National Seminar

on

Biodiversity and Development Challenges of 21st Century

24th & 25th, November, 2019

Souvenir

Oraanized by

IQAC & Faculty of Science

M.L.K. P.G. College, Balrampur, U.P

(Affiliated to "Siddharth University, Kapilvastu, Siddharth Nagar")

In Association with

www.abrf.org.in

Asian Biological Research Foundation (ABRF)
Prayagraj, U.P., India.

Sponsored by

Council of Science & Technology, U.P. Lucknow.

National Seminar
on

Biodiversity and Development Challenges of 21st Century

(24th & 25th, November, 2019)

Organized by.

IQAC & Faculty of Science
M.L.K P.G. College, Balrampur, U.P
(Affiliated to " Siddharth University, Kapilvastu, Siddharth Nagar")

Sponsored by

Council of Science & Technology, U.P. Lucknow.

Editorial Board

Organizing Committee

Chief Patron
Shriman Maharaja Jayendra Pratap Singh
Founder President, M.L.K.P.G. College, Balrampur (U.P.)
Prof. Surendra Dubey
Vice Chancellar Siddharth University, Kapilvastu, Siddharth Nagar
Patron
Lt. Col. R.K. Mohanta (Retd.) Secretary: Committee of Management
Co-Patron
Sri. B.K. Singh Joint Secretary: Committee of Management
President
Prof. N. K. Singh, Principal Vice-President
Dr. R. K. Singh, HOD, Chemistry
Coordinator
Dr. Ravindra Kr. Pandey, Asso. Prof. Botany
Co- Coordinators
Dr. D.D.Tewari, Asso. Prof. Botany
Dr. Ashok Kumar, HOD, Zoology
Convenor
Dr. Rajiv Ranjan, Asst. Prof. Botany

Executive Members

Dr. A.K. Dwivedi, HOD, Physics
Dr. R.N. Singh, HOD, Geography
Dr. J.P. Pandey, Asso. Prof, Physics
Dr. Veena Singh. HOD, Mathematics
Dr. P.K. Singh, Chief Proctor
Dr. M. Ansari, Asso. Prof, Chemistry
Dr. T. Farakhi, HOD, History
Dr. S. P. Mishra, Asso. Prof, B.Ed.

Organizing Secretary
Dr. Sadguru Prakash
Asst. Prof. Zoology

Members

Mr. Ram Asray Gautam
Dr.Ashish Kumar Lal
Dr. Swadesh Bhatt
Dr. AkankshaTripathi
Dr. Jitendra Kumar
Mr. B. K. Pandey
Dr. S.M. Singh
Dr. Alok Shukla
Mr. Lavkush Pandey
Dr. Azad Kumar
Dr. Rishi Ranjan
Dr. Alpana Parmar
Dr. Mohd. Akmal
Dr.Amrendra Kr. Singh
Dr. Sunil Mishra
Dr. Basant Kumar
Dr. R. B. Tripathi
Dr. Rajan Singh

Coordinating Committee

Mr. Avinash Singh
Smt. Versha Singh
Dr. Anil Mishra
Km. Deeksha Srivastava
Mr. C.B.Yadav
Km. Nivedita Singh
Mr. Abhishek Singh
Dr. Sunil Srivastava
Mr. Yogesh Kasaudhan
Mr. Anand Bajpeyee
Smt. Usha Pandey
Km. Priya Srivastava
Dr. Devendra Chauhan
Dr . Saurabh Mishra
Mr. Durgesh Mishra
Mr. Ajay Srivastava
Km. Sakshi Srivastava

National Advisory Committee

Prof. P.P.Singh, Bareilly College, Bareilly
Prof.N.K.Dubey,BHU Varanasi
Prof. Ghanshyam Tripathi JNV Uni. Jodhpur
Prof. Yashvant Singh, RMLAU,Ayodhya
Prof. Rajendra Singh, DDUGPU. Gorakhpur
Prof.Malvika Srivastava, DDUGPUGorakhpur
Prof.Sunil Srivastava, DDUGPUGorakhpur
Dr. Vinod Verma, SGPGI, Lucknow
Dr. ShriPrakash,Kulbhaskar PG College,Prayagraj
Dr. A.K. Verma, Govt. P.G. College, Saidabad
Dr. Birendra Singh, ABRF, Prayagraj
Prof. Yogendra Singh, Delhi University Delhi
Prof.R.N.Kharwar, BHU Varanasi
Prof.Ramakant Pandey, PatanaUni.Patna
Prof. M.P. Singh, Allahabad Uni. Allahabad
Prof.V.N.Pandey,DDUGPU,Gorakhpur
Prof. Amritesh Chand Shukla, LU LKO
Prof. Naseem Ahmad, IIT Rookee
Dr. Manoj Kumar, ICMR, Bhopal
Dr. Rahul Singh, Lovely Uni. Jalandhar
Dr. H.P. Pandey, I. S.D. College, Prayagraj
Prof. Sandeep Singh, IIT, Roorkee.
Prof.K.P.Sahu,Govt.MadhavSci.College, Ujjain.
Prof. A.K. Singh, BHU Varanasi
Prof. AmitaKanujia, LU,LKO.
Prof.Ajay Singh, DDUGPUGorakhpur.
Prof.P.H. Pathak, DDUGPU Gorakhpur.
Dr. AshwaniMishra,RHEO,Gorakhpur.
Dr. Ramesh Kr. Srivastava, CIMAP, LKO.
Dr. Piyush Mishra,GovtPGCollegeNaini,Prayagraj
Dr. Sunita Arya, DGPG College, Kanpur

Local Advisory Committee

Dr. S.V. Singh. M.L.K. P.G. College, Balrampur
Dr. J.S. Chauhan, M.L.K. P.G. College, Balrampur
Dr. Gopal Ji Kushwaha, Kisan P.G. College, Basti
Dr. Mukal Sinha, LBS.P.G. college, Gonda
Dr. R.K. Pandey, KNIPSS, Sultanpur
Dr .Vinay Singh, K.S. Saket P.G. College, Ayodhya
Dr. Arvind Sharma Saket P.G. College, Ayodhya
Dr. DivakarRam Tripathi, KDC Bhabnan, Gonda
Dr. J.P. Tiwari, M.L.K. P.G. College, Balrampur
Dr. J.P. Shukla, S.H. Kisan P.G. College, Basti
Dr. Susmita Srivastava, Kisan P.G. College, Basti
Dr. S.K.Srivastava, LBS P.G. College, Gonda
Dr. P.N. Tripathi, K.S. Saket P.G. College, Ayodhya
Dr. A.K.Singh, KNIPSS Sultanpur
Dr. Akhilesh Sharma, S.P. P.G. College, Shohratgarh
Dr. K.K. Ansari, M.L.K. P.G. College, Balrampur.
Dr. Ajay Srivastava, S.P. P.G. College,Shohratgarh
Dr. S. C. Tripathi, K D C , Bahraich.
Dr. R.N. singh, KNIPSS, Sultanpur.
Dr. F,D,Yadav, K.S. Saket P.G. College, Ayodhya.
Dr. Arvind Mishra,MDPGCollege, Pratapgarh
Dr. Dharmendra Singh, S.P.P.G.College, Shohratgarh.

About the College,

Balrampur, the erstwhile princely state of pre independent era, was actively involved in removing educational backwardness of the terai region by establishing schools and colleges. Immediately after getting independence, a great philanthropist Late Maharaja Pateshwari Prasad Singh took a giant step by establishing M. L. K. College in 1955 in the loving memory of his mother Maharani Lal Kunwari.With the passage of time this college became cradle for learning and research for the students belonging to terai region. This was the reason that the then governor his highness Sri K.M. Munshi in his inaugural speech on August 1955 said, this college is one of the rarest colleges to which I have offered affiliation with delight. This college is furnished with a good building, good economic sources and accomplishments. It has some rare qualities which are not found in other colleges of Uttar Pradesh." (Adapted from the letter of the V.C., Bhartiya Vidya Bhawan).

The college was initially affiliated to Agra University, Agra. Later on it got affiliated to DDU Gorakhpur University, Gorakhpur and Dr. R M L Awadh University, Ayodhya. Presently it is one of the premier colleges affiliated to Sidharth University Kapilvastu, Sidharth Nagar.The college was assessed & accredited by NAAC in 2011. The Peer team observed minutely the academic standards of the college, consisting of teaching, research and co-curricular activities beneficial to the students and awarded 3.25 CGPA out of 4 and thus decorating the college with grade 'A'. In 1969, the then Chief Minister U.P. Honorable Chandra Bhan Gupta, being impressed by its fine-infrastructure said, "Had I seen this college earlier, I would have got Gorakhpur University built here".

In April 1994 while addressing the convocation the then H.R.D. Minister Honorable Arjun Singh, praising the college said, "I was already aware of the fame of this college. Today I came here and was very much delighted. I heartily wish that this college should be doing great in academic spheres in U.P."

This college has been progressing continuously. The academic journey of the college has been- B.Ed. course 1960; P.G. courses in Botany & Chemistry, 1970 and Physics, Maths.,Geography, Political Science, Hindi & Sanskrit, 1971; P.G.D.C.A. course, 1986; Seed Technology as a subject in 1990.Since 2004-05 the P.G. courses for Zoology & Psychology & B. Com courses were started for the convenience of the local students. Recognizing the importance of occupational education, the college started B.C.A. & B.B.A. since 2010-2011 session. Home Science has been started in Arts faculty since 2013-2014 session.

Thus, being associated with Siddhartha University, Kapilvastu, Siddharth Nagar, it is contributing to qualitative education under the guidance of proactive & visionary committee of management and learned and experienced faculty members. Not only the college family but also the people of terai region feel proud of this institution.

(Dr.N K Singh)
Pincipal

(Ravindra Kumar)
Coordinator IQAC

प्रेरणा स्रोत

स्मृति शेष : स्वर्गीय महाराजा बहादुर श्रीमन् धर्मेन्द्र प्रसाद सिंह जी

1958-2018

Maharaja Jayendra Pratap Singh

Founder President ,
Committee of Management .

M.L.K.(P.G.) College,
Balrampur
Date- 08.11.2019

Message

It gives us immense pleasure that the National Seminar on "Biodiversity and Development: Challenges of 21st Century" is being organized by M.L.K.P.G. College, Balrampur U.P. in association with Asian Biological Research Foundation (ABRF), Prayagraj and U.P. Council of Science & Technology, Lucknow from 24 to 25November,2019.

Biodiversity refers to the extraordinary diversity found on earth, recognized as diversity among species and habitat. It, therefore, represents a distinct natural capital which is essential to human and earth's sustainability. Over the last few decades, expansion of human population coupled with consequent increased resource demands have caused a dramatic effect and proven devastating on the status of the biodiversity. Therefore, it is very important to understand the present status of biodiversity and the measures and means to be adopted to ensure and reconnect human prosperity with future sustainability.

With this perspective the present seminar is very appropriate to discuss the different aspects of biodiversity and development together in the present context by different stakeholders of the society.

I extended my heartiest congratulations to the organisers and participants for putting in their best efforts, and wish them all success in their endeavour.

Jayendra Pratap Singh

(Jayendra Pratap Singh)

प्रो. सुरेन्द्र दुबे
कुलपति

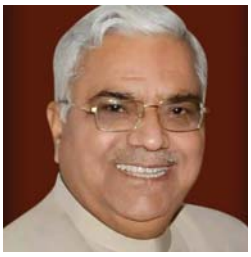
Prof. Surendra Dubey
Vice-Chancellor

सिद्धार्थ विश्वविद्यालय
कपिलवस्तु, सिद्धार्थनगर-272 202 (उ.प्र.) भारत

SIDDHARTH UNIVERSITY
Kapilvastu, Siddharthnagar-272 202 (U.P.) India

Ref: 400/VC/2019
Dated: 15/11/2019

Message



It is with great pleasure and immense pride that I extended a warm welcome to all the delegates, eminent scientist, academicians, experts, and dear student participants from all over the country in two days National Seminar on "Biodiversity and Development: Challenges of 21st Century"organized by M.L.K.P.G. College, Balrampur from November 24-25, 2019. in association with ABRF, Prayagraj and U.P.C.S.T. Lucknow.

The theme of this seminar has a great importance in the present context because biodiversity, encompasses the variety of all the species on earth i.e. different micro and macro-organisms inhabiting the aquatic and terrestrial ecosystems.

I hope that this august congregation of the experienced, intellectuals and young inquisitive minds would provide a platform for developing new vision, new ideas and new strategies for maintaining the harmonious relation between development and status of biodiversity.

On this occasion, I extend my best wishes to all for the success of this Seminar.

(Surendra Dubey)

डॉ. वेदपति मिश्र
आई.ए.एस.
विशेष सचिव,
विज्ञान एवं प्रौद्योगिकी विभाग एवं
निदेशक,
विज्ञान एवं प्रौद्योगिकी परिषद,
उ.प्र.

विज्ञान एवं प्रौद्योगिकी परिषद, उ.प्र.
विज्ञान भवन, 9–नबीउल्लाह रोड़,
लखनऊ – 226 018
फोन: 2284819, 2202452 (CST), 2238422 (SEC)
Email - director.cstup@gmail.com

अर्ध शा. पत्र संख्या 2369

दिनांक 18-11-2019

MESSAGE

I am delighted to know that M.L.K.G.(P.G.) College, Balrampur (U.P.) is organizing a "***National Seminar on Biodiversity & Development: Challenges of 21St Century***" during 24-25th November, 2019. On this occasion, a Souvenir is also bringing out by the College.

This seminar would provide a congregating platform for exchanging novel ideas and findings among young researchers and delegates from Research and Development community. I am sure young participants will gain a lot from this seminar.

I congratulate the organizers for their enthusiasm and spirit for holding this National Seminar. I extend my best wishes for the success of the event.

18.11.19
(Dr. Ved Pati Mishra)

To,

Dr.Sadguru Prakash
Organizing Secretary
Department of Zoology,
M.L.K.(P.G.) College,
Balrampur.

Dr.Ashwani Kumar Mishra

RHEO,Gorakhpur

य उच्चा कार्यालय, गोरखपुर

मोबाइल नं0 – 9415621763

Respected Sir,

I am happy that our parent institution is going to organize two days national seminar on 'Biodiversity and Development: Challenges of 21st Century". The plants are the base of our food chain and also play key role in environment conservation. For the growing population we have exploited the natural resources for food and shelter. The indiscriminate exploitation in the name of development has disturbed the natural harmonious relation between living and nonliving components all over the world. So, the United Nations has highlighted the importance of biodiversity for human survival and declared decade (2011-2020) as decade of biodiversity.

The seminar organized by M L K P G College Balrampur in last year of biodiversity decade to discuss all the relevant issues will serve as a platform for eminent scientist, researcher and students of Biological ,Physical Chemical, Environmental Sciences and all other stakeholders to discuss latest technology and innovations for protection and conservation of our biodiversity and mother planet.

I extend my good wishes to scientist, innovators and researcher and wish the conference all success.

To

Dr.N.K.Singh

To Principal

M.L.K.P.G.College,balrampur

Yours Sincerely

(Dr.Ashwani Kumar Mishra)

Council of Science & Technology, UP

Dr. D. K. Srivastava

Joint Director

9, NABIULLHA ROAD, SURAJ KUND PARK
LUCKNOW-226 018

Tele no. 0522-261173, 2202446,
FAX:2611793.
E-mail : mailme.dk4srvt@rediffmail.com

D.O. NO.: CST/ AAS/05
Dated:18/11/2019

Message

I am glad to learn that M.L.K.(P.G.) College, Balrampur is going to host a National Seminar on **"Biodiversity and Development : Challenges of 21st Century"** on November, 24 & 25, 2019.

The theme of National Seminar is highly relevant with the present day need and covers some of the crucial issues related to science & technology. The delegate scientists from all over the country are expected in this conference reflecting the growing concern of the community. I am confident that the deliberation of Conference will result in implementable recommendations.

I send my best wishes for the Conference.

Your's Sincerely

(Dr. D. K. Srivastava)

To,

Dr.Sadguru Prakash
Organizing Secretary
Department of Zoology,
M.L.K.(P.G.) College,

Balrampur

ASIAN BIOLOGICAL RESEARCH FOUNDATION

www.abrf.org.in
secretary.abrf@gmail.com
8004913089
abrf prayagraj
JLN Road 'The Little House'
Tagore Town Prayagraj 211002 (India)

MESSAGE

It is a matter of immense pleasure that IQAC & Faculty of Science MLK P. G. College Balrampur (U.P.) is organizing a **Council of Science & Technology** (CST UP) **Lucknow** sponsored National seminar entitled " BIODIVERSITY AND DEVELOPMENT: CHALLENGES OF 21st CENTURY" in association with Asian Biological Research Foundation(ABRF) Prayagraj, India on 24th & 25th November 2019.

The theme of this National seminar is quite pertinent in contemporary scenario of the world in general and India in particular. No doubt, biodiversity and development both are big challenges of 21st century having global effects. Each and every one has to play a significant role in conserving not only the biodiversity but also the water and nature to save the human and humanity.

I hope that this national seminar will provide a platform for the researchers of relevant fields to contemplate and present their research papers along with the opportunity to interact with fellow researchers and veterans of their area of research.

I congratulate the entire organizing team for taking up this challenging but momentous initiative. This two days national seminar would witness intense academic discourse and discussions which in turn would throw up tentative solutions to the issues in consideration. I am confident that outcomes of this national seminar on various issus on the subject will generate a new concept in order to conserve and protect the water, nature and biodiversity (key objective of ABRF).

I on behalf of ABRF, impart ecofriendly best wishes to the organisers for organising the national seminar and welcome all the participants across the nation.

(A.K. Verma)
Secretary (hony), ABRF Prayagraj
www.abrf.org.in

Mr. Kailash Nath Shukla
M.L.A, Tulsipur, Balrampur

Civil Lines Balrampur
District – Balrampur
Mo.No – 9450513588

Message

It gives me immense pleasure to know that the IQAC & Faculty of Science, M.L.K.P.G. College, Balrampur is organising a national seminar on "Biodiversity and Development: Challenges of 21st Century" from 24-25 November 2019,

I am thankful to Principal M L K P G College Balrampur and organisers to organize a national seminar on such a burning global issue related to survival of humanity. The Indian subcontinent is rich in Biodiversity having a tradition of harmony with nature but in present scenario greed of human being has disturbed the harmony.

I am very much hopeful that the Seminar will succeed in its aim. The outcome of the seminar will really prove to be helpful in framing proper guidelines to make balance between biodiversity and development.

I extended my best wishes to all the participants, delegates, students and faculty members for success of the events.

(Kailash Nath Shukla)

Mr. Palturam
M.L.A, Balrampur

Vill. Pared Sarkar
Post &DistGonda
Mo.No – 9792319000

Message

Dear Guests,

I am delighted to know that M.L.K.P.G.CollegeBalrampur is organizing a national seminar on Biodiversity and Development: Challenges of 21st Century" in association with Asian Biological Research Foundation (ABRF), PrayagrajU.P.and U.P. Council of Science & Technology, Lucknow from 24th to 25thNovember,2019.

Sohelwa forest, situated at the foothill of Himalaya is having a rich biodiversity inhabited by Tharutribes.These people, during course of evolution played important role in conserving biodiversity in their natural habitat.For them biodiversity is the means of livelihood.I trust that the discussions in this seminar would bear rich and beneficial output for sustainable development.

I extendmy warm greetings to organisers, scientists, NGOs,Tribal people and participants from all over the country in this remote area of terai region of Balrampur.

(Palturam)

Mr. Ram Pratap Verma

M.L.A, Utraula, Balrampur

Gram - ImiliaBanghusara

Utraula,Balrampur

Mo.No – 9415664651

Message

It gives me immense pleasure to know that the IQAC &the Faculty of Science, M.L.K.P.G. College, Balrampur is organising a national seminar on "Biodiversity and Development: Challenges of 21st Century" from 24-25 November 2019,

I am thankful to the Principal M .L. K P G College Balrampur and the organisers for organizing a national seminar on such a burning global issue related to the survival of humanity. The Indian subcontinent is rich in biodiversity having a tradition of harmony with nature but in present scenario greed of human being has disturbed that harmony.

I am very much hopeful that the Seminar will succeed in its aim. The outcome of the seminar will really prove to be helpful in framing proper guidelines to make balance between biodiversity and development.

I extend my best wishes to all the participants, delegates, students and the faculty members for success of the events.

Ram Pratap Verma

Lt. Col. R. K. Mohanta(Retd.)
Secretary,
Committee of Management .

M.L.K.(P.G.) College,
Balrampur
Mo.No – 9956344254
Date- 08.11.2019

Message

It is with great pleasure and immense pride that I extended a warm welcome to all the delegates, eminent scientist, academicians, experts, and dear student participants from all over the country in two days national seminar on "Biodiversity and Development: Challenges of 21st Century" organized by M.L.K.P.G. College, Balrampur from November24-25, 2019. in association with ABRF, Prayagraj andU.P.C.S.T.Lucknow.

The theme of this seminar has a great importance in the present context because biodiversity, encompasses the variety of all the species on earth i.e. different micro and macro-organisms inhabiting the aquatic and terrestrial ecosystems.

I hope that this august congregation of the experienced, intellectuals and young inquisitive minds would provide a platform for developing new vision, new ideas and new strategies for maintaining the harmonious relation between development and status of biodiversity.

On this occasion, I extend mybest wishes to all for the success of this Seminar.

(R. K. Mohanta)

B. K. Singh
Joint Secretary,
Committee of Management .

M.L.K.(P.G.) College,
Balrampur
Mo.No – 9415036010
Date- 08.10.2019

Message

It is heartening to know that IQAC & the Faculty of Science, M.L.K.P.G. College, Balrampuris organizing a national seminar on "Biodiversity and Development: Challenges of 21st Century" from 24-25 November, 2019, in collaboration with U.P. Council of Science & Technology, Lucknow and Asian Biological Research Foundation (ABRF), Prayagraj U.P.

Organization of the national seminar on globally importanttopicmakes people aware for the resource conserving modern scientific methods of development, so that it remains economically sound, socially relevant and environmentally secure.

I send my blessings for the success of the seminar.

(B.K.Singh)

Dr. N.K.Singh
Principal

M.L.K.(P.G.) College,
Balrampur
Mo.No – 9450514172

Message

It is a moment of pride that IQAC & Faculty of Science, M.L.K.P.G. College, Balrampuris organizing a national seminar on "Biodiversity and Development: Challenges of 21st Century" from 24-25 November, 2019with financial assistance from U.P. Council of Science & Technology, Lucknow and in association with Asian Biological Research Foundation (ABRF), Prayagraj U.P. The theme chosen for the seminar is relevant in this contemporary era of globalization and industrialization.

Biodiversity conservation emerges to be more important due to the globalized process of the world economy and also for survival of the world as a balanced habitat. Biodiversity of an ecosystem is a vital issue of the economy. Soil, water, climatic condition, forest cover and biodiversity are crucial in determining the renewable resource flow of an economy,sustainable development stresses on economic development along with the object of conservation of environment.

I hope that the present seminar will provide a road map for the purpose with exhaustive deliberations and discussions.

I wish the seminar all the success.

(Dr.N. K. Singh)

National Seminar on
Biodiversity & Development: Challenges Of 21st Century
(24th & 25th November, 2019)
M.L.K.(P.G.) College, Balrampur (U.P.)- 271201

Dear Madam/Sir,

It gives us immense pleasure to welcome all of you in this historic city Balrampur well known for rich diversity of living organism and habitat. The M L K P G College Balrampur established in 1955 by then Maharaja Balrampur estate late Maharaja Sir Pateshwari Prasad Singh in sweet memory of his beloved mother Maharani lal Kunwari.

The National Seminar on "Biodiversity and Development: Challenges of 21st Century" which is organised by college in association with Asian Biological Research Foundation (ABRF), Prayagraj and U.P. Council of Science & Technology, Lucknow from 24 to 25November, 2019 in memory of Late Maharaja Bahadur Dharmendra Prasad Singh, who always inspired us to organise seminars on relevant topics to aware students and people of neighbouring areas of this region.

The Indian subcontinent is rich in biodiversity having a tradition of harmony with nature but in present scenario greed of human being has disturbed that harmony. Therefore, its conservation emerges to be more important due to the globalized process of the world economy and also for survival of the world as a balanced habitat is very important to understand the present status of biodiversity and the measures and means to be adopted to ensure and reconnect human prosperity with future sustainability.

The Balrampur situated at foothill of Himalaya having diversity of habitat and life. The natural forest that spread as a boundary between India and Nepal well known as Sohelwa Sohgibarwa forest from Gorakhpur to Lakhimpur.It is a good reservoir of flora and fauna which are traditionally used by common people either as food or as medicine. After separation of Uttarakhand this region has only natural forest in Uttar Pradesh. The Balrampur estate has played a major role since British period to protect and preserve the rich natural heritage of this region.But after independence exploitation of forest has reduced the diversity in such a level that survival of human being is in danger. The tharu tribes living in this forest as a natural protector

are also facing some problems of their survival. The urbanisation, deforestation and industrialisation has destroyed this natural heritage.

With this perspective the present seminar is very appropriate to discuss the different aspects of biodiversity and development together in the present context by different stakeholders of the society. The outcome of the seminar will really prove to be helpful in framing proper guidelines to make balance between biodiversity and development which is linked with survival of humankind.

We extend our best wishes to all the participants, delegates, students and the faculty members for success of the events. We are thankful to Committee of Management, M L K P G College Balrampur, Council of Science and Technology Uttar Pradesh, Balrampur Chini Mills Ltd Balrampur and others for providing financial and moral support to organise this event.

(Dr. R. K.Pandey)
Associate Professor Botany
Coordinator

(Dr.Rajiv Ranjan)
Assistant Professor Botany
Convenor

Department of Zoology

M.L.K.(P.G.) College,Balrampur

(Affilated : Siddharth University, Kapilvastu, Siddharth Nagar)

From the Desk of the Organizing Secretary

***"The highest education is that which does not merely give us information but makes our life in harmony with all existence"*Rabindra Nath Tagore**

Respected Delegates

It is a matter of great honour and privilege that the national Seminar on "Biodiversity and Development: Challenges of 21st Century" is being organized by M.L.K.P.G. College, Balrampur U.P. from 24-25 November, 2019,in collaboration with Council of Science & TechnologyU.P., Lucknow and Asian Biological Research Foundation (ABRF), Prayagraj, U.P.

Biodiversity referring to the variety and variability among living organisms and the ecological complexes in which they occur, is of great importance in terms of its commercial, recreational, aesthetic, ethical and scientific values. It supports a large number of services that have economic value for humans either by their direct or indirect use. In India and many parts of the world, biodiversity is a source of livelihood and also a way of life. Thus, it is of utmost importance, and is the duty of every single individual to protect and preserve this vast diversity of flora and fauna- not only for the benefit of the present generation, but also for the well-being of the generations to come. So, most of the biological scientists emphatically argued for conservation of biodiversity as a significant human priority. Therefore, studies on different aspect of biodiversity, its importance, its impact on human life, conservation measures, etc, bring to the forefront several question: What is biodiversity? How biodiversity contributes to the

functioning of natural environments that provide crucial infrastructure to all organisms including human?How biodiversity conservation would contribute economically to the well being of humans and the biosphere? What is the nature of biodiversity as an economic commodity and why does it matter? Some of the basic aspects of biodiversity *viz*., origin and evolution ; composition, structure and function; types and measures; bioasset conservation and management and its impact on human well being; biodiversity loss and its implications; and some contemporary issues related to the theme which also need to be debated upon and addressed in the present scenario will be discussed.

I am happy to inform the august gathering that about 15 invited speakers and about 125 national delegates have kindly consented to participate in the seminar. I gratefully acknowledge and thank one and all for their overwhelming response and enthusiasm. The guests are representing the length and breadth of our beautiful country, right from Jammu & Kashmir, Punjab, Haryana, Uttarakhand in the North, to Kerala and Tamil Nadu in the South; and from Rajasthan in the West to West Bengal, Bihar, Jharkhand in the East, and Sikkim in the North East.

This Seminar will serve to bring together experts and pioneer academicians, research scholars from different disciplines and young enthusiastic minds bubbling with academic queries and passions on a common platform. I hope that the exchange of knowledge, experiences, thoughts and opinions among them will give rise to new direction and understanding of all the key issues related to the theme.

It's felt that the deliberations in the seminar between the learned experts in their respective fields on one hand and the enthusiastic young scholars and common men on the other hand will provide fruitful conclusions that will be helpful in maintaining harmony between biodiversity and development in near future.

On behalf of the organizing committee, I take this opportunity to extend a very warm welcome to all the invited guests, delegates, research scholars and P.G. Students inthisseminarwhich will inspire the young minds to think, introspect and transform their thoughts into action.

I hope that your brief stay here will prove to be academically stimulating and personally memorable.

Welcome All!

(Dr. Sadguru Prakash)

Organizing Secretary
Assistant Professor Zoology
M.L.K.(P.G.)College,Balrampur

ISBN- 978-93-89703-08-5

Plant Diversity of North-Eastern Uttar Pradesh: Distribution and Depletion Pattern During the Last Few Decades

R. P. Shukla
Plant Ecology Lab., Department of Botany,
DDU Gorakhpur University, Gorakhpur-273 009, India

ABSTRACT

Species diversity is the building block for the higher taxa and ecological associations such as communities. The most basic idea is that of species-richness which simply accounts for the number of species inhabiting a given area or habitat. The study of biodiversity usually begins with learning to distinguish species and their grouping over different habitats constituting the landscape. The vegetational landscape of north-eastern Uttar Pradesh is a mosaic of several land uses and vegetation types, viz. grassland, old-field, wasteland and forest. The gradual rarefaction and eventual local extinction of plant species of different habits have been viewed in the light of perceived changes in microclimatic conditions during the last few decades. Conversely, several exotics recently took over the prevalent indigenous species and a good number of fortuitous species showed natural aggregation at places often causing over-dominance of a single species. The taxonomic records during 1960s and subsequent decades and listing of species since 1990s showed a clear cascade in the number of different woody and herbaceous genera and species. The more spectacular was the depletion of several congeneric legume species viz., species of Alysicarpus, Cassia, Crotalaria, Indigofera, Desmodium and Moghania and a few non-leguminous species like Ipomea, Leea, etc. The rarefaction of several major and minor woody elements from forest as well as from grassy landscape was evident during as short a span as 50 years. The number of total wild plant species of regional landscape which was noted to be around 1150 (under 119 families) in 1960s, fell down to about 800 (under 110 families) in 2000s. A noticeable number of species which could be easily encountered during early part of the first decade of the present century became very much rare by the end of decade. The spatial and temporal patterns of plant diversity of different vegetation types was found to be a function of availability of suitable niches and adoption of more efficient regeneration strategy, A set of opportunistic species managed to thrive even under conditions of recurrent but moderate disturbance. The depletion of plant genera and species have been examined to relate it to stochastic and anthropogenic disturbances and probable climate change during the last few decades. As of now, the perpetuity of the potential resident plants are becoming quite uncertain due to fast shrinkage of wilderness zone including seral habitats. The information obtained from this investigation highlights the changes in the occurrence and abundance pattern of herbaceous as well as woody plant species. This information may be used for devising compatible methods of conservation to check further erosion in order to ensure the perpetuity of regional plant resources and their sustained utilization.

ISBN- 978-93-89703-08-5

Competition for Resource

Dr Param Hans Pathak
Professor,
Department of Zoology,
D.D.U., Gorakhpur University, Gorakhpur- 273 009.

ABSTRACT

An individual's competitive success is determined not only by its physical strength but also by behavioral strategies it uses when competing with others. The best strategy to adopt often depends on what competitors do? Our aim in this talk is to explore how competition for resource affects an individual's choice of strategy. The highest potential for competition occurs when resource items are densely clumped in space, and are evenly distributed through time, thus clumping of resource items in space increases competition. Under natural conditions resource items are not alike. Competitors are usually not equal. Some may be stronger, quicker or more experienced than others. Being competitive in one situation need not correlate with competitive advantage in another. There are many reasons why we should expect competitors to vary in their ability to compete for a specific resource. Not only the ability but also the motivation tto compete may vary among different individuals. Better or more motivated competitors may suffer less severely from competition than poor or less motivated competitors. Limited supply of at least one resource such as food, water, and territory used by both can be a factor. Competition is an interaction between organisms or species in which both the species are harmed. It is a negative interaction that occurs among organisms whenever two or more organisms require the same limited resource. These resources can be limiting factors for where organisms are distributed, and competition for them can be fierce. Animals and plants that have specific life history requirements, like cavity-nesting birds, or animals with obligate feeding behaviors, have a more difficult time competing for space, food, and Water or Air. Organisms compete for the resources they need to survive.

Most competition between organisms of the same species surrounds scarce resources, like water or food. These requirements include both resources (like food) and proper habitat conditions like temperature and pH . The word "niche" refers to a species' requirements for survival and reproduction. G. F. Gause proposed the competitive exclusion principle in 1934 "species cannot coexist if they have the same niche".The Competitive Exclusion Principle where a smaller (yellow) species of bird forages across whole tree; a larger (red) species competes for resources, red dominates in middle for the more abundant resources. Yellow adapts to new niche, avoiding competition.Therefore, species must at least have slightly different niches in order to coexist. Gause reasoned that if two species had identical niches (required identical resources and habitats) they would attempt to live in the exact same area and would compete for the exact same resources.

Defensive behaviors often lead to aggression if problems can't be sorted out through threatening displays or intimidation Males may compete over an existing territory, available females, nesting sites, or breeding rights in a social hierarchy. Animal exhibit aggressive behavior when one of their resources is compromised. When an animal has found a space that contains all the resources it needs to survive, it wants to hold on to it. This is why many animals are territorial; they defend their territory which contains those resources. Another example of this can be seen between the ant Novomessor cockerelli and red harvester ants, where the former interferes with the ability of the latter to forage by plugging the entrances to their colonies with small rocks. An elephant might be able to prevent other animals from using a water hole, but would be unlikely to be able

to chase them away from a river with its long banks. Large aphids defend feeding sites on cottonwood leaves by kicking and shoving smaller aphids from better sites. Biologists typically recognize two types of competition: interference and exploitative competition. During interference competition, organisms interact directly by fighting for scarce resources. This occurs directly between individuals via aggression and by mechanism Male-male competition in red deer during rut is an example of interference competition. Exploitation competition Occurs indirectly through a common limiting resource which acts as an intermediate. For example, use of resources depletes the amount available to others, or they compete for space.

Interspecific competition has the potential to alter populations, communities and the evolution of interacting species. Interspecific competition may occur when individuals of two separate species share a limiting resource in the same area. The organism that obtains less resource will usually perform less well than if it lives alone. Intraspecific competition occurs when members of the same species compete for the same resources in an ecosystem. An example among animals could be the case of cheetahs and lions; since both species feed on similar prey, they are negatively impacted by the presence of the other because they will have less food. Geographic separators might be an expanse of land, a mountain range, a body of water, or an elevation gradient For Example Salmon fish, Wild beasts and horses.

This isolation can occur through animals having different geographic distributions or by participating in seasonal migrations. Hyenas whose jaw structure and musculature is strong enough to consume the hides and bones of carcasses left behind by other predators and giraffes who's browse line is way above that of the other browsers it resides with, and today there are many animals that have morphological differences that directly allow them to avoid competition with other organisms. Come dusk there is a taxonomic tango when the diurnal (active by day) organisms retire for the evening and the nocturnal (active by night) organisms commence their daily follies. By the cover of night nocturnal organisms avoid competitive interactions with their diurnal counterparts. For example, by day, birds rule the air. By night, however, bats rule the roost. This occurs when animals have contradictory behaviors that prevent them from competing with each other. White rhinos have flat, wide lips for grazing grasses while black rhinos have pointed, dexterous lips for browsing shrubs. Foraging herbivorous rhinos deal with this conundrum by consuming different parts of plants. Specialist predators, however, like the osprey, which eats strictly fish, are limited in their prey selection as well as their geographic range because they have to live in areas where their prey resides. Red-tailed hawk, they eat anything from rodents to reptiles to other birds. Foraging habits are another way that organisms can avert competing with each other.

The Purple Sea Star (Pisaster ochraeus), below, several of these sea stars (which range in color from purple to orange) are feeding. Once again, the mussels are black and the barnacles a lighter color. The barnacles, the mussels attach themselves to a rock and filter food from the water. Similar species avoid competition by occupying different habitats.

ISBN- 978-93-89703-08-5

Fomeag Cafeteria: Challenges and Natural Solutions Tobiodiversity And Biodiversity Climate Link in 21st Century

V. N. Pandey
Experimental Botany and Nutraceutical Laboratory
Department of Botany, D.D.U. Gorakhpur University
Gorakhpur- 273009 (U.P.), India.

ABSTRACT

FOMEAG CAFETERIAaglobal biodiversityConcern and conservation efforts. The double impacts of climate change and biodiversity loss are major threats to achieving the Millennium Development Goals, especially those relating to environmental sustainability, poverty alleviation and food and water security. The growing awareness of the planet's vulnerability to human driven changes also provides an opportunity to re-when integrated into land use plans as part of larger and connected conservation networks, offer practical, tangible solutions to the problems of both species loss and adaptation to climate change.Pandey (2009) coined the term FOMEAG by combining threewords Food, Medicine and Agriculture (Agricultural Field/Land/Areas, Arboretum Garden –Forest, Aquatic Garden (Water Bodies –sea, ocean,Ponds, Lakes, Rivers, Puddles, watersheds etc.) CAFETERIA to study Biodiversity and Biodiversity Climate link to solve the problem at local as well as Global level in the slogan think globally, act locally and vice versa Think Locally, and act globally. (Botany, 2016, 2019).Natural habitats make a significant contribution to mitigation by storing and sequestering carbon in vegetation and soils, and to adaptation by maintaining essential ecosystem services that help societies to respond to, and cope with, climate change and other environmental challenges. Many Fomeag Cafeteria (protected areas) could be justified on socioeconomic grounds alone yet their multiple goods and services are largely unrecognized in national accounting. There is a convincing case for greater investment In expanded and better- connected.Fomeag Cafeteria systems, under a range of governance and management regimes that are specifically designed to counter the threats of climate change, increased demand and altered patterns of resource use.The Fomeag Cafeteriarequires greater inclusivity of a broader spectrum of actors and rights holders, with growing attention to landscapes and seascapes protected by indigenous peoples, local communities, private owners and other actors, which complement conservation areas managed by state agencies. Greater attention also needs to be focused on ways to integrate and mainstream Fomeag into sustainable development, including promotion of "green" infrastructure as a strategic part of responses to climate change throughFomeag Cafeteria

Key words:*Fomeag Cafeteria,Biodiversity, Biodiversity Climate –Link, Challenges,* Natural Solutions, 21st Cen

ISBN- 978-93-89703-08-5

PHYCOS

Ramakant Pandey
Patna

Phycos means algae. The study of algae is Phycology. Those who study algae are known as phycologist. Phycologists have responsibility to enumerate phycos. origin, evolution and their future associated with developing human society is a privileged matter of consideration. Perhaps algae are the first green creature appeared on the earth's surface along with archeo-bacteria. Algae still exist. Algae will be in the future where human race will be devastated. During the course of settlement of the earth algae appeared. Algae will be the dominant creature till the devastation of this earth from ditches to the vast oceans. The term algae was used by Linnaeus(1753)., the actual meaning of algae was enumerated by A.L.De Jussieu(1789), Vaucher(1803), C.A.Agardh (1824), Klebs (1893), Blackman (1900), Prescot, Fritsch, Smith and some others did many pioneer work in the field of algae. In India Ghose(1919-1932), M.O.P.Iyengar(1920), Balakrisnan, Desikachary, Kanthamma, Ramanathan, Subramniam were recognized as pioneer worker in this field where as Bruhl and Biswas(1922- 26), Bharadwaja(1928-36), R.N.Singh(1938-59), C. B. Rao (1935-38), S.R.N.Rao(1941-49), Pal, Dixit, Kundu and Sunderlingam made significant contribution in this area. After all world is not fully aware of its economic importance. Algae have immense potency. It may be supplemented as food, fodder, fuel, fertilizer and pharmaceuticals. People should know to harvest it as much as possible.

