prof., Department of Botany, Dolphin (PG) College of Science and Agriculture, Punjab, India. Dr. Verlaxmi Indrakanti, Asst. Prof., Anand Vihar College for Women, Bhopal, MP.

Young Scientist Award (Below 35 Years) to Iqra Nazir qadri, Research Scholar, Aquaculture Division, College of Fisheries, Govind Ballabh Pant University Agriculture & Technology, Pantnagar

Social Innovative ESW National Award to Dr. Nandita Pathak, Social Entrepreneur, Founder Director Udyamita Vidyapeeth JP Foundation at Social Work, Satna, Madhya Pradesh

ESW Recognition Award: Dr. Rohit Kumar Singh, Pt. Jawaharlal Nehru College, Banda, UP & Dr. Sajjad-ul-Akbar-Wani, Jammu & Kashmir.

Appreciation Award to Prabhakar Reddi, Mr. K. P. Singh, IFS. M. K. Kulshresht, Joint Director, Skill Development Entrepreneurship, Banda, UP

Fellowship of ESW Society Awarded to

Certificate of Paper presenter and Participants given by the Chief Guest. And Mementos presented by Mrs. Vandana Dubey MD Godavari Academy of Science and Technology to our Guest.

Vote of thanks by Dr. Ashwani Kumar Dubey, National President, ESW Society, Khajuraho

RECOMMENDATIONS:

Location of heritage building increases the historical value of the area and brings pride to the residents of the community.

Considering that it is the duty of central and state governments to ensure the protection and the preservation of the cultural heritage and natural resources of mankind, as much as to promote social and economic development,

Considering that cultural property is the product and witness of the different traditions and of the spiritual achievements of the past and thus is an essential element in the personality of the peoples of the world,

The ESW Conference recommends that Member States should apply the following provisions by taking whatever legislative or other steps may be required to give effect within their respective territories to the norms and principles set forth in this recommendation.

The ESW Conference recommends that Member States should bring this recommendation to the attention of the authorities or services responsible for public or private works as well as to the bodies responsible for the conservation and the protection of monuments and Natural resources and scientific sites. It recommends that authorities and bodies which plan programmes for education and the development of eco tourism be equally informed.

The ESW Conference recommends that Member States should report to it, on the dates and in a manner to be determined by it, on the action they have taken to give effect to this recommendation.

In a spirit of international collaboration, Member States should take steps to stimulate and develop among their nationals interest in, and respect for, the cultural heritage of the past of their own and other traditions in order to preserve or to salvage cultural property endangered by public or private works.

Specialized publications, articles in the press and radio and television broadcasting should publicize the nature of the dangers to cultural property arising from ill-conceived public or private works as well as cases where cultural property has been successfully preserved or salvaged.

Educational institutions, historical and cultural associations, public bodies concerned with the tourist industry and associations for popular education should have programmes to publicize the dangers to cultural property arising from short-sighted public or private works, and to underline the fact that projects to preserve cultural property contribute to international understanding.

Educational institutions and other interested organizations should prepare special exhibitions on the dangers to cultural property arising from uncontrolled public or private works and on the measures which have been used to preserve or to salvage cultural property which has been endangered.

280+ participants were present out of these General 52 % Schedule Caste 22 % Schedule Tribes 15 % and Women more than 35 % overall.

News Gallery:

National news paper, Local news paper and National, State and Local electronic channel covered this event promptly.

Guidelines of Fellow of Environment and Social Welfare (FESW) award

The Executive Board of the ESW Society, Khajuraho India has approved a Fellow of Environment and Social Welfare (FESW) award to recognize members of the FESW for distinguished contributions to the field of Environment and Social Science, and for promoting and sustaining the professional stature of the field.

A **fellow** is a member of a group of people who work together in a **fellowship** pursuing mutual knowledge or practice. A **fellowship** is a monetary award connected to a specific field. Usually given to scientist, professor, assistant professor and researcher.