Carbon Neutrality By 2050-A Long Term Strategy

Shalini Saxena
Lab. Of Cytogenetics
Department of Botany,Bareilly College, Bareilly

ABSTRACT

Earth was far hotter in its distant past than it is today, which suggest that global warming could seriously cook the planet. Global temperature are now set to reach1degree Celsius above pre industrial level. It seems the world's temperature is going to go up. So how hot could the earth really get? Climate change is not a new experience for earth. The planet has gone through countless temperature fluctuations over its 4.6 billion years history from frozen snowball to blazing tropical heat.

Without the greenhouse effect, the earth would have an average temperature of -18 degree Celsius. Life as we know it would not be able to survive. Greenhouse gases in the air mainly carbon dioxide, methane and water vapours trap radiations from the sun and act like a thermal blanket around the planet, The greenhouse effect is clearly a good thing but like all good things it is possible to have too much and its excess is very harmful for the whole planet'

Humans have only been here for a relatively short time, yet we have managed to become the most significant

driver of climate change on the planet. By burning fossil fuels and cutting down trees, we are releasing more and more carbon dioxide in to the atmosphere and that has caused temperature to rise.

Our rates of emissions are more than quadrupled from the previous decade and so far there is little sign on this upward trend reversing.

To predict the state of the planet in the future, scientists build computer models that stimulate what will happen to the earth's climate? These predictions are compiled in to reports by the Intergovernmental Panel on climate change (IPCC) most recently in 2013-2014.

They suggest that if our greenhouse gas emissions continue to increase as they have been over the last 50 years, then by the end of century the world will be at least 4 degree Celsius warmer than it was before the industrial revolution.

So this is high time to keep climate change under control, it is important to step back and examine its many origins. The phenomenon is the result of a development model based on fossils fuels, which leads to releasing vast quantities of greenhouse gas emissions, but above and beyond that, it is the result of a linear approach to the economy, of the extract, manufacture, dispose type in which increasing quantities of resources are extracted from nature. The non-recovery of waste, non-reuse of used products and non- recycling greatly increase the need for energy. But we are far less aware. It requires the implementation of a different model for the use of natural resources, one that consumes less and more efficiently. This model must be supplied by the clean energy and based on the principles of the circular economy- turning resources, making new raw materials from the environment. The use of recycled PET emits 70% less Co2 than the production of virgin PET. Too often, we do not realise that the circular economy is one of the main step for reducing Co2 emission. When temperatures are rising when extreme events become the norm and the economy has to become circular.

The world is caught in a dilemma between the need to satisfy growing demand for energy and protecting the climate. The 2015 United Nations climate change conference COP21 was held in Paris, France from 30 November to 12 December2015.

In view of all this a slogan CARBON NEUTRALITY has been introduced. Carbon neutral, also called carbon neutrality is a term used to describe the action of organization, businesses and individuals, taking action to remove as much carbon dioxide from the atmosphere as each put in to it. The overall goal of carbon neutrality is to achieve a zero carbon footprint.

The European Commission calls for climate-neutral Europe by2050. On 28 November 2018, the commission presented its strategic long term vision for a prosperous, modern competitive and climate neutral economy by 2050.

New Zealand unveils ambitious plan to go carbon neutral by 2050. The proposed climate change response (zero carbon) amendment bill sets a target for a 10%reduction in biological emissions by 2030 and aims for a provisional reduction ranging from 24% to 47% by 2050.

The Paris agreement is an agreement within the United Nations framework convention on climate change (UNFCCC) dealing with greenhouse gas emissions mitigation, adaptation and finance starting in the year 2020. The agreement aims to respond to the global climate change threat by keeping a global temperature rise below 2 degree Celsius above pre industrial levels and to pursue efforts to limit the temperature increase even further to 1.5 degree Celsius. But solution of the problem exists-

- Energy saving and energy efficiency
- Use of non-intermittent renewable energy
- Waste recovery

- Capture of methane from organic waste and its transformation in to heat.
- Use of bio fuel
- Use of biomass for the recovery of unavoidable energy

However, no single solution will be enough; no nation alone will be able to deploy them on a sufficient scale. So if we want CARBON NEUTRALITY to become a reality we must intensify our efforts towards cooperation and innovation.

Biodiversity in Relation to Productivity in Indian Context

Sadguru Prakash
Department of Zoology
Department of Zoology, M.L.K. (P.G.) College Balramur U.P.

ABSTRACT

India is quite rich in biodiversity with a remarkable percentage of endemic flora and fauna due to variation in climate, altitude and ecological habitats. At least 166 important food / crop species and 320 wild relatives of crops have originated in India. Our country is one of the 12 mega biodiversity countries in the world and divided into 10 biogeographic regions. Biogeographically, India is situated at the tri- junction of three realms- Afro-tropical, Indo-Malayan and Paleo- Arctic realms, and therefore, has characteristic elements from each of them. This assemblage of three distinct realms makes the country rich and unique in biological diversity. It has a great wealth of biological diversity in its forests, wetlands and in its marine areas. Our country accounts for two hotspots i.e. Eastern Himalayas and Western Ghats which figure in top eight most important hotspots of biodiversity of the world. Based on this, over 46,000 species of plants and 81,000 species of animals have been described by the Botanical Survey of India (BSI) established in 1890 and Zoological Survey of India (ZSI) established in 1916, respectively.

India covers 2% of the world area and supports 16% of the world's population. This country harbors 65% of the world animal and 33% of the world plant species. The total number of plant species in India is estimated to be about 45,000 (15,000 flowering plants, 64 Gymnosperms, 2834 Bryophytes, 1012 Pteridophytes, 1940 lichens and 23000 fungi). Nearly 4900 of these species are endemic of India out of which, 1500 are highly threatened species.The faunal wealth of India comprises of 81000 species (5000 molluscs 57000 arthropods, 2546 fishes, 204 amphibans, 428 reptiles, 1228 birds and 372 mammmals) Out of which, 62 % species are endemic to India .

India is one of the world's largest and oldest agricultural societies. But future of India's agriculture depends on agro-biodiversity. Biodiversity has immense effect on human survival. The traditional diversity was bred to meet diverse human needs and to resist natural calamities. Nature provided rich genetic material to Indian farmers and fisherman over centuries. Deliberate practices of selection, planned exposure to various natural conditions and cross breeding at field level led to diversification.

Steps should be towards revival of indigenous biodiversity, with appropriate modern input where necessary. This revival is eminently possible in India. The food basket should be enlarged with diverse foods made available for consumption for the sake of nutrition. There is a need for a second green revolution which should be the gene revolution.

Biodiversity is must to secure livelihood, fulfillment of food requirement and achieving the goals of progress. In fact poverty eradication and biodiversity conservation are interlinked tightly. Expenditure on biodiversity needed to be looked as an investment that would reap benefits " for us and for our future". Indigenous diversity is a key development issues to provide "welfare system" for poor people. It helps strengthen cultural integrity and values.

Eco-Friendly Management of Some Plant Bacterial Diseases By Plant Extracts of Some Medicinal Plants of Eastern U. P.

Ravindra Kumar ,Vipin Tiwari, J P Tewari and N K Singh
Department of Botany
M.L.K.P.G.College Balrampur U P

ABSTRACT

Nine medicinal plants viz., Acacia nilotica (L) Del. (Leaf), Acorus calamus L. (Rhizome), Carum copticum L. (seeds), Emblica officinalis Gaert (Leaf), and Ocimium basilicum L. (Leaf) was screened for antmicrobial activity against important phytopathogenic bacteria such as Xanthomonas campestris pv. vesicatoria, Xanthomonas axonapodis pv. malvacearum, Xanthomonas oryzae pv. oryzae, and Erwinia carotovora (MTCC 1428). Powdered leaves/fruits/seeds/rhizome of all the plants was extracted with different solvents such as petroleum ether, chloroform, methanol and ethanol using cold extraction method. All the extracts were subjected to antibacterial activity against test pathogens. Among different solvent extracts tested, methanol and ethanol extract of Emblica officinalis, Acacia nilotica, and Carum copticum recorded significant inhibitory activity against all the test. The result revealed that antibacterial activity of methanol extract of Emblica officinalis, Acacia nilotica and Carum copticum was highly significant compared to antibiotic. The present study is successful in demonstrating inhibitory activity of important medicinal plants against phytoapthogenic bacteria and proposes the use of these plants in plant disease management after further screening on package and practice.

Key words: *Pesticide, Phytopathogenic, Antibacterial,*

ISBN- 978-93-89703-08-5

Antifertility Effect of Ethanolic Extract of Seed of Plant Annona Squamosa in Male Rats

Veena B Kushwaha and Preeti Singh
Department of Zoology, DDU Gorakhpur University,
Gorakhpur-273009, U.P., India

ABSTRACT

Several plants have been evaluated for their antifertility potential in the hope of developing a contraceptive for use in man. Hence in this paper an attempt is made to evaluate the effect of ethanolic extract of the seeds of plant Annona squamosa commonly known as custard apple on the level of protein, glycogen and activity of phosphatases in the reproductive organs of rat. A significant time and dose dependent decrease in the level of protein, glycogen and activity of phophatases was observed in testis, caput epidydymis, cauda epidydimis, vas deferens and seminal vesicles of the treated rats in comparison to control rats. Alterations in these parameters indicate interference of the active compounds of the plant on the reproductive physiology and suggest that the ethanolic extract of the seeds of plant bears antiandrogenic property.

Keywords: *Annona squamosa, testis, caput epidydymis, cauda epidydimis, vas deferens, seminal vesicles, glycogen, protein, acid phosphatase, alkaline phosphatase.*

Effects of Callistemon Lanceolatus Leaf Oil Volatiles on Immature Stages of Corcyra Cephalonica And Characterization of Active Ingredients By Gcms.

Vikas Chandra Verma and P.H. Pathak
Entomology Laboratory, Department of Zoology, D.D.U. Gorakhpur University,
Gorakhpur-273010, (Uttar Pradesh, India)

ABSTRACT

Callistemon lanceolatus (Family : Rutaceae) is commonly known as “red bottle brush” , this plant claimed for the management and control of rice moth Corcyra cephalonica an important pest stored commodities. The action of Callistemon lanceolatus leafoil volatiles was studied during rearing in a programmed manner. When new born larvae were exposed for first 15 days, from 16th day for 15 days after hatching or continuously exposed till 30th days after hatching,with 20, 40, 80 or 160 µl concentrations of Callistemon lanceolatus leaf oil there wassignificant reduction in the reproductive potential of breeding pairs when compared to control. A significant reduction ($P<0.01$) in eggs output and eggs hatchability in breeding pairs was recorded when

new born larvae were continuous exposed till 30th day at various concentration of thisoil volatile that's too maximum at 160> 80 > 40 µl volumes. When laboratory extracted this leaf oil was subjected to Gas-chromatographic and mass-spectrometry (GC-MS) studies itcontained maximum percentage of 1, 8 Cineole (62. 25%); Alpha-terpineol (8.73%); D-limonene (8.40%) Alpha Pinene (7.03%) ; and several other constituents such as Bezylicosanoate * 0.03%; beta-pinene*0.39%; Alpha Phellendrene*2.85%; Linalool*0.67%; Trans-Pinocarveol*0.18%; Terpinen-4-ol*1.60; Nerol*0.36%; Caryophyllene*0.54%; Eugenol*0.42%; Hexadecane*0.46%; Durohydroquinone*0.65%; Caryophyllene oxide*0.87%; Gibberelic acid*0.04%; Levomepromazine*0.03% etc. The results of this study offers a platform for using Callistemon lanceolatus leaf oils in management of Corcyra cephalonica (rice moth) population in godowns and warehouses around the world if appropriate technology is discovered from where the needed concentration is released and maintained in affected areas.

Key Words*:Corcyra cephalonica, Clevenger's apparatus, Gas-chromatography and Mass- Spectrometry (GC-MS), Phytochemicals, Active ingredient, Callistemon lanceolatus.*

"Gamma Irradiation Induced Floral Abnormalities in Brassicacampestris Cultivars."

Gopal Krishna Shukla
Department of Botany, Kisan P.G.College, Bahraich,U.P

ABSTRACT

The human population is growing alarmingly and there is increasing vulnerability to agriculture as a result of climate change. This is a serious concern for food security. As the land is un-stretchable and availability of land is a limiting factor, a ray of hope lies only in the use of wasteland and introduction of high yielding genotypes with traits enabling drought and salt tolerance. The massive advent of induced mutagenesis is gaining importance in plant molecular biology and it is becoming more powerful and effective in breeding crop varieties and continues to play a significant role for improving world food security in coming years and decades. Keeping this in view, the seeds of four cultivars of Brassica campestris viz. T-9, PT303, Brawn Sarson and Peela sona were treated with different doses of physical mutagen(Gamma rays) for the creating variability and selection of improved genotypes. The frequency of different types of floral variants was screened in M1 generation. It has been observed that frequency of pale yellow, albino, reduced sized petals and apetalous flowers were maximum at high doses whereas increased number of petals, fused petals, large flowers were more at lower doses of gamma irradiation in all cultivars but maximum in T-9 cultivar. These results suggested that plants having apetalous and small sized petals as component of high yielding and stress resistant ideotype and this would help stabilize the Brassica cultivation in drought and salinity prone wasteland of the country.

ISBN- 978-93-89703-08-5

Pistia Stratiotes : An Invasive Threat to Aquatic Biodiversity

Gopal Krishna Shukla and S.C.Tripathi
Department of Botany, Kisan P.G.College, Bahraich

ABSTRACT

Pistia (water cabbage) is a genus of family Araceae. It has spread to many tropical and subtropical regions across the planet. Nowadays Pistia is very aggressive species capable of rapid growth and reproduction and is considered as an invasive weed of ponds and lakes in India. The present study deals with the occurrence of Pistia stratiotes in different water bodies (ponds) of district Lakhimpur and Bahraich of Uttar Pradesh. It has been observed that Pistia replaced Eichhornia due to change in the environment of ponds. Accumulation of organic matter by death and decay of Eichhornia in water bodies makes them shallow which results in their suitability for Pistia growth. Due to adaptability in shallow water habitat and eutrophication Pistia grow rapidly forming large dense mat in the ponds and lakes. Pistia mat has completely displaced Eichhornia and other emersed plants which inturn reduced the aquatic biodiversity.

Electrophoretic Studies on Mixed Complexes Metal-Methyl Cysteine-Nitrilotriacetate

Pramod Kumar
Assistant Professor, P. G. Department of Chemistry,
Jawaharlal Nehru Rajkeeya Mahavidyalaya (JNRM),
Port Blair, Andaman and Nicobar, Islands, India-744104
Affiliated to Central University Pondicherry, Pudducherry

ABSTRACT

Therole of mixed-ligand complexes in biological processes is well known. The stabilities of binary and mixed complexes are known to play an important role in a number of metabolic and toxicological functions. Iron is an important constituent of the blood and tissues of animal body, most of the iron in the body present as heme proteins and high concentration of iron in living system can be prevented by the use of iron specific chelating agents. Copper is an essential part of several enzymes, including tyrosinase involved in the formation of melanin pigments, cytochrome oxidase, superoxide dismutase, amino oxidase, and uriase.The significance of sulphur containing amino acid like methyl cysteine is enhanced by the fact that in recent years it has been utilized in connection with rheumatoid arthritis and neonatal jaundice.

In the present communicationionophoretic technique has been used for the study of Fe(III) and Cu(II) - methyl cysteine binary and Fe(III) and Cu(II) - methyl cysteine-NTA (Nitrilotriacetic acid) mixed complexes. The stability constants of metal-methyl cysteine binary complexes are found to be 108.55 and 106.57, and the stability constants of metal-methyl cystine-NTA mixed complexes have been found to be 106.31, and 106.25 for Fe(III) and Cu(II) complexes respectively at μ = 0.1M ($HClO_4$) and 25°C.

ISBN- 978-93-89703-08-5

Survey of Different Fungal Diseases of Cucurbits in The Area of Siddharth Nagar

Shivdatt Tiwari, Amarmani Tripathi, J P Tewari and S V Singh
M L K P G College ,Balrampur

ABSTRACT

Cucurbits represents the major vegetable crop of the world. But it faces serious challenge due to the crop loss that may occur due to ecological, agronomical and biological factor. Among the biotic factor like pest and diseases, which are prime importance and are included a wide range of fungal pathogen affecting the productivity of cucurbits. The present investigation was carried out in the different area near siddharth Nagar. On the major fungal diseases prevalent in the cucurbits growing area. The observed symptom were Fusarium wilt, Alternaria leaf spot, downy mildew , Powdery mildew, and alternaria leaf blight of cucumber, belly rot of cucumber, blue mold rot of cucumber, Cercospora leaf spot of cucumber , damping of cucumber seedlings were common in Bansi, Uska Bazar, Shohratgarh, Itwa, Kapilvastu and Sohans etc. Root lesion of cucumber was noticed in serious proportion. The cause serious loss of vegetable and down the market in Siddharth Nagar district.

Key Words :*Cucurbits, Siddharth Nagar, Fungal Pathogens, Vegetables.*

Future of Organic Farming in India

Jaya Singh*, Digvijay Singh, AK Pandey and Ajay Singh*
DDU Gorakhpur University, Gorakhpur (UP)
Government Degree College, Sehmo – Basti (UP)

ABSTRACT

The mounting use of chemical fertilizers and pesticides in agriculture is today acknowledged as an issue of concern affecting the entire food chain. Now days consumers all over the world are concerned about the presence of toxic residues in food items including cereals, pulses, oilseeds, spices, feed, fodder, vegetables, fruits, milk, and milk products etc. There is also growing concern for safe healthy food by World Trade Organization (WTO) and other such agencies. Application of chemicals fertilizers, pesticides and synthetic substances over a long period resulted in to poor soil fertility, human and animal health hazards, disturbed eco-system, all leading to decrease productivity and reduced profitability. Excessive and blanket use of chemicals fertilizer and pesticides results also in pollution of our air, water and soil.

The fertility and quality of soil has deteriorated over a period over a long time due to blind use of agricultural inputs. Thus, the organic farming is becoming necessary for due to these reasons: 1. Eco friendly technology 2. Encourage sustainable live hood of the producers as well as safeguard of the consumers health 3. Enhance and sustain biological diversity with the system 4. Organic farming can be a lifeline for small and marginal farmers because it offers and alternative market 5. Toxicity and residues are the main problems of the agrochemicals in farm produce 6. Agrochemicals also affect ground water bodies.

Use of organic manures have several advantages. They improve the soil profile and facilitate the nutritive power. Organic manure contains humic substance increase P availability as they have very high cation exchange capacity. Technical merits of using these manuers are proven not only to provide nutrients but also to improve soil tilth and water holding capacity of soil. Therefore, it will be deemed necessary to apply these manures such as Biopesticides, Green Manuring, Crop residues, Biopesticides, Natural plant products as pesticides and bioherbicides. Organic farming has not popular among the farmers because of the poor awareness about its utility and importance. Consumers in many countries willingly pay a premium price for organic farmed fruits, vegetables and other food products. Organic products have premium price than non-organic products in international market. The global market would offer greater opportunities to country as international food market. The world wide demand for organic products has also encouraged the farmers to turn to organic farming.

Impact of Climate Change on Biodiversity

Braj Kishor
Research Scholar (Geography)
Dr. Bhimrao Ambedkar University, Agra (U.P)

ABSTRACT

Biodiversity means the variety of living beings present on the planet. Biodiversity plays an essential role in maintaining the well being of the planet. Climate change is a prominent factor that has a huge impact on the ecosystems, biological diversity and ecological interactions. Changes in climate have severely impacted the terrestrial and marine ecosystems. With rising temperatures and sea levels and their adverse impacts on biodiversity including prominent ones like coral bleaching have made it crucial that impact of climate change on biodiversity should be thoroughly researched and effective steps be taken to mitigate the adverse effects of climate change on biodiversity.

Environmental Crisis: Challenges And Future Scenario

Dr. Pradeep Kumar Sharma
Department of Environmental Science
Jhunjhunwala P. G. College, Ayodhya-224001 (U.P.)

ABSTRACT

Our environment is constantly changing. There is no denying that. However, as our environment changes, so does the need to because increasingly aware of the problems that surrounded it. With a massive influx of natural disasters, warming and cooling periods, different types of weather patterns and much more, people need to be aware of what types of environmental problems our planet is facing.

Global warming has become an undisputed fact our livelihoods; our planet is warming up and we are definitely part of the problem. However, this is not the only environmental problem that we should be concerned

about. All across the world, people are facing a wealth of new and challenging environmental problems every day. Some of them are small and only affect a few ecosystems, but others are drastically changing the landscape of what we already know.

Our planet is poised at the brink of a severe environmental crisis. Current environmental problems make us vulnerable to disasters and tragedies, now and in the future. We are in s state of planetary emergency, with environmental problems pilling up high around us. Unless we address the various issues prudently and seriously we are doom for disasters. Current environmental problems require urgent attention.

We need for change in our daily lives and the movement of our government is growing. Because so many different factors come into play; voting, governmental issues, the desire to stick to routine, many people don't consider that what they will affect future generations. If humans continue moving forward in such a harmful way towards the future, then there will be no future to consider. Although it's true that we cannot physically stop our ozone layer from thinning (and scientists are still having trouble figuring out what is causing it exactly), there are still so many things we can do try and put a dent in what we already know. By raising awareness in your local community an within your families about these issues, you can help contribute to a more environmentally conscious and friendly place for you to live.

Water Quality Status of Basti, U.P. India

Dr. G. J. Kushwaha
Department of Botany, S. K. P.G. College, Basti -272 001, India.

ABSTRACT

Water is a universal resource which, because of its free occurrence in nature, is often taken for granted and abused, especially in third world nations where information is neither readily accessible, nor disseminated to society. Ground water is used for domestic, agriculture and industrial purpose in most parts of the world. Ground and surface water quality can be affected by three different forms of pollution all over the world viz. chemical, biological & physical pollution. Due to urbanization & expanding economic activity about 13% of the world population do not have access to safe drinking water (WHO & UNICEF, 2010).The WHO reports that approximately 36% of urban and 65% of rural Indian's were without access to safe drinking water (WHO, 2009) and has estimated that up to 80% of all sickness & disease in the world is caused by inadequate sanitation; pollution or unavailability of water (WHO, 1997). Since the quality of groundwater is directly or indirectly depends on its related use, there is always a need to classify the ground waters of an area on a regional basis. Keeping this in focus, the objective is to evaluate the suitability of the groundwater of Basti district for drinking.

The study exposed that most of the samples within study area have higher values of total dissolved solids, hardness, alkalinity, chloride, magnesium and presence of E. coli in the groundwater. So, the groundwater quality in Basti city and around its surrounding areas is not so healthy as for as its drinking quality is concerned. Therefore, study calls for immediate attention for sustainable management of water resources.

ISBN- 978-93-89703-08-5

Impact of Climate Change in Water Resources

Dr. Ankur Vishwakarma,
S.V.N. University, Sagar (M.P.)

ABSTRACT

There is increase in earth's temperature from 40°-50°C due to increasing concentration of green house gases above normal. Fresh water resources are essential component of the earth's hydrosphere and an indispensable part of all terrestrial ecosystems. The fresh Water environment is characterized by the hydrological cycle, including floods and drought. In which some regions have become more extreme and dramatic in their consequences. Global climatic change and atmospheric pollution could also have an impact on fresh water resources and their availability and through sea level rise, threaten low-lying coastal areas and small island ecosystems.

All regions of the India show an overall net negative impact of climate change on water resources and fresh water ecosystems areas in which runoff is projected to decline are likely to face a reduction in the value of the services provided by water recourses. The beneficial impacts of increased annual runoff and seasonal runoff shifts on water supply, water quality and flood risks.

In this paper an attempt has been made to evaluate these impacts. It is very challenging because water availability, quality and stream flow are sensitive to changes in temperature and precipitation other important factors include increase demand for water caused by population growth, change in the economy, development of new technologies, changes in watershed characteristics and water management decision.

Key words:- *Climate Change, Increase, Fresh water, Water Resource, Temperature.*

Climate Change and Human Health

Dr. Rekha Vishwakarma
Depertment of Geography
M.L.K.(P.G.) College, Balrampur

ABSTRACT

Climate change includes changes in temperature humidity and photopcriodism with changing seasonsin the year. Climate change is statistical properties. Climate can change over period of time, raning from months to thousands or millions of years.

Changing climate patterns in the bitter truth of the World. One of the major factor responsible for this climate change is emission of green house gases as accepted by meny scientists. Changing climate patterns coupled with increasing huge population and industrilazation led to shifting of season. Climate change represents one of the biggest challenges to the long term health of the world population with rising global temperature and sea level decreased agricultural output and deforestation climate change impects and air we breathe, the water we drink, whatever food we eat and the land on which we live. These are cornerstone of human health. The

effect of climate change on health are immense-yet despite strong evidence that climate change will profoundly affect human health, the mechanisms have received little attention and are poorly understood.

The adverse health effect associated with climate change in topical and sub topical region exprience a significant change in human parasites relationships. changing temperature and rainfall patterns affect health by ecological borne diseases like malaria, Chikunguniya, Japnese encephatities, Filariasis and dengue etc. among human population of India.

Key Words:- *Climate Change, Ecology, Temprature, Human Health.*

Survey of Different Fungal Diseases of Cucurbits in the Area of Siddharth Nagar

Shivdatt Tiwari, Amarmani Tripathi, J P Tewari and S V Singh
M. L. K P. G. College, Balrampur

ABSTRACT

Cucurbits represents the major vegetable crop of the world. But it faces serious challenge due to the crop loss that may occur due to ecological, agronomical and biological factor. Among the biotic factor like pest and diseases, which are prime importance and are included a wide range of fungal pathogen affecting the productivity of cucurbits. The present investigation was carried out in the different area near siddharth Nagar. On the major fungal diseases prevalent in the cucurbits growing area. The observed symptom were Fusarium wilt, Alternaria leaf spot, downy mildew , Powdery mildew, and alternaria leaf blight of cucumber, belly rot of cucumber, blue mold rot of cucumber, Cercospora leaf spot of cucumber , damping of cucumber seedlings were common in Bansi, Uska Bazar, Shohratgarh, Itwa, Kapilvastu and Sohans etc. Root lesion of cucumber was noticed in serious proportion. The cause serious loss of vegetable and down the market in Siddharth Nagar district.

Key Words : *Cucurbits, Siddharth Nagar, Fungal Pathogens, Vegetables.*

Effects of Sugar Effluents on Seed Germination of Pisum Sativum At Balrampur

Vipin Kumar, Zaheen Hasan, D.D.Tewari and N.K.Singh
Department of Botany,M.L.K.(P.G.)College, Balrampur (U.P.)

ABSTRACT

The present paper deals with percentage of seed germination of Pisum sativum (Var, Arkel & Asauji) irrigated with sugar mill effluent at Balrampur. It was observed that increasing concentration of effluent included a gradual decrease in the percentage of seed germination. At higher concentration of the effluent shows more significant and inhibitory effect on both varieties of Pisum sativum (Arkel & Asauji).However, upto 25% concentration of the effluent the effect on seed germination is almost negligible. It was found that Var. Asauji is more susceptible than Var.Arkel.

Keywords: *Sugar factory effluents, Pisum sativum*

A Preliminary Study on Spider Diversity from A House Hold Garden in Uttar Pradesh, India

Akhilesh Sharma
Department of Zoology, S.P.P.G. College, Shoharatgarh, Siddharthnagar;

ABSTRACT

Insects are the largest taxonomic group in the animal kingdom and their significant role in ecology needs no description. Spiders are exclusively predators, hence can play a very important role in regulation of insect population in any ecosystem. Comprehensive study of spider fauna of Uttar Pradesh has been not carried out yet. In our present study, we are attempting to provide relevant information regarding spiders. This information may serve as the base line document for future studies. A survey was carried out during May 2018 to January 2019 in a house garden. A total of 37 spider species belonging to 32 genera of 11 families were collected.

Key Words: Spider diversity, House hold garden, predator.

Studies on A New Species Atheria Puriensis N.SP.(Trematoda:hemiuridae From A Marine Fish of Puri Coast , Orissa

Deepak Kumar Dwivedi
Deptt. Of Zoology,
D.A-V. College, Kanpur, U.P.

ABSTRACT

Atheriapuriensis n.sp. (Trematoda: Hemiuridae) from the intestine of a marine fish Engraulis hamiltoni (Cuv. And Val.) has been described and figured.The new species differs from Atheria zakiae in having genital pore lateral to pharynx instead of ventral to oral sucker , caeca not forming shoulder instead of forming shoulder after bifurcation , vitellaria confined only in soma instead of extending into ecsoma, ovary submedian instead of median and in having smaller size of escola and eggs.This is a new host as well as locality record.

Key words: *Atheria, Marine fishes, Hemiuridae.*

Biodiversity of Aquatic Insect Population in Chittaura Jheel of District

Bahraich (U.P.) India.

Ram prakash*and R.B.Tripathi**
*Department of Zoology, M.L.K.P.G.College Balrampur (U.P.),India
**Department of Zoology, M.L.K.P.G. College Balrampur (U.P.) India

ABSTRACT

The present study deals with aquatic insects of Chittaura Jheel of district Bahraich (U.P.),India. The survey conducted from January 2018-December 2018, enumerated 21 different species belonging to 8 families and 3 orders. Aquatic insects are probably best known for their ability to indicate about the water quality in a particular environment. If a sample of the aquatic insects in a particular place is analyzed, in terms of the sensitive kind versus tolerant kinds and can get a good measure of the environment.

Keywords:- *Insect fauna, biodiversity and Chittaura Jheel.*

In Vitro Study of Anti-Hyperglycemic Property of Pleurotus Opuntiae

Sushil K. Dubey*, A.K. Bajpeyee and Prof. M.P. Singh
Centre of Biotechnology University of Allahabad, Prayagraj-211002

ABSTRACT

The purpose of this study is to determine the anti-hyperglycemic activity of Pleurotus opuntiae which was cultivated on paddy straw substrate. The fruiting body was air dried and then formed the powder by using mixer and grinder. The powder was then subjected for the extraction in chloroform solvent by using soxhelet for the 48 hours. The extract was separated from solvent by using rotatory evaporator. The extract was then used to determine the □-amylase and □-glycosidase inhibitory activity in vitro. According to our results the 1000 µg/ml concentration of extract showed 96.56 % and 78.91 % inhibition of □-amylase and □-glycosidase enzymes respectively. Hence, Pleurotus opuntiae showed a good anti-hyperglycemia property and can be given as an alternative diet therapeutic with other treatments of type-2 diabetes.

Keywords*: Anti-hyperglycemic, □-amylase, □-glycosidase.*

ISBN- 978-93-89703-08-5

Seasonal Changes In Alkalinity of Moti Sagar Pond and Its Effect on Fish Growth Balrampur Distric (U.P.) India

Priyanka mishra* and Akanksha Tripathi

ABSTRACT

Life on the earth is never possible without water. This study was designed to assess the quality ofpond water. Water samples were analyzed for various physio – chemical characteristics likecolour, odor, turbidity, temperature, pH,BOD,,salinity ,total alkalinity and total hardness etc.Thestudy will aid fish farmers on the necessary treatment needed to effectively use water this source forfish farming. In Rainy seasonal alkalinity increase and its effect on Plankton the Labeorohita and this fish found large amounts in Balrampur district. In this project you will learn about pH scale. 4.0 is aciddeath point, 4.0- 6.0 slow growth rate ,6.0-9.0 best for growth, 9.0-11.0 slow growth, lethal to fish overlong period of time, 11+ Alkaline death point of fish .Many physical factors are impact on pondproductivity of plankton . Plankton production in a optimum environment and then best productivity offish and fauna. If the alkalinity and temperature is increase high range then fish larva is dead,turbidity found into pond. Phytoplankton depend on the sun light for the photosynthesis factor,If alkalinity period of cloudy weather can cause a phytoplankton die off using oxygen duringdecomposition. An acceptable range would be 6.5 to 9.0 ,Fish can become stressed in water with pHranging from 4.0 to 6.0 and 9.0 to 11 .0 pond water PH fluctuate though out the day due tophotosynthesis and respiration by plant and vertebrates.

Key word:*Alkalinity,Fauna, and Plankton of water.*

Fish Diversity of Balrampur District Utter Pradesh

Aditi Jaiswal and Alpana Parmar
MLK PG College,Balrampur(U.P.)

ABSTRACT

Balrampur district of Utter Pradesh has waste potential of fish fauna diversity offers considerable scope of inland Fisheries development. Agricultural activities in rural for most of the Fisherman area in order to established to fish fauna of diversity of Balrampur preliminary data have been collected with the help of local fish farmers and market survey. Various lactic and logic water bodies of different locations of district for 9 month during 14 to 15 have been collected during the study period, 83 fish species belonging to 58 genera, 21 families a 8 order have been identified. Cypriniformrs was found the dominated order with 56 species (68%) followed by perciforms .9 species 11 % clupiformis 6 species (7%).The present study shows that Balrampur passes reaches fish diversity but proper conversion major or require to maintain sustainability and richness' of species diversity of the distinct.

Key word: *Fish, fauna, diversity*

ISBN- 978-93-89703-08-5

Vitexnigundo L. – An Ethnomedicinal Potential Herb In North Eastern Terai Region Of Utter Pradesh

Jayendra Nath Singh
Department of Botany,
Marwar Business School, Gorakhpur

ABSTRACT

North-Eastern Terai belt of UP which is endowed by the natural flora. It is a natural paradise. A field survey of the deferent district was done in order to gather information about the various flora used by the tribal's for different human diseases. The potent flora which were collected and studied wereVitexnigundo L. (locally called Samhalu) belongs to Verbenaceae. According to local healers/old villagers plants cures mental disorder, stomatitis, ear problem, digestion problem, liver problem, wound and tumor etc. The parts used, mode of treatment is studied and enumerated in aforesaid paper. The Tribal's of the area are real informers for aforesaid purpose and their knowledge is transferred to their next generations. Phytochemistry is still to be done from reputed laboratories like NBRI and CIMAP. This will enrich our knowledge as well as to the Pharmacoloigist and researchers in field of Ethnopharmacology.

Keywords: *Vitexnigundo L., Verbenaceae , Ethnopharmacology.*

Ethnomedicinal Significance of Sphaeranthusindicus L. in Rural Area of Gorakhpur (U.P.) India

Manjulla Srivastava, Chhamta Srivastava & Shail Pande
Deptartment of Botany,Mahatma Gandhi P.G. College, Gorakhpur

ABSTRACT

Sphaeranthusindicus L. (commonly known as Mundi/ Gorakhmundi) belongs to Asteraceae is a worldwide medicinal plant traditionally used in herbal medicines due to its medicinal properties against different human ailments viz. heart palpitations, depression, panic, liver disorders, jaundice, yellowness of eyes, burning sensation of urine and uterus. It is also beneficial in curing throat problems, wet and dry itching, eczema, dermatomes. Due to its bitter nature it is also used for curing indigestion, epilepsy and elephantiasis. These properties have been attributed to the contains a bitter, alkaline chemical called, Sphirenthin and a glucoside. It also containa a red oil which contains Euginol. This article briefly focus on the potential phytochemicals and pharmacological activity of selected plant, Various parts of plant including seeds, bark, leaves and fruits had been studied and investigated for various pharmacological properties. The plant also contains phytochemicals such as a greenish stable oil. The flower contain albumin an oil, resins, carbohydrates, tannin, minerals, volatile oil, and glucosides have been reported for ethnomedicinal significance.

Keywords: *Sphaeranthusindicus L., Asteraceae, pharmacological activity, ethnomedicinal*

ISBN- 978-93-89703-08-5

The Impact of Anthropogenic Environmental Degradation on the Population of Bats in District Lakhimpur Kheri, Uttar Pradesh, India.

Jitendra Kumar1 and Dr. Amita Kanaujiya2

1. Assistant Professor, Department of Zoology, Government Degree College, Pihani, Hardoi-241406,

2. Professor, Biodiversity and Wildlife Conservation Laboratory, Department of Zoology, University of Lucknow, Lucknow- 226007

ABSTRACT

Climate influences the biogeography of bats, their access to food, arrival and departure time of roost, reproduction and development, frequency and duration of activities, rate of energy expenditure and habitat preference. Although environmental change is a natural process but habitat destruction and other sources of environmental degradation pose a serious and increasing threat to local fauna and flora. Highly modified environments consequently struggle for maintaining the population of native fauna and flora. Species diversity linked to ecosystem structure and function in which organism and population interact with each other. Bats are unique among mammals as they are the only group that has evolved true powered flight, like aves. India has a rich diversity of bat fauna comprising approximately 119 species of bats. Previous literatures revealed that population of bats are declining day by day in world due various anthropogenic factors such as habitat destruction, human influences, hunting and electrocution incidents etc. The present study was conducted to reveal local environmental degradation that poses serious threats to survival of bats in this area and alarms for their decline. The present study also made some recommendations to protect and conserve local environmental resources and bat population.

Keywords: *Biogeography, Ecosystem, Roost, Anthropogenic, Habitat destruction, Electrocution,fauna and flora.*

ISBN- 978-93-89703-08-5

Behavioural Responses Of The Freshwater Fish, Cyprinus Carpio (Linnaeus) Following Sub Lethal Exposure To Organophosphorus Pesticide, Monocrotophos

Sarabjeet Kaur*, M.S.Johal and Monita Dhiman*****
*MCM DAV College for Women, Sector 36 A, Chandigarh
**Department of Zoology, Akal University, Bhatinda
***Khalsa College for Women, Ludhiana

ABSTRACT

Common carp were exposed to different concentrations of an organophosphate pesticide, monocrotophos. Median lethal concentration tests were performed in accordance with standard methods given in manual of APHA and was found to be 0.37 ml/L. One-third (0.052 ppm) , one-fifth (0.074 ppm) and one- seventh (0.123ppm) of the 96 h LC50 were selected as sub lethal concentrations for sub-acute studies. The fish were exposed to the sub lethal concentrations for 30, 45 and 60 days. Behavioural responses, hormonal abnormalities and morphological deformities were studied in the experimental periods. Fish under stressed conditions exhibited changed opercular movements, irregular, erratic and darting swimming movements, increased air gulps, abnormal fin movements, hyper and hypo excitability, loss of equilibrium and sinking to the bottom. The carp were found under stress, but mortality was insignificant in both the sub lethal concentrations. The inhibition of acetylcholinesterase (AChE) activity results in excess accumulation of acetylcholine (ACh) in cholinergic synapses leading to hyperstimulation and cessation of neuronal transmission (paralysis) which finally lead to behavioural and morphological changes in the fish. This may be a consequence due to the inhibition of brain and muscular AChE activity by monocrotophos via biotransformation of bioaccumulated monocrotophos in the tissues.

Keywords: *Monocrotophos, common carp, acute toxicity (96 h LC50), behavioural anomalies,*

Germplasm Conservation Of Gloriosa Superba L.

Shail Pande, Manjulla Srivastava & Chhamta Srivastava
Department of Botany,M.G.P.G.College Gorakhpur U.P.

ABSTRACT

Gloriosa superba is believed as one of the important herb that is exported, and collection of seeds and roots for the foreign market is causing a shortage of raw material for local drug industries in India. Plants like G. superba are becoming damaged through excessive collection, a whole series of traditional medicines and plants which have been in use for thousands of years will be threatened by indiscriminate usage. It is therefore need of the hour to come forward and rescue this important glorious herb of North eastern terai region of Gorakhpur, Uttar Pradesh.

Glory lily (Gloriosa superbaL.) is a medicinally potent plant species used to produce alkaloid colchicine. With

ever increasing demand, there is a pressing need to conserve it.This glorious herb found in abundance once upon a time in North east terai region of Uttar Pradesh now-a-days, this herb is becoming rare in this region.

Conservation of various verities ofGloriosais important so that plants which are having more desired constituent can be identified and mass propagated for the purpose of drug development.

Potent Antiarthritic Flora Of District Bahraich Of (U.p.) India

S.C. Tripathi & D.K. Gupta
Postgraduate Department of Botany,
Kisan P.G. College, Bahraich, (U.P) India

ABSTRACT

An ethnobotanical survey was carried out to collect information about the traditionally useful plants of district Bahraich. The present work deals with the antiarthritic plants found in studied area. Elder and local people as well as tribals who have the knowledge on various medicinally and commercially important plants were interviewed. A total of 20 plants belonging to 20 genera and 17 families is reported in this study.

Keywords: *Traditional knowledge, Medicinal plants, Tribals*

Herbal Remedies of Marshylands Macrophytes in Aligarh (Uttar Pradesh), India

Shazia Bi and M.B Siddiqui*
Department of Botany
G.F.College, Shahjahanpur-242001
*Department of Botany, Aligarh Muslim University, Aligarh-202002, India

ABSTRACT

Marshylands provide a unique habitat for several medicinal plants. In spite of their commercial value, the local community utilizes good number of these plants for various curative purposes. A number of these plants are very sensitive to the fluctuation in the normal physic-chemical parameter of the wetland. A slight alteration of the wetland may result in the disappearance or the extinction of these plants. This will ultimately result in large scale economic loss in terms of the medicinal product. Apart from the loss of plants, this will also result in the loss of local knowledge on the medicinal properties of these plants which very often can't be retrieved. Attempt has been made to document some of the little known medicinal properties of wetland plants used by local community of Aligarh, Uttar Pradesh.

ISBN- 978-93-89703-08-5

Diversity Of Aquatic Angiospermic Plants Of Western Uttar Pradesh

Shazia Bi
Department of Botany
G. F. College Shajahanpur-242001(INDIA)

ABSTRACT

The present investigation of the aquatic angiosperms growing throughout the Western Uttar Pradesh, comprises the districts of Aligarh, Bareilly, Pilibhit, Meerut, Saharanpur etc. The mentioned districts were surveyed and 45 species were collected. A brief taxonomic account of each species is given with current nomenclature, vernacular name, family and uses. Colocasia esculenta, Eichhorniacrassipes, Ipomoea aquatica, Nymphoides indicum, Ludwigia repens, Polygonum orientale,Pistia stratoites, Lemna perpusilla, Wolffia arrhiza, Xanthium indicum, Phyllanthusreticulatus, Cynodon dactylon were very common Nymphaea nouchali, Polygonumbarbatum, Scirpus articulatus were very rare species in the study area.

Physicochemical analysis of Sugarmill Effluent

Aftab Alam Ansari*,Vibha Tiwari*
*P.G.Dept. of Botany,N.N.P.G.College,Nawabganj,Gonda,U.P.
** P.G.Dept. of Botany, Jhunjhunwala P,G,College,Faizabad,U.P

ABSTRACT-

The physico chemical parameter of the content in the effluents from mankapur chini mills ltd mankapur, a unit of Balrampur chini mill ltd. Has been explored and its impact on different parameter of Rice crop has been studied.physico chemical parameters included color,odour,PH,temprature,suspended soloids ,dissolved solids ,BOD ,COD,chloride ,sulphate ,calcium ,oil and grease etc.concentration has been observed.

Key words *= effluents,sugar mill, physico chemical analysis.*

ISBN- 978-93-89703-08-5

Biological Control of Plant Diseases.

Anupam Sinha & Ramakant Pandey.
Vidya bhawan Mahila College, Siwan. & PatnaUniversity, Patna University ,Patna.

ABSTRACT

Each and every organism produces its young ones in suitable environmental condition. Required energy is obtained from optimum nourishment. For this nourishment organisms are struggling for their existence as well as for their supremacy. Generally lower organisms or weaker strength were found sources of nourishment to the mightiest one. A reversible cycle is continuously going on in existing nature between microorganisms to macro organisms. Here a case studied on Sclerotium rolfsii and trichodermaharzianum. Both are the members of Deuteromycetes. But on the basis of keen observations trichoderma were found fed on sclerotium mycelium and put relief from the disease caused due to scerotium. These observations were came into account since January 2017. Repited again and again ten times.

Key words- *biological control, phytoremediation, and plant diseases.*

Qualitative and Quantative Analysis of Macrozoobenthos of Semara Tal, A Wetland of U.P.

Raj Badhur Singh and Shivani Srivastava*
Department of Zoology
Nandini College, Turkauli, Nawabgang (Gonda)
K.N.I.P.S.S. Sultanpur U.P.

ABSTRACT

The present study was conducted on Semara Tal of Shohratgarh district Siddharth Nagar of U.P. , dealing with the qualitative and qualitative analysis of macrozoobenthic diversity. During the present investigation 41 genera were recorded which belonged to phylum annelid, arthropod and mollusca.During the present study molluscans show rich diversity contributing about 45%, to the total benthic population as shown in table, arthropods also shoes good diversity contributing about 30% while as annelids contributing only 25% of the total population The overall benthic population was estimated to be 1897 nos/m2. Highest diversity(15genera)and population density(812nos/m2) was contributed by molluscans folled by arthropods (12genera and 547nos/m2) and annelids (11genera and 538nos/m2).

Key Words *:Macrozoobenthos, Tal, Wetland*

ISBN- 978-93-89703-08-5

Effect of Climate Change on Biodiversity

J.P. Pandey
Department of Physics
M.L.K.(P.G.)College ,Balrampur -271201(U.P.)

ABSTRACT

Climate refers to the average weather conditions in a certain place over many years. Climate is directly affected the air, water, and land which in turn are related to one another.Recent reports reveal that the average temperature of the Earth has been increasing for many years. Rising global temperatures (Global warming) leads to the dramatic climatic changes around the world, such as melting glaciers, stronger hurricanes, and loss of wildlife habitats. Warming of ocean water has caused the melting of sea ice, shifting of many species from their natural habitats and extinction of species incapable of doing so. Therefore, a change in one place can lead to changes at somewhere else. Human actions have been a primary cause of climate changes observed today. Thus climate change has brought about serious and possibly ever lasting modifications to our planet's geological, biological and ecological systems. The IPCC reported in 2003 that " there is new and stronger evidence that most of the warming observed over the last 50 years is attributable to human activities". These changes are ultimately affecting human life in various ways such as extreme weather, ozone depletion, loss of biodiversity, stresses to food-producing systems and the spread of chronic diseases and the natural world.

Impact of Barrage on the Diversity of Zooplankton of Gharghara River

Mukul Sinha
Head Department of Zoology, LBS PG College, Gonda, U.P.

ABSTACT

Zooplankton are the main component of aquatic secondary producers. Zooplanktons are often used as environmental bioindicators because they have high sensitivity to environmental changes and any change in their population may be considered as an alert for the presence of water contaminants. The present study encompasses the impact of the ongoing construction of a barrage across the river on the diversity and dynamics of the zooplankton inhabiting river Gharghara .

The zooplankton data generated from the present study is critically compared with the zooplankton data of the river before the constraction of the barrage. The study reflects an overall decrease in the diversity of Zooplanktonic fauna of the river.

Keywords: *Barrage, diversity, River Gharghara, Zooplankton.*

ISBN- 978-93-89703-08-5

Benthic Invertebrate Biodiversity of Rapti River at Balrampur

Sadguru Prakash and Ashok Kumar
Department of Zoology
Department of Zoology, M.L.K. (P.G.) College Balramur U.P.

ABSTRACT

The present investigation was carried out at River Rapti during pre-mansoon, mansoon and post-mansoon seasons on the qualitative and quantitative composition of benthic community in relation to some environmental factors. Results reveled maximum production of fauna during post-monsoon (4652 nos. /m2) and minimum in monsoon (2132 nos / m2). Molluscs (grastropods and bivalves) dominated in upper stream (85.67%) and chironomids dominated in lower stream (60.55%). Nature of substratum was found to be an important factor in influencing the bottom fauna. During post-monsoon with a substratum of sand and mud with weedy areas at regular intervals supported a dense molluscans population. The common molluscans are Bellamya bengalensis, Thiara tuberculato, Brotia costula, Pila globosa, P. virens, Lymnaea acuminate, corhiculo striatella and Lamellidens. The Occasionally arthopodans larvae such as Chironomus sp., Culicoides sp. and Agabus sp. are also present.

Low concentration of benthic organisms observed during monsoon season may be due incoming flood water which might have mechanically dislodged them. Both number of species and density of benthic invertebrates were reduced during this period and only species capable of tolerating turbulence of water were found with regularity. From the foregoing observations it can be concluded that availability of food, water temperature, nutrients status of soil, aquatic vegetation and nature of substratum have greatly influenced the quality and quantity of benthic community.

Periphyton Diversity of River Rapti At Balrampur

Rajiv Ranjan
Department of Botany, M.L.K.P.G.College, Balrampur

ABSTRACT

Periphyton are the primary producers inhabiting lotic water bodies. These are the main source of energy for higher trophic levels in flowing waters. Periphytons are not only purify water bodies by sequestering inorganic nutrients and labile organics but also form an important food for fishes. Due to quick response to changes in immediate environment, the periphytic community has been extensively used as bioindicators.

The present investigation was carried out in River Rapti at Balrampur conducted during July2018-June2019 revealed evident seasonal variations. Results reveled maximum production of periphyton during the summer months followed by winter months and minimum in monsoon months. Current velocity, temperature and transparency of the river along with the available substrata seemed to regulate the spatial and temporal distri-

bution of the periphytic community.

The periphyton community comprised of diatoms (Cocconies, Cymbella, Fragilaria, Gomphonema, Melosira, Meridian, Navicula, Nitzschia and Synedra sp.) green algae (Ankistrodesmus, Cladophora, Closterium, Cosmariums, Pediastru, Rhizoclonium and Scenodesmus) and blue green algae (Merimopedia, Microcystis and Oscllatoria sp.).

High temperature, low current velocity, low turbidity and high concentration of nutrients probably favour the growth of periphyton especially blue green algae during summer months. Due to high current velocity, substratum intensity and high turbidity periphytic communities were swept off during monsoon months. Winter months were the recovery period for the periphyton community and constitute the accrual phase. Low temperature, high concentration of dissolved oxygen and low concentration of oxidizable organic matter favour the growth and production of diatoms.

Thus it can be concluded that the ability of periphyton to grow and proliferate in river is the outcome of complex series of interactions among abiotic and biotic components. Seasonal fluctuations of periphyton community in lotic waterbodies are controlled by temperature, transparency, turbidity, substratum stability, nutrients and current velocity.

Ground Water Pollution Affect On Mung Bean (Vigna Radiata) Growth In Terms Of Biomass Accumulation And Total Nitrogen Contents

Mohammad Akmal*, Rajiv Ranjan, Soumya Shukla
Advanced Plant Physiology Laboratory
Department of Botany, M. L. K. P. G. College, Balrampur, Uttar Pradesh.

ABSTRACT

There is a good repository of ground water in Balrampur district. It is observed that the ground water is suitable for drinking and domestic uses except at few places where arsenic (As) occur above permissible limit. In present investigation we observed the impact of ground water on growth of the plants through culturing five days old Vigna radiata seedlings in hydroponics in normal distilled and as well as ground water. The growth was monitored in terms of root/shoot length, biomass accumulation and total nitrogen estimation at 10, 20 and 25 days. It was observed that the root/shoot length, biomass decrease as compared to control in all three days. Total nitrogen accumulation was also decrease. These results indicate that the ground water is contaminated with heavy metals like As, iron etc. The possible solution for this is to remediate ground water with those plants that's accumulates heavy metals through phytoremediation.

Key words: Arsenic, Ground water, Growth, Nitrogen, biomass accumulation

ISBN- 978-93-89703-08-5

Qualitative And Quantative Analysis Of Macrozoobenthos Of Semara Tal, A Wetland of U.P.

Raj Badhur Singh and Shivani Srivastava*
Department of Zoology,Nandini College, Turkauli, Nawabgang (Gonda)
K.N.I.P.S.S. Sultanpur U.P.

ABSTRACT

The present study was conducted on Semara Tal of Shohratgarh district Siddharth Nagar of U.P. , dealing with the qualitative and qualitative analysis of macrozoobenthic diversity. During the present investigation 41 genera were recorded which belonged to phylum annelid, arthropod and mollusca.During the present study molluscans show rich diversity contributing about 45%, to the total benthic population as shown in table, arthropods also shoes good diversity contributing about 30% while as annelids contributing only 25% of the total population The overall benthic population was estimated to be 1897 nos/m2. Highest diversity (15genera)and population density(812nos/m2) was contributed by molluscans folled by arthropods (12genera and 547nos/m2) and annelids (11genera and 538nos/m2).

Key Words *:Macrozoobenthos, Tal, Wetland*

Effect of Digenetic Trematode Parasites in Fresh Water Carnivorous Fish

Singh Prashant & Mishra D.B.
Department of Zoology
T.D.P.G. College Jaunpur(U.P.) 222002

ABSTRACT

Fishes are rich in protein and minerals . They are nutritive and easily available food for mankind . Fishes are both marine as well as fresh water . Fish diversity correlate to their climatic condition . Anthropogenic activities create a harmful impact on the biodiversity of any region. The district Jaunpur(25.7490 N, 82.69840 E) is rich in water bodies included Sai , Gomti, Pili, Basuhi, Barna rivers , Gujar tal and different ponds. Fishing is a important livelihood for the people of Jaunpurdistrict . In our experiment we trying to know the effect of digenetic trematode infection in carnivorous fishes . Helminth parasites play a major role in fish infection in which trematodes are playing large contribution . Digenetic trematode parasites infection harm their internal body parts which cause deterioration in their growth nutritional value, immune system and economic values The mortality rate increases, which directly affect their ecosystem. So it is important to known the different aspects of infection with the ecological parameters . Finding data will be storage for the future scientific use.

Keywords:-Digenetic trematode parasites , Ecological parameters and Channa punctatus.11/18/19

Survey of Wall flora of KatarniaGhat Wildlife Sanctuary, Bahraich

Rahul Kumar Singh, N.K. Singh*, D.D Tewari*
Post Graduate Department of Botany,
Kisan P.G. College, Bahraich- 271 801 (U.P.)
* M.L.K P.G. College, Balrampur.

ABSTRACT

KatarniaGhat Wildlife Sanctuary is Situated Adjacent to the Nepal and Bahraich District.

Many ruined temples, mosques, monuments and pillars of old bridges are found here and there in the district and adjacent to Nepal. A well-recognised flora have been observed in these buildings. The Present paper is based upon the studies of past three year.

The Distribution on the wall in different seasons and their families are incorporated in present study. It has been observed that during rainy season the numbers of plants are very high in comparison to other seasons.

Key words- Wall Flora, Bahraich, Survey.

Ecofriendly Management of Some Plant Diseases of Terai Region of Uttar Pradesh

Ravindra Kumar Pandey, Vipin Tiwari,Shivdut and Saumya Shukla
Plant Pathology Lab,Department of Botany
M.L.K.P.G.College Balrampur (U P)

ABSTRACT

Over the next 20 years, crop production will have to increase significantly to meet the needs of the rising human population. This has to be done without damaging the environment. There will be no 'silver bullet' solution to the impending food production challenge. One way to increase food availability is to improve the management of pests. There are estimated to be around 67 000 different crop pest species including plant pathogens, weeds, invertebrates and some vertebrate species and together they cause about a 40 per cent reduction in the world's crop yield.

Eco-friendly are renewable source of environment which can multiply itself once established in the nature. Bio-pesticides can replace chemical pesticides to increase crop production with quality products. To combat the threat of global food crises the alternative technologies in the agriculture like bio-pesticides are obligatory. Therefore, to cater the need, it is necessary to promote the efforts for quality production of bio-pesticides in the U.P. to encourage the farmers, entrepreneurs etc. The present project proposal would be an effort in the

direction of qualitative, efficient, eco-friendly products and economically feasible technologies for setting up of bio-pesticides testing units at M.L.K.(P.G.)Collge ,Balrampur U.P.. The main objective of this project is to check the quality and use of bio-pesticides. In current scenario bio-pesticides are often criticized for their variable performance and lack of reliability. Quality control (QC) is therefore of paramount importance in order to ensure that products are delivered that comply with pre-determined specifications and deliver the efficacy within the prescribed conditions for use. Quality controlled bio-pesticides can play an important role in boosting the agricultural production.

Key words-Ecofriendly,bio-pesticide,pest,

Characterization of Putative Probiotics Isolated from Indian Murrel to Restrain Pseudomonas Aeruginosa Infection in Cyprinuscarpio

Rahul Singh*and Sadguru Prakash**
*Department of Zoology, School of Biosciences and Biotechnology
Lovely Professional University, Phagwara, Punjab
**Deptt.Of Zoology, MLKPG College, Balrampur U P

ABSTRACT

A study was conducted with the aim to isolate and characterize novel strain of probiotics in fish farming as disease outbreaks are constraint to aquaculture industry. A total of Sixty Four Putative bacterial colonies were isolated from gastrointestinal tract of seven healthy fish. Among them only six isolates F1F4, F1H4, F2H4, F3 1(2), F1F2 exhibited antagonistic activity against Pseudomonas aeruginosa and passes through all the Invitro criteria's to be a probiotic candidate. The strains were identified and confirmed by 16s rRNA gene sequencing followed by BLAST and were named as Bacillus subtilis strain F1F4, Enterococcus faecium strain F1H4, Bacillus safensis strain F2F4, Bacillus subtilis strain F3 1(2), Bacillus velezensis strain F1F2 and Enterococcus gallinarum strain F1H3, respectively. For reconfirmation the probiotic effects were checked in Cyprinuscarpio for 60 days of feeding with probiotic supplemented diet. We observed a significant increase ($p<0.05$) in the weight gain, survival rate and growth performance in probiotic treated groups as compared to positive control and negative control. Our Invitro and in vivo results shows that all the above 6 isolates would serve as an effective probiotic in aquaculture.

Role of horticultural plants to improve the indoor air quality: A review

Awanish
Associate Professor
Department of Botany,
Mahatma Gandhi (P.G.) College, Gorakhpur

ABSTRACT

Due to rapid industrialization and urbanization, air quality of outdoor as well indoor becomes very poor which cause a problematic health include breathing problems, respiratory illness, and cardiovascular disease. Plants can improve the quality of air by reducing level of air pollution. We spent most of our time indoor, so the quality of indoor air must be healthy and it should be top priority. Many species of ornamental plants have been identified as phytoremediator to improve indoor air quality. This paper reviews the state of art of system and their effect on indoor environmental quality based on recent scientific studies. Indoor greenery can reduce the harmful gases and volatile organic compounds, helps in lowering temperature and reduce sound level. This is portable, attractive and low cost technology fitted in any building.

Keywords: Air pollution, Indoor air quality, Plants, Phytoremediation.

Isolation and Bioefficacy of EntomopathogenFusarium pallidoroseum (Cooke) Sacc against Aphis gossypii Glover

Ritu Srivastava and Sakshi Agarwal
Mycology and Plant Pathology Laboratory,
Department of botany, Lucknow University, Lucknow

ABSTRACT

An entomopathogenic fungus, Fusarium pallidoroseum(Cooke) Sacc,was isolated from natural population of HelicoverpaarmigeraHubner infesting chickpea (Cicer arietinum L.). A big mass of hyphae was observed together with macroconidia, mesoconidia and microconidia at 1000X and 3500X magnification examined by scanning electron microscope. Infection hyphae with appresorium (measuring about 5.21 µm) were observed among the mycelial mat. The length of macroconidia was found approximately 11.26 µm. Short spindle shaped microconidia and chlamydospores with average diameter of about 2.56 µm were also observed. The present study clearly indicated the effectiveness of F. pallidoroseumas a bio-control agent against okra aphid (Aphis gossypii) as it inflicted initial mortality of 43.33% nymphs on the 2nd day and lead to complete annihilation (93.33%) of nymph population on the 8th day of application at a concentration of 1x1010 spores mL-1. Bio-efficacy results against adult okra aphid clearly demonstrated that spraying of 1 x 1010 spores per mL of Fusarium pallidoroseum(Cooke) Sacc resulted in 66.67 per cent mortality after eight days of spraying. Increased mortality was observed with an increase in spore suspension concentrations. The LC 50 and LC 90 value for Fusarium pallidoroseumagainst the nymphs of Aphis gossypiicalculated were 3.79x105 and 2.74x108, respectively. The bioassay results against Helicoverpaarmigera revealed that this bioagent was only capable to cause disease in susceptible host larvae.

Key words: Aphis gossypiiGlover, Bio-efficacy, entomopathogen, Fusarium pallidoroseum(Cooke) Sacc, HelicoverpaarmigeraHubner

ISBN- 978-93-89703-08-5

Biodiversity of Angoori Barrage in Datia district, Madhya Pradesh

Kamlesh Kumar, Vijiyata Singh and Umesh Kumar Mishra*
Department of Zoology Bipin Bihari P.G. College, Jhansi

ABSTRACT

India is a mega diverse country in terms of its diverse form of its biogeographical location, climatic conditions, seasonal activities and rich form of floral and faunal diversity. There are innumerable forms of species which have not yet been identified and described. These species may also be play important role for environmental conservation and maintaining the ecological balance. Angoori barrage is an important unique water bodies which contains a lot of faunal and floral diversity. This barrage provides support for agriculture sector, human society and varies form of animal community. This barrage contains various varieties of invertebrates, vertebrates, phytoplanktons and zooplanktons. These animals are very essential for maintaining the eco-environmental-chain. This research investigation focus on various forms of faunal diversity which reveals detailed information of biodiversity of Angoori barrage.

Keywords: Faunal diversity, Eco-environmental chain, Angoori barrage.

Effective Control Measures of the Pestiferous Giant African Snail Achatinafulica (Bowdich)

Dr. Farindra Tiwari
Assistant Professor
P. G. Department of Zoology
Mahatma Gandhi P. G. College, Gorakhpur, 273001 UP

ABSTRACT

Snail control has been performed through different means as like chemical, biological, ecological, mechanical and bait formulation. The giant African snail, Achatina fulica a native of east Africa has invaded many countries in the world and established as a polyphytophagous pest. It is reported to feed on at least 500 different types of plant species and is extensively studied snail of economic, ecological and medical importance. A. fulica has been recorded in every continent except Antarctica and is a classic example of an introduced species and has been listed as one of the world`s 100 most invasive species by the International Union for Conservation of Nature and Natural resources (IUCN). The giant African snail has gained attention due to its large size, supposed medicinal properties and its potential as human or animal food source and its success as an introduced species is attributed to several factors viz., high reproductive capacity, voracious feeding habit, inadequate quarantine arrangements and human aided dispersal. This snail is one of the most destructive pests affecting subtropical, and tropical areas, causing large damages to farm's commercial plantations and domestic gardens. It can also be found on trees, decaying material in decomposition and next to garbage deposits. It is also invaded in the districts of eastern Uttar Pradesh and causing great damage to the vegetable crops and garden plants. Present study clearly demonstrates the effective control measure of the snail by using integrated snail control programmes.

ISBN- 978-93-89703-08-5

Impact of climate change on Biodiversity

Ranjana Tiwari, Usha Pandey and Neeti Srivastava*
Department of Zoology,M.L.K. (P.G.) College, Balrampur
Maulana Azad Institute of Humanities ,Science and Technology,Mahmudabad,Sitapur

ABSTRACT

Climate change is an important factor for biodiversity & ecosystem. Impact of climate change can be seen on physiological activity, HabitatebehaviourAdoptibility& on Immunity of Animal & plants. Change in habitate behavior of Animal causes migration of some important spps. Of that area : a result causes biodiversity loss. On other hand the increasing concentration of green house gases, such as Co2 in the earth's atmosphere are causing the planet's climate system retain more energy. Particularly in field agricultural, industrial development have expanded over the last few centuries. Increases climate variability altered distribution of certain infectious diseases, increased sea levels, increased ocean acidification. All these changes in environment adversely affecting the biodiversity. It is estimated that about 27,000 species become extinct every year. If this goes on 30% of world's species may be gone by the year 2050. The current extinction rate is 100 to 1000 times that of natural rate of extinction. Increasing our understanding of the effects of climate change on biodiversity and developing ways of mitigating such effects are critical to limit such damage.

Keywords : Biodiversity, species, climate change, green house.

Importance of Biodiversity

Dharm Veer Singh
Department of Geography
M.L.K. (P.G.) College, Balrampur-271201 U.P.

ABSTRACT

A variety of organism including plants animals and microorganisms which are our partners on this planet, give the world a beautiful place to live. The living organisms are found in almost all places, from the mountain peaks to the depths of the sea, from the deserts to the rain forests. Their shapes behavior shape size and color are different. The extraordinary diversity found in living organisms constitutes integral and important parts of our planet although biodiversity is facing serious threats due to the ever-increasing population.

Biodiversity is being affected by population growth, as industrial development is also an important part to provide sustenance and employment to the growing population but forests are being destroyed rapidly with industrial development. Our ecosystem is also being affected by this.

Biodiversity helps in the disposal of environmental pollution. Dissolution and absorption of pollutants are characteristic of some plants. A plant called evergreen has the ability to decompose deadly explosives such as trinitrotaluin various species of micro-organism are helpful in cleaning up toxic waste materials. Pseudo-

monas putida and Arthrobacterviscosa of micro-organism have the ability to remove various types of heavy metals from industrial waste. Some species of plants have the ability to absorb and store soil-rich metals such as copper, cadmium, mercury and chromium. There plants can be used in the disposal of heavy metals. Indian mustard has the ability to absorb chromium and cadmium from the soil. Aquatic plants such as hyacinth lamna, salvinia and azolla are used for the disposal of heavy metals in the water.

The concentration level of cadmium in two major carps (Catlacatla and labeorohita)in the river Gomti, Sultanpur (U.P.)

Preeti Singh
Dr. R.M.L. Avadh University, Ayodhya

ABSTACT

This study was conducted to determine the effect of Cadmium (haevymatal) concentration in gills, scales and liver of Catlacatla and LabeoRohita in Gomti river, Sultanpur. Heavy metal concentration varied significantly depending upon the type of fish tissues. The concentration of Cadmium differed significantly ($p<0.001$) among 3 organs of fishes. Fish liver shows higher tendency for the accumulation of Cadmium (4024±1.47), while gills had minimum concentrations (1.10±0.52) of this metal.The concentration of Cadmium is higher in Catlacatla than Labeorohita.

Keywords: Major carps, Cadmium, Lambo Rohita, haevymatal

Bio-Diversity Cycles and Strategies for Restoration

Usha Pandey
Department of Zoology,
M.L.K. (P.G.) College, Balrampur

ABSTRACT

Biological diversity is the total sum of diversity in the biosphere over the globe in terms of number, variety and variability of all living organisms. The diverse biological entities make the basis for life and society by continuous interaction with natural resources from air, land and water. Evolution of human being and nature remains in a dynamic stage always. A components or elements of natures are subjected to cyclic mode. Water cycle and carbon cycle are two major dynamic process of overall biodiversity. According to a hypothesis water cycle period is about 20000 years when glacial to vapaour phases of water goes to a major cyclic changes affecting the bio-diversity over the earth. Pauranik scriptures give a notion of such cyclic changes.

कलिकल्मषेनसन्तप्तोगंगावि णुलोकेसमागमि यति।

संचयंजलंजल भृतेव्यापारञ्चर क्षणंकलौ धर्मः तुजायते।

One such dynamic change cycle is mentioned as Chaturyug in Puranas. Another the biggest cycle for diversity change is carbon cycle (forest cover) which 100 times bigger than water cycle. The carbon is subjected to cyclic dynamic changes. Coal, petroleum and natural gasses reserves could be seen as the driving force for such cosmic changes. This cycle has been called as Kalpa.

जलं प्रथमो जायते वह तिजी वनंर संतु।

गंगायुगं संवहति वनं कल्पंत थैवच।।

Massive devastating diversity changes take place during the phases of these two cycles. There was one incarnation of Lord Vishnu as a 'Matsy' to preserve bio-diversity of the globe. Similar mythological statements are written in Old Testaments of Arabian civilizations. Agriculture had been the focus of human being for meeting their food, clothing, shelter and other basic amenities from available abundant biodiversity. Agro-environment have changed its equilibrium under domestications and farming over millennia giving rise to new diversity which well adapted over the time. Agro-biodiversity refers to variety and variability of animals, plant and microbial organisms on the earth which are important to food and agriculture. India is biodiversity rich country in the world having about 7.5% of identified biological species of global land mass. In terms of plant species nearly 17500 higher plant species occurs in India. There are more than 380 cultivated/semi-cultivated crop species and 130 breeds of domesticated animals. Biodiversity is a ironic symbol of sustainable development. The globe has come to an age when all human intellects and efforts would be needed not to only preserve the bio-diversity but continuously enhance its base. The present paper is devoted to evolve strategies to increase global bio-diversity with available agri-biodiversity of the country and the globe as a whole.

Key Words: Biodiversity, Pauranik scriptures.

Impact of Zinc on Fresh Water Catfish, Clarias Batrachus (LINN.)

Navneet Kunwer Srivastava 1 and Sadguru Prakash2
Department of Zoology
Mewar University Gangrar, Chittorgarh-312901 (Rajasthan)1
M.L.K.(P.G.)College ,Balrampur -271201(U.P.)2

ABSTRACT

Zinc is one of the most common heavy metal pollutants.Present study was done to evaluate the bioaccumulation of zinc and its impact on organic reserves of the kidney, Liver, gill and muscles of Clarias batrachus exposed to sublethal concentrations of zinc sulphate i.e.0, 10, 20 and 30 mg/L in water for a period of 15,30 and 45 days. Statistically significant increase in zinc concentration was noted in all tissues of zinc sulphate exposed fishes of all treated groups. The concentration of Zn in all studied tissues of Clarias batrachus was recorded in the order Kidney > Liver > Muscles > Gills. There was an increase in the concentration of Zinc with an increase in the dose and durations of exposures. Slow elimination of zinc was observed though the concentration of zinc remained significantly higher than controls till the end of experiment. The order of elimination of zinc from organs was Gills > Liver > Kidney > muscles. Thus both bioaccumulation and elimination of zinc were dose and duration dependent. The sub-chronic exposure of Clarias batrachus to sub-lethal concentration of Zinc sulphate showed a decline in glycogen, total proteins, cholesterol and total lipids in all

these tissues. The level of these organic reserves alter simultaneously with an increase in dose and duration of zinc exposure to zinc sulphate. The alteration in all parameters studied thus reflects an adverse influence of zinc sulphate exposure on the metabolism of fish.

Key words: *Zinc, Bioaccumulation, Biochemical changes, Clarias batrachus*

Physico- Chemical Characteristic of Pulp and Paper Mill Effluent And Its Impact On Morphology And Behaviour Of Fresh Water Catfish,- Clarias Batrachus (LINN.)

Shivani Srivastava and Indu Singh
Department of Zoology
Kamala Nehru Institute of Physical and Social Sciences, Sultanpur,U.P.

ABSTRACT

The aim of the present study to evaluate the physic-chemical characteristic of pulp and paper mill effluent and their toxic impact on morphology and behavior of fresh water cat fish, Clarias batrachus. The pH, electrical conductivity and phenol were found within the desirable limits and colour, order, BOD,COD and chloride were higher the desirable limits of Central Pollution Control Board of India. During the study period, the colour of the experimental fish become progressively darker with increasing concentrations and was directly proportional to the concentrations of the test solution unlike those in the control. The opercular beat (number of beat / min) and surface activity of fish increase with increasing the concentrations of effluent and duration of exposure. Thus from the present study it may be concluded that air breathing catfish, Clarias batrachus is sensitive to pulp and paper mill effluent and can be used as indicators of effluent related stress in the water as it is evident from behavioural responses and morphological changes.

A monthly record covering all the spawning season (pre-spawning phase, spawning phase and post-spawning phase) was evaluated at different exposure periods (24h,48h,76h and 96h) using the paper mill effluent. Annual variations in LC values in relation to annual breeding cycle were also taken into consideration. A well marked variation in the LC values in different exposure periods as well as in various months of the spawning phases of the Clarias batrachus were observed

Key wards*: Pulp and paper mill effluent, Clarias batrachus, morphology, behaviour.*

ISBN- 978-93-89703-08-5

Pollution of Ganges Water Due To Discharge of Sewage and Tanneries Water Bithooraandjajmau Kanpur,Uttar Pradesh

S.P. Srivastava
Department of Zoology, P.P.N. (P.G.) College Kanpur,

ABSTRACT

In the present communication embodies our observation on some aspect study as physical-chemical indicator of water quality assessment vize. Temperature, colure, PH concentration of dissolved oxygen to Alkalinity Chromium lime and total hardness sample were collected in a routine from Ganga-Barrage to Jajmau sewage and Tanneries water discharge in to Ganga during Rainy, Winter and Summer season (2016-2018) colure of the water was light yellowish during rainy season the PH range 9.93 to 10.78 dissolved oxygen range from 7.32 to 5.42 the alkalinity values range from 83.12 to 86.32 mg/l whereas hardness was 194.82 to 199.93, Temperature 28 to 29 0C. The colure of the water was brownish yellow during winter season. The PH 9.69 to 9.32 dissolving oxygen 6.31 to 8.03. Alkalinity values 83.89 to 91.06 mg/l whereas hardness 196.36 to 204.69at temperature 19 to 220C. The colure of the water blackish yellow during summer season due to discharge of sewage directly in to Ganga. The PH 10.32 to 10.69 dissolved oxygen 4.32 to 4.98, the alkalinity range 106.46 to 109.61 and hardness 197.36 to 209.31, temperature 35 to 39oC during the summer season there for water as such from Ganga barrage to Jajmau is not recommended for portable purpose it is therefore, desirable to create awareness among the people regarding the potential hazards of using the polluted ganga water for human consumption.

Impact of Sugar Factort Effluent On Indian Major Carps

Sudha Shukla* and Maya Devi**
Department of Zoology, K.D.C., Baraich, U.P.*
Uppar Primary School Malak Nidura, Kaushambi (U.P.)**

ABSTRACT

Anstudy was carried out to assess the sugarfactory effluent on fresh water fish Labeo rohita. The physiological and biochemical changes in labeo rohitaafter exposure to sublethal concentrations of the sugar industry effluent have been investigated for the period of 30 days. Two different concentrations of sugar industry effluents were used to carry out the experiment viz 20 cm3/dm3 and 40 cm3/dm3. The results of physiological and

biochemical changes in muscles and blood of Labeo rohitashowed that, fish were under considerable stress during the exposure periods to the sublethal doses. The results obtained in the present study showed that, the sugar effluents caused marked depletion in the biochemical composition of muscles and blood parameters of fish Labeo rohitaafter the exposure period. The biochemical changes, protein, lipid and carbohydrate were decreased significantly..

Keywords: *sugar factory effluent, Labeo rohita,*

Climate Change And Biodiversity

Dr Manish Kumar Singh
Assistant Prof Botany
KS Saket PG College, Ayodhya

Climate change refers to the long-term change in the climate of earth or any region of earth due to anthropogenic activities and over exploitation of natural resources, specially burning of fossil fuels which ultimately increases the amount of CO2 in atmosphere which eventually contribute in rise of global temperature of earth surface. The increasing concentration of green house gases in earth's atmosphere is causing the planet's climatic system to retain more energy. Worldwide, net emission of greenhouse gases from human activities increased by 35% from 1990 to 2010. Emission of CO2 which account for about three fourth of total emissions, increased by 42% over this period, and this emission results from electricity generation, transportation and other forms of energy production and use. The average temperature of earth's surface increased by an estimated 0.70 C since the beginning of 20th century. The effect of increased CO2 in the atmosphere and changing climatic condition are expected to include; more frequent extreme high maximum temperature (50.30C is reported in Churu, Rajasthan in June 2019) and less frequent extreme low minimum temperature, warmer winter condition (300C on 15th Nov at Ayodhya), change in rainfall pattern and frequency of extreme events increased (natural disasters), length of season, glacial retreat, decrease in arctic sea ice extent and rise in sea level; these changes have already had an observable impact on biodiversity at species level, in term of phenology, distribution and population. A changing climate means changing habitat and threatening vulnerable species of area. Diversity of species increases the ability of ecosystem to do several things like holding soil particles, maintaining soil fertility and nutrient cycle etc. loss of species and vegetation could reduce this abilityparticularly if environmental conditions are changing rapidly.