Such accomplishments will have advanced the Education, Environment, Art and science & technology, as evidenced by:

- Sustained service and performance in the advancement of science and technology
- Publication of papers, articles, books, and standards which enhance the knowledge of Science
- Innovative development of new technology
- National and international service contributions
- Professional recognition

Requirements and Conditions will

- Candidates will have a minimum of one year's active participation in ESW.
- Candidates will be nominated by their national delegation of FES Fellow. Each delegation may nominate at maximum of two (2) candidates per year.
- Nominations shall be submitted on the official form available from the ESW Secretariat.
- Nominations must be submitted to the ESW Secretariat no later than December 31 of the year prior to that in which the individual is recognized as Fellow.
- Nominations will remain valid for three years.
- All information on nominees will be held in strict confidence.
- Fellows will be selected by the Executive board based on the Performance of Applicant.

Number of Fellows

- Maximum of 06 Fellows will be selected each year, as determined by the Executive committee.

The Award

- The ESW Chair will present the Fellow of FESW Award at the ESW Conference of the ESW Society or Annual assembly.

Letter for ESW Membership

ENVIRONMENT & SOCIAL WELFARE SOCIETY, KHAJURAHO

Dedicated to Environment, Education, and Science & Technology entire India since Bi-millennium,
Under Government of M.P., Firms & Society Act 1973
Accredited by JAP Govt. of MP & NITI Aayog, Govt. of India

Dear,

Applications are invited from the Eminent Scientist, Professor, Academic Institutes, University, Their affiliated Colleges, Deemed Universities, Autonomous Research Institution, and Industrial R & D Units for **Member** of Environment & Social Welfare Society, Khajuraho India. Membership form may be downloaded from Website http://www.godavariacademy.com.

An application filled dully sign by you in all respects should be submitted to President of ESWSociety**.** Payments are accepted only through Bank or NEFT online transfer in the account.

Name of Beneficiary: Environment and Social Welfare Society

Account Number: 77352200000561

Name of Bank: Syndicate Bank

Branch: Chhatarpur, Madhya Pradesh

IFSC code: SYNB0007735

Please mail us complete membership form dully signed by you along with fee. Please inform us when you transfer payment to ESWSociety account so that we can track your payment (mail scan copy as proof to eswsociety320@gmail.com).

Membership Fee

A. Patron member Rs 10,000/- or more; **B. Life member** (10 years) Rs.5000/- or more**;**

C. Annual member Rs. 600/- per year; **D. Honorary member**

Board of Directors may offer honorary membership time to time the eminent scientist and distinguished persons. You will receive attractive certificate from ESWSociety, you can display on your office wall.

Only selected Life Members are privileged to write the abbreviation **F.E.S.W.** (Fellow of the Environment & Social Welfare Society) with their names.

With Regards,

All correspondence to:

Executive Director

Environment and Social Welfare Society (ESWSociety)

Head Office: Vidhyadahr Colony, Khajuraho Madhya Pradesh, India

Regional Office: Godavaripuram, Bajrangnagar, Ward No.31, Chhatarpur-471001, India

Email: eswsociety320@gmail.com, Mobile: +91-9425143654

Website; http://www.godavariacademy.com

MEMBERSHIP FORM ***Regd. No.SC2707-2K***

ENVIRONMENT & SOCIAL WELFARE SOCIETY, KHAJURAHO

Dedicated to Environment, Education, and Science & Technology entire India since Bi-millennium,
Under Government of M.P., Firms & Society Act 1973
Accredited by JAP Govt. of MP & NITI Aayog, Govt. of India
Website: http://www.godavariacademy.com
Mobile: 09425143654 Email: eswsociety320@gmail.com

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To Photo

The President/Secretary

Environment and Social Welfare Society

Regional Office, Chhatarpur 471001

Dear,

I wish to be a Petron member/ Life member /General member of **ENVIRONMENT & SOCIAL WELFARE SOCIETY** (ESWSociety) Khajuraho-471001, India and agree to abide by your rules and regulations. (For details see Letter call for Membership)

1. Name Dr……
2. Designation……..
3. Date of birth……
4. Address

Office……

……

Mailing……

……

5. Mobile / Telephone:……..
6. Email:……
7. Academic Qualification:……...
8. Field of specialization:

(1)……

(2)……

(3)……

Signature of applicant