ISBN- 978-93-89703-08-5

A New Record of Foliicolous Hyphomycetesfrom Madhya Pradesh, India

H D Bhartiya
Mycopathology laboratory,Department of Botany
Bipin Bihari P G College Jhansi (U P)

ABSTRACT

The genus Cercospora was established by Fresenius(1863) to accommodate hyphomycetes fungus producing hyaline and vermiform conidia described on host genus Apium graveolans withCercospora apii as the type species. One of the most important habitat of this fungal organismis living leaves,the site of photosynthetic processes of green plants.The utilizingliving leaf surfaces as habitats are referred to as foliicolous fungi.This communication deals the description and illustration of new record has been described on the basis of morphological features.The holotype deposited in HCIO, NEW DELHI and corresponding isotype in mycopathological herbarium of the college for further reference.

Key Words:*Foliicolous,Cercospora,Hyphomycetes,Photosynthetic.*

Studies on Therapeutic And Medicinal Uses of Aloe Vera

Mohammad Farhan, Vinay Kumar Pathak and Shalini Gupta*
Department of Botany
M L K P G College,balrampur,U P
*A G Hashmi Degree College,Utraula,Balrampur

ABSTRACT

Aloe vera belonging to the 'Alliaceae' family is a succulent herb. According to World Health Organization medicinal plant would be the best source of obtaining a variety of drugs .Aloe vera is one of the most commonly used medicinal plant. The inner most layer of leaf gel contains up to 99% water with glucomannans amino acid,lipid ,sterol and vitamins. The Main functional component of Aloe vera is long chain of acetylated mannose. Aloe vera is used in various medicinal, Pharmaceutical and cosmetic formulation. From medicinal point of view it is bitter sweet cooling and used for treating, wound minor bulbs, and skin Irritation. Number of glycoprotein present in Aloe vera gel have been reported to have antitumor and Antiulcer activity to increase proliferation of normal human dermal cells.

ISBN- 978-93-89703-08-5

Sustainable Agriculture and Environment

A.K. Jha
Department of Sociology,
HNB Govt. PG College Naini Prayagraj (U.P.)

ABSTRACT

Agriculture always has both positive and negative effects on social issues as well as on environment. **Unsustainable** agriculture exerts mostly negative multiple effects including land conversion, habitat loss, wasteful water consumption, soil erosion, genetic erosion, degradation as well as pollution. This unsustainable agriculture cannot be continued over long period of time. Unsustainable agricultural practices do produce higher yields seem to be immediately efficient, but in long run that yield may decrease greatly, sometimes to zero, never to recover in future. When agriculture is practiced at sustainable levels, after several years the total yield will be the same or more, adding to total production indefinitely.

Keywords: *Unsustainable and **s**ustainable agriculture, Negative impacts, Biodiversity, Ecological balance.*

Management of Meteorological Factors, on the Production of Silk, By Multivoltine Mulberry Silkworm, Bombyx Mori (Linn.)

Sanjai Kumar Gupta
Department of Zoology, Government Model Degree College,
Barakhal, Santkabirnagar-272271 (UP), India

ABSTRACT: Sericulture is the science that deals with the production of silk by rearing of silkworm. Silk is called the queen of textiles due to its glittering luster, softness, elegances, durability and tensile properties and is discovered in China between 2600 and 2700BC. The silk is preferred over all like water absorbency, heat resistance, dyeing efficiency and luster. Meteorological factors has influenced on the biochemical constituent of insects are temperature, humidity and photoperiod of Bombyx mori at different developmental stages. The seasonal differences in meteorological component considerably affect the production of silkworm crop such as cocoon weight, shell weight and cocoon shell ratio. The variations in the meteorological conditions day to day and season to season emphasize the need of management of temperature, humidity and photoperiod for sustainable cocoon production. Present study the role of temperature and humidity on growth and development of silkworm including recent studies on variation of temperature affect the biochemical constituents like protein. Study also discusses another meteorological effect of light on silkworm development. In addition to this study emphasis on the role of various meteorological factors, on embryonic development of silkworm eggs, nutrition feeding of mulberry leaf of silkworm larvae and reproductive potential of silkworm moth. The study also highlights about the management and care to be required during silkworm spinning and the meteorological factors on post cocoon parameters of silkworm. The silkworm is domesticated insect, which produces luxuriant silk thread in the form of cocoon by consuming mulberry leaf during larval period. The Growth and development of silkworm is greatly influenced by meteorological factors. The biological as well

as cocoon related characters are influenced by ambient temperature, rearing seasons quality of mulberry leaf and biochemical content like protein of silkworm. The study included future strategies to be taken for the management of meteorological condition like 26±1°C, 75±5% RH and 12±1 hrs light a day are best condition for successful cocoon crop and other rearers or farmers.

Seasonal Variations in Physico-Chemical Properties of Kanha Tal, Utraula, Balrampur (U.P.) India

Haidar Ali, K.K. Ansari and Mohd. Ali*

P.G. Department of Zoology and Research Studies, M.L.K. (P.G.) College, Balrampur.
*Deptt. of Zoology, Haji Ismail Degree College, Sadullah Nagar, Balrampur.

ABSTRACT

Kanha Tal, a large perennial freshwater waterbody, situated at distance of 8 K. M. from Utraula town on north of Utraula- Basti road (Assam Road) adjacent to Hashimpara Market. During the present investigation the various physico-chemical parameters were determined from the samples collected during 2017-2018 and in 3 seasons *viz.* winter (Nov. to Feb.), summer (Mar. to Jun.) and rainy (Jul. to Oct.) from two sampling sites i.e. site –I, marginal area and site-II, central area of waterbody. The results revealed that due to heavy discharge of sewage, domestic wastes, fertilizers, bathing of domestic animals, the water of pond get deteriorated. The various physico-chemical parameters were varied from site to site and from season to season. High level of BOD, COD, Total Alkalinity, TS, TSS, TDS, Chloride, Phosphate and Sulphate at different sites are harmful for aquatic fauna and unfit for human consumption. Thus overall physico-chemical parameters of Kanha Tal showed that water was highly polluted during rainy season, less during winter season (Seasonal fluctuation) and the water of marginal area showed high level of total solids, TSS and TDS than central area.

Keywords: *Physico-chemical parameters, Kanha Tal, Utraula, Balrampur.*

Fish Faunal Diversity of Kanha Tal At Hashimpara, Utraula, District Balrampur (U.p.) India

Haidar Ali, Mohd. Ali* and K.K. Ansari

P.G. Department of Zoology and Research Studies, M.L.K. (P.G.) College, Balrampur.
*Deptt. of Zoology, Haji Ismail Degree College, Sadullah Nagar, Balrampur.

ABSTRACT

Kanha Tal, a large perennial freshwater Tal, situated at distance of 8 K.M. from Utraula town on north of Utraula- Basti road (Assam Road) adjacent to Hashimpara Market.

In present study the fish fauna of Kanha Tal were observed & identified thoroughly with standard identification keys of fish during July 2017 to June 2018. There are 27 species of fishes belonging to 12 families and 5

orders were reported. Data reveal that Cyprinidae family were found to be most dominant in Kanha Tal and the prevalence rate is 36.90 %, Nandidae family less common in this Tal and the prevalence rate is 3.85%. In Cyprinidae family the *Labeo rohita* was most abundant, while *Labeo calbasu* was less abundant.

Keywords: ***Cyprinidae, Fish diversity, Kanha Tal***

Occurrence of Ecto-parasites in Indian Major Carp, *Labeo rohita* Collected from River Kuwana, Balrampur (U.P.) India

Haidar Ali and K.K. Ansari
P.G. Department of Zoology and Research Studies, M.L.K. (P.G.) College, Balrampur.

ABSTRACT

An investigation was made on the helminths and crustacean ecto-parasites of Indian major carp, *Labeo rohita* collected from different sites of river Kuwana, Balrampur. A total of 125 host fishes were examined during the study period of which 67 fishes were found infested by four genera of helminths and crustacean ecto-parasites i.e. *Dactylogyrus sp., Gyrodactylus sp.*, *Lernaea* sp. and *Argulus* sp. . The infestation exhibited seasonal fluctuations, the maximum in pre-winter to winter and the minimum in the rainy season. Prevalence, intensity and abundance of the infestation were also found to be related on different length group of the hosts, the smaller sized fishes were less infested, the medium sized fishes were more infested while the larger fishes showed lesser infestation.

Keywords: *Labeo rohita, Kuwana River, Parasites, Balrampur*.

Cestodes as Disease Causing Parasites in Freshwater Fishes from River Yamuna at Yamuna Nagar, Haryana, India

Babita and Sushil Kumar Upadhyay
Department of Biotechnology, Maharishi Markandeshwar (Deemed to be University)
Mullana-Ambala, Haryana- 133207, India

India is the 3rd largest producer of fish in the world and 2nd in inland fish production. Fisheries are important for Indian economy as it provides employment, protein rich food and foreign exchange earnings. The total fish production is 6.42mmt of which 3.4mmt is inland and 3.02mmt is marine production but fish farming is at a high risk investment, mainly due to the disease problems caused by cestode parasitic infections. The fishes are host to many adult helminth parasites and larval forms, the adult of which occur in amphibians, reptiles, birds and mammals as well as predatory fish. These parasites cause direct economic losses due to reduced fish production. Therefore, helminth parasites remain a subject matter of major public health concern, particularly in Asia, as they can be transmitted to humans and domestic animals only through fish. Out of the recorded

parasitic taxon, 50 species of helminth parasites have been implicated as producing zoonotic infections (infections of animals that also infect man) resulting from eating raw or under-cooked aquatic food, including fish. Damage is frequently indirect when these worms degrade the mucous layer, making the host fish susceptible to secondary pathogens such as bacteria and fungi. The economic effects of infestation include a decrease in and/or rejection of otherwise edible fish products leading to subsequent loss of interest in the aquaculture industries. The chemicals and freshwater/marine baths are often used to control the cestodes infections but these methods can be very expensive.

Keywords: Parasitic helminthes, Cestodes, Freshwater fishes, Zoonotic disease, Public health.

Primary Productivity of Rani Talab of Balrampur

Rajiv Ranjan and N.K.Singh
Dept. of Botany , M.L.K. (P.G.) College, Balrampur

ABSTRACT

Monthly variations in primary productivity were carried out during July 2018 to June 2019. Grass primary productivity (GPP) and net primary productivity (NPP) ranged from 53.25 to 96.65 mgC/m³/3hr and 34.94 to 59.85 mgC/m³/3hr, respectively. The respiration(R) values varied between 15.31 to 33.60 mgC/m³/3hr. The maximum rates of production in summer months denote the peak of phytoplankton, macrophytes, higher values of light intensity, temperature and chlorophyll concentration. The minimum rates of primary production were observed during monsoon months.

Keywords: Primary productivity.

Status of Biodiversity in India and its Conservation

Dr. Sadguru Prakash[1] and Seema Srivastava[2]
Department of Zoology[1] and Education[2], M.L.K. (P.G.) College Balramur

Since 1986 the term and concept of biodiversity was used by among biologists, environmentalists, political leaders and concerned citizens worldwide. This term includes diversity within species, between species and of ecosystem. Biodiversity is often used as a measure of health of biological systems.

Biodiversity is the 'foundation of human life' on earth. The biodiversity has immense values for nation. It includes variety and variability among living organisms from all sources including inter alias, terrestrial, marine and other aquatic ecosystem and ecological complexes in which they occur, and it comprises diversity within species and in ecosystems. Each organism plays an important role and contributes to ecosystem stability. Biodiversity helps in producing more productive and stable ecosystem capable of surviving in stress conditions. The distribution and magnitude of the biodiversity that exists today is a product of over 3.5 billion years of

evolution, involving speciation, migration, extinction and more recently, human influences.

The total number of species in the world is estimated to be around 5 to 30 million out of which about 1.4 million species have been described. India is one of the 12 mega biodiversity countries in the world. India has a great wealth of biological diversity in its forests, wetlands and in its marine areas. Our country accounts for two hotspots i.e. Eastern Himalayas and Western Ghats which figure in top eight most important hotspots of biodiversity of the world. The country is divided into 10 biogeographic regions.

diverse physical features and climatic situation have formed ecological habitats like forests, grasslands, wetlands, coastal and marine ecosystems and desert ecosystems, which harbor and sustain immense biodiversity. Biogeographically, India is situated at the tri- junction of three realms- Afro-tropical, Indo-Malayan and Paleo- Arctic realms, and therefore, has characteristic elements from each of them This assemblage of three distinct realms makes the country rich and unique in biological diversity. Based on this, over 46,000 species of plants and 81,000 species of animals have been described by the Botanical Survey of India (BSI) established in 1890 and Zoological Survey of India (ZSI) established in 1916, respectively.

covers 2% of the world area and supports 16% of the world's population. This country harbors 65% of the world animal and 33% of the world plant species. The total number of plant species in India is estimated to be about 45,000 (15,000 flowering plants, 64 Gymnosperms, 2834 Bryophytes, 1012 Pteridophytes, 1940 lichens and 23000 fungi). Nearly 4900 of these species are endemic of India out of which, 1500 are highly threatened. The fauna of India comprises of 81000 species (5000 molluscs 57000 arthropods, 2546 fishes, 204 amphibans, 428 reptiles, 1228 birds and 372 mammmals) Out of which, 62 % species are endemic to India. The country is also one of the 12 primary centers of origin of cultivated plants and domesticated animals. It is considered to be home land of more than 200 important plants species and 114 breads of domesticated animals. Among the cultivated species of India, The germplasm comprises of 51 species of cereal and millets, 104 species of fruits, 27 species of spices, 24 species of fibre plants and 12 species of oil seeds, besides several wild strains of coffee, tobacco and sugarcane .

of extinction as estimated today is 10,000 times higher than natural extinction rate of 1-10 species per year. If it continues for a few centuries more, the earth may be devoid of life. Natural habitats such as forests, grasslands, deserts, wetlands, mangroves and coral reefs, etc. are under tremendous pressure due to increasing population density and activities of human beings. The major threats to biodiversity are from habitat loss, habitat fragmentation, environmental pollution, introduction of exotic species, genetic pollution, hybridization, genetic anomalies, GMOs, spread of diseases, overexploitation, shifting cultivation, poaching, acid rain, climate changes etc. Thus there is urgent need for conserving our biodiversity.

can be brought by both *in situ* and *ex situ* conservation. *In situ* conservation includes conservation of species in its natural habitat in protected areas like biosphere reserves, national parks and sanctuaries etc. *Ex situ* conservation involves maintenance and breeding of endangered species under partially or wholly controlled conditions, in botanical gardens, seed banks, gene banks etc. It also includes tissue culture, cryopreservation etc. Rich biodiversity is an indicator of the health of a particular habitat/ biogeographic area and it's potential to sustain life. For conservation and protection of biodiversity, biodiversity rich areas are declared as national parks, wildlife sanctuaries, biosphere reserve, ecologically fragile and sensitive areas. Other strategies include offloading pressure from reserve forest by alternative measures of fuel wood and fodder need by a forestation of degraded areas and wetlands and certain *ex-situ* conservation facilities such as gene bank.

Key words : Biodiversity, conservation, climate change.

ISBN- 978-93-89703-08-5

Diversity and Parasitocoenosis in Fishes: Perspective to Health and Climate Change

Dr. Sushil Kumar Upadhyay
Department of Biotechnology, Maharishi Markandeshwar
(Deemed to be University) Mullana- Ambala, Haryana- 133207

The freshwater fishes are the most common, ubiquitous and natural habitat of parasitic helminthes. The parasites of these hosts are helpful in providing information to population bioecology of respective hosts. The parasite communities might be used to distinguish individual populations of similar fish species utilizing same habitat. Furthermore, parasites acquire a variety of specialized traits and life-historic strategies which enable them to take possession of hosts. The fishes show immense diversity of parasites in natural occurrence. These parasites are generally present either on gills, skin or fins or even in mouth, intestine and internal body organs including muscles of the fish. On the basis of available records and workouts followings are the most common parasites diversity of fishes are ectoparatic protozoa (*Costia, Chilodonella, Trichodena*), Myxosporea, Coccidia, Monogenea (*Gyrodactylus, Dactylogyrus*), trematodes (*Cephalogonimus, Paragonimus* etc.), tapeworms (*Diphyllobothrium, Senga* etc.), nematodes (*Eustrongyloides, Dacnitoides, Sturdynema* etc.), ergasilids, lernaeids, argulids, freshwater mussels (Glochidia larvae) and crustaceans like anchor worm. The impact of hydrobiological, seasonality and climatic factors vs. host's biology were reflected during investigation. The seasonality and hydrobiological factors biased population dynamics of helminthes infections were well marked. The parasitic prevalence was found to be significant for climate change substantiated and analyzed by the application of advanced numerical tool, SYSTAT 11. Therefore, author supposes to propose the awareness among societies about the parasite diversity in naturally inhabiting fauna perspective to hygiene and health and mankind.

Key words: *Biodiversity, Riverine fish, Parasitic helminthes, Population biology, Climate change, Health and hygiene.*

Ethics Related With Environment

Jai Singh and SP Verma[2]
[1]GPS Mahila Mahavidyala Ambari Azamgarh (U.P.)
[2]KA PG College Prayagraj (U.P.)

ABSTRACT

Moral principles define the responsibility of a particular person towards the environment. These principles, the environmental **ethics** establish the ethical relationship between human beings and the natural environment. The resources on earth are limited and belong to all the species that exist in nature. Though humans have right to draw their requirements from the environment but certainly not to the extent that degrades the environment and harms other species and living beings. Humans have appar-

ently more responsibility to minimize their anthropogenic activities and to save the earth. Because human beings are deriving all the benefits from nature, they should take moral practical responsibility and proper care for the maintenance of ecological balance and preservation of biodiversity in all its forms. The existing **environmental ethics** seem imperfect and insufficient to meet the current situation hence humans have to rethink about effective **environmental ethics.**

Keywords: Environmental ethics, anthropogenic activities, healthy environment, sustainable development.

"Entrepreneurship Development through Aquarium Manufacturing"

Ghanshyam N Jha, N Paul, A S Charak and Shivani Sharma
Krishi Vigyan Kendra-DODA, SKUAST-J, Bhaderwah, Doda, J&K-182 221

ABSTRACT

As aquarium keeping is the second largest hobby after photography, aquarium manufacturing and ornamental fish farming is fast emerging business in the world. The trade with a turnover of US $ 6 Billion and an annual growth rate of 8 percent offers a lot of scope for development. The top exporting country is Singapore followed by Honkong, Malaysia, Thailand, Philippines, Srilanka, Taiwan, Indonesia and India. The largest importer of Ornamental fish is the USA followed by Europe and Japan. About 80% of ornamental fishes are from fresh waters and the rest from brackish and marine waters. Most of the ornamental fishes cultured and marketed in India are exotic species. Our country has a rich and unique biodiversity with a variety of indigenous ornamental fishes. But this resource has not been properly exploited. India's share in ornamental fish trade is only 0.008% of the global trade. The major part of the export trade is based on wild collection. There is very good domestic market too.

Even with great employment opportunities in this sector, there is not even a single established aquarist in Doda district of Jammu & Kashmir reported till date. In view of this KVK-Doda organized mostly practical oriented several three days vocational training/skill development programme on the topic as mentioned above for the rural youths of this area. The youth showed their keen interest, learnt to manufacture aquarium, successfully install the aquaria and rear the beautiful ornamental fishes. They came forward to establish their business in this sector. After proper training and support from KVK-Doda some of the participants are now ready to provide/install aquarium on demand in the district.

The achievement of KVK-Doda in this sector is highly appreciated by the Officers from 4RR, Indian Army, Bhaderwah. The new entrepreneurs need further support of the local peoples/institution. We are further in plan to organize such trainings in collaboration with various other local institutions by involving the already trained local youths.

Keywords: Aquarium, Ornamental fish, Entrepreneurship, Vocational training

ISBN- 978-93-89703-08-5

Species Diversity of Butterfly (Order: Lepidoptera) in some Urban Habitats at Lucknow

Ashok Kumar
Department of Zoology,
BSNV PG College (Lucknow University), Lucknow, (U.P.), India

ABSTRACT

The study was carried out between August 2016- July 2017 from six different localities like Bijli Pasi Quila, Budha Park, Vanasthali Park, Ratan Khand and College Campus in Lucknow. All Study locations of Lucknow is responsible for the diverse weather patterns and climate change. This region has tropical dry equable climate having three main seasons that is cold, hot and rainy season. Temperature of the city range from 23.8- 45.8^{0}C in summer and 4.6-29.7^{0}C in winter. During the study butterflies were collected mainly the used of circular aerial net, and then placed in killing jar. The captured butterflies were carried to the laboratory and their wings were spread on the spreading board. The killed butterflies were stored in the insect box by proper pinning them for further study. During the course of study 32 species of butterflies, belonging to 24 genera, representing 5 families, were recorded in Lucknow. Species 12, 8, 5, 3 and 4 were recorded belong to the family nymphalidae, pieridae, lycaenidae, hesperidae and papilionidae respectively. The butterflies observed were categorized into groups based on their relative numbers most common >9-10, common 6-8, rare 3-5, very rare 0-2 during the study period.

***Key Words*:** Butterfly, Species diversity, Lepidoptera Urban Habitats

The Concentration Level of Cadmium In Two Major Carps (*Catla Catla* and *Labeo Rohita*) In the River Gomti, Sultanpur (U.p.)

Preeti Singh
Dr. R.M.L. Avadh University, Ayodhya

ABSTACT

This study was conducted to determine the effect of Cadmium (haevy matal) concentration in gills, scales and liver of Catla catla and Labeo Rohita in Gomti river, Sultanpur. Heavy metal concentration varied significantly depending upon the type of fish tissues. The concentration of Cadmium differed significantly ($p<0.001$) among 3 organs of fishes. Fish liver shows higher tendency for the accumulation of Cadmium (4.24±1.47), while gills had minimum concentrations (1.10±0.52) of this metal.The concentration of Cadmium is higher in *Catla catla* than *Labeo rohita.*

Keywords: Major carps, Cadmium, *Lambo Rohita*, haevy matal

ISBN- 978-93-89703-08-5

Biochemistry as Molecular Logic of Living Organisms

Dr. Dilip Shukla
Asstt.Professor, Chemistry Department
L.B.S.P.G. College, Gonda
(Dr. R.M.L.Avadh University, Faizabad)

ABSTRACT

Biochemistry means Chemistry of living organisms. It includes aspects of organic chemistry, inorganic chemistry, Physical Chemistry, Physics, Biology and other basic disciplines. It also interrelated with Physiology, Microbiology, Clinical Sciences and Agriculture.Biochemistry may be defined as that branch of science which concerned with the chemical basis of life.It deals with the chemical processes that go on in living matter ranging from viruses and bacteria to Plants and animals. Actually it is a study of biology at molecular level. It is concerned with the molecules that make up the structures of cells and organs I.e.molecular anatomy. Much is known about these molecules,and rapid progress is being made in working out the molecular organizations of the cell.As Biochemistry deals with carbon compounds and the reactions they undergo in living organisms it implies organic chemistry, the branch of carbon compounds, is basic to biochemistry. Biochemistry is also concerned with molecular physiology, I.e.the functions of molecules in carrying out the needs of the cells and organs. The Central theme of modern biochemistry is to correlate the nature, properties and metabolic transformation of chemical constituents of a living system with its morphological structure on one side and its biological functions on the other.Perhaps the most exciting area of present research in biochemistry deals with mechanisms for the regulations of the synthesis of cellular compounds.

Biochemistry shows that living organisms are composed of similar organic compounds, in particular the proteins and nucleic acids The study of biochemistry helps to study the molecular basis of life. Some of the achievements of biochemistry are the discovery of the structure of DNA, the determination of the three dimensional structure of some protein molecules, and the unfolding of the Central metabolic pathways. Organisms as diverse as the bacteria and mammals possess many common features at the molecular level. They employ the similar building units to construct macromolecules. The flow of genetic information from DNA through RNA or protein has been reported to be essentially the same in both types of organisms.The rapid development of biochemistry in recent years has helped scientists involving some of the most challenging and fundamental problems in biology and medicine. For example, how is a single cell able to give rise to cells as different as those in muscle, the kidney and, the brain? How are cells able to find each other in forming a complex organ?What forms the mechanism of memory? How does light bring about a nerve impulse in the retina of eye?What have been the causes of cancer? Since the time of Aristotle, students of biology try to correlate structure and function and this endeavor continues.The correlation of biological function and molecular structure forms the main theme of biochemistry.

ISBN- 978-93-89703-08-5

Role of Conservation of Genetic Diversity and Plant Genetic Resources in Sustainable Agriculture

Dr. S.C. Gaur
Assoc. Prof., Department of genetics and Plant Breading
B.R.D.P.G. College, Deoria (U.P.) – 274001

ABSTACT

The diversity in the genetic makeup of a species is called genetic diversity. There are often a number of varieties or strains within a species that differs from each other. The differences are due to very minute variations in their genetic setup. Genes are biochemical packages passed on by parents to their offspring are similar belonging to a given organism. The differences like that expressed in form of size, colour or invisible traits like, disease resistances. The greater diversity in genetic constitution within a species enable it to adopt and survive the adverse continuously changing environment moiré effectively. Genetic diversity is the basis for survival and adaptation of any plant varieties/strains and make it possible to continue and advance the adoptive process on which evolutionary success to sustainable agriculture.

effective conservation of plant genetic resources there must be a clear understanding of extent genetic diversity of concerned species and it distribution, structure and material that it to be conserved either *ex situ* or *in situ conservation.* Genotypes which could be will stand better under biotic and abiotic pressure are the keys for sustainable agriculture. Genes for such traits are after available in wild species and land races.

Vision of Future: Conservation of Biodiversity

Dr. Vinay Kumar Singh
Department of Botany, K.S. Saket College, Ayodhya

ABSTACT

People have used and abused life with all its diversity over the ages but never had biodiversity been a focus of worldwide attention. Biodiversity is the part of nature which refers to the variability among living organisms from all sources including terrestrial, marine and other aquatic ecosystems. This term is widely used as the large variety of flora and fauna of earth. The biodiversity country with extremely rich biodiversity biomes and habitats. The U.N has declared 2011 to 2020 as the decades of biodiversity. Biodiversity conservation is necessity for all of us because we depend upon biodiversity for our food, medicine, clothes, shelter etc. i.e. for overall existence.

biodiversity we see today is a result of about 3.5 billion years of evolution. Unfortunately due to humans over exploitation of natural resources harmonious relation among different component of environment has badly disturbed. Therefore, by conserving biodiversity we have to safe life on earth in all its forms.

Key words: biodiversity, conservation, ecosystems, Carbon Sequestration.

ISBN- 978-93-89703-08-5

Environmental Pollution and Social Sustainability

Dr. Pragati Srivastava
Assistant Professor, Department of Botany
Feroze Gandhi (P.G.) College, Rae Bareli

ABSTACT

Pollution is the introduction of substances that contaminates natural environment and cause adverse changes. The addition of unwanted material or energy in a particular environment in concentration greater than the normal renders the environment partially or wholly unfavourable for human life. This paper proposed a conceptual framework is for social sustainability that seeks to enhance the protection of people, all people regardless for colour, origin, culture, and socio- economic status, against risk by fostering the adaption of just and equitable social, economic and environmental policies. This conceptual framework articulates an alternative set of arrangements and constructs to urge other to act in concert to affect change.

Agro-Biodiversity Erosion: Threat of Human Civilization

Mukesh Kumar Chaubey
Department Of Zoology
National Post Graduate College,Barahalganj - 273 402, U.P., India

ABSTACT

Agriculture comprises all aspects of crop and livestock farming, fisheries, aquaculture and forestry. Agricultural biodiversity or agro-biodiversity includes all the components of biodiversity of relevance to food and agriculture together with the components of biodiversity that constitute the agro-ecosystem: the variety and variability of animals, plants and micro-organisms, at the genetic, species and ecosystem levels, that sustain the functions, structure and processes of the agro-ecosystem. The food we eat every day throughout our lives comes from agro-biodiversity. Our civilization evolved since the origin of agriculture about 10,000 years ago when human beings started domesticating plants and animals. Agro-biodiversity provides us cereals, grains and vegetables for food, raw materials like cotton and wool for clothing; wood for shelter and fuel; plants and roots for medicines; materials for biofuels etc. It also performs ecosystem services such as soil and water conservation, maintenance of soil fertility, conservation of biota and pollination of plants. Genetic erosion in agro-biodiversity refers to the loss of genetic diversity including loss of individual genes and particular combinations of genes with loss of varieties or species. Since 1900s, 75% of plant diversity has been lost as farmers worldwide have left their local varieties for high-yielding varieties. Today, 75% of the world's food is generated from only 12 plants and five animal species. Only three viz. rice, maize and wheat contribute nearly 60% of calories and proteins obtained by humans from plants. As of today, from livestock breeds known, 7% are extinct, 24% are at risk of extinction and 59% are classified as being of unknown risk status because of lack

of data. Animals provide some 30% of human requirements for food and agriculture and 12% of the world's population live almost entirely on products from ruminants. The major driving forces behind genetic erosion of agro-biodiversity are variety replacement, land clearing, overexploitation of species, population pressure, environmental degradation, overgrazing, replacement of local varieties by high yielding or exotic varieties or species, policy and changing agricultural systems. Maintenance of genetic resources in form of agro-biodiversity is a matter of global concern as our society is highly dependent on these for productivity in agriculture, medicines, livestock and fisheries. These resources also provide communities from where the varieties can be created that best cope with changing local conditions. In addition, genetic diversity of agro-biodiversity provides species with the ability to adapt to changing environments and to evolve by increasing their adaptation to improve productivity, frost, high temperature, drought and water-logging as well as their resistances to diseases, insects and parasites.

Florestic and Phenological Analysis on Phanerophytes Trees Inhabiting Industrial Area of Balrampur City

Zaheen Hasan and D.D.Tewari
Ecological Research Laboratory,
Department of Botany, M.L.K. (P.G.) College, Balrampur(U.P.)271201

ABSTRACT

Present paper deals with the floristic and phenological observation of phanerophytes inhabiting the industrial areas of Balrampur. The industrial areas including one main sugar industry and distillery unit (BCM LTD.) and some small scale industries also. Here soil moisture conditions have been found influence the flowering and fruiting annually. Most of the trees we recorded have been economic importance. It has been concluded that more frequent species are more useful than the less frequent ones. This paper is therefore, planned study of phenology, frequency of distribution and magnitude of heterogeneity in respect to floristic composition of phanerophytes (trees) growing along the roadside of industrial area of Balrampur.

Wild Edible Fruits of Sohelwa Wildlife Sanctuary, Uttar Pradesh.

Shiv Mahendra Singh
Department of Botany
M.L.K. (P.G.) College, Balrampur, (U.P.) India.

ABSTRACT

Sohelwa Wildlife Sanctuary situated in Balrampur and Shravasti districts of North Uttar Pradesh, near the Indo-Nepal border covering with an area of 452.47 square kilometer. It lies between $27^0$30'1''- $27^0$5'4'' N Latitude and $81^0$55'36''- $82^0$48'33'' E Longitude at an altitude of 120-200 meter above msl. The sanctuary harbors rich floristic wealth of which many are fruits and medicinal plants. Study deals with wild edible fruits of Sohelwa Wildlife Sanctuary, Uttar Pradesh. A total of 48 wild edible fruits belonging to 29 families and

40 genera, out of which 31species trees, 09 species shrubs, 04 species climbers and 04 species of herbs are documented in this study.

Keywords: Wild fruits, Sohelwa Wildlife Sanctuary, Uttar Pradesh

Micropropagation of Threatened *Lycopodium* Through Plant Tissue Culture

Mohammad Akmal and Rajiv Ranjan
Department of Botany, Maharani Lal Kunwari Post-Graduate College, Balrampur

ABSTACT

The most widespread species in the clubmoss family is *Lycopodium clavatum*. It is widely used in the homeopathy medicine to treat both acute and chronic ailments like hepatitis prostatitis, and many digestive disorders. It contains two most important alkaloids like lycopodine and clavatine with acetylcholinesterase activity was isolated form this species. The *L. clavatum* with the other two species *L. inundata* and *L. dendroideum* become threatened because of its rapid exploitation for medicinal use. Its conservation through horticulture is very difficult especially terrestrial species because of its special requirements. Plant tissue culture technique however, give an excellent method to propagate the club moss using propagules like bulbils. The sporophyte generation can be mentioned through vegetative propagation in culture medium. The culture medium required for its cultivation includes half strength Murashige and Skoog (1964) medium supplemented with cytokinin (Kinetin) and very low concentration of auxin (NAA). But the process of its propagation through tissue culture is also challenging and needs more improvements. A quick and better tissue culture protocol will be required for its propagation.

Key words: Threatened, Lycopodium, Tissue culture, Endangered, etc.

Estimation of Palladium (Toxic Metal) In Natural and Synthetic Samples Based on Ligand Substitution Reaction In 0Ctahedral Complex Leading to Formation of Spectrophotometricly Active Product

Basant Kumar
Department of Chemistry
MLK (P G) College, Balrampur (U P)

ABSTRACT

Palladium compounds are in contact to people rarely. All palladium and its compounds are regarded as highly toxic and are also as carcinogenic. It causes bone marrow, liver and kidney damage in animals. It may cause skin, eye or respiratory tract irritation, may cause skin sensitisation. This paper describes a fairly economic, selective catalytic spectrophotometric method for the determination of Palladium (II) in concentration range

as low as 17.71–177.14 ng mL1. The reaction was followed by measuring the increase in absorbance of product [Fe(CN)54-CNpy]3- at 477 nm .The effect pH, ionic strength concentration of reactants on the proposed reaction has been studied and discussed to optimize the reaction and to get a relation between the absorbance and [Pd2+]. The detection limit has been calculated to be 9 ng mL1.

Key words: Spectrophotometric, Palladium, Catalytic Effect and toxic metal

Diversity and Conservation of Ethno-Medicinal Plants in Kuwano Forest, Balrampur (Uttar Pradesh)

Shiv Mahendra Singh and Prem Prakash Yadav
Department of Botany
M.L.K. (P.G.) College, Balrampur, (U.P.) India.

ABSTRACT

Kuwano forest is situated southern, distance about 4 km, from Balrampur City on Balrampur-Gonda state highway road. It has flourished with rich biodiversity due to Kuwano River and a high grade commercial medicinal plant in the area is *Helminthostachys zeylanica* (L.) Hook. being traded in the name of Kamraj. However, plants of *Aegle marmelos* (L.) Corr. (Bael), *Glycosmis pentaphylla* (Retz.) DC. (Ban Nimbu), *Sida cordata* L. (Bhuinii), *Mallotus philippensis* (Lam.) Muell. Arg. (Kamala), *Terminalia arjuna* (Roxb.) Wight & Arn. (Arjun) and *Vetiveria zizanioides* (L.) Nash (Vetiver) are available in common in this forest and needs to be commercialized through forest department. Plants of *Bacopa monnieri* (L.) Pennell (Brahmi), *Evolvulus alsinoides* L. (Sankhpushpi), *Desmodium gangeticum* (L.) DC. (Salpani) and *Helminthostachys zeylanica* (L.) Hook. (Kamraj) etc. needs to be conservation. The exploration is supported in location of medicinal plant species by the global Positioning system (GPS).

Keywords: Conservation, Diversity, Ethno-medicinal plants, Kuwano forest and Balrampur, Uttar Pradesh.

Role of Phytochemicals Produced By Medicinal Plants: Review

Kripa Shankar Mishra
Department of Chemistry, Jhunjhunwala P.G. College,Dwarikapuri, Ayodhya (U.P.)

ABSTRACT

Plants are the Major sources that contribute to the basic needs of Food & Shelter. The plants which have great importance for human welfare (Solve the Health Problem) are known as medicinal plants. Medicinal plants play key roles in attenuating human welfare. The healing properties of many herbal medicinal plants have been recognized in ancient culture different phytochemicals produced by medicinal plant have been used in

the treatment of various diseases for thousands of years. In Ancient times, an impressive number of modern drugs have been developed from different countries. Phytochemicals are the secondary metabolites which are a spaciously of organic compounds that are not need for all structure and maintenance of life, but are often participate is plant protection against biotic and abiotic stresses. Secondary metabolites are involved in progression of ecological rules. Phytochemicals have antioxidant, antimicrobial and anticancer properties (Basically phenolic natural products)

In this paper a review has been made of certain phytochemicals of medicinal plants which are common practice especially in our traditional therapy.

Biodiversity: An International Perspective

Amrendra Kumar Singh
Department of Physics M.L.K.P.G. College, Balrampur (U P)

ABSTACT

The term biodiversity was coined by Walter G. Rosen in 1985. Biodiversity is a variation of life at all levels of biological organization. Linkage of biodiversity with the survival of human race is very deep. It impacts on human health in a number of ways, both positively and negatively. Though the balance in the ecosystem is maintained naturally by a self-regulatory process, yet this process has been disturbed by human being over thousands of years. The destructive process has recently been accelerated by the onset of industrial age resulting into extinction of many species, a serious threat to diversity. In the interest of human being it is necessary to preserve our biodiversity.

Fish Diversity of Semara Tal, a Wetland of U.P. India

Sadguru Prakash and Susmita Srivastava*
Department of Zoology M.L.K.P.G.College, Balrampur, U.P.
Shiv Harsh Kisan P.G. College, Basti, U.P*.

ABSTACT

Semara Tal, a wetland is situated in Shohratgarh (Siddharth Nagar) of U.P. Areas which remains waterlogged or submerged under water, seasonally or throughout the year are termed as wetlands. Wetlands are amongst the world's most productive ecosystem and provide natural habitat to wide array of biodiversity and has vast ecological, economic and aesthetic value. Moreover, wetlands provide numerous other ecological services such as flood mitigation, abatement, nutrient cycling and aquifer recharge. Nineteen species of freshwater fishes i.e. *Labeo rohita, Labeo bata, Labeo calbasu, Calta calta, Cirrhinus mrigala, Cirrhinus reba, Puntius sarana, Punius ticto, Heteropneustes fossilis, Clarias batrachus, Mystus singhala, Rita rita, Wallago attu, Channa punctatus, Channa striatus, Hypophthalamichthys molitrix, Cyprinus carpio, Xenentodon cancila* and *Mastacembelus armatus* are recorded from this wetland during present study.

Out of above said fish fauna, 2 fish species comes under endangered (EN), 2 comes under vulnerable (VU), 2 comes under lower risk near threatened (L Rnt), 12 comes under lower risk concern (LRlc) and 1 comes under Data Deficient (DD) status of IUCN. Fishes are very important components of the wetlands and they play an important role in food web. The occurrence of fishes attracts many piscivorous migratory birds to this wetland. The gradual degradation of wetlands due to numerous factors can cause lot of the fish diversity. Therefore, the conservation and management from ecological point of view is highly required for sustainable development of this wetland.

***Key words**:* Wetland, Biodiversity, Fish fauna.

Impact of Climate Change on Biodiversity

Ashish Kumar Lal
Department of Political Science
M.L.K.P.G. College, Balrampur, U.P.

ABSTACT

Climate change is one of the most serious ongoing concerns in the coming years. The rise of atmospheric temperature in the global scenario has cautioned scientist and policy makers worldwide to take positive steps to tackle the problem. Emission of different greenhouse gases like carbon dioxide, chlorofluorocarbon, methane and nitrous oxide from various anthropogenic activities has led to increase in the atmospheric temperature which in turn is creating many visible problems in the environment today. The major issue related to biodiversity is the unprecedented extinction rate caused due to anthropogenic activities. This threatens the very survival of human race as biodiversity helps humanity in various ways. The extinction rate warrants rapid conservation of biodiversity. The cause of loss and degradation of biodiversity are: increased for biological resource, failure of people to consider the long term consequence of their action due to a lack of basic knowledge, failure of people to using inappropriate technology, failure of economic markets to recognize the true value of biodiversity.

Impact of Development on Biodiversity

Alok Shukla
Department of Physics
M.L.K.P.G. College, Balrampur (U P)

ABSTACT

Human population is increasing day by day. With this increasing population, modernization of the society and technologies are also increasing and changing every day. These results over utilization of forest area by humans to cultivate crops, cut tree branches as food for domestic animals and collect firewood etc. In urban areas, the forest is utilized for building purposes and to set up industries and factories; which destroy the nat-

ural habitat of wild animals.

other countries of the world in India cities are also developing frequently. As a result illegal encroachment of forest lands for housing, factories and agricultural purposes; extensive cutting of forest tree and plantation of exotic tree species has taken place. Habitat destruction has forced the monkey to invade human settlement areas for their survival. These monkeys also created social problem by damaging or destroying property such as household goods, car, edible items and stealing of clothes.

is found that habitat destruction, human encroachment of forest land and rapid population increase of the monkey are the main causes of human-monkey conflict in most of the cities in U.P.

The Water Quality of the Rapti River in Balrampur and its Effects on Agriculture

Dr. Himanshu Dhar Dwivedi[1], Dr. Akanksha Tripathi[2], Dr. Kapil Madan[3]
1-Botany Department, S.S.S. (P.G.) College Balrampur
2-Zoology Department, M.L.K. (P.G.) College, Balrampur
3-Botany Department, M.L.K. (P.G.) College, Balrampur

ABSTRACT

Water is the most vital element among the natural resources, and is crucial for the survival of all living organisms including human, food production, and economic development.

The river Rapti is one of the most prominent rivers in the flood plain region of North U.P. Starting from Nepal it flows in various districts. Industrial waste, municipal and domestic sewage sludge's from Balrampur urban area, find their way untreated into this river.

The basis of present study is the investigation of 'point' and 'non-point' sources of water pollution affecting water quality of Rapti River and the extent to which the water quality is degraded.

The effect of water of Rapti River was observed in fields of Sugarcane, Paddy, Wheat, Maize, and Gram in the catchments of Rapti River as well as in the Botany laboratory of S.S.S. (P.G.) College, Balrampur.

The Chemical analysis of both 'Plants watered with polluted water' and 'control' plant was also done by using ash test, enzymatic analysis and histochemical localization techniques.

The most polluted water was found at site number 5, where the Suaon-nalah water mixes with the Rapti River in almost all parameters.

ISBN- 978-93-89703-08-5

The Role of Green Chemistry In Solving the Environmental and Economical Challenges of the 21St Century

Dr. Shailesh Kumar
Department of ChemistryBabasaheb Bhimrao Ambedkar University
Vidya Vihar, Raebareli Road, Lucknow-226 025

ABSTRACT

Green Chemistry is the utilization of a set of principles that reduces or eliminates the use or generation of hazardous substances in the design, manufacture, and application of chemical products. The challenge to develop methodologies to meets the needs of the present generation without compromising the ability of future generations to meet their own needs is the only means for 'sustainable development' and hence Green Chemistry is also called 'Sustainable Chemistry'. Using the concept of green chemistry several important pharmaceutical and non-pharmaceutical products have been continuously been synthesized.

Phenomena such as globalization, demographic shifts, and even climate change are influencing the global economy, creating uncertainties regarding the future and demanding urgent attention. Rather than focusing on short-term concerns, we should attend to structural changes that will have a global impact and shape the economy in the long run. The economic growth of any country is often linked with its industrial growth which may cost the environmental pollution problems. In the present scenario, the environmental concern is an integral part of any developing country's economic system and is proportional to the rapid exploitation of its natural resources. In order to overcome the overutilization of the natural resources and in the environmental concern, the term '*Sustainable development'* from the Brundtland Report[1] of 1987 was introduced which defines as 'development that helps the present generations to fulfill their needs without endangering future generations to fulfill their own needs'.

The present paper discusses the importance of green chemistry in solving the environmental and economical challenges of the 21st century

Keywords: Green chemistry, Sustainable Chemistry

Bio-Diversity Conservation: Strategies to Ensure Development in 21St Century

Shachi Sharma[1], Reeta Pandey[2], Asna Quraishi[3], Pushpendra Gangwar[4]
1,2,3. Department of Chemistry
4. Department of Physics
Bareilly College, Bareilly, U.P.

ABSTRACT

Concept of biodiversity has gained momentum in the environmental scenario during the past two decades. The term biodiversity was coined by Walter G. Rosen in 1985. According to the U.S. Office of Technology Assessment (1987), biological diversity is titled as the variety and variability among living organisms

and the ecological complexes in which they occur. As per in depth study conducted by IUCN & UNEP (1992), a concise definition of biodiversity is the totality of genes, species and ecosystem in a particular region. Mathematical indices of biodiversity have been developed to connate species diversity at different geographical scale as -Alpha diversity, Beta diversity and Gamma diversity. They exhibit species richness in different ecosystem types along an environmental gradient. Indian biodiversity is under serious threat. Tropical forests of the country are disappearing fast at the rate of 0.6% per year (about 7.3 m ha). If the trend continues then all closed tropical forests will disappear within 175 years. According to latest estimate 90% of tropical forest area comprising 500 plant species will be destroyed by 2020. Latest report reveals that 70% of the world's total flowering plants occur in 12 countries, hence they have been categorised as mega-diversity countries. They comprise Brazil, Ecuador, Australia, Indonesia and Philippines, China, Malaya, India, Columbia, Mexico and Peru. India occupies tenth place in the world and fourth in Asia among biodiversity rich countries. Biodiversity rich ecosystems are natural resources of agriculture, live-stock, forestry & fisheries. Indian biodiversity is an invaluable source of several lifesaving drugs and novel chemicals. About 90% of medicines are obtained from plants which are being robbed by majority of pharmaceutical companies. Diverse Flora and fauna including algae, bacteria, fungi, gymnosperms, flowering plants, protozoa, corals, sponges, anemones are being screened to develop drugs. Biodiversity loss is very severe in agro-ecosystems. Many wild crop varieties have been replaced by a few hybrid species during green revolution. Along with these plants microbial flora has also suffered heavy loss. Marine life and habitats are also at risk. There is a alarming rise in endangered species. IUCN and BSI have published plant Red DATA book to bring to light threatened species. According to latest estimate India is known to harbour more endemic species than any other part of the world. Conservation strategies are highly desirable to secure the peak of development in 21st century. Dwindling biodiversity across the globe is a challenge to economic upheaval and needs judicious measures to cope with anthropogenic disaster.

Key words: tropical, gradient, gymnosperms, anthropogenic, endangered.

Survey and Bio-Statistical Analysis of Noxious Weeds Found in Devi-Patan Division of U.P.

Dr. Akanksha Tripathi[1], Dr. Himanshu Dhar Dwivedi[2]
1-Zoology Department, M.L.K. (P.G.) College, Balrampur
2-Botany Department, S.S.S. (P.G.) College Balrampur

ABSTRACT

'Weeds' are unwanted plants growing everywhere and most of our harmful weeds have been introduced from other parts of the world.

There has been no national or local survey for weed plants in Uttar Pradesh, India. It was decided to conduct a detailed survey and Bio-statistical analysis using some ecological parameters like Frequency, Density, Dominance and Important Value Index (IVI) of the Weeds found in Devi-Patan Division of U.P.

The survey and Biostatistical analysis revealed that *Parthenium, Lantana, Calotropis, Eichhornia* and *Clerodendron* were becoming problem weeds in wider area.

ISBN- 978-93-89703-08-5

Antibacterial Activity of Mucus Extract of Snakehead Fish, Channa striatus *(Bloch) &* Clarias batrachus *(Linn.)*

Liji Koshy andAshok Kumar*,
Dept of zoology catholicate College, Pathanamthitta Kerala
Dept. of Zoology, M.L.K College, Balrampur 271201, UP, India.

ABSTRACT

Fishes are in relation with aquatic habitat, which contains very high concentrations of bacteria and viruses. The immune system is composed of numerous organs and cells that act together in a dynamic network in the defense against infection, disease and foreign substances. Fish mucus were tested by using disc diffusion technique against seven pathogenic bacteria (human pathogens) such as Klebsiella pneumoniae, Staphylococcus aureus, Pseudomonas aerugenosa, Salmonella enteritidis, Proteus vulgaris, Salmonella paratyphi A, Salmonella paratyphi B, Bacillus subtilis. The activity was measured in terms of zone of inhibition in mm. The mucus from Channa striatus showed broad spectrum of antibacterial activity. The present results suggest that the mucus extracts of snakehead fish Channa striatus and Clarias batrachus may be a potential source of antimicrobial agents for human and fish pathogens

Key Words : *Antibacterial activity, Fish mucus, Channa striatus. And Clarias batrachus*

In Vitro Study of Anti-Hyperglycemic Property of Pleurotus Opuntiae

Sushil K. Dubey*, A.K. Bajpeyee and Prof. M.P. Singh
Centre of Biotechnology University of Allahabad, Prayagraj-211002

ABSTRACT

The purpose of this study is to determine the anti-hyperglycemic activity of *Pleurotus opuntiae* which was cultivated on paddy straw substrate. The fruiting body was air dried and then formed the powder by using mixer and grinder. The powder was then subjected for the extraction in chloroform solvent by using soxhelet for the 48 hours. The extract was separated from solvent by using rotatory evaporator. The extract was then used to determine the amylase and glycosidase inhibitory activity *in vitro*. According to our results the 1000 µg/ml concentration of extract showed 96.56 % and 78.91 % inhibition of amylase and glycosidase enzymes respectively. Hence, *Pleurotus opuntiae* showed a good anti-hyperglycemia property and can be given as an alternative diet therapeutic with other treatments of type-2 diabetes.

Keywords: Anti-hyperglycemic, amylase, glycosidase.

ISBN- 978-93-89703-08-5

Survey of Some Kharif Crop Diseases of Siddharth Nagar (U.P.)

Shivdatt Tiwari and Ravindra Kumar Pandey
Plant Pathology Lab,Department of Botany
M.L.K.P.G.College,Balrampur (U P)

ABSTRACT

Siddharth Nagar situated in terai region of Uttar Pradesh well known for cultivation of Rice (*Oryza sativa*), Arhar (*Cajanas cajan*), Sugarcane- (*Saccharum officinarum*), Urd (*Vigna mungo*) etc. In *Rice* (*Oryza sativa*) many diseases i.e. rice blast disease caused by *Pyricularia oryzae*. The Symptoms of this disease develops on leaves as lesion that start as small water soaked bluish green specks which soon enlarge and forms characteristic boat shaped spot with grey center and dark brown margin. Use of resistant varieties MTU 1010 Swathi, RATNA JAYA etc. and spray of Triyclazole are helpful in management of this disease. Brown Spot of Rice caused by *Helminthosporium oryzae* that symptom appear as lesion (Spots) on coleoptiles, leaf blade, and leaf sheath. Management of this disease is by use of disease free seed, crop rotation and spray of common fungicide. Bacterial leaf blight causal organism *Xanthomonas oryzae*), Sheath rot of Rice (caused by *Sclerotium oryzae)* etc. Other Kharif crop diseases found are wilt of Pigeon Pea (Arhar) causal organism *Fusarium oxysporum*, Stem Rot of Pigeon Pea caused by *Phytophthora dreschsleri*.,Red rot of sugarcane caused by *Colletotrichum falcatum,* Smut of sugarcane caused by *Ustilago scitaminea,* and Red strips of sugarcane caused by bacteria *Xanthomonas rubrilineans.*

Key words*:* Blast,*Oryza sativa*,wilt and kharif.

Excess Fluoride Intake and its Impact on Human Health

Dr Anand Kumar *and Dr Basant Kumar**
*Assistant Professor, Deptt of Zoology,BSNV(PG) College, Lucknow
**Assistant Professor, Deptt of Chemistry,MLK(PG) College,Balrampur

ABSTRACT

Fluoride is found naturally in soil, water and foods. It is also produced synthetically for use in drinking water, toothpaste, mouth washes and various chemicals.thooth decay is one of the most common health problems affecting children. many people worldwide cannot offered the cast of regular dental checks ,so adding fluoride can offer savings and benefits to those who need them. However low concentration have arise regarding fluoride effects on health , including problems with bones ,teeth and neurological development .Excess exposure to fluoride can lead to a bone disease known as skeletal fluorosis. Over many years, this can result in pain and damage to bones and joints. Presently international association of oral medicine and toxicology (IAOMT),an organization that campaigns against the use of added fluoride in drinking water and toothpaste because it

contribute to the health problems like skin disease, cardiovascular problems including arteriosclerosis and artificial calcification ,high BP, osteoartheritis, bone cancer and reproductive issues.

Keywords: fluoride, health problems, chemicals and fluoride in drinking water

Education Andbiodiversity

Dinesh Kumar Maurya
Department of Education
M.L.K.P.G. College, Balrampur

ABSTRACT

Biodiversity is an essential component of human development and human security. Agriculture, forestry, fishing, crops, timber and fish play important role in national economies and employment. Biodiversity plays an important role in ensuring their food and income from natural resources. In these environments, there is a high dependency on genetic, species and ecosystem diversity to support their livelihood.

Biodiversity directly affects access to education and women's empowerment by imparting on the time taken for women to perform definite household duties, and thus the time available for education and other activities. Degradationof biological resources and subsequent non-availability of fuel, non – timber forest produce and potable water results in significant time being spent collection these resources every day. Thus aspects of biodiversity are of direct and indirect important importance to availability of food, health, nutrition, house-hold development, income generation and vulnerability.

Importance of Biodiversity in Food Security

Versha Singh, Usha Pandey and Sakshi Srivastava
Deptt. of Zoology, M.L.K. P.G. College, Balrampur

ABSTRACT

Biodiversity refers to the sum of all the different species of animals, plants fungi and microbial organisms living on earth and the variety of habitats in which they live. Each species is adapted to its unique niche in the environment from the peaks of mountains to the depths of deep sea and from polar ice caps to tropical rain forests. Humans utilize at least 40,000 sp of plants and animals for food and medicine on daily basis. Much of the earth's great biodiversity is rapidly disappearing, species of plants, animals, fungi and microscopic organisms such as biologists estimate that three species go extinct every hour.

Biodiversity provides vast majority of foodstuffs, e.g. fish, and food products from animals, such as eggs, meat, etc. Wild biodiversity provides us fruits, nuts, mushrooms, honey, spices, etc. Grasshoppers, ants and other insects are utilized as food by many tribes of India. Silkworm soup, cricket proteins bars and red ant chutneys are most commoninsect dishes in the world. Tribes of different regions of the world utilized many groups of invertebrates like insects, mollscans, annelids and echinoderms

Plant Diversityand its Importance in India

Dr. M.P. Tiwari
Pioneer Public School and College, Balrampur, U.P.

ABSTRACT

The term biodiversity is used to describe the variety of life on Earth-means wide variety of ecosystems and living species; it is thus the foundation of life on earth. Biodiversity is a measure of the health of ecosystem, biome, or an entire planet.

Biodiversity is important for mankind. Several species of plants are economically important and people living in forest area are dependent for many purposes and used them as food, fodder, and cure of various diseases. Some species are used as pot plants which remain green through out the year. Human used the plants a source of medicine from the time of human civilization. In India rural people living in remote places and forest area depend on indigenous system of medicine. One fifth of the estimated 17000 angiosperium (Timbar, wood, edible plants, medicinal plants, fiber plants etc) found in India are useful.

All the components of nature remain in a perfect balance, not only interwoven but also interdependent. The disturbance to any type of component can threaten the whole life support system of which human-beings are also part. At the ecosystem level, biodiversity not only provides conditions but also drives the processes that sustain the economy and our survival as a species. Thus biodiversity is important in the development and poverty alleviation. Poor rural communities depend on biodiversity and ecosystem for health, nutrition and development.

Effect of Pesticides on Beneficial Insects.

Kalpna Roy and Ramakant Pandey
Dept of Zoology, S. B. A. N. College, Darheta Lari. Arwal, Bihar. Patna.

ABSTRACT

Pests belong to phylum Arthropod and class Insect. Most of the insects are destructive by nature but some of them are beneficial to the nature as well as human being. Honey-bee, bumble bee, fruit fly (*Drosophilamelanogaster*), wasp (*Vespuladucalis*), Butter fly (*Pierisrapae*), (*Pierisbrassicae*), (*Aulocophorafoveicollis*) and (*Coccinellaseptumpunctata*) were identified and recognized as beneficial insects in the winter crop. These

observations were started from 1st November (2015) to 31st October (2019).during the course of investigation, three month wise visual observation reports were noted down one day before fumigation of pesticides. Results were found negative, beneficial insects lost their identity, where as another kind of pests communities were appeared vigorously. It's a matter to be considered. Many complexities will come up due to the loss of biodiversity.

Key words: Pest community, beneficial insects & pest management.

Biodiversity and Community Structure of Phytoplankton of Bhagwanpur Reservoir of Tulsipur, Balrampur (U P)

N.K. Singh and Rajiv Ranjan
Department of Botany, M.L.K. (P.G.) College, Balrampur

ABSTRACT

Bhagwanpur reservoir is a medium freshwater reservoir of eastern U.P. situated in village Bhagwanpur, Tulsipur block of district Balrampur. It was constructed in the year 1960-61. The source of water is Jamunhva nallah. The height and maximum depth of dam is 14.5 m and 9.0 m, respectively. Its capacity is 345 metric feet. The present study was carried out to investigate the biodiversity and community structure of phytoplankton of Bhagwanpur dam for a period of one year from January, 2008 to December, 2008. For this purpose 3 sites were selected for sampling. During the study period twenty two species of phytoplanktons were identified, of these seven belong to Chlorophyceae, six to Bacillariophyceae, five to Cyanophyceae and four to Euglenophyceae. The identified predominant species are *Pediastrum tetras , Scenedusmusarmatus, S. dimorophus, S. quadricauda, S. abundans, S. obliqus and Chlorella vulgaris of chlorophyceae; Naviculasalinarum, Synedra affinis, Nitzschiafiliormis, Pinnulariagibba, Naviculagrilis*and *Synedra ulna* of Bacilliariophyceae*; Oscillatoria sp.; Spirulina sp., Raphidiopsis sp., Merismopedia sp.* and *Gloecapsa sp.* of Cyanophyceae and *Euglena virdis, E. oxyuris, Phacuslongicauda, and Phacuspleronectes*of Euglenophyceae. The quantity of phytoplankton fluctuates between 474 to 1014 units/L. The minimum and maximum density was observed in February and April respectively. The annual periodicity of phytoplankton shows that Chlorohuceae dominates and constitute 32.68% of total phytoplankton population followed by Cyanophyceae (29.66 %) . Bacillariophceae (26.43%) and Euglenophyceae (11.22%). The population density of Chlorophyceae ranged between 115-440 unites/litre. The minimum density was recorded in July and maximum in January. *Scenedusumus*sp. had the highest density followed by *Pediastrum* sp. and was recorded throughout the year. *Chlorella* sp. had the lowest density and was found in post-monsoon and winter season only. The population density of Cyanophyceae ranged between 101-474 units/ liter. The minimum and maximum density and was present throughout the study period. *Reaphidiopsis*sp. had the lowest average density and was found only in summer and rainy seasons.The density of Bacillariophyceae varies between 111-294 units/L . The minimum and maximum density was obtained in January and September, respectively. More or less all the species of Bacillariophyceae were present throughout the year but *Navicula*sp. shows highest average density among them. The population density range of Euglenophyceae was between 72 to 175 units/L. The minimum and *Euglena* sp. shows high density in comparison to *Phacus*sp. Both species were absent in winter season. It was observed that maximum production occurred during summer due to optimum ecological conditions while minimum productivity was observed in winter.

ISBN- 978-93-89703-08-5

Biological Control by Entomopathogenic Fungi *Beauveria Bassiana*and Paecilomyes Lilacinus of Helicoverpa Armigera

Dr. Ashok Kumar and Dr.Sadguru Prakash
Department of Zoology,
M.L.K. (P.G.) College Balrampur (U.P.), India

ABSTRACT

Adult fruits flies *Helicoverpaarmigera* sprayed with *Paecilomyeslilacinus*150ml/Lleads to death of flies within 2-3 days. On diedflies pinkish violet puffy mycelial growthdeveloped on the second daywhen kept in moist chamber. On the third day the development of pinkish violet powdery growth of the funguson whole surface of the died flies were observed. Adult fruit flies sprayed with *Beauveria bassiana* 150ml/l died within 4-5 days. When the dead flies were kept in moist chamber mycelia growth appeared within two days and the whole surface of the dead insect was covered with white puffy mycelia growth of the fungus on third day.

***Key Words*:** Biological control , entomopathogenic fungi ,

Effect of Pleurotussppson Serum and Mucolysogenic Activity of Cat Fish

A.K. Bajpeyee, C.B.Yadav, Sushil Dubey and Prof. M. P. Singh
Center of biotechnology university of Allahabad

ABSTRACT

For vegetarian's Mushroom are considered as a very healthy food, because their mineral nutrient is higher than that of meat and fish. Besides the nutritional value, they have medicinal properties such as chronic autoimmune thyroiditis, Graves' disease, hypothyroidism, cancer, human infertility, cardiovascular disease, diabetes, osteoarthritis, rheumatoid arthritis, and depression, and immunostimulatory, antimicrobial and antiviral activities. Cat fishes arethe most popular edible Indian fresh water cat fish consumed by people throughout the country. The aim of present study is to evaluate the effects of edible mushroom powder, for 45 days on the mucus and serum responses, of *Cat Fish* fingerlings. After the end of trial experiment the mucus and serum of was examined. The results showed a significant dose-dependent increase in the lysogenic activity of mucus and serum. The results revealed that feeding catfish fish with dietary supplementation of *Pleurotus* improved growth performance of catfish.

***Key word*:** Pleurotus; Edible Mushroom

ISBN- 978-93-89703-08-5

Cage Culture of Freshwater Fish

Varsha Singh
Department of Zoology,
M.L.K. (P.G.) College Balrampur (U.P.), India

ABSTRACT

Cage culture is an aquaculture production system where fish are held in floating net pens. Cage culture of fish utilizes existing water resources but encloses the fish in a cage or basket which allows water to pass freely between the fish and the pond permitting water exchange and waste removal into the surrounding water. Cages are used to culture several types of shell fish and finfish species in fresh, brackish and marine waters. Cages in freshwaters are used for food fish culture and for fry to fingerling rearing. The origins of cage culture are a little unclear. It can be assumed that at the beginning fishermen may have used the cages as holding structures to store the captured fish until they are sent to the market. The first cages which were used for producing fish were developed in Southeast Asia around the end of the 19th century. Wood or bamboos were used to construct these ancient cages and the fish were fed by trash fish and food scraps. In 1950s modern cage culture began with the initiation of production of synthetic materials for cage construction. Fish production in cages became highly popular among the small or limited resource farmers who are looking for alternatives to traditional agricultural crops in compression to other any type of culture. The advantageous character of cage culture is due to its easy installation, flexibility of management, effective use of fish feeds, less man power requirement, better control of fish population etc.

Key Words : Cage Culture, Freshwater Fish

Sustainable Development of the Biodiversity and Climatic Changes

Dr. Pradeep Kumar
Department of Zoology, S.G.N. Govt. P.G. College, Muhammadabad Gohana,
Mau, 276403, (U.P.) India

ABSTRACT

Biodiversity is an important part of the earth for sustainable life. These are incredible variety of living things in nature and how they interact with each other. On earth, each organism contributes their activities for sustainable biodiversity, functioning and beauty of the earth planate. Biodiversity is a complex variety and variability of different genes, different species, which form different ecosystems on the earth. Therefore, sustainable ecosystems are necessary for green and healthy environment. However, human activity day by day interferences in natural ecosystem which may be harmful for earth planate life. Human activities day by day, directly or indirectly causes impact on the biological species in which a lot of natural species disappear or disappearing

from the earth planate. These species was an important part of the biodiversity as well as a part of the ecosystem. India has rich biodiversity which covering ten biogeographically zones like Trans-Himalayan, Himalayan, Semi-arid zone, Western Ghats, Indian desert, Deccan Peninsula, Gengetic Plain, North-East India, Coasts and Islands. In India's different wide range of climatic and topographical features has resulted in a high level of ecosystem biodiversity encompassing grasslands, forests, wetlands, deserts, coastal and marine ecosystems, each with a unique assemblage of species. These biodiversity have generates economic value for human societies in different ways and it has been a source of revenue from extractable products which obtained from individual species. Global warming and climate changes is one of the most important factors on the earth which controlling the growth, developments, survival and distribution of different biological species as well as regulating natural ecosystems in a variety of ways. Climatic changes are the most important for local and global environmental challenges which affect all the natural ecosystems of the earth. These effects on the natural ecosystem may be diverse, such as change in the timing of phenological events of plants/animal, changes in species abundance and range, shifts in habitat. According to prevailing extinction theory, the larger and more specialized species are likely to be lost due to the habitat destruction. Therefore, for the sustainable development of biodiversity, it is necessary for human societies that develop sustainable and healthy environment for green planate.

Key words: Biodiversity; climatic changes; Conservation, Ecosystem, Sustainable development.

Studies on Weeds of Wheat Crop of Ambedkar Nagar District of Uttar Pradesh (India)

S.C. Shukla
P.G. Department of Botany
Kisan P.G. College, Bahraich-271801

ABSTRACT

The Ambedkar Nagar district is situated in Ayodhya division of Uttar Pradesh (India). Weeds are unwanted, useless often prolific and persistent plant species which interfere with agricultural operation, add to costs and reduce crop yield. The weeds compete with crop plant for light, water, space and minerals. It also functions as reservoir for pathogens and help in dissemination and recurrence of disease. The weeds are also disturb the ecosystem of the concerning area.

The present paper deals with 36 weed species out of which 33 species belongs to dicots and remaining 3 species belongs to monocots. The dominant families are Fabaceae, Asteraceae and Euphorbiaceae

ISBN- 978-93-89703-08-5

Survey of Weed Flora of Kharif Crop Fields of Distt. Deoria & Kushinagar

H.S.G.Rao
Deptt. of Botany, B.R.D. P.G. College, Deoria

Weed is such a plant that grows in excess or abundance which suppresses the growth of other plants having important nutritive qualities. The detailed floristic survey was conducted during 2016-18 with special reference to the weeds flora of the different site of Deoria district. A survey was conducted to record the composition of different weed flora in kharif crop in Deoria and Kushinagardistt. Based on visual observations such as Celosia argentia, Cleome viscosa, Cyperusrotundus, Cynodondactylon, Dactylocteniumegypticum, Digera arvensis, Eleusinecrusgalli, Eleusineindica, Euphorbia hirta, Euphorbia thymifolia, Gynandropsis pentaphylla, Launea aspera, Phyllanthus niruri, Portulacaquadrifida, Phaseolus trilobus, Trianthemamonogyna, Tribulus tiristins, Tridaxprocumbens, Xanthium strumarium etc. were recorded as major weeds of kharif season. The total 55 weed species spread over the district in the different crop fields were collected. Identification of these weed species was done using standard monograph and regional floras and arranged alphabetically in different categories with their relative density percentage.

Role of Carica Papaya Leaf in Dengue Fever

H.S.G. Rao & R. Achal*
B.R.D. P.G. College, Deoria. 274001
*Ayurvedic Physician & chief editor, Eastern Scientist, Paikauli Maharaj, Deoria

Dengue in recent decades has become a major threat of international public health concern. Dengue fever is one of the life threatening diseases caused by dengue virus (flavi virus) that is borne and transmitted by diurnal mosquitoes (active during day time), *Aedes egyptii*. World health organization estimated that every year 50 million people across the world are infected by dengue and about 2.5 billion people are at risk from this dreadful disease which spreads over about 100 countries. The platelet count for a normal person varies from 150,000 to 450,000 per microlitre of blood or 3 to 5 lakhs in cubic millimeter. The dengue virus affects mainly the platelet production. On becoming infected, a patient's platelet count starts falling. Platelet count below 100,000 per microlitre is alarming- immediate medical attention is required. A platelet count below 50,000can is fatal. Its symptoms include severe headache, pain behind the eyes, muscle & joint pain, nausea, vomiting, swollen glands & rashes. Also known as 'break bone' fever, it causes extreme body pain, especially in the joints of bones. Though some preventive measures have been suggested to cure dengue, so far there is no effective medicine & vaccine approved for the dengue virus.

In this new study is to understand the effects of papaya leaf juice as a possible herbal medicine to cure dengue fever. The researchers believe that the extract of papaya leaves influences the bone marrow to increase production of blood platelets rapidly. 25 ml of extract was given to the patient in the morning and evening. After two days dengue patients in most of the studies have shown a significant improvement in their health. Now it has been established that only the leafy part should be collected not the sap & stalk. The extracted juice is fil-

tered through a clean cotton cloth or filter to remove the uncrushed hard fibers or pieces of leaves. One leaf of papaya gives about one table spoon of juice, which is quite bitter in taste. The leaf is not boiled and cooked as it is believed that rinsing with hot water or boiling makes the leaf lose its strength. The leaf extract of papaya, possesses many compounds, such as flavonoids and other plant phenols and alkaloids for example carpine, anthraquinone, saponins and cardiac glycosides such as carposides and tannins. Thus it is rich in antioxidants and free radical scavenging activity, as well as being able to stabilize the RBC membrane. It may therefore have a protective role against hemolysis in stressfull conditions. Recent researches show that papaya leaves are also beneficial in the treatment of kidney stones, hypertension, lack of breast milk, malnutrition, rheumatism, acne, abdominal pain during menstruation & dysentery.

***Key word**:* dengue, hemorrhagic fever, platelets, *Carica papaya* leaves.

Fresh Water Diatoms From Shravasti District U.P. India

Rajiv Ranjan* , Anand Kumar Srivastava and Prabhat Kumar Singh
*Department of Botany MLK College Balrampur
Department of Botany KDC Bahraich

ABSTRACT

Present communication deals with fifteen taxa including seven genre , thirteen species and two varieties . These taxa belonging to order bacillariales of class bacillariophyceae. The taxa identifed on the basis of literature of handy (1964) , Tiffany and Briton (1952) , Prasad and Srivastava and Gandhi (2000) . The specific cell dimension , number of striae and costy considered the main criteria of identification of taxa after clearing frustules by potassium-dichromate of Petric and Reimer . The genre of *Cyclotella , Melosira , Fragilleria , Synedra , Surirella , Naviculla*and *Caloneis* . Presence of these taxa in aquatic habitate indicate Algal growth index which is a pollution indicator and water is non-potable.

Effects of Heavy Metals on Plant Growth

C. S. Mishra & H.S.G. Rao
Deptt. of Botany, B.R.D. P.G. College, Deoria

ABSTRACT

Heavy metals can be defined as metallic elements with density of 5 gm/cm^3 like cadmium (Cd), nickel (Ni), lead (Pb), zinc (Zn), arsenic (As), mercury (Hg), Chromium (Cr), copper (Cu), cobalt (Co), molybdenum (Mo) etc. Although heavy metals are naturally present in the soil, geologic and anthropogenic activities increase the concentration of these elements to amounts that are harmful to both plants and animals. There are about sixty metals that are toxic in response to plants as well as their environments. Use of pesticides and chemical

biofertilizers containing heavy metals causes contamination in the soil. Along with that rapid urbanization and industrialization add heavy metals to the soil and water. Plants growing on heavy metals, polluted soil show a reduction in growth due to change in their physiological and biochemical activities. Heavy metals pose stress to plant and interfere with physiological processes like damage of membrane, seed germination. Different concentrations of these metals, in the surrounding environment, affect the developmental status of the plants. Heavy metal absorption is governed by soil pH and organic matter content. This is especially true when the heavy metal involved does not play any beneficial role towards the growth and development of plants.

Key words: geologic, anthropogenic,

Impact of Chemical Pollution on Biodiversity

Dr Jitendra Kumar and Dr Rishi Ranjan Pandey*
Affiliation: Department of Chemistry, MLK PG College Balrampur, UP

Biodiversity is backbone of human existence on earth as we are directly or indirectly dependent on vast treasure of biodiversity for food, shelter and health. Every creature on planet earth is vital as existence of one is dependent on the existence of other. Perfect harmony with each and every biotic and abiotic factor of nature is required for healthy and peaceful existence. Unfortunately, uncontrolled exploitation of natural resources by human beings for their need and greed has broken the natural equilibrium of different constituents of nature and thereby rendering the planet earth unfavourable for the existence of various flora and fauna. Recent report from United Nation on Sustainable Development Goals presents an alarming picture where it has been highlighted that the population of native terrestrial species has declined by at least 20% since early 1990. Additionally, 40% of amphibian species and more than a third of all marine mammals are threatened and roughly 10 % of insect species are being threatened.

The age of industrialization accompanied with the extensive use of chemical for various purposes in day to day life have resulted an unwanted contamination of our existing natural reserves by the release of harmful substances. Many of these chemicals are highly toxic and have adverse effect on biodiversity by changing the delicate natural balance. This paper highlights the adverse impact of chemical pollutants on biodiversity.

Impact of Wilt on Musa Crop.

Nitu, Kapildeo Prasad and Ramakant Pandey.
B.N.M.U. Madhepura & Patna.

ABSTRACT

Wilt is a contagious fungal disease of *Musa* crop. The pathogen is recognized as *Fusarium oxysporum var cubence* (Berc & Pers). This pathogen is completely destructive by nature. This study started since 1st February (2016) up to 31st January (2019). During this study period several facts were recorded on the basis of

visual observations. Very simple laboratory techniques were applied to identify the disease and pathogens of underground rhizome, shaft and terminal spike. Temperature, Rain fall and Humidity were noted daily on 7 A. M. pathogens were observed fortnightly where as soil and water were tested six monthly. Obtained results were noted scientifically and now it is ready to publish. Finally conclusive remark is - *Fusarium* is damaging crop quality as well as economy based on *Musa* cultivation.

Key words : **wilt,** *Musa* cultivation and pathogens.

"Generation and Stabilization of Induced Pluripotent Stem Cells From Domestic Pigs (*Sus Scrofa)*ऱ

Chandra Bhan Yadav*[1]Bajpeyee A. K.*[2] Singh M. P.*[3]
* Centre of Biotechnology, University of Allahabad, Allahabad-211002

ABSTRACT

The porcine model is an ideal animal model for preclinical regenerative medicine owing to its high immunological, histological, biochemical and physiological similarity to humans. Its anatomy and cardiovascular function of the porcine heart is almost identical to that of humans and hence is an excellent model for cardiovascular disease. It is an outstanding preclinical platform for testing the safety of iPS technology and has a long history of use for tissue and xenotransplantation.The aim of present research work is to generate non–viral, integration free bona fide porcine PSCs. For this purpose we used various reprogramming factors such as mRNA and episomal vectors. We attempted to generate bona fide porcine pluripotent stem cell by using non-integrating strategy. In brief, target cells were transfected daily for day 17 by using various reprogramming factors. Noticeable morphological changes appear at day 6 of the transfection, where the cluster of proliferating cells begins to emerge. Morphological changes were more evident by day 15 and 18. Induced Pluripotent Stem Cells (IPSCs) like colonies started to emerge by day 15. On the basis of morphology and stringent pluripotent markers subset of 14 -16 clones were identified, mechanically picked and passaged further in standard embryonic stem cell culture conditions.This would provide a chemically defined screening platform for factors that induce proliferation and maintain the pluripotency of embryo derived pluripotent stem cells and eventually help us to generate the porcine embryonic stem (ESCs) cells. Later on, established Porcine PS cell lines will be subjected to in vitro differentiation.

Key words: Animal model, ESCs, IPSCs, Bona fide

Diversity of Cercospora in North Tarai Region of U P

Ajay Kumar and Dr. N.K. Singh
Postgraduate Department of Botany, M.L.K. P.G. College, Balrampur- 271201(U.P.)

The members of **Cercospoeae** group are important plant pathogen and responsible of serve economic losses, attacking particularly all the areal parts of plant though their role is more important as leaf parasites form-

ing numerous necrotic spots. The taxonomic treatment of a fungal organism is the first requirement for any studies concerning its biology. In fact without being equipped for ascertaining the correct identity of a fungal pathogen all studies concerning its phytopathological aspects would be misleading. The weed and forest plants serve as reservoirs of leaf spot pathogens which on getting opportunity may spread to agriculture and horticulture plants.

In present investigation we searched certain angiospermic plant of north tarai region. Two hundred seventy angiospermic plant species being parasitized by foliicolous fungi. The collection, herbarium preparation and laboratory processing for identification of the fungus was followed by Hosagauder and Kapoor as described in Asterinales of India. Out of Two hundred seventy angiospermic accessions forty three hosts were found to be parasitized by different species of **Cercospora.** Out of forty three, nine accession of **Cercospora** are still to be identified up to species rank.

The forty three angiospermic hosts are belonging to 36 genera of 25 families. Three hosts are still unidentified in want of inflorescence, flower or a taxonomist.

It is surprising to note that in certain cases single slide preparation showed the presence of more than one fungus viz. **Phaseolus coccineus, Capsicum annum** were recorded with two fungus where as rest hosts with single fungus. The list reveals that family Moraceae is represented by five susceptible hosts where as Apocynaceae and Paplionaceae with three hosts each; Araceae, Cucurbitaceae, Fabaceae, Malvaceae, Solanaceae and Verbenaceae with two hosts each and rest of the fifteen families were found to be infected by a single fungus only.

Biodiversity and Hot Spots of Uttar Pradesh Province of India

SeemaKodesia
Department of Zoology, Bareilly College Campus
MJP Rohilkhand University, Bareilly-243001

ABSTRACT

India has a rich and varied heritage of biodiversity encompassing a wide range of habitats. Besides, India is recognised as one of the eight Vaviloviancentres of origin and diversity of crop plants. India ranks among the top ten species rich nations and shows high endemism. With only 2.4% of the world‘s land area. India accounts for 7-8% of recorded species of the world including over 45,000 species of plants and 91,000 species of animals. Being one of the 17 identified mega diverse countries; India has 10 biogeographic zones and is home to 8.58% of the mammalian species documented so far, with the corresponding figures for avian species being 13.66%, for reptiles 7.91%, for amphibians4.66%, for fishes 11.72% and for plants 11.80%. Along with this, India represents about 17.31% of the world’s population. Four of the 34 globally identified biodiversity hotspots, namely the Himalaya, Indo-Burma, the Western Ghats-Sri Lanka and Sundaland (also called the Sundaic region), are represented in India. As per the literature survey and studies conducted, the recorded flora diversity of Uttar Pradesh include 1017 genera and 2932 species of plants (lower and higher) with 67 genera and 301 species of algae; 46 genera and 135 species of lichens; 135 genera and 935 species of parasitic fungi; 31 genera and 72 species of bryophytes; 20 genera and 41 species of pteridophytes; 4 genera and 6 species of gymnosperms; and 714 genera and 1442 species of angiosperms.

Keywords: Biodiversity, India, Uttar Pradesh, Flora, Fauna, hot spot areas, Biodiversity act.

ISBN- 978-93-89703-08-5

Synthesis of Novel Sugar Based Cross-Linker for Preparation of Biodegradable Hydrogels

Anamica, Amar Nath and P. P. Pande
Department of Chemistry and Environmental Science,
M.M.M. University of Technology Gorakhpur-273010, U.P., India.

ABSTRACT

The cross-linker is an additive that links two or more polymer chains by the formation of ionic or covalent bonds. Sugar based cross-linkers are easily biodegradable and forms three-dimensional network of super absorbent polymeric materials which can be converted into stable hydrogels by absorption of large amount of water. The cross-linker was prepared by reacting sugar with allyl chloride in an alkaline medium. The synthesized sugar based cross-linker was characterized by ^{1}HNMR and IR spectroscopy. These cross-linking agents have been found to be very useful for the preparation of hydrogels which do not get deformed easily even after the absorption of large quantities of water. In this paper we present the synthesis and characterization of a novel sugar based cross-linkers for the preparation of biodegradable hydrogels.

Keywords: cross-linker, biodegradable hydrogel, super absorbent polymer.

Sugar Based Xanthates Used in Removal of Heavy Metal from Waste Water

***Amar Nath, Anamica and Poorn Prakash Pande**
Department of Chemistry and Environmental Science,
M.M.M.University of Technology Gorakhpur U.P. India, 273010.

ABSTRACT

Potassium sugar xanthates were synthesized under N_2inert gas atmosphere by stirring at room temperature. The sugar based xanthtes metal compleses which are present into the water changed physic-chemical properties of drinking water likes Cu(II), Fe(II), Pb(II) were also synthesized by the constant stirring at room temperature. These complexes were characterized by micro-analytical method, molar conductance, magnetic susceptibility, and Spectroscopic methods (IR, UV-Vis, 1H-NMR).

Keywords: Sugar based xanthes, Metal ions, drinking water.

ISBN- 978-93-89703-08-5

Survey and Surveillance of Major Insect-Pests of Basmati Rice in North Eastren Uttar Pradesh (India)

Bindra Bihari Singh
Assistant Professor Agri. Entomology J.M.V Ajeetmal, Auraiya, U.P India. 206121

ABSTRACT

A survey was carried out on the insect-pests incidence in Basmati rice ecosystem in North Eastern Uttar Pradesh of India. In North Eastern U. P. mainly Pusa Basmati-1121, Pusa Basmati-1 (Todal), Pusa Basmati-2 (Sugandh-2), Pusa Basmati-3, RS-10, Dehradun-1, Hbc-19 Safidon, Pusa Basmati-6, Pusa Basmati-1509 and HBR-92 Pusa Basmati (Kasturi), Basmati-370,385, HUBR2-1 Malviaya Basmati, varieties are cultivated in which about 60 % area is covered by PB-1121. The crop is infested by many insect-pests which play a significant role in limiting Basmati rice production. Insect-pests infest all parts of the plant at all growth stages, and a few transmit viral diseases such as Green leafhoppers and Brown plant hoppers. In Basmati rice ecosystem some defender viz. dragon fly, spiders and praying mentis also were noticed. In North Eastern Uttar Pradesh some other insect-pests as gundhi bug, rice hispa, brown plant hopper, grasshopper etc. were also found at Rice field. During the survey it was observed that the leaf folder and stem borer were found to be at significance level. A large number of insecticides have been tried for insect-pests management; indiscriminate use of pesticides has led to severe ecological consequences, residues in consumable products and ultimately resistance to the pesticides. The increasing concern for environmental safety and global demands for pesticide residue free food evoked keen interest in pest control through eco-friendly methods.

Keywords: Basmati rice, Survey, Insect-Pests, Residue and Pesticides. North Eastern Uttar Pradesh.

Screening of Pollution Indicator Cyanophycean

Anand Kumar Srivastava , Rajiv Ranjan* , Manoj Misra and Dilep Shukla**
Department of Botany , KDC , Bahraich
*Department of Botany MLK , Balrampur
**Department of Chemistry LBS , Gonda

ABSTRACT

Present communication deals with Morphotaxonomic studies of Cyanophycean taxa occurring in polluted water bodies . These taxa are *Anabaena , Lyngbya , Oscillatoria , Gloeotrichia , Microcystis.* These taxa richly grow in industrial effluents containing heavy metals like Arsanic , Mercury, Cadmium. TDS , Turbidity , p^H , temperature , BOD , COD parameters are correlated with specific diversity and morphological changes. Observation is directly a impact of pollutants in aquatic habitats.

ISBN- 978-93-89703-08-5

Consequences of Modern Development

Shruti Kaushik and Ramakant Pandey
Kamla Neharu Se. secondary School Gardanibagh, Patna.

ABSTRACT

Human is highly evolved creature on the earth in comparison to the other organisms. It needs proportionally similar to the other organisms but its greed attains unlimited dimensions. For fulfilling its desire it may go beyond the limits, whereas nature does not permit to cross the optimum ceiling height. Earth provides home and livelihood for each and every organism associated with its sphere. The solo development of human being will definitely go up for a while but finally it will go down up to the destruction level. On the basis of visual observations since 1st January (2016) to 31st December (2018) and very simple laboratory techniques were applied for completion of study. The results were obtained in the favor of biodiversity. Conclusion is – the sustainable human development will depend only upon biodiversity. Without the biodiversity sustainable human life cannot be thought off.

Keywords – *Sustainable development, greed and biodiversity.*

Impact of Trichoderma Sps.

Anupam Sinha., Kaushlendar Kumar & Ramakant Pandey
Vidya Bhawan Mahila College, Siwan.(Bihar) & Patna.

ABSTRACT

Trichoderma sps are recognized as rhizomatous fungus or soil fungi. This group belongs to Deuteromycetes. The powder form of *Trichoderma* in the name of TRICHODERMA is sold in the open market for farmers. Agriculture scientists and crop growers are using it for enhancing the soil fertility by killing the soil base microbes as well as destroying eggs, larva, pupa and metamorphosed macrobs. Since 1st January (2016) to 31st December (2018) continuous observations were recorded on *Lycopersiconesculentum* (L) syn *Lycopersicumesculentum* (L) to know the impact of *Trichoderma* on standing crop as well as on the basis of obtained case currency by its marketing The results were found positive and fruitful in favor of careful use. The final conclusion was established that the *Trichodema* is not fit for foliar use. It can be used only for soil treatment.

Key-words *: Trichodema sps*, soil treatment foliar use.

ISBN- 978-93-89703-08-5

Biodiversity Leads to Social Change (Society Seeks to Move Towards More Sustainable Development)

Dr.Pankaj Kumar Srivastava* and Dr.Pawan Kumar Singh**
*Assistant Professor Dept. of Commerce MLKPG College Balrampur
**Assistant Professor Dept. of BBA MLKPG College Balrampur

ABSTRACT

As society seeks to move towards more sustainable development paths, it is important to properly conceptualize the relationship between biodiversity (i.e. genes, traits, species and other dimensions) and human wellbeing such as health, wealth, security and other dimensions. Here, we examine how published conceptual frameworks consider the extent to which biodiversity links are integrated into public communication and scientific research and the impact of our decisions for sustainable development. . We find that our understanding has progressively evolved from seeing the value of biodiversity as an external factor that can affect to biodiversity as something as fundamental to health, wealth, security and other dimensions. Analysis of the literary trends reveals increased engagement with the terms biodiversity, and sustainable development in the public, science and policy fields, but largely as independent rather than linked terms. We propose that a consensus framework for sustainable development should explicitly incorporate biodiversity as a set of internal variables that are both affected and influenced by health, wealth, security and other dimensions. Doing so will improve clarity and help shape coherent research and policy priorities. We also suggest that the lack of this connection in development could unfortunately lead to the consolidation of biodiversity with well-defined policies. Such biological vulnerability could lock health, wealth, security and other dimensions at minimum levels or lead to decline and halt or halt progress in achieving sustainable development.

Keywords: Biodiversity, sustainable development, human wellbeing, ecosystem service

Floristic Study of Family Poaceae in Uttar Pradesh

NahidFatima and Satya Narain
Duthie Herbarium, Department of Botany
University of Allahabad,Allahabad-211002.

ABSTRACT

The Uttar Pradesh is the fourth largest state of India with a total area of 240,928 sq. km. The state prior to carving out of Uttarakhand from it, was a unique region in having all the three physiographic in homogeneities of India: the northern Extra- Peninsular mountains, The Himalaya, the southern Peninsular Uplands and extensive intervening Indo- Gangetic Plain. The state has been divided into 18 division which is further divided into 75 districts.The rivers are main source of agriculture in Uttar Pradesh.

Grasses are spread like hairs on planet these are belongs to the family Poaceae and constitute the fifth largest family of flowering plants in the world, with some 11,500 species and about 768 genera. In India there are

about 262 genera and 1110 species of family Poaceae and in Uttar Pradesh represented by 118 genera and 300 species. These are source of food, fodder, shelter, medicine and other useful things. Grasses are important due to their biogeographical presence as well as ecological and socio-economic importance..

The present paper is based on my collection and taxonomic study of family Poaceae in UttarPradesh resulted 172 species of 89 genera. Plants are collected from agricultural field, on road side and on wasteland. All these specimens are kept in Duthie Herbarium, Department of Botany, University of Allahabad with their field numbers, localities and other information.

Quantitative Estimation of Bacteria in the Air of Mankapur

S. K. Srivastava, D.S. Shukla* and S.C. Tripathi**
Department of Botany, L.B.S. PG College, Gonda – 271003
*Department of Botany, M.L.K. PG College, Balrampur – 271201
**Department of Botany, Kisan PG College, Bahraich – 271801

ABSTRACT

Our aerial environment is filled up with number of micro-organisms including fungus spores, pollen grains, viruses, bacteria, nematodes, algae, lichen, insect scales, protozoan cysts, mites, moss spores, fern spores and small epidermal hairs including dust particles. Dust often acts as "raftऋ carrying microbes. Bacteria comprise a heterogeneous group of organisms varying in size from 0–3 to 10–15 m. Bacteria laden minute droplets are continuously thrown in air by rainsplash, breakers or sea air. Water droplets by sneezing or coughing are important source of airborn bacteria.

Present investigation on bacterial concentration of the atmosphere was carried out at Mankapur (District Gonda) by using pertidish exposure method for the period of one year from January-2018 to December-2018. Daily exposure of petridish containing Peptone Beef Agar medium was done to observe the accurate concentration of bacteria in the atmosphere. The data reveals that the highest concentration of bacteria was recorded in rainy season in the month of July-2018 (3134 Colonies). The lowest count was observed in the month of January-2018 (682 Colonies). This variation was due to seasonal variation in temperature, relative humidity and rain fall round the year.

Spirulina: Source of Protein In 21St Century

Nikhil Agnihotri, Narendra Mohan & Noorul Hassan Paryavaran Sodh Ekai
Department of Botany,D.A-V. College, Kanpur

ABSTRACT

Spirulina is a photosynthetic filamentous spiral shaped blue green algae (Cyanobacterium) known for containing highest amounts of protein in the universe. *Spirulina* is highly useful as it has large content of highly

digestive proteins, various amino acids, vitamins, beta carotene, Phycocyanin, minerals, essential fatty acids, pigments and polysaccharides. Tribal people of America, Mexico and some countries of Africa exploited this alga as food. Use of *Spirulina* as food supplement resulted in enhancement of the yellow pigment in the skin and yolk in poultry and flamingos, and for growth acceleration, sexual maturation and increase in fertility of cattle. Phenolic acid, tacoferal and beta carotene component of *Spirulina* have shown antioxidant properties. It is proved in recent researches that *Spirulina* and its extract is effectively used as anticancer, antiviral and chronic inflammatory conditions. Proper use of *Spirulina platensis* increases the immunity in fish, chickens, humans and other mammals against various types of infections. *Spirulina sulfolipids* have also been effective against HIV. *Spirulina* also enhances the body's ability to generate new blood cells, bone marrow and stem cells, macrophagus, T-cells, natural killer cells, spleen and thymous gland. As of now, all sources of Veg and Non-Veg proteins are unable to fulfill the total demand of protein around the globe including India. According to a study, approximately 33% population across the world is suffering from several disorders associated with protein energy malnutrition. Though India produces 23% pulses of world's production, it is not sufficient to provide proper protein nutrition for all its population. The present study highlights the possibilities of using *Spirulina* as an alternative of protein supplement. In search of new ways to overcome protein shortage, *Spirulina* as an alternative source of protein has received worldwide attention.

Key words*: Protein source, Spirulina, blue green algae, cyanobacterium etc.*

Taxonomic Enumeration of Weeds in Sandalpur Block of Kanpur Dehat District, U.P., India

Nikhil Agnihotri, Jitendra Mohan and Narendra Mohan Paryavaran Sodh Ekai
Botany Department, D.A-V. College, Kanpur

ABSTRACT

Weeds are unwanted and self grown plants which occur at any habitat out of place and time. Occurrence of weeds is cosmopolitan. Presence of weeds creates numerous problems in agricultural lands such as reduction in crop quantity and quality. It also causes adverse effects on human and animal health as well as harmful effects on ecosystem. According to a study, a decrease of 15-30% in crop production worldwide occurs due to weeds. Furthermore, several species of weeds are considered responsible for wildfires in mountainous regions. The present study deals with some taxonomic enumeration of rainy season weeds in Sandalpur block of Kanpur Dehat district, Uttar Pradesh, India. A total number of 671 rainy season weeds belonging to 53 genra of 33 families were identified and analyzed with their local (Hindi) names, English names, botanical names, families, habits and habitats.

Key words Weeds, Taxonomic enumeration, Self grown plants.

ISBN- 978-93-89703-08-5

Floristic Studies on Family Amaranthaceae of Uttar Pradesh

Sadhana and Satya Narain
Duthie Herbarium, Department of Botany,
University of Allahabad, Prayagraj (U.P.), India

ABSTRACT

Amaranthaceae is family of flowering plants commonly known as the 'Amaranth family'.It comprising 65 genera and around 850 species in the world which are chiefly distributed in tropical and temperate regions.In India it is represented by 18 genera and 50 species while 9 genera and 21 species reported from upper gangetic plain and 39 species of 14 genera from Uttar Pradesh.Uttar Pradesh is the northern part of India, The total geographical area of the state is 243,290km². The area is represented by rich floristic diversity. The present paper is based on my collection and herbarium study of family Amaranthaceae in Uttar Pradesh. During exploration of the area 22 species of 7 genera are collected. All these specimens are kept in Duthie Herbarium, Department of Botany, University of Allahabad with their field numbers, localities and other information.

Keywords: Amaranthaceae, Uttar Pradesh.

Quantitative Estimation of Bacteria in the Air of Mankapur

S. K. Srivastava, D.S. Shukla* and S.C. Tripathi**
Department of Botany, L.B.S. PG College, Gonda – 271003
*Department of Botany, M.L.K. PG College, Balrampur – 271201
**Department of Botany, Kisan PG College, Bahraich – 271801

ABSTRACT

Our aerial environment is filled up with number of micro-organisms including fungus spores, pollen grains, viruses, bacteria, nematodes, algae, lichen, insect scales, protozoan cysts, mites, moss spores, fern spores and small epidermal hairs including dust particles. Dust often acts as "raftः carrying microbes. Bacteria comprise a heterogeneous group of organisms varying in size from 0–3 to 10–15 m. Bacteria laden minute droplets are continuously thrown in air by rainsplash, breakers or sea air. Water droplets by sneezing or coughing are important source of airborne bacteria.

Present investigation on bacterial concentration of the atmosphere was carried out at Mankapur (District Gonda) by using pertidish exposure method for the period of one year from January-2018 to December-2018. Daily exposure of petridish containing Peptone Beef Agar medium was done to observe the accurate concentration of bacteria in the atmosphere. The data reveals that the highest concentration of bacteria was recorded in rainy season in the month of July-2018 (3134 Colonies). The lowest count was observed in the month of January-2018 (682 Colonies). This variation was due to seasonal variation in temperature, relative humidity and rain fall round the year. The meteorological data shows that relative humidityrangedfrom57.47%to 90.10%, rainfall .02 inch to .58 inch and temperature varied from C to 40.C during the course of investigation.

ISBN- 978-93-89703-08-5

Geographical Erosion of Some Herbal Flora in Shrawasti District (U.P.) and Their Conservation with Reference to Medicinal Aspect.

Rajiv Ranjan and Ravi Krishna Mishra
Department of Botany, M.L.K. (P.G.) College, Balrampur

ABSTRACT

An Ethno-Medicinal survey of flora in Shrawasti district of U.P. revealed that some less known medicinal flora have been used by villagers. The valid scientific name , family , local name and habits of *Achyranthus aspera* , *Aegle marmelos, Brassica nigra, Cordia myxa, Carica papaya, Cappans deciduas, Eucalyputs citri-odora, Mentha pipenta, Nyctanthes arbortrisths .Phytanthes fratens, Psidium guayava* are enumerated some of the medicinal flora mentioned in this abstract were already reported in some earlier works but purposes and methods of uses are different. The people of Shrawasti district , U.P. are in involved in using these medicinal flora. Traditional benefits, concepts, knowledge and practices among them for preventing, lessening or curing diseases are accessible till now. Still they depend upon such traditional healthcare and the need for immediate documentation of such knowledge and conservation of these valuable plants are emphasized to secure it for future generation along with geographical erosion.

Degradation of Biodiversity : Meaning Causes and Effect.

Azahruddin
Assistant Profesor M.L.K. (P.G.) College, Balrampur U.P.

ABSTRACT

Biodiversity refers to the diversity and variability of life on earth. It includes different ecosystems of the earth such as plants, animals and micro organism and others such as coral reefs grasslands etc. variation in biodiversity is usually measured at three levels, such as genetic, species and ecosystem. Biodiversity is no evenly disturbed on the earth and is most abundant in tropical regions. The tropical forest ecosystem controls about 90% of the world's species and about 10% of the earth surface. She biodiversity of the sea is highest in areas with high sea surface temperatures. Such as the mid latitude band of oceans and areas of the western pacific coasts. She environment plays an important role in maintaining balance in the biodiversity or ecosystem of plants and animals. Loss of biodiversity leads to many problems such as loss of food security, discruption of food chain climate change, loss of livelihood etc. due to the loss of the biodiversity it has a very bad effects on humans, they have to face problem like lack of food and increase in prices of commodities etc. Due to this, the balance of the environment system is also disturbed. This problem is indeed very serious and human society should consider how its actions are showing negative effects on biodiversity. It should includes some solution such as alternative methods in agriculture and adopting policies the consume. Loss of biodiversity can be reduced and humans can live on the earth in peace.

ISBN- 978-93-89703-08-5

Study on the Rust of Ficus Carica Infected By Cerotelium FICI from Balrampur, U.p.

Ajay Kumar and Yugesh Kumar Kasaudhan
Postgraduate Department of Botany,
M.L.K. (P.G.) College, Balrampur-271201 U.P.

ABSTRACT

Ficus carica (Fig) is one of the most ethanomedicinal and fruit crop in the state of Uttar Pradesh. It is known to be the fig is infected by various pathogen like fungi, bacteria and viruses. Among these the fungal disease, fig rust caused due to pathogen *Cerotelium fici* has been reported as major constraintin the successful cultivation of fig crop.

This disease causes considerable damage by reducing the ethno-medicinal properties, fruit quality and yield.

Keeping this in mind the authors surveyed the different parts of district Balrampur and reported that period from July to November is very crucial as maximum disease incidence and intensity was recorded during the period.

Rust symptoms were noticed on foliage, petioles and fruits. However, the leaves were found to be severely infected by disease. The round, oblong pustules was observed in all location of Balrampur district.

The sample were collected and slide were prepared according to techniques followed by fungal taxonomist. On Microscopic studies, the urediospores of *Cerotelium fici* were orange in colour single celled, double walled with echinulate ornamentations and oval shape observed. Field evaluation of systemic and non systemic fungicide indicated that azoxystrobin (0.05%) had recorded best for effective management.

Isolation and Bioefficacy of Entomopathogen Fusarium Pallidoroseum (Cooke) Sacc Against Aphis Gossypii Glover

Ritu Srivastava and Sakshi Agarwal
Mycology and Plant Pathology Laboratory, Department of botany, Lucknow University, Lucknow

ABSTRACT

An entomopathogenic fungus, *Fusarium pallidoroseum* (Cooke) Sacc,was isolated from natural population of *Helicoverpa armigera* Hubner infesting chickpea (*Cicer arietinum* L.). A big mass of hyphae was observed together with macroconidia, mesoconidia and microconidia at 1000X and 3500X magnification examined by scanning electron microscope. Infection hyphae with appresorium (measuring about 5.21 µm) were observed among the mycelial mat. The length of macroconidia was found approximately 11.26 µm. Short spindle shaped microconidia and chlamydospores with average diameter of about 2.56 µm were also observed.

The present study clearly indicated the effectiveness of *F. pallidoroseum* as a bio-control agent against okra aphid (*Aphis gossypii*) as it inflicted initial mortality of 43.33% nymphs on the 2nd day and lead to complete annihilation (93.33%) of nymph population on the 8th day of application at a concentration of $1x10^{10}$ spores mL^{-1}. Bio-efficacy results against adult okra aphid clearly demonstrated that spraying of 1 x 10^{10} spores per mL of *Fusarium pallidoroseum* (Cooke) Sacc resulted in 66.67 per cent mortality after eight days of spraying. Increased mortality was observed with an increase in spore suspension concentrations. The LC 50 and LC 90 value for *Fusarium pallidoroseum* against the nymphs of *Aphis gossypii* calculated were $3.79x10^5$ and $2.74x10^8$, respectively. The bioassay results against *Helicoverpa armigera* revealed that this bioagent was only capable to cause disease in susceptible host larvae.

Key words: *Aphis gossypii* Glover, Bio-efficacy, entomopathogen, *Fusarium pallidoroseum* (Cooke) Sacc, *Helicoverpa armigera* Hubner

Depeasantization, Distress, Debt and Suicide Among Agrarian in Uttar Pradesh: Status of Farmers Who Left Farming

Prabhakar Singh.
Research Scholar D.Phil.
Department of Anthropology University Of Allahabad, Prayagraj- 2121002.

ABSTRACT

The state of Uttar Pradesh, earlier regarded as an agriculturally developing region of India. Hehas been passing through a severe economic crisis. The capital-intensive mode of production,propagated by the green revolution in the mid-1960s, It is turning out to be non-viable for thesmall peasantry and hence, they are being involuntarily manoeuvred towards shifting away fromfarming. Based on a secondary data study in Uttar Pradesh during the year 2015-17, it wasobserved that 17.14% of the farmers had left farming since 1991. A considerable proportion ofmarginal and small farmers who have been pushed out of agriculture become wage labourers.

This paper shows that Uttar Pradesh in which household income are more diversified and socialnetworks much stronger, the distress conditions did not result in suicides. Mitigation of agrariandistress requires not only for debt relief but also implementation of long term strategies

containing policies to promote price stability, ecological sustainability of agriculture,strengthening of formal rural credit and support networks, and income and employmentgeneration programmes.

Biodiversity of Angoori Barrage in Datia District, Madhya Pradesh

Kamlesh Kumar, Vijiyata Singh and Umesh Kumar Mishra*
Department of Zoology Bipin Bihari P.G. College, Jhansi

ISBN- 978-93-89703-08-5

ABSTRACT

India is a mega diverse country in terms of its diverse form of its biogeographical location, climatic conditions, seasonal activities and rich form of floral and faunal diversity. There are innumerable forms of species which have not yet been identified and described. These species may also be play important role for environmental conservation and maintaining the ecological balance. Angoori barrage is an important unique water bodies which contains a lot of faunal and floral diversity. This barrage provides support for agriculture sector, human society and varies form of animal community. This barrage contains various varieties of invertebrates, vertebrates, phytoplanktons and zooplanktons. These animals are very essential for maintaining the eco-environmental-chain. This research investigation focus on various forms of faunal diversity which reveals detailed information of biodiversity of Angoori barrage.

Keywords: *Faunal diversity, Eco-environmental chain, Angoori barrage*.

Biodiversity in India

Dr. Shist Pal Singh
Dept. of Geography
M.L.K. P.G. College Balrampur U P

ABSTRACT

Environment and biodiversity are closely related. If environmentally friendly, biodiversity is also well maintained. In contract, maintaining biodiversity is very important. At the present time, there is a rapid loss of biodiversity due to which there is a continuous increase in ecological imbalance. And its consequences suffering in the form of disasters. Conservation of biodiversity is very important to protect the present and future generations.

India is most important in terms of geographical location in the continent of Asia. India can be divided in to three biodiversity areas-

(i) Biodiversity of the Himalayan mountain System.

(ii) Biodiversity of the peninsular region and

(iii) Medial plain biodiversity.

There are about 15,00,000 fauna species in the world in which there are 250,000 flora species. All the botanical species of the would 4,45,000 and 91212 out of animals species, the common species and insect species are found only in India. In this way 17.8 percent of the entire plant and 7.29 percent of the animal species lives here.

India is a country endowed with a variety of biodiversity. Various types of habitat are found here. Where are one side the tropical forest to alpine flora is found. On the other side from the temperate forest to coastal vegetation is found. Conservation of environment and biodiversity is essential for the benefits of variety of benefits such as sustainability of ecosystem. Fulfillment of human needs, rotation and recycling of nutrient systems.

ISBN- 978-93-89703-08-5

Free and Attached Ear Lobe Determining Gene Frequency in the People of Eastern Uttar Pradesh

Om Prakash Singh
Dept. of Zoology
Y. D. PG College, Lakhimpur Kheri (U.P.)

ABSTRACT

Several morphological and behavioural phenotypes in human are known to be determined by single gene. Such traits show monohybrid pattern of inheritance. Indian people belonging to different regions and castes have been analyzed for the distribution of such traits. The distribution and allelic frequency of ABO and MN blood group have been reported by different workers of our country. Some of the morphological traits which have been studied in Indian people are widows peak, mid phalangeal hairs, cleft chin, behavioural traits as tongue rolling, hand clasping, handedness. The present study reports the distribution and allelic frequencies of the gene determining attached and free ear lobe in the people of five district of eastern Uttar Pradesh.

Ear lobe may be free or attached. Free ear lobe is controlled by a dominant autosomal allele (A) and attached ear lobe by a recessive allele (a). Individual with free ear lobe may be homozygous (AA) or heterozygous (Aa). People having homozygous recessive condition (aa) show attached ear lobe. Presence of free ear lobe is a dominant phenotype and those with attached ear lobe have recessive phenotype. The gene determining this character is located on 21 chromosome, and therefore it is an autosomal trait. The frequency of (A) allele varies from 0.18 to 0.41 in the five districts of eastern UP. The maximum frequency of (A) allele was observed in kshatriya population and minimum frequency of this allele was observed in Muslim population. A comparison between Hindu and Muslim populations of five districts indicated that Hindu show high frequency of A allele than Muslims. The frequency of recessive allele (a) ranges from 0.59 to 0.82. The allelic frequency (a) is lowest in Kshatriya of Faizabad district whereas the frequency of (a) is highest in the Muslims of Jaunpur district.

"Sustainable Approach Toward Green Chemical Synthesis of Key Biological Ingredients"

Sumit Kumar and Shailesh Kumar*
Department of Chemistry, *School of Physical & Decision Sciences,
Babasaheb Bhimrao Ambedkar University (A Central University)
Lucknow 226025, Uttar Pradesh (INDIA).

Green chemistry is also called sustainable chemistry, which plays an important role in the synthesis of various types of highly potential biologically active molecules with very good yield of the product, time saving of the reaction, highly efficient method, cheap reactant, high atom economy of the product and reactant, very efficient, and nontoxic character of the compound are used in the reaction. The biggest achievement of green chemistry is that it does not go into compound waste and can use the catalyst again for another reaction. The

chemical reaction method including microwave irradiation, ultrasound wave, in the presence of ionic liquid, solid phase synthesis, and in presence of a green solvent such as water, ethanol, methanol, also called green method. Some biologically active molecule which is synthesized by the green method such as quinoline, benzimidazole, coumarin, quinazoline quinazolinone, pyrimidine, and another heterocyclic molecule. The derivatives of these molecules generally display useful therapeutic and pharmlogical activity such as anti-cancer, anti-bacterial, anti-inflammatory, anti-hypertensive, anti-convulsant, anti-malarial, etc. Quinoline is an aromatic hetrocycles, which consists of one benzene ring and one pyridine ring. Quinoline has a few varieties of biological activity but its derivatives have potential therapeutic activity against many diseases, and just like that benzimidazole and coumarin derivatives also synthesized by the sustainablemethods and display thevarious biological activity.

Key Words: One pot synthesis, Green method, Quinoline, Coumarin, Benzimidazole, etc.

Noise Pollution and tts Effects

Sunil Kumar Srivastava and N.K. Singh.
Post graduate Department of Botany,
M.L.K. (P.G.) Collage, Balrampur. 271201, U.P., INDIA

ABSTRACT

Noise pollution, also known as environmental noise or sound pollution, is the propagation of noise with harmful impact on the activity of human and animal life. The source of outdoor noise worldwide is mainly caused by machines, transport, and propagation systems. Poor urban planning may give rise to noise pollution, side-by-side industrial and residential buildings can result in noise pollution in the residential areas. Some of the main sources of noise in residential areas include loud music, transportation (traffic, rail, airplanes, etc), Iawn care maintenance, construction, electrical generators, explosions, and people. Noise is measured in Decibel (dB).Noise pollution associated with household electricity generators is an emerging environmental degradation in many developing nations, The average noise level of 97.60 dB obtained exceeded theWHO value of 50 dB allowed for residential areas. High noise levels can contribute to stress, hypertension and cardiovascular effects in humans and an increased incidence of coronary artery Disease. In animals, noise can increase the risk of death by altering predatorand avoidance, interfere with reproduction and navigation, and contribute to permanent hearing loss. While the elderly may have cardiac problems due to noise, according to the World Health Organization. New devices like Wireless Sensor Networks, sound level meter, sound monitors are installed in order to check noise levels.

Key Words*:* Noise. Sound, Decibel, Predator and avoidance.

ISBN- 978-93-89703-08-5

A Study on Distribution of Pollution Tolerant Macrophytes and Plankters in Water of Bharat Kund Pond During the Year 2011-2012

Dr. Vinay Kumar Singh* and Dr. Santosh Kumar Mishra**
*Department of Botnay-K.S.S.P G Collage ,Ayodhya
**Department of Botnay-Jhun Jhun Wala.P G Collage, Ayodhya

ABSTRACT

In present study, Bharat kund pond was selected which is situated in vicinity of Faizabad town enjoying both urban and rural climatic and geographical conditions famous as a religious place of Rama's dynesty. The main water source to the pond is rain water which carries with it the chemical fertililizers applied to field during agricultural operation that teaches out to pond during rains. The other source of water includes the discharge of effluents from nearby industries and waters which drains down after domestic use of nearby urbon population.

During the study, the pond water was divided in to two zones viz; up stream: Non-polluted zones; and down stream; polluted zone; and observations were made in respect of the presence of macrophytes and plankters in these zone. Occurrence of cyperus anulatus (Linn), Ipomoea aquatica (Forsk.), Marsilea quadrifolia (Linn.), Sagittaria sagitifolia (Linn.), Potamogeton Pectonatuns (Linn.), and Eicchornia crassipes (Mart.), Soleman. indicated that they are highly pollution tolerant macrophytes and they prefer polluted habitats. Presence of chlorogonium, stigeoclonium, Scendesnmus Cosmarium, Navicula, Nitzschia, Spirulina, and Oscillatoria as. common phytoplankton and Alora, Branchionus, Keratella, Polyalthra, Platyias and Arcella as zooplankton confirm the polluted nature of water of down stream zone of the pond .

Effect of Temperature on Protozoanic Disease Development

Lavi Jaiswal
Deptt. of Zoology
Mahila P.G. College, Bahraich (U.P.)

A relationship between increasing water temperature due to global warming and thermal waste. The protozoanic gill disease has been noted in fishes and fish forming industry if temperature increase above the 25^0C are considered to be an important risk taken for protozoanic disease. Thus his study is for the test for the presence of association between temperature and development of protozans which affects the production and health of fresh water fishes. Earlier and stronger infection reported by histopathological analysis while increase in temperature make no significant change in their plasma cortisol level, both glucose lactate level is increased.

Expression analysis of immune and stress related genes showed more modulation in gills then in head and kidney, revealing an organ specific response between temperature and infection. In conclusion temperature may not only affect the host response but also favour higher attachment growth capacity of parasitic protozoans.

ISBN- 978-93-89703-08-5

Effect of Bio and Inorganic Fertilizers Treatment of Mulberry Plants on Economic Traits of Bombyx Mori: A Multivoltine Mulberry Silkworm

Santosh Kumar Tripathi
Department of Zoology
Mahatma Gandhi Post Graduate College,Gorakhpur-273 001,UP

ABSTRACT

The present study reveals to the effect of bio-fertilizers and chemical fertilizers uses in cultivation of mulberry plants on economic traits of multivoltine mulberry silkworm (*Bombyx mori*). *Bombyx mori* is a monophagous insect which drives almost all required nutrients for its growth and development from mulberry leaf. Nutrition of caterpillar larva of *Bombyx mori* plays a vital role in performance of sericulture industry. It improves the healthy growth, development, feed consumption and conversion of silkworm thereby improving the commercial traits. Application of the required nutrient in the proper amount to mulberry plant cultivation is therefore, very essential for the successful growth of silkworm larvae and cocoon production. Chemical fertilizer, bio-fertilizer and its mixture increased the economic traits of silkworm like weight of silk gland, cocoon weight, cocoon shell weight, cocoon shell ratio, filament length and filament weight and filament size. While, application by bio-fertilizers resulted in better values for cocoon shell ratio, survival of larvae, larval weight, larval duration, silk gland length and filament length. Both chemical and bio fertilizes shows better values for pupal weight and survival of pupae. Thus, uses of bio-fertilizer and chemical fertilizers in mulberry cultivation by proper ways may improve the economic traits of mulberry silkworm and yields sericulture industry.

Ecological and Toxicological Effects of Inorganic Nitrogen Pollution in Aquatic Ecosystem

Dileep Kumar Yadav
Deptt. of Zool. Kisan P.G. College, Bahraich (U.P.)

ABSTRACT

Inorganic nitrogen pollution of ground and surface water can induced adverse effects in human health and economy. Because increasing the emission of No_x play vital role in nitrogen pollution in industrial area of India. HNO_3 Now playing an increasing role in the acidification of ecosystem. This acidification process has caused several adverse effects on primary and secondary producers, with significant biotic impoverishment, particularly concerning invertebrates and fishes, in many acidified lakes and river like Chittaura Lake of Bahraich Distt. U.P. the cultural eutrophication of fresh water ecosystem affects that either directly indirectly related to proliferation of primary producers.

Extensive kills of both invertebrates and fishes are probably the most dramatic manifestation of hypoxia or anoxia effects on aquatic animals the decline and dissolve O_2 concentration can also promote the formation of reduced compound such as hydrogen sulfide, resulting in higher adverse (toxic) effects on aquatic animals. The drinking water which contain nitrites and nitrates can induced methaemoglobin in humans which reduce the O_2 carrying capacity of blood ingested nitrate also have potential role in developing cancer.

High Rate Transpiration System: A Phyto- Treatment Technology for Wastewater Disposal

K. Anita
Assistant Professor, Department Of Botany,
Mahatma Gandhi P.G. College, Gorakhpur, India.

Urbanisation and industrialisation increase demand of water supply. It also led to production of large amount of waste water. Now a days, wastewater disposal is great environmental concern. High Rate Transipiratiion System (HRTS) is a natural wastewater treatment method. It is a land application system where the wastewater is applied in field with wide ridges and furrows. The trees having higher transpiration capacity, are grown on wide ridges and furrows and wastewater flows through the furrows. Transpiration of large amount of water through stomatal network is the basic principle for the function of HRTS for treatment and disposal of wastewater treatment. HRTS is a natural wastewater treatment process. It is an eco-friendly method because it involves reuse of effluents and its nutrient content for biomass production. Since, maximum amount of water is utilized in this process, the ground and surface water pollution is negligible.

Keywords: Wastewater, High Rate Transpiration System, Effluent, Wastewater Treatment.

Evaluation of Fungitoxicity of Higher Plants Against Fusarium Oxysporum *F.SP.* Cumini

Virendra Kumar
Department of Botany, DDU Gorakhpur University, Gorakhpur

ABSTRACT

Aqueous extracts of angiospermic plants were tested against *Fusarium oxysporum* f.sp. *cumini* causing wilt disease in cumin (*Cuminum cyminum*) by Poisoned Food Technique (Grover and Moore,1962). Out of 59 plant species, *Tylophora asthmatica* (L.) Wight and Arn showed 100 percent inhibition of mycelial growth of the pathogen. The MIC of the extract was 400×10^3 µl/l. The plant extract showed fungicidal nature at higher concentration but fungistatic at its MIC. The efficacy of plant extract was neither affected by increased inoc-

ulum density nor by storage. *In-vivo* trials were non-phytotoxic and also checked the wilting in cumin caused by *Fusarium oxysporum* f.sp. *cumini*.

Conservation Genetics

Shalini Saxena1 and P.K.Gangwar2
1 Lab.of Cytogenetics, Department of Botany, Bareilly college, Bareilly-243001, U.P.,
2 Department of Physics, Bareilly college, Bareilly-243001, U.P., INDIA

ABSTRACT:-

Conservation genetics is an interdisciplinary subfield of population genetics that aims to understand the dynamics of genes in population principally to avoid extinction, its basic application is to apply those genetic methods which conserves and restores the biodiversity. Genetic diversity is one of the three main fundamental levels of biodiversity-transmission genetics, molecular genetics and population genetics. Genetic diversity comes under population genetics. Genetic diversity determines the potential fitness of a population and ultimately its long term persistence, because genes encode phenotypic information, extinction risks have been associated with low genetic diversity. Low genetic diversity also reduces the opportunities for chromosomal cross over during meiosis to create new combination of alleles on chromosomes. It reduces the efficacy of selection, across successive generation to remove fitness enhancing alleles from a population. Specific techniques are used to restore the genetic diversity. Random fragment length polymorphism, Amplified fragment length polymorphism, mini satellites, micro satellites, DNA sequencing are main techniques to restore genetic diversity. These different techniques focus on different variable areas of the genome within animals and plants. Comparison of current DNA and historic DNA is also important tool because it indicates how species reacted to changes to conditions in the past. So molecular techniques are gaining importance in biodiversity conservation.

Key words: biodiversity conservation, molecular conservation.

Current Status and Diversity of Forget Me Not Family (Boraginaceae) in Upper Gangetic Plain, India.

Santosh Kumar
Duthie Herbarium , Plant Taxonomy Laboratory
Department of Botany, University of Allahabad**.**

ABSTRAC

The studies on Indian plants were first initiated by the European visitors. Even before the publication of Species Plantarum by Linnaeus (1753), Hendrik Van Rheede (1678-1703) started publication of his monumental 12 volume work 'Hortus Malabaricus'. However, actual work on Indian flora was initiated by Roxburgh (1814, 1820- 1824) and later by Hooker and Thompson (1855). The publication of Flora of British India by Sir J.D. Hooker (1872- 1897) and Duthie's Flora of the Upper Gangetic Plain and of the Adjacent Siwalik & Sub-Himalayan Tracts (1903-29) gave a stimulus to taxonomic studies in our country and since then several regional and state floras have been published. The upper Gangetic plain has been a perennial source of attraction and curiosity to human intellect throughout the ages. Diversity and richness of upper Gangetic plain in physiography, flora, fauna, herital culture and other features invited the attention of several workers from time to time. Uttar Pradesh is one of the largest area of upper Gangatic plain. Several botanist and plant explorers have contributed to the flora of various part of Upper gangetic plain but all these works do not satisfy the floristic account of entire region. Steps have been made on intensive studies of local flora on family Boraginaceae especially to gather precise information on the identity, floristic diversity, distribution, ecological association, phenology, medicinal and economic uses of plants

Key words: Upper Gangetic plain, Uttar Pradesh, Boraginaceae, Flora, Diversity

Venation Pattern of Nepal Pteridophytes

P.C.Misra & *Shraddha Tiwari
H.N.B.Govt. P. G. College, Naini, Allahabad, U. P., India.
*Bhawan's Mehta Degree College, Bharwari, Kausambi.

ABSTRACT

This paper deals venation pattern of pinnules of various plants of pteridophytes of Nepal. All the plant species are collected in different interval of season of autumn and winter. The venation pattern in pteridophytic leaves are very peculiar and of several type. Usually their leaves show open dichotomous type or may be reticulate type. The open dichotomous type of venation also varies in bifurcation. They may be simple and free at endings, bifurcate once, bifurcate twice; more than two times bifurcation etc. In this open bifurcation there are some complexities also. Reticulate venations are also very complex type and show peculiarity in their formation. They may form costae or areoles without veinlets or areoles with included veinlets . Some times included veinlets show swollen tips which may works as a hydathodes or may not. The development of open dichotomous type of venation pattern to the formation of mesh area or reticulate shows complexity in it. In this way it can be derived that simple venation or open dichotomous type is primitive type and reticulate venation is advanced type. The veinlets show more advancement in comparision to the simple reticulum. Some intermediate venation pattern shows the link between open type and reticulate type as *Woodwardia unigemmata*. The species shows formation of two areoles near the mid vein and lastly they are open dichotomous type with free endings. This shows the development open to reticulate type.

As a rule the venation pattern works for the support and translocation of water and mineral nutrients. As far as the size of the plant and leaves increases, it needs more translocation and mechanical support which increases the number of costae and veinlets. Several other parameters are also applied for the description of venation pattern.

ISBN- 978-93-89703-08-5

Brick Manufacturing Practic in Sultanpur: A Review of Energy Efficacy and Air Pollution

Dr Shishir Kumar Srivastava
Rana Pratap P G College Sultanpur (UP)

Brick is a popular construction material for thousands of years. Brick is an essential construction material for building industries. To meet the need of construction, brick fields are growing sporadically here. Eventually,brickfields are producing major environmental pollutants.This study is focused on existing technologies of brick manufacturing as well as their emission which exceeds the tolerable limit and puts a threat to the environment.Vertical shaft Brick kiln is an alternative solutions for the small investors which is energy efficient and can minimize the air pollution to achieve a sustainable environment.

Study of Biochemical Profile in Gill Tissue of Channa Punctatus Exposed to Deltamethrin

Mishra Dev Brat ,& Dube JK.
Deptt.Of Zoology
Tilak Dhari College, Jaunpur -222002

ABSTRCT

In nature there is no pests.Human levels as 'pests' any plants or animals that endanger our food supply,health or comfort.To manage these pests we have 'Pesticides'.Intented for preventing,destroying,repelling or mitigating any post.Contamination of pesticides in aquatic system may occur through different routes and is assessed by identifying three major routes that brings it to water bodies.Pesticides greatly reduce food organisms abundance in aquatic bodies and ecosystem which is necessary for fish survival.Thus it indirectly interrupts the fish food supply and change the habitat of water bodies.Pesticides induce different types of toxicity in fish, which these pesticides leads to such as changes in fish behaviour.

Key Words: Deltamethrin,DO ,LC50

ISBN- 978-93-89703-08-5

Impact of Globalisation Impact of Power in Sustainable Economic Growth- Khadi Gramodyog

Dr. Vidya Nand Pandey
Dept. of Economics
Govt. P.G. College, Paurigarhwal
H.N.B. Garhwal University, Uttarakhand

Khadi and Village Industries from a part of rural Industries and are based on socioeconomic and cultural fabric of life. These industries constitute an important segment of the decentralized sector of our economy and provide employment mostly to the weaker of the society of

which women constitute a substantial part of the work force. One of the major requirements for sustainable and inclusive economic growth is an extensive and efficient infrastructure network. It is critical for the effective functioning of the economy and industry. The key to global

competitiveness of the Indian economy lies in building a high class infrastructure. To accelerate the pace of infrastructure development and reduce the infrastructure deficit, the Government has initiated a host of projects and schemes to upgrade physical infrastructure in all crucial

sectors. Despite several challenges, the positive results of the Government & # 39;s initiative are showing in some sectors. However, required capacity addition in a time-bound manner needs focused attention in other sectors*.

CD64: A Novel Biomarker to Distinguish Fever in Sepsis Viruses' Autoimmune Diseases

Harshit Singh, Kritika Singh, Vikas Agarwal.
Department of Clinical Immunology, Sanjay Gandhi
Post Graduate Institute of Medical Sciences, Lucknow, India.

ABSTRACT

Bacterial infections are one of the major causes of morbidity and mortality in patients. Fever is one of the main symptoms for bacterial infection, yet is often confusing for the clinicians as fever can be because of multiple reasons. Differentiation between disease activity and infection in a patient receiving immunosuppressive treatment is vitally important as the treatment differs dramatically. However, in routine clinical practice, this remains a common dilemma as many patients present with different signs and symptoms of non-specific inflammation like fever, arthralgia that can be caused by both disease activity and infection.

Despite improvements in better understanding of pathophysiology and research over the years, early diagnosis of infection still remains a challenge for clinicians Some common laboratory tests used to diagnose infections, are total leukocyte number, presence of immature forms in peripheral smear, C reactive protein (CRP) and

erythrocyte sedimentation rate (ESR), do not have high specificity or sensitivity. Culture results are often viewed as confirmatory, but in practice they are often not used in immediate treatment decisions because of their relatively slow reversal times of up to 72 hours or more.

" Effect of Digenetic Trematode Parasites in Fresh Water Carnivorous Fish ह

Singh Prashant & Mishra D.B.
Department of Zoology T.D.P.G. College Jaunpur (U.P.) 222002

ABSTRACT

Fishes are rich in protein and minerals . They are nutritive and easily available food for mankind . Fishes are both marine as well as fresh water . Fish diversity correlate to their climatic condition . Anthropogenic activities create a harmful impact on the biodiversity of any region. The district Jaunpur (25.749^0 N, 82.6984^0 E) is rich in water bodies included Sai , Gomti, Pili, Basuhi, Barna rivers , Gujar tal and different ponds. Fishing is a important livelihood for the people of Jaunpur district . In our experiment we trying to know the effect of digenetic trematode infection in carnivorous fishes . Helminth parasites play a major role in fish infection in which trematodes are playing large contribution . Digenetic trematode parasites infection harm their internal body parts which cause deterioration in their growth nutritional value, immune system and economic values . The mortality rate increases, which directly affect their ecosystem. So it is important to known the different aspects of infection with the ecological parameters . Finding data will be storage for the future scientific use .

Keywords:- Digenetic trematode parasites , Ecological parameters and *Channa punctatus.*

Effect of Sugar Effluent on Seed Germination of Cicer Arietinum (Chickpea)

Vipin Kumar, D. D. Tiwari and N. K. Singh
Deptt. Of Botany, M. L. K. (P.G.) College, Balrampur

ABSTRACT

The present investigation deals with percentage seed germination of *Cicer arietinum* irrigated with sugar mill effluent at Balrampur. It was observed that increasing concentration of effluent treatment including a gradual decrease in the percentage of seed germination. At higher concentration the effluent shows more significant and inhibitory effect on *Cicer arietinum*. However, up to 30% concentration of the effluent the effect of the seed germination in almost negligible.

Key words*:* Sugar factory effluent, Cicer arietinum.

ISBN- 978-93-89703-08-5

Quantitative Studies with the Help of Spectrochemical Analysis of Physiochemical Parameter and Trace Element in Underground Drinking Water of Jalalpur Block of Jaunpur District (U.P.)

Saras Prakash, Dr. Saras Tiwari
Awadesh Pratap Singh University Rewa (M.P)

ABSTRACT

Water is essential for sustaining life and adequate safe and accessible supply of water must be available to all. The aim of proposed study is to assess the underground drinking water quality with reference to different physiochemical parameters and trace metal. Effect of onset of monsoon of underground drinking water quality will be assessed by analyzing the water samples for premonsoon period and after the onset of monsoon as well. Twenty samples were collected from the targeted area and were analyzed for electrical conductivity (EC), TDS, PH, total hardness (TH). alkalinity, salinity, sulphates, chlorides, nitrate nitrogen showed maximum value of TDS and EC. Total dissolved solids and electrical conductivity are linearly correlated and around 75% samples exceeded the maximum permissible limit of U.S.P.H., W.H.O., I.C.M.R. On the basis of these statistical water quality index (WQI) for drinking shall be calculated and water quality will also be assessed by comparing these value with recommended assumption, some useful measures for the management of underground drinking water quality shall also be suggested.

Studies on the nesting material of Sarus Crane (*Grus antigone antigone*, Linn. 1758) around Alwara lake, District Kaushambi, (Uttar Pradesh), India

Shri Prakash
Department of Zoology, KAPG College, Prayagraj 211001 (U.P.)

ABSTRACT

The nesting material of **Sarus Crane** is specific which totally made by the residing flora of marshy land and confines its distribution and conservation. The nest size, material and buoyancy are appealing toward this threatened, state bird of Uttar Pradesh.

A total number of 46 nests including 89 eggs were encountered during the survey month of July-Fore September, 2014. These nests were mainly located inside the marshy wetland surrounded by croplands and non croplands. The nests were mainly fabricated by the twigs of residing aquatics and land plants for the purpose of buoyancy. The nest were a platform of varying size (1.3 to 2.5feet), having broad base and submerged type. The water level was quite and less than its leg. The maximum percentage of the utilized plants were observed- *Oryza sativa* (Dhan), *Typha angustata* (Naraee), *Oryza rufipogon (Fasahi),* stem and roots of *Pennisetum typhoids ,* stem and roots of *Sorghum bicolar,* roots of Typha angustata whereas minimum percentage were recovered - *Echinocola colonum, Hydrilla vericillat, Eleochharis,Ipomoea aquatica* and others. The percent-

ages of utilized material were varied according to the availability of plants in their habitat. Therefore, selection of nesting sites were depends on the nesting material of landscape flora which varied in different transects of Alwara lake.

Key words: Aquatic plants, flora, marshy wetland, croplands, Alwara lake

Use of Bio-Pesticides Against *Papilio Demoleus* Infestation and Yield in Citrus (*Citrus Aurantifolia*)

Dr. Sunita Arya
Department of Zoology
Dayanand Girls P.G. College, Kanpur (U.P.) India

ABSTRACT

Citrus fruit rank first in the world with respect to production among fruits. In addition to oranges, mandarin limes, lemons, pummelos and grapefruits. Other citrus fruits such as kumquats, calamondins, citrons, Natsudaidais, Hassakus and many other hybrids are also commercially important. The contribution of the citrus industry to the word economy is enormous and is provided jobs to millions of people around the world in harvesting, handling, transportation, and marketing operations. Citrus (*Citrus aurantifolia*) is an important fruit crop of India. Among the various insect-pests, *Papilio demoleus, Phyllocnistis citrella* and *Diaphorina citri* are the regularly occurring insect-pests in citrus orchards. Experiments were carried out in Horticulture garden of C.S.A. University of Agriculture and Technology, Kanpur. *Bacillus thurangiensis* Product Dipel, Biolep and Neem product neem oil, neem nool and achook were used in different concentrations and persistence to toxicity in field and LT50 were calculated to assess their Bioefficacy. It was found that plant originated insecticides, neem oil 0.5, 0.75, 1.0 persisted upto 5, 9, 9 days, neem gold 0.05, 0.75, 1.0 upto 11, 11, 17 days and achook 0.05, 0.75, 1.0 and 7, 11, 11 days, respectively. Residual toxicity and lethal time was found in neem formulalions neem oil at 0.5 per cent, neem gold at 0.75 per cent and achook 1.0 per cent gave significant decrease in probit value per unit of dosage. Relative efficacy of neem oil was higher (1.245) as compared to neem gold (1.0%). It was concluded that Dipel, biolep and neem based insecticides can be used at flowering and fruiting stage of plants. They are treated as safer insecticides in nursery plants. Intercropping may be taken in to practice in citrus plantations.

Growth and Comparative Characterisation of Some Organic Macro and Nano Crystals for Scientific, Societal and Industrial Applications

K. Senthilkannan
[1]Edayathangudy G S Pillay Arts & Science College Nagapattinam, 611002. Tamilnadu, India.
***Corresponding Author**
Address for Correspondence: Dr.K.SenthilKannan
Director - Research, Edayathangudy G S Pillay Arts & Science College Nagapattinam, 611002.
Tamilnadu, India. +91 9042403418, mscgoldmedalist@yahoo.in

ABSTRACT

$C_{14}H_{10}O_4$ is the formula of benzoyl peroxide, it is orthorhombic system, $P2_12_12_1$ is the space group, a=8.96 Å, b=14.25 Å , c=9.42 Å are the lattice parameters, Mass spectral data portrays that its molecular mass is 242.22 units, from the UV data the cutoff wave length is 304 nm and 4.081eV is the corresponding band gap, the study of photo conductivity represents that benzoyl peroxide crystals is having negative photo conductivity. 4-(4-Acetyle-5-methyl-1H-1,2,3-triazol-1-yl) benzonitrile crystals are having enormous opto-electronic application, 4-(4-Acetyle-5- methyl-1H-1,2,3-triazol-1-yl)benzonitrile crystals are having formula $C_{12}H_{10}N_4O$, a system is monoclinic, space group is $P2_1/n$, the lattice parameters are 11.854 Å, 6.8299 Å, 14.733 Å, beta is 107.478°. The Mass spectral data portrays that its molecular mass is 226.24 units, from the UV data the cutoff wave length is 288 nm and the corresponding band gap is 4.308eV, Photo conductivity study represents that 4-(4-Acetyle-5- methyl-1H-1,2,3-triazol-1-yl)benzonitrile crystals is having negative photo conductivity. Fluorene nano gadgets utilizing non harmony Green's capacity strategy. The terminals are built along the (111) plane with Ag, Au and Pt iotas individually and they are associated with the Fluorene particle through a linker molecule.

Keywords: Organic, NLO, Macro, Nano and Device fabrication….

Environmental Correlation and Path Coefficient Studies on Growth and Flower Quality Traits in Rose Genotypes

Dr. Ranjit Singh
Asstt. Professor and Head, Department of Botany
D.S.N. (P.G.) College, Unnao (U.P.)

ABSTRACT

Rose culture has been an integrated part of ornamental gardening in the institutions and big Banglows. In modern era, export of rose flowers has gained a considerable popularities in India during the past one decade. The wide variations in the agro-climatic conditions in our country permit us to grow rose varieties for export purpose. The importance of understanding correlations among the traits to be improved is for those characters which are difficult to identify in the segregating populations. Studies on environmental correlation and path coefficient analysis were undertaken on 25 rose genotypes for 14 characters. Present investigations were carried out during 2014-2015 and 2015-2016. From the environmental correlation studies among all the characters, it was observed that plant height had positive association with length of shoot, length of leaf, diameter of flower shoot, length of flowering bud, width of flower, number of flowers per plant, weight of flower, number of petals per flower, length and diameter of petal during 2014-15. In the next year width and weight of flower, number of petals per flower also revealed positive correlation. In path coefficient analysis results were found considerably important where height of plant, diameter of flower shoot and flowering bud and width of flower had positive and direct effect in rose genotypes during both the years of present investigations.

Key words : *Rose, Genotypes, Environment, Correlation, Coefficient.*

ISBN- 978-93-89703-08-5

Sustainable Conservation and Management of Indian Sarus crane (*Grus antigone antigone*) in and around Alwara Lake of District Kaushambi (U.P.), India

K. Verma
Department of Zoology,
Government P.G. College, Saidabad Prayagraj 221508 (U.P.)

ABSTRACT

The Indian Sarus crane, *Grus antigone antigone* is the only resident breeding crane of Indian subcontinent that has been declared as 'State Bird' by the Government of Uttar Pradesh. This is one of the most graceful, monogamous, non-migratory and tallest flying bird of the world that pair for lifelong and famous for marital fidelity. Population of this graceful bird now come in vulnerable situation due to the shrinking of wetlands at an alarming speed in the country. Present survey is aimed to study the population of sarus crane in the year 2017 in and around the Alwara Lake of district Kaushambi (Uttar Pradesh) India and their comparison to sarus crane population recorded from 2012 to 2016 in the same study area. This comparison reflects an increasing population trend of the said bird in the area studied. It has been observed that the prevailing ecological conditions of the lake, crane friendly behaviour of the local residents and awareness efforts of the authors have positive correlation in the sustainable conservation and increasing population trends of this vulnerable bird.

Keywords: Alwara Lake; Conservation; Population census; Sarus crane; increasing trend; Wetland.

Biology of Complexes of Ruthenium(II) Mixedhalides

Sadguru Prakash* and Alok Shukla**
Department of Zoology* and Department of Physics**
Maharani Lal Kunwari P.G. College, Balrampur (U.P.), India

ABSTRACT

The ability of Ru to exist in many oxidation states is an important property of this element, which plays an important role in its applications. Ruthenium readily form coordinate complexes and these complexes have their applications in diverse fields, as shown in scheme .

Day-to-day expanding in the chemistry of ruthenium and its complexes is due to their applications directly or indirectly in determination of calcitonin level in blood, in Eleecysfolate RBC assay to estimate folate deficiency in RBC, as immunosuppressant, as antimicrobial agents, as antibiotic agents, as inhibitors to inhibit over production of nitric oxide in biological cell, as metallopharmaceuticals in treatment of various diseases including cancer, AIDS, radio sensltizers complexes with ruthenium are used in radiation therapy, as anti-me-

tastasis drugs. Dragutan et al. in editorial special issue review wrote "Valorization of Ru complexes in photochemistry and agrochemicals will undoubtedly be forthcoming[३]. A survey of literature shows that designing of new ligands that can complexed with ruthenium in various oxidation states can lead to develop new materials. Now, center of gravity of approach of biology together with chemistry and physics has shifted from, how to make a drug to what drug to make, in other words drug design. The emergence of computational chemistry together with physics and various software shave given a quantitative nature to the relationship between drug and its property and thus its various applications. The aim of present study is "to study the electronic structure of ruthenium(II) mixedhalides[३], which more precisely can explain or help to explain the various properties of the molecule and thus help in the development of new ruthenium(II) complexes and or tuning the property of pre-existing ruthenium(II) complexes as shown in scheme .

Biodiversity and Development: Challenges of 21St Century Climatic Change Impacts Soil water bio resouras and biodiversity

Manoj Kumar
(Research Scholar)
Gerography. Department
Vikram University Ujjain (M.P.)

ABSTRACT

Humans have abandoned the practice of natural pleasure and have given preference to consumerist culture, due to which, gases like carbon dioxide, methane, chlorofluorocarbons, nitrous oxides etc. produce a greenhouse effect, these gases will cover a dense covering around the earth. Through which solar radiation comes to the Earth, but these gases do not allow them to go back into space. This results in an increase in global temperature. Its effect can also be global or may be visible in a particular region.

Due to this temperature rise, the specter of climate change is not only hovering over India, but many countries of the world are struggling with this problem. Due to which soil, along with water, the foundation of life on earth has changed in the natural form of biodiversity, as the fertility of soil is favorable, then there should be an increase in production, it does not have the opposite effect on crop production, which is related to soil water. Human has inherited precious wealth, he is not untouchable due to the effect of water changes, due to which the water level has come down. Which has affected human life, soil productivity and biodiversity.

In the future, the biggest impact of climate change is going to be on the biology, the seaside tidal forests and the marshes found in the marshes will be eliminated, which will eradicate various organisms, which will increase the intensity of sea storms, which can be increased by the marine organisms. Simultaneously the human community will be affected. The present need is that we should be aware of our environment and use natural resources to see the future, by controlling the indiscriminate culture and blind use of resources, due to various reasons for which climate is changing. Considering that, not only India, the entire world community should make global efforts to deal with it, only then can the future generation be created from the crisis of soil, water and biodiversity.

Word Seeds - consumerist, greenhouse, global temperature, blackout, control etc.

ISBN- 978-93-89703-08-5

Genetic Diversity management with reference to fresh water Fishes

Dr. Dharmendra Singh
Department of Zoology
Shivpati P G College Shohratgarh

With the biotechnological and genomic revolutions, sovereign rights of the native inhabitants on the IPRs related to aquatic genetic resources and associated traditional knowledge form the integral components of the strategies of management of genetic resources. Fisheries plays a promising role in social development by providing nutritional security for the burgeoning world population and contributes to economic upliftment of farmers and fisher folks, especially in developing countries. Identification of different stocks of fishes belonging to a single species in emerging as an interesting problem in the field of fishery management. The knowledge of the relative growth of the discriminated stocks is considered to be helpful in judicial management of commercially important fishes in aquaculture leading to higher yield. While we have some knowledge of intraspecific variability at the ecosystem and species levels our knowledge of intraspecific variability of genetic diversity is poor. Although more than 28 thousand fish species have been so far recorded from all over the world and, out of these, 25 hundred fish species are known to occur in different aquatic habitats of India. NBFGR, Lucknow enlisted 79 threatened fish species of India under different categories. The greatest challenge is to conserve the genetic variability and secure the IPRs related to aquatic germplasm. Conservation on natural resources inhabiting aquatic ecosystem is important from the fact that majority of the genetic resources for food still come from the wild due to low domestication level in fisheries.

Study of Biochemical Profile in Gill Tissue of Channa Punctatus Exposed to Deltamethrin

Mishra DevBrat , & Dube JK.
Deptt.Of Zoology
Tilak dhari College Jaunpur 222002

ABSTRCT

In nature there is no pests. Human levels as ‘pests’ any plants or animals that endanger our food supply, health or comfort. To manage these pests we have ‘Pesticides’. Intented for preventing, destroying, repelling or mitigating any post. Contamination of pesticides in aquatic system may occur through different routes and is assessed by identifying three major routes that brings it to water bodies. Pesticides greatly reduce food organisms abundance in aquatic bodies and ecosystem which is necessary for fish survival. Thus it indirectly interrupts the fish food supply and change the habitat of water bodies. Pesticides induce different types of toxicity in fish, which these pesticides leads to such as changes in fish behaviour.

Key Words: *Deltamethrin, DO ,LC50*

ISBN- 978-93-89703-08-5

Impact of Brick Kilns' Emission on Soil Quality of Agriculture Fields in the Vicinity of Selected Sultanpur Area of (U.P)

Preeti Prakash & Dr.R.K. Khare
Shrimant Madhavrao Scindia Govt. Model science college, Gwalior(M.P)

ABSTRACT

The study was conducted to evaluate soil quality and impact of brick kiln on different physicochemical characteristics of soil , soil fertility, and heavy metal contamination of soil. During the entire study period , water absorptivity of soil ranged from 3.42 to 4.3mg/L, p^H varies from 4.98 to 7.44 ,and organic carbon content and organic matter varied from .366 to .99%, from .443% to 1.763% , respectively. Nutrients content , that is sulphate and nitrate concentration, in the soil ranged from 0.929to 4.647 mol/L and from 0.977 to 28.88 mol/L, respectively. The findings revealed that concentrations of heavy metals(chromium and lead) were within permissible limit, although the labels were high in soil at 50m. and decrease further from brick kiln. However the physical parameters and nutrients content were deficient in soil at 55m. while increasing gradually at distance of 105m and 155m. The variation of result obtained for physical parameters supports the fact that quality of soil in terms of heavy metal content and nutrient content was directly proportional to the distance from the kiln , that is the quality of soil increased with increasing distance.

Zooplankton Studiesin Relation to Water Parameters of Tedhinadi At Godwa Ghat of District Gonda U.p(India).

Jata Shankar Pandey and R.B.Tripathi
PG Department of Zoology
M.L.K P.G College Balrampur

ABSTRACT

The physico-chemical factors and nutrients status of water play production planktonic Biomass full stop Tripathi R.B (2006). but the little information is available on the seasonal variation of zooplankton and their relation with the physico chemical parameters of the water in the Tedhi Nadi district Gonda (U.P) India.Some worked on sessional variation of zooplankton and their relationship with physico-chemical parameters Seetadwar lake of Shravasti district (U.P). India.Tripathi R.B (2006).The aim of the present study to deal with the impact of various Physico-Chemical factors on the seasonal abundance of Zooplankton population in Tedhi Nadi at Godwa Ghat of district (U.P),India.

ISBN- 978-93-89703-08-5

Study of Diversity and Composition of Beetles (Order-Coleoptera) Of District Balrampur (U.P.) , India

R.B.Tripathi ‘ and N. K. Singh “
‘ Department of Zoology , M.L. K. (P.G.) College Balrampur (U.P.) , India
“Principal & Head Department of Botany ,M.L.K. (P.G.) College Balrampur (U.P.) ,India

ABSTRACT

A survey of beetle faunal diversity and composition was studies in Balrampur municipal corporation ,Balrampur ,Uttar Pradesh from June 2018 to May 2019 . Beetles were collected using standard trapping methods from three different sites selected on the basis of their specific habitat differences , identified up to the level of family and counted monthly . A total 5 families were reported from the study site that is site B showed the highest diversity . It is also noted that the highest diversity was found during monsoon in all the three sites .

Key words : *Beetles ,diversity and Balrampur .*

Study of Zooplankton Diversity in Seetadwar Lake of District Shravasti (U.P.) , India

R.B.Tripathi ‘and Indu Singh
‘ Department of Zoology ,M.L.K.P.G. College Balrampur (U.P.) , India
“ Department of Zoology ,K.N.I.P.S.S. Sultanpur (U.P.) , India

ABSTRACT

Seetadwar lake is the historical lake situated in Shravasti district . Zooplankton is the important component of aquatic flora serve as a major component of aquatic food chain . Also it maintain proper equilibrium between biotic and abiotic components of the aquatic ecosystem . The present investigation deals with study of diversity of zooplankton of Seetadwar lake . The work was carried out for the period of one year that is October 2018 to September 2019 . The zooplankton of Seetadwar lake water is represented by four different groups like protozoan , rotifers , crustacean and meroplanktonic organisms with 14 different species were identified and recorded in Seetadwar lake . Meroplanktonic organisms dominant among zooplankton and this indicates the polluted nature of the lake water .

Key words *: Zooplankton ,Seetadwar lake and diversity .*

ISBN- 978-93-89703-08-5

Diversity of Aquatic Insects in Baghel Talab of Bahraich District During Pre- Monsoon Season

Anjani kumar shukla ‘ and R.B. Tripathi “
‘ Department of zoology , Kisan P.G. College Bahraich (U.P.) , India
“ Department of Zoology , M.L.K.P.G. College Balrampur (U.P.) ,India

ABSTRACT

The present investigation conducted on Baghel Talab of Bahraich district with regard to its insect fauna revealed a total of 25 species during pre-monsoon season of 2019 . These 25 species of aquatic insects belong to 6 order and 20 families . Maximum of 18 species of aquatic insects were recorded from the vegetation rich site and minimum of 10 species were recorded from the disturbed site of the Baghel Talab . The insect fauna from the order hemiptera dominated over diptera .

Key words *: Aquatic insects , Baghel Talab , Pre-monsoon & diversity .*

Butterfly Species Abundance in Agricultural Fields of Balrampur District Uttar Pradesh with Special Emphasis on the Conservation Complementary Plantations

R.B. Tripathi ‘ and D.D. Tewari “
‘ Department of Zoology , M.L.K. P.G. College Balrampur (U.P.) , India
“ Department of Botany , M.L. K. P.G. College Balrampur (U.P.) , India

ABSTRACT

Interdependent relationship of butterflies and plants is inevitable for their own successful co- existence . Agricultural fields of Balrampur , adjoining trees and shrubs serve as host complementary plants for butterflies . The objective of this study to observe the abundance of butterfly species in the agricultural fields along with important implications for complementary plantations like shrubs Lantana camara and Calotropis procera which serve as pollinating grounds and host plants for butterflies . Moreover , family wise distribution of butterfly was also documented to support the species abundance . The study was carried out for a period of one year that is June 2018 to May 2019 . Results suggest that agricultural fields sustain butterfly species that is Charaxes solon which was found feeding on rotten Musa paradisiaca in banana fields and outlined fenced complementary plantation harbours Graphium agamemnon on Ficus benghalensis and Mangifera indica. The bed of Alternanthera pungens serve as basking cot for butterflies like Danaus chrysippus ,Junonia lemonias . This study is a special attempt to accelerate the conservation campaign in cultivating more of such complementary plants for holding up life of butterflies .

Key words : *Agricultural fields , butterflies , complementary plantation , Balrampur .*

ISBN- 978-93-89703-08-5

Protection of Biodiversity in Indian context

Seema Srivastava
Department of Education , M.L.K.P.G. College, Balrampur.

Biodiversity is the "variety of life on earthश or variability among the living organisms of the ecosystem. Biodiversity is being lost most rapidly now, than the past. Plant and animals are now becoming extinct at an alarming rate almost entirely as a direct result of human activities.The Global Biodiversity Assessment warns, unless actions are taken to protect biodiversity, we will lose forever to opportunity of reaping its full potential benefit to human kind. India represents biodiversity of mountain, desert, marine, island, coral reef, forest and wetland ecosystem. To protect the Indian biodiversity various laws came to know like more known Biological Diversity Act,2002 that comes after the Convention on Biological Diversity signed by the members of United Nations Conference on Environment and Development, 1982. The biological diversity act mainly deals with access to genetic resources by foreign companies, individuals or organizations and maintained by National Biodiversity Authority (NBA). This act covers all aspects regarding the conservation of biodiversity including conserve and sustainable use of biodiversity etc. If do all things according to law, India can prove itself as a role model to other countries in field of protection of biodiversity. Today it is a need and responsibility to all people to give their small contribution in conservation of traditional heritage of Indian biodiversity.

Toxicity of Heavy Metals to the Fish (*Labeo Rohita)* in Gomati River Sultanpur (U.P.)

Ravindra Pratap Singh
,Department of Zoology
R.P.P.G.College Sultanpur

ABSTRACT

Heavy metals such as Iron, Zinc, Lead are wide-ranging naturally occurring metals. These are very important group of environmental pollutants and are potent metabolic inihibitor. Metals receives little research attention for their toxicity to fresh water fish *Labeo rohita.* This study includes the determination of 96-h LC50 and lethal toxicity of metal to fish. This test were performed at constant temperature , neutral pH and hardness(100mg/L).Four fish age group,20-,40-,60-,and 90-days were tested for their sensitivity to metal toxicity. In this experiment the physico-chemical parameters as water tempreture, pH,dissolved oxygen, carbon dioxide,sodium,potassium and ammonia were also studied. This fish also showed maximum sensitivity against lead followed by zinc and iron. The response of this fishes were statistically significant. The 90-days fish showes higher tolerance against the metal than that of 60-,40-,and 20-days.The excretion of ammonia increases significantly with increasing metal concentration. The high concentration of metallic ions induced stress in the fish that regulated insignificantly more carbon dioxide liberation in water through respiration.

ISBN- 978-93-89703-08-5

Biodiversity & Development: Challenges of 21St Century

Dr. Ajai Kumar
HOD Geography Department
A.N.D. Kisan P.G. College Babhnan-Gonda

Our earth mother is the most precious gift of the universe. It is the sustenance that is key to development of the future of mankind. It is our duty & responsibility to protect & conserve the nature the nature the need for sustainable development is key to the future of mankind. The degradation of our environment is linked to continuing problems of pollution, loss of forest & biodiversity, solid waste disposal, issues related to economic productivity & national as well as ecological security.The increasing level of global warming, the depletion of the Ozone layer & a serious loss of biodiversity have also made everyone aware of global environmental concerns. The environment management has become part of the health can sector managing environmental hazards & preventing possible disasters has become an urgent need.

India is rich in biodiversity,which provide various resources for people. It is also the basis for biotechnological development 1.8 million living organisms have been described & named globally. The destruction of habitats, over use of energy resources & global environmental pollution have been responsible for the loss of a large number of the life forms. It is leaved that a large proportion of life on earth may get wiped out in the near future.Despite the deteriorating status of the environment, the formal study of environment has so for not received adequate attention in our academic domain.

Biodiversity means different types of plants & animals found on the surface of the earth. On the earth in the different areas different types of plants & animals live in their natural habitat. Biodiversity mostly used for biotic wealth.

Threats to biodiversity habitat loss, poaching of wild life, man wild life conflicts. Deforestation, biological invasion, pollution, climate change, over use of resources, population growth.Lack of information & knowledge for common manabsence in making to plans and policiesfor conservation of biodiversity. Think globally act locally.

Diversity of Plants Bearing Edible Underground Parts in Bahraich U.P. India

T.P.Mall
Postgraduate Department of Botany, Kisan PG College Bahraich- 271 801 (UP)

ABSTRACT

Humans depend on plants for survival.A geophyte (earth+plant) is a plant with an underground storage organ including true bulbs, corms, tubers, tuberous roots, enlarged hypocotyls, and rhizomes. Most plants with underground stems are geophytes but not all plants that are geophytes have underground stems. Geophytes are often physiologically active even when they lack leaves. They are able to survive during adverse environmen-

tal conditions by going into a state of quiesce and later resume growth from their storage organs, which contain reserves of carbohydrates and water, when the environmental conditions are favourable again.

The perusal of the list of plants bearing edible underground parts reveals that there are 36 plant species bearing edible underground parts in Bahraich which is represented by 24 genera and 19 families. Dioscoreaceae is found to be the biggest family represented by 5 plant species whereas Araceae with 4 plant species followed by Brassicaceae, Zingiberaceae and Alismataceae with 3 plant species each; Amaryllidaceae, Cannaceae, Apiaceae and Nymphaeaceae with 2 plant species each; Asparagaceae, Poaceae, Chenopodiaceae, Costaceae, Hypoxidaceae, Convolvulaceae, Liliaceae, Nelumonaceae, Solanaceae and Typhaceae with one plant species each.

Diversity of Root Vegetables in Bahraich U.P. India

T.P.Mall
Postgraduate Department of Botany,
Kisan PG College Bahraich- 271 801 (UP)

ABSTRACT

Root vegetables are underground plant parts eaten by humans as food. Although botany distinguishes true roots (such as taproots and tuberous roots) from non-roots (such as bulbs, corms, rhizomes, and tubers, although some contain both hypocotyl and taproot tissue), the term "root vegetable" is applied to all these types in agricultural and culinary usage.

Root vegetables are generally storage organs, enlarged to store energy in the form of carbohydrates. They differ in the concentration and the balance among starches, sugars, and other types of carbohydrate. Of particular economic importance are those with a high carbohydrate concentration in the form of starch; starchy root vegetables are important staple foods, particularly in tropical regions.Many root vegetables keep well in root cellars, lasting several months. This is one way of storing food for use long after harvest.

The perusal of the list of root vegetables reveals that there are about 23 plant species found in Bahraich. Five are bulb viz, Allium spp. (garlic, onion, shallot), Foeniculum vulgare, Lilium spp.; two viz., Ginger rhizome and Nelumbonucifera are modified plant stem; five are corm viz., Colocasiaesculenta, Nelumbonucifera, Nymphaea spp., Sagittariaspp., Typha spp.and rhizome viz., Ginger, Curcuma longa, Canna spp., lotus root, Zingiberofficinale;two are tuber viz., Dioscoreaspp., Solanum tuberosum; six are true root viz., Beta vulgaris (beet and mangelwurzel), Brassica spp. (rutabaga and turnip), Carrot, Radish and one is tuberous root viz., Ipomoea batatas.

ISBN- 978-93-89703-08-5

Sustainable Development and Environment

Rajesh Kumar and Seema Yadav*
Department of Zoology, D.A-V. College, Kanpur
*Department of Zoology
Manohar Lal Degree College, Kanpur

ABSTRACT

Man has been always in search of development. This development has led us to the disaster of our environment. We are over exploiting the natural resources day by day. This will definitely make our future generations deprived of the natural resources. We should develop our future in such a way that we are not only able to meet our present needs but on the other hand, our future generations are not forced to face lack of sufficient natural resources in the days to come. This means that we have to meet two simultaneous goals at present. We have to save our environment as well as our natural resources for the future generations. Presently, a number of schemes based on environment conservation and sustainable development are being executed at national as well as international level. The world leaders are working on achieving the goals of Agenda-21 at global level. Several schemes related to environment conservation and sustainable development are also being run in India including Swachh Bharat Mission, Ujjwala Scheme, Green India Clean India, Cleaning of rivers for water conservation, Monitoring of air through Air quality index etc. Recently, India has presented its first voluntary national report at High Level Political Forum held at New York in July 2017 which recognized India's efforts towards the implementation of sustainable development. Every citizen should conduct his duties exceptionally well for the conservation of environment and sustainable development. For this, various awareness programmes and schemes should be run at local, regional and national level. All countries across the globe have to work together to achieve the 17 goals as mentioned in Agenda-21 so that our present and future becomes safe.

Key words: Environment, conservation, sustainable development.

Polythene Pollution in Ranchi

Arun Kumar Singh Jha
Dept. of Botany, Jubilee P.G. College,
Bhurkunda, Ramgarh, Jharkhand

ABSTRACT

Today, plastic has become one of the most useful yet polluting inventions for the environment. Plastic or polyethylene (Commonly called Polythene) bags are posing a huge threat to our environment since the last two decades. Polythene bags have many redeeming ecological features; in fact, many of the techniques we utilize in our designs involve targeted use of plastic products. Though convenient, it is making us lazy these days as

every second person uses a polythene bag everyday. Toxic chemical release during manufacture is another significant source of the negative environmental impact of plastics. Polythene if not disposed properly may find its way into the drainage system resulting into choking of drains, creating unhygienic environment and causing water borne diseases. Recycled polythene may contain certain chemicals, which reaches to the ground and contaminates soil and water. Some of the plastic bags which contain leftover food or which get mixed up with other garbage are eaten by animals resulting in harmful effects. Because of the non-biodegradable and impervious nature of polythene, if disposed in the soil, it could arrest the recharging of ground water aquifers. If not disposed properly, polythene bags find their way into the drainage system resulting into choking of drains, creating unhygienic environment and causing water borne diseases. Polythene contains hazardous chemicals, which reach the ground and contaminate soil and sub-soil water. Because of the non-biodegradable and impervious nature of plastics, if disposed in the soil, they could arrest the recharging of ground water aquifers. A study shows that the quantity of polythene already consumed all over the world will take 500 years to decompose totally. The current study deals with the ecological hazards of Polythene and necessary steps to control the danger of polythene in Ranchi.

Key words: Polyethylene, Polythene, Plastic pollution, sewer choke, hazardous chemicals.

Sustainable Management Strategies For Soil-Borne Plant Diseases

Dr. A. K. Mishra1 and Dr. Rashmi Singh2
1Regional Education Officer, Gorakhpur
2Assistant Professor, Botany, Smt. Indira Gandhi Govt. PG College, Lalganj, Mirzapur

ABSTRACT

Soil biodiversity indicates the variety of life belowground whose interaction with plants and small animals forms a web of biological activity. It improves the entry and storage of water, resistance to soil erosion, and plant nutrition, while also controlling soil pests and disease, and facilitating recycling of organic matter in the soil. Soil biodiversity is therefore the driver of healthy soil for sustainable crop production. Intensified use of chemical fertilizers for management of plant diseases as well as increasing yield to support current population lead to a disbalance in biodiversity of microbes in soil. This has been attributed to environmental degradation, and consequently to climate change. Restoring beneficial organisms that attack, repel, or otherwise antagonize disease-causing pathogens will render a soil disease-suppressive. Plants growing in disease-suppressive soil resist diseases much better than in soils low in biological diversity.Disease suppressive soil can be prepared by using sustainable management. Management strategies encompassing crop rotation, incorporation of crop residues and manure, alter the soil quality and the capacity of soil to perform its functions. Addition of biocontrol agents like Trichoderma species and Pseudomonas species provide a long term protection against soil borne plant pathogens.There is increasing evidence that microbial volatiles play an important role in natural suppression of soil-borne diseases. Production of antifungal volatiles has been shown for a broad range of bacterial phyla: it has been estimated that 30-60% of the soil bacterial species can produce fungistatic volatiles. Volatile compounds produced by soil micro-organisms have an important contribution to the restriction of growth and germination of pathogenic fungi (fungistasis) that occurs in most soils.

Keywords: *Sustainable management, Volatile compounds, Trichoderma, Pseudomonas*

ISBN- 978-93-89703-08-5

Weed Plants of Rabi Crops of Balrampurand Their Ethnomedicinal Uses

Ankit Srivastava, Ravindra Kumar Pandey and J S Chauhan,
Seed Certification Officer
Haryana State Seed Certificatrion ,Hisar Haryana
Department Of Botany
M.L.K.P.G.College,Balrampur (U.P.) 271201

ABSTRACT

The Rabi crops include Wheat, Barley, green gram, black gram, mustard, potato, pea, masoor and other vegetables such as radish, coriander, cauliflower etc. Farmers, local people, agricultural labourers as well as herbal healers of the said area were approached to collect the information on the uses of the crop weeds as fodder and in primary health care as raw materials for the preparation of various herbal formulations. The present study provides an account of weed of rabi crops of Balrampur district in Eastern Uttar Pradesh. In present investigation 98 plants species belonging to 28 families were collected, identified and reported and their possible uses by common people is documented.

Key words- *Weeds, Rabi crops, ethnomedicine.*

Use of Plant Bio-Regulators vegetative propagation in Dragon Fruit (Hylocerusundatus)

Lavkush Pandey,Dr. Ravi Shankar Verma
Department of Horticulture
School of Agricultural Sciences & Technology
Babasaheb Bhimrao Ambedkar University
Vidya Vihar Raebareli Road, Lucknow -226025 (U.P.)

ABSTRACT

Dragon fruit (Hylocereus undatus) commonly known as Pitahaya belongs to family Cactaceae are perennial climbing cactus native to Central and South America. Pitahaya is considered as a promising crop to be commercially grown in dry regions. The species have high water use efficiency as they have the mechanism to secure water requirement from the developing aerial roots from the sides of the stem to collect water from surroundings. Dragon fruit is an excellent source of Vitamin-C, minerals particularly calcium, phosphorous and is a good source of natural pigments known as Bitalins. It is usually propagated by seeds and stem cuttings. Seed propagated plants are not true to type and fruit bearing occurs in three and half to four years but the stem propagated plants bears fruit in one and half to two years. Therefore, large number of plantlets with healthy root and shoot system can be produced to meet the demand of increasing commercial cultivation through stem cuttings.

The use of plant growth regulators in dragon fruit propagation through stem cuttings is very scanty. In India, it is newly extending in all the dry areas. Therefore, it is important to select the appropriate concentration of growth regulators for rapid and commercially production of plantlets. Hence, the influence of Indole -3- byturic acid (IBA) and Naphthalene acetic acid (NAA) as single and in combination on stem cuttings in Dragon fruit.

Invasive Alien Species of Bahraich District of Uttar Pradesh (India)

S.c. Tripathi & D.k. Gupta
Postgraduate Department of Botany, Kisan P.G. College, Bahraich, (U.P) India

ABSTRACT

Biological invasion by non-native species (exotic) constitute one of the major threats to natural environment and biodiversity including forestry, livestock and ago-ecosystem. IAPS are dominating day by day and threatening not only to the biodiversity and ecosystem service but also to the economic development and human welfare .IAPS loss the yield of agricultural crops, forests, declines water availability and also contributes to the spread of diseases. The term 'Invasive Species' denotes plants and animals that:

a) Have been introduced into ecosystems where they are not native.

b) Have established self-reproducing populations.

c) Have caused significant changes in pre-existing natural or artificial ecosystems (Richardson, 1998).

Bahraich is one of the Terai (low land) Dstrict of Uttar Pradesh which has great Historical & Archaeological importance. It is bounded by district Shravasti on the east, district Barabanki&Sitapur on the west, district Gonda on the south and district LakhimpurKheri on the North. Geographical area of the district Bahraich is 5020.6 km2 and it is located at 27004' to 28024' N latitude and between 81003' to 82024' E longitude. The study area has tropical moist deciduous type of climate and major vegetation types .

Invasive Alien Plant species (IAPS) are threatening the native biodiversity and ecosystem day by day after successful invasion and colonization in field due to anthropogenic activities, absence of natural enemies and their allelopathic competitive strategies. The paper deals with the study of 43 alien plant species belonging to 23 families are being reported in District Bahraich of U.P. during the aforesaid study.

KEY WORDS: IAPS, Biodiversity, Ecosystem, Invasion, Anthropogenic.

Utilization of Different Mulching Types in Strawberry (Fragariaxananasa)

Kuldeep Kumar Shukla,Dr. Ravi Shankar Verma
Department of Horticulture
School of Agricultural Sciences & Technology
BabasahebBhimraoAmbedkar University
VidyaViharRaebareli Road, Lucknow -226025 (U.P.)

ABSTRACT

Mulching is the application of any covering at the surface of the ground constituting a physical barrier to the energy transference and water vapour between the soil and atmosphere. This technique is used to reduce the infestation of weeds, to reduce the losses of water and to modify the microclimate. Climate – Pelotas, with the objective to evaluate the effect of different mulching types on strawberry production. Polypropylene (called TNT or non woven) was evaluated in colors white and black and polyethylene film of low density with thickness of 30 micras was used as a control. The black polyethylene film, used as the control, gave the highest strawberry production followed by the black polypropylene

Ucalyptus Leaves Extract In Treatment of Options Ulcers

C.B. Singh*, Rekha Singh and D.D. Tiwari*****
*Dept of Botany S.R.T.S.M. (P.G.) College,Itiathok, Gonda
**Dept. of Pharmacology (C.D.M.S.) Lucknow
***Dept. of Botany, M.L.K. (P.G.) College, Balrampur

ABSTRACT

The ancient Egyptians were familiar in treatment of various diseases of many medicinal herbs, Eucalyptus leave extract is used to control several oral diseases arises from microbiol origin and autoimmune disorders, because eucalyptus leaves contain various alkaloids in which 118-cincole none proven effect on healing of options ulcers in various patients.

Key words :-Herbal medicine, eucalyptus leaves, diseases.

Management of Meteorological Factors, on The Production of Silk, By Multivoltine Mulberry Silkworm, Bombyx Mori (Linn.)

Sanjai Kumar Gupta
Department of Zoology, Government Model Degree College,
Barakhal, Santkabirnagar-272271 (UP), India

ABSTRACT

Sericultureis the science that deals with the production of silk by rearing of silkworm. Silk is called the queen of textiles due to its glittering luster, softness, elegances, durability and tensile properties and is discovered in China between 2600 and 2700BC. The silk is preferred over all like water absorbency, heat resistance, dyeing efficiency and luster.Meteorological factors has influenced on the biochemical constituent of insects are temperature, humidity and photoperiod of Bombyxmori at different developmental stages. The seasonal differences in meteorological component considerably affect the production of silkworm crop such as cocoon weight, shell weight and cocoon shell ratio. The variations in the meteorological conditions day to day and season to season emphasize the need of management of temperature, humidity and photoperiod for sustainable cocoon

production. Present study the role of temperature and humidity on growth and development of silkworm including recent studies on variation of temperature affect the biochemical constituents like protein. Study also discusses another meteorological effect of light on silkworm development. In addition to this study emphasis on the role of various meteorological factors, on embryonic development of silkworm eggs, nutrition feeding of mulberry leaf of silkworm larvae and reproductive potential of silkworm moth. The study also highlights about the management and care to be required during silkworm spinning and the meteorological factors on post cocoon parameters of silkworm. The silkworm is domesticated insect, which produces luxuriant silk thread in the form of cocoon by consuming mulberry leaf during larval period. The Growth and development of silkworm is greatly influenced by meteorological factors. The biological as well as cocoon related characters are influenced by ambient temperature, rearing seasons quality of mulberry leaf and biochemical content like protein of silkworm. The study included future strategies to be taken for the management of meteorological condition like 26±1°C, 75±5% RH and 12±1 hrs light a day are best condition for successful cocoon crop and other rearers or farmers.

Biodiversity of Mango

Viplaw Kumar, R.B. Ram, R.S. Verma, Som Prakash and Shani Kumar
Department of Horticulture
School of Agricultural Sciences and Technology,
Babasaheb Bhimrao Ambedkar University (ACentral University)
Vidya Vihar, Rae Bareli Road, Lucknow-226025 Uttar Pradesh, India.

ABSTRACT

Mango (Mangifera indica L) belong to family Anacardiaceae. It is the most widely cultivated fruitcrop of India and reportedly there are over 1,000 varieties found in the country. It is one of the choicest fruits of the country and has a long history of cultivation. Mango has been grown in India since long and is considered to be king of fruits. Its mention has been made in Sanskrit literature as Amra. Mango has attained the status of the national fruit of India. Genus Mangifera contains 49 species of which only 41 are valid. Mangifera indica to which the most of the present Indian cultivars belong is of great importance. Over one thousand varieties have been reported belonging to this genus. Mango is commercially cultivated in Andhra Pradesh, West Bengal, Karnataka, Kerala, Bihar, Uttar Pradesh, Uttara Khand, Punjab and Haryana, Maharashtra and Gujarat. Vavilov suggested 'Indo-Burma' region as the centre of origin of mango. Mango is native to IndiaMukherjee (1949,1985)opened that this genus might have originated in the region covering Burma, saim, indo- china and malayaan peninsula. Genetic diversity of mangoavailable in India very rich and at present more thanone thousand vegetativily propagated varieties exit in country. Clonal selection from chanceseedling and breeding efforts resulted identification of many elite and improved varieties of mango for commercial cultivation in country.

ISBN- 978-93-89703-08-5

Hkkjrh; gLrf'kYi m|kx e jkt xkj dh pukfr;k ,o lEHkkouk,a ¼ikp fVªyh;u Mkyj dh vkj½

fo|kuUn ik.Mk; ikS0 iæe ukjk;.k ;kno lYYku vyh
डिपार्टमेंट ऑफ इकोनॉमी
एण्ड
डिपॉर्टमेन्ट ऑफ इकोनॉमिस गर्वनमेन्ट पोस्टग्रेजुएट
डिग्री कालेज कोटद्वार (उत्तराखण्ड)
(हेमवती नन्दन बहुगुणा केन्द्रीय
विश्वविद्यालय पौड़ी गढ़वाल
श्रीनगर उत्तराखण्ड)
एण्ड
छत्रपति भााहू जी महाराज विश्वविद्यालय,
कानपुर

'kks/k lkjka'k %&

आर्थिक विकास और पर्यावरण में अन्योन्याक्षित रिश्ता है। दीर्घकालीन सतत विकास के लिये पर्यावरण का स्थित एवम् हरित रहना एवं वैधानिक एवं नैतिक षर्त है। भारतीय हस्त शिल्प एवं खादी ग्रामोद्योग इस कसौटी पर अनादिकाल से खरे उतरते रहे हैं। 1000 वर्श पहले अकेले भारत वैश्विक जी0डी0पी0 में कुल 32.4ः का योगदान कर सोने की चिड़ियाँ का तमगा पहनता आया है। तब भारत और चीन का संयुक्त उत्पादन वैश्विक जी0डी0पी0 का 59.1ः दो देशों का मिलकर होता था अर्थात् जो आज अमेरिका का एकाधिकार 25ः वैश्विक जी0डी0पी0 का वह भारत के सीमा रेखा से कोसों दूर है। लघु एवं कुटीर उद्योग भारी उद्योगों के बीच सेतु का काम करता है जिसमें करोड़ो लोगों को रोजगार का स्वच्छ साधन जुटाता है भारी उद्योगों की निर्भरता विकसित देश कनाडा, अमेरिका समेत विकसित देश एसिड रेन एवं पर्यावरणीय संकट के काल बनकर उभरे हैं। ओ0ई0सी0डी0 देशों में जो विकसित एवं विकासशील देशों का संगठन है जिसके आधार स्तम्भ 99ः यही लघु एवं सूक्ष्म उद्योगों के मजबूत नींव पर बहु मंजिला इमारत टिकी है और 70ः रोजगार का एकाधिकार है साथ ही साथ 50 से 60ः मूल्य संवध र्न में बहुमूल्य योगदान देता है विश्व की उभरती हुई देशों में भारत, ब्राजील, चीन, द0अफ्रीका में एम0एस0एम0ई0 का कुल रोजगार का लगभग 45ः और सफल घरेलू उत्पाद में 35ः का योगदान देता है। प्रस्तुत षोध साहित्य में भारतीय लघु एवं कुटीर उद्योगों में रोजगार की असीम संभावनाओं का गहन विश्लेशण करने की चेश्टा कर इसके सुधारों की गहन षोध परक सुझाव देने की कोशिश की गयी है।

'kCn cht – 1. अन्योन्याश्रित समबन्ध 2. खादी ग्रामोद्योग, 3. लघु एवं कुटीर उद्योग, 4. ओ0ई0सी0डी0, 5. उभ. ारती हई अर्थव्यवस्थाएं लघु एवं भारी उद्योगों का सेड,

ISBN- 978-93-89703-08-5

mÙkj çn'k e to fofo/krk

अंकिता पटेल एवं मणिका मिश्रा
गृह विज्ञान विभाग, एम0 एल0 के0 पी0जी0 कालेज, बलरामपुर

आशव

उत्तर प्रदेश का कुल भौगोलिक क्षेत्रफल 2,40,927 वर्ग किमी0, है।प्रदेश में क्षेत्रफल का पारिस्थितिकीय दृश्टि से देखने पर स्पश्ट होता है कि प्रदेश में चार प्रमुख पारितंत्रीय क्षेत्र हैं।उत्तर में महराज गंज, गोरखपुर, श्रावस्ती, बलरामपुर, बहराइच, लखीमपुर, पीलीभीत के तराईवन क्षेत्र नम जल वायु पारितंत्र के अन्तर्गत आताहै।दक्षिण में एक और बुन्देल खण्ड है तथा दूसरी ओर विंध्याचल की पहाड़ियों को क्षेत्र शुश्क जलवायु पारितंत्र के अन्तर्गत आताहै। मध्य मेंगंगा–जमुना का विशाल मैदानी क्षेत्र है। पश्चिम में अर्ध मरूस्थलीपारितंत्र के वनआगरा एव इटावा में मिलतेहैं। इस प्रकार प्रदेश की भूमि तथा जलवायु में काफी विविधता है।शीत काल में यहाँ का तापमान कम से कम शून्य व ग्रीश्म काल मे अधिकतम 50 डिग्री सेल्सियस तक पहुँच जाताहै।

उत्तर प्रदेश में बहनें वाली महत्वपूर्ण नदियों मे गंगा, यमुना, चम्बल, घाघरा इत्यादि प्रमुख हैं।गंगा–यमुना के मैदानी क्षेत्र मेंमीठेपानी की झीले स्थितहैं, जोप्रवासी पक्षियों एवं कृशि फसलों की जंगली किस्मों के प्रमुख प्राकृतिकवास स्थलहैं। ऐसी भौगोलिक स्थिति एवंज लवायु की विविधता के फलस्वरूप प्रदेश में जैवविविधता अत्यन्त सम्पन्न और समृद्ध है।उत्तर प्रदेश की जैवविविधता के संरक्षण हेतु प्रदेश के 16ख966.22 वर्गकिमी. वन क्षेत्र में से लगभग 5,170 वर्ग किमी0 क्षेत्र में 1 राश्ट्रीय उद्यान, 23 वन्य जीव विहार स्थापित किए गए हैं, जोकि प्रदेश के वन क्षेत्र की लगभग 33.6 प्रतिशत तथा कुल भौगोलिक क्षेत्रफल का 24 प्रतिशतहै।

प्रदेश के तराई क्षेत्र मेंहाथी, बाघ, तेंदुआ, बारासिंघा, सांभर, भालू एवं गंगा–यमुना के मैदानी क्षेत्र में प्रवासी पक्षी, नीलगाय, भेड़िया, दक्षिणी पठारी भाग मे चौसिंघा, चिंकारा, रीछ तथा शुश्क जलवायु वाले अर्द्ध रेगि. स्तानी क्षेत्र में काला हिरण, चीतल लकड़ बग्घा आदि वन्य जीव पाए जाते हैं।वहीं गंगा, ममुना, चम्बल, गिरवा, घाघरा, गंडक आदि नदियों में मगर, घड़ियाल, ऊदबिलाव तथा डॉल्फिन देखी जा सकतीहै।

प्रदेश की जलवायु व भौगोलिक विविधता के कारण ही प्रदेश की पक्षी संख्या भी विधिता से भर पूरहै। शीतकाल मे स्थानीय तथा प्रवासी पक्षियों के मनमोहक झुण्ड प्रदेश की झालों का मुख्य आक र्शणहैं।

ISBN- 978-93-89703-08-5

t\o fofo/krk dk gkl&,d leh{kk

Mk- j[kk fo'odek

भूगोल विभाग,

एम.एल.के.पी.जी. कॉलेज, बलरामपुर उ0प्र0

जैव विविधता जीवन एवं विविधता के संयोग से बना है। जो पृथ्वी पर स्थित जीवन की विविधता एवं परिवर्तन शीलता को दर्शाता है। अनेक प्रकार के पौधों एवं जन्तुओं का अस्तित्व जो सम्मिलित रूप से स्वस्थ पर्यावरण का निर्माण करते है जैव विविधता कहलाती है।

हमारे चारों ओर की वनस्पतियाँ पेड़–पौधे एवं जीव–जन्तु आदि सभी मिलकर हमारा जैव मण्डल बनाते हैं। इन्ही सबके कारण हमारी पृथ्वी का संतुलन बना रहता है। वैश्विक तापन के परिणाम स्वरूप जलवायु परिवर्तन से जैव विविधता पर प्रतिकूल प्रभाव पड़ता है।

हमारे देश का उत्तर पूर्वी भाग जैव विविधता की दृश्टि से सर्वाधिक सम्पन्न क्षेत्र है। यह परितंत्र ,प्रजातियों एवं अनुवांशिक जैव विविधता सहित जैव विविधता के समस्त पहलुओं में विशिश्ट रूप से समृद्ध है। यहाँ विविध प्रकार के परितंत्र पाये जाते हैं। भारत में विश्व का 2.4 प्रतिशत भू–भाग ही है। परन्तु यहाँ विश्व की 7.8 प्रतिशत जीवित प्रजातियाँ एवं 81000 से अधिक जीव–जन्तु की प्रजातियाँ पायी जाती है। हमारे देश की कृशिक जैव विविधता भी बहुत ही समृद्ध है। विश्व का सबसे प्राचीन एवं सबसे बड़ा कृशि प्रधान देश होने के कारण देश में कृशि योग्य फसलों की विविध प्रजातियाँ एवं किस्में मौजूद हैं। पुश्पों की 06 प्रतिशत प्रजातियाँ एवं पक्षियों की 14 प्रतिशत प्रजातियाँ यहाँ पायी जाती हैं। सम्पूर्ण विश्व में पहचाने गये विभिन्न प्रकार के पौधों की 45000 भारत में पायी जाती है। देश में लगभग 90 प्रतिशत औशधियाँ पौधों से ही प्राप्त की जाती है।

मानवीय गतिविधियों के कारण प्रकृति का अस्तित्व खतरे में पड़ता जा रहा है। इन कारणों में – जलवायु परिवर्तन, प्रदूशण, अवैध शिकार, व्यवसायिक दोहन एवं वनोन्मूलन प्रमुख है। वर्शा आधारित वनों का निरन्तर ह्रास होता जा रहा है। प्रजातियों की क्षति मानव अस्तित्व के लिए गम्भीर चिंता का विशय है। यह देखा जा रहा है कि स्तनध ारियों की 79, पक्षियो की 44 सरीसृपों की 15 एवं उभयचर प्राणियों की प्रजातियाँ आज संकट में हैं।

जलवायु परिवर्तन के कारण वनों में आग लगने की घटनाओं में वृद्धि होने के परिणाम स्वरूप वनों का विनाश होता जा रहा है। ऐसे में विलुप्त होने वाली प्रजातियों का पूर्वा नुमान नही लगाया जा सकता। यदि स्थिति यही रही तो जलवायु परिवर्तन का सर्वाधिक प्रभाव उन अनारक्षित प्रजातियों पर पड़ेगा, जिनकी संख्या बहुत कम है एवं जो प्रतिबंधित क्षेत्रों में निवास करती है। जैव विविधता के ह्रास के परिणामस्वरूप पारिस्थितिक असंतुलन का खतरा और भी ज्यादा बढ़ने की आशंका है।

मानव अपने क्रिया कलापों से वैश्विक जलवायु परिवर्तन की समस्या से निपटने में काम आने वाले साधनों को नुकसान पहुँचा रहा है जबकि मानव अपनी जीविका, स्वास्थ्य, खुशहाली एवं सांस्कृतिक विकास के लिए प्रकृति पर निर्भर है। जीवन की विशाल विविधता अत्याधिक मूल्यवान ही नही बल्कि सामाजिक एवं सांस्कृतिक दृश्टि से अत्याधिक महत्वपूर्ण भी है।

अतः परिस्थितिकी एवं जैव विविधता का अध्ययन एवं संरक्षण करने की तत्काल आवश्यकता है। वर्तमान समय में यह अर्न्तराष्ट्रीय प्राथमिकता का महत्वपूर्ण मुद्दा है।

i;Dr 'kCn& जैव विविधता, परिस्थितिकी, जलवायु परिवर्तन, परितंत्र, प्रजातियाँ।

ISBN- 978-93-89703-08-5

t\o fofo/krk ,oa f'k{kk

Mkå Jh i:dk'k feJ
सह आचार्य
शिक्षक शिक्षा विभाग
एम०एल०के०पी०जी० कॉलेज बलरामपुर

ज्ञान जन्या भवेदिच्छा चेश्टा जन्या कृति र्भवेत्।

कृति जन्या भवे च्येश्टा चेश्टा जन्यं फलं भवेत्।।

अर्थात किसी कार्य में प्रवृत्ति के प्रति साक्षात् ज्ञान ही कारण है जैसा ज्ञान होता है,वैसी ही इच्छा होती है और इच्छा के अनुसार ही कृति होती है।कृति से शरीरा दिसम्बन्धी चेश्टाएँ होती है औरत द्नुसार फल होता है। अतःकिसी भी उद्देश्य की प्राप्ति के लिए उस विशय की जान कारी होना आवश्यक है। उत्तम फल के लिए उत्तम साधन का होना आवश्यक है क्यों कि बबूल वृक्ष से आम्र फल की प्राप्ति नही हो सकती। ठीक इसी प्रकार जैव विविधता की अच्छी शिक्षा के बिना जैवविविधता का संरक्षण नही हो सकता। वर्तमान मानव जीवन के रहन–सहन में जैव विविधता, जैवविविधता क्षरण, जैव विविधता का महत्त्व तथा जैव विविधता सरंक्षण आदि का सच्चा ज्ञान प्राप्त करना परमावश्यक है।यह सब शिक्षा के बिना सम्भव नही है। व्यक्ति या समाज के अन्दर विद्यमान स्वाभाविक मौलिक सत्ताका प्रस्फुति करण शिक्षा का लक्ष्य है। विविध जैविक घटक भी मानव के स्वभाव के अनुकूल होते हैं।ये जैविक घटक मानव के अस्तित्व के लिए आवश्यक होते हैं।अतः उन से स्वाभाविक सम्बन्धब नाने का लक्ष्य शिक्षा का होना चाहिए।मानव इस सृश्टि का एक अंश है।इसी में उसका जड. है।उसी में मनुश्य काविे का सएवं अन्त भी है। इसलिए मानव को अपना विकास करने के लिए प्रकृति की अर्थात दूसरे शब्दों में जैवविविधता की तारतम्यता बनाये रखने की आवश्यकता है।उसी तारतम्यता के लिए शिक्षा के प्रत्येक अंगों यथा–विद्यार्थी, शिक्षक, पाठ्यक्रम, प्रशासन आदि को समग्र प्रयास करना होगा।

ISBN- 978-93-89703-08-5

Òkjr o"k e: t\o fofo/krk

डॉ0 अनामिका सिंह

स्माजशास्त्र विभाग, एम0 एल0 के0 पी0जी0 कालेज, बलरामपुर

आशव

भारत में जैवविविधता का अमूल्य भण्डार मौजूद है। यह विश्व के 10 सर्वाधिक धनी विविधता वाले देशों में से एक है।भारत का क्षेत्रफल, विश्व के कुल क्षेत्रफल के मुकाबले केवल प्रतिशत है तथा यहाँ पर विश्व की कुल जैव विविधता का 7–8 प्रतिशत हिस्सा मौजूद है। ऐसा अनुमानित है कि हमारे देश में पौधों की 45,500 जंगली प्रजातियां और जंतुओं की 91,212 जंगली प्रजातियाँ मौजूदहैं।

भारत में रिकार्ड की गई पौधों और जंतुों की कुल प्रजातियाँ, विश्व की ज्ञात वन्य जीवों की कुल प्रजातियों में से 6.5 प्रतिशत भाग को दर्शाती है। विश्व की ज्ञात कुल जन्तु प्रजातियों में से लगभग 7.43 प्रतिशत हिस्सा केवल भारत में ही निवास करतीहै।

भारत में पर्वतीय क्षेत्रों के साथ–साथ समुद्री क्षेत्र एवं मैदानी भाग व भारी वर्शा वाले क्षेत्रों के साथ–साथ शुश्क मरुस्थलीय क्षेत्र जैसे वृहद पर्यावास एवं विविध जलवायु परिस्थितियां है ंजिसके कारण प्रचुर विविधता मौजूद है। प्रजातियों की प्रचुरता के संदर्भ में भारत विश्व में स्तनधारी वर्ग में सातवें, पक्षियों में नौवें तथा सरी सृपो ंमें पांचवें स्थान पर है।

भारतीय उपमहाद्वीप, फसली एवं पादप विविधता की उत्पत्ति के कारण हिंदुस्तान केन्द्र के रूप में जाना जाता है। यहाँ पर करीब 166 फसल प्रजातियों और लगभग 320 जंगली प्रजातियों की उत्पत्ति हुई है। भारत को कृशि संबंधी पौधों की उत्पत्ति के लिए विश्व के आठ केन्द्रों में से एक केन्द्र के रूप में प्रसिद्धि प्राप्त है।भा. रत में चावल की 50,000, ज्वार की 5,000, आम की 1000 से भी अधिक किस्में पायी जाती हैं। यहाँ पर अनाजऔर बाजरे की 51, फलों की 104, मसालों की 27, सब्जियों और दालों की 55, रेशेदार फसलों की 24, तिलहनफसलों की 12, और चाय, काफी, तम्बाकू तथा गन्ने के विविध जंगली प्रजातियाँ मौजूद हैं।

भारत में मवेशियों की 27, भेड़ोंकी 40 औरब करियों की 22 नस्लें मिलकर पशु धनविविधता दर्शाती हैं। उदाहरण के लिए भारत में मौजूद भैंसों की आठ प्रजातियाँ विश्व में पाये जाने वाले कुल भैसों की जीनिक विविधता की विस्तृत श्रेणी को दर्शाती हैं। इस प्रकार से भारत कृशि एवं पशु पालन क्षेत्र में विश्व में सात वें स्थान पर है।

भारत में वन्य जीवों के संरक्षण हेतु 661 संरक्षित क्षेत्र हैं जिसमें 99 राश्ट्रीय उद्यान, 515 वन्य जीव अभ्यारण्य, 43 संरक्षण हेतु आरक्षित क्षेत्र, एवं 4 सामुदायिक रिजर्व सम्मिलित हैं।

ISBN- 978-93-89703-08-5

tho fofo/krk dk {kj.k

lhek ik.Mk;

प्रवक्ता–समाजशास्त्र विभाग

एम.एल.के.(पी.जी.) कालेज बलरामपुर

जैव विविधता जीवन और विविधता के संयोग से निर्मित शब्द है जो आमतौर पर पृथ्वी पर मौजूद जीवन की विविधता और परिवर्तनशीलता को संदर्भित करता है। किसी पारिस्थितिक तंत्र या व्योम में मिलने वाले पौधों एवं जन्तुओं की प्रजातियों की विविधता को जैव विविधता के नाम से जाना जाता है।

जैव विविधता का पारिस्थितिकीय एवं आर्थिक दोनों प्रकार से महत्व है। जैविक रूप से विविधता पूर्ण प्राकृतिक पर्यावरण मानव के जीने की आवश्यकताओं की पूर्ति करता है एवं अर्थव्यवस्था के लिए आधार तैयार करता है।

जैव विविधता शब्द का प्रयोग वाल्टर जी रोसेन ने 1985 में किया था। जैव विविधता का आशय जीव–जन्तु एवं पादपों से है, जिसमें यदि किसी पादप या जन्तु की वृद्धि या कमी होती है तो पारिस्थितिक तत्व का संतुलन बिग. ड़ेगा। उदाहरणार्थ– यदि जैव विविधता में हिरण की संख्या बढ़ जाती है तो घास कम हो जायेगी तो जीव–जन्तु के जीवन पर असर पड़ेगा, इससे जैव विविधता स्थिर नहीं रहेगी।

उश्ण कटिबंधीय वर्षा वाले वन जैव विविधता की दृष्टि से समृद्धि है क्योंकि इनमें स्थलीय प्रजातियों, निरन्तर जीवित एवं प्राचीन समुदाय से सम्बन्धित जीवों में पर्यावरण अनुकूलन की प्रवृति, गर्म तापमान एवं उच्च आर्द्रता, नाशक जीवों एवं परजीवियों की संख्या की अधिकता अधिक होती है।

जैव विविधता का क्षरण एक प्राकृतिक प्रक्रिया है। प्रकृति में होने वाले अनेक प्रकार के परिवर्तनों जैसे– बाढ़, सूखा, गर्मी, तूफान, भूकम्प आदि के कारण बहुत से जीवों की प्रजातियों का क्षरण होता रहता है।

जैव विविधता के वास्तविक एवं सम्भावित मूल्य को प्राप्त करने तथा इनके साथ ही इसके संरक्षण के लिए देश में जैव प्राद्योगिकी क्षमता निर्माण का लक्ष्य प्राप्त करने के लिए तैयार की नीतियों एवं कार्यक्रम को सुदृढ़ किये जाने की आवश्यकता है।

olf’od tyok;| ifjorlu d| i|Hkko

Jherh vfrek 'kek]

एस.वी.एन. विश्वविद्यालय, सागर (म0प्र0)

वर्तमान समय में जलवायु की बिगड़ती स्थिति सम्पूर्ण विश्व के लिए गम्भीर चिन्ता का विषय है। जिसका प्रभाव केवल भारत पर ही नही बल्कि सारे विश्व पर पड़ रहा है। जलवायु में विविधतायें पवनों, तापमान, वर्षा, आर्दता एवं शुष्कता के रूप में सागरीय निकटता एवं दूरी, सागर तल से ऊँचाई, पर्वतों से दूरी एवं उच्चावच में विभिन्नता के कारण मिलती है। जलवायु परिवर्तन का सर्वाधिक प्रभाव कृषि पर, वनस्पतियों पर एवं उसपर निर्भर रहने वाले जीवधारियों पर पड़ता है। जलवायु परिवर्तन पर हुए 2005 के एक अध्ययन के अनुसार 20वीं शताब्दी के छठे दशक से अबतक विश्व के तापमान में लगभग 3ष सेन्टीग्रेड तक की वृद्धि हो चुकी है।जिसके कारण दक्षिण पूर्व एशिया में मानसून की प्रक्रिया में विषमता देखने के मिलती है। जिसका परिणाम अतिवृष्टि एवं अनावृष्टि के रूप में सबके सामने है।

फलस्वरूप कृषिगत फसलें कहीं बाढ़ से प्रभावित होती हैं तो कहीं वर्षा की अपर्याप्तता से सूख जाती है। यह प्रभ्‍ााव अलग–अलग रूप में कहीं ज्यादा तो कहीं कम महसूस किये जा रहे हैं। वर्षा की अल्पता एवं मिट्‌टी में नमी को संरक्षित रखने की क्षमता भी प्रभावित होती है।अतिवृष्टि एवं बाढ़ की अधिकता से भूमि का क्षरण अधिक होता है।वर्तमान समय में मौसम में परिवर्तन, चक्रवातीय तूफानों का कहर, कहीं सूखे का प्रभाव, तो कहीं अत्याधिक वर्षा, तो कहीं अत्याधिक बर्फबारी ने मौसम वैज्ञानिकों के सामने एक समस्या खड़ी कर दी है। फलतः सन् 2030 ई0 तक वैश्विक ताप 2 सेन्टीग्रेड प्रभाव तथा सन् 2050 ई0 तक 5 सेन्टीग्रेड एवं 2100 ई0 तक 8 सेन्टीग्रेड तक ताप में वृद्धि होगी।

i|;Dr 'kCn%& जलवायु परिवर्तन, अतिवृष्टि, वैश्विक, अनावृष्टि।

t|o fofo/krk ij tyok;| ifjor|u dk çÒko

डॉ. राजकुमार गुप्ता, डॉ शिवेन्द्र सिंह, डॉ.पी.एल.त्रिपाठी

भूगोल विभाग–किसान पी.जी. कालेज, बहराइच

जलवायु परिवर्तन पिछले कुछ दशकों से एक गम्भीर समस्या बनी हुई है। जलवायु परिवर्तन के परिणाम स्वरूप भूमि और समुद्र के तापमान और स्तर मे बृद्धि हुइ है तथा वर्षा चक्र में भी बदलाव देखने को मिला है जो प्रजातियों पर कई आकस्मिक प्रभाव डालती है। जलवायु परिवर्तन के परिणामस्परूप प्रजातियों को या तो पर्यावरण में बदलावों के अनुकूल होना पड़ता है या अन्य स्थानों पर चले जाना पड़ता है। जलवायु परिवर्तन का सर्वाधिक प्रभाव समुद्र के तटीय क्षेत्रों में पायी जाने वाली दलदली क्षेत्रों की वनस्पतियों पर पड़ेगा जो तट को स्थिरता प्रदान करने के साथ–साथ समुद्री जीवों के प्रजनन का आदर्श स्थल भी होता है। जलवायु परिवर्तन के कारण उष्ण कटिबंधीय वनों में आग लगने की घटनाओं में वृद्धि होगी परिणाम स्वरूप वनों के विनाश के कारण जैव विविधता का ह्रास होगा। जलवायु परिवर्तन केवल जैव विविधता पर असर डालता है अपितु जैव विधिता के क्षरण का कारण भी बनता है। इस परिवर्तन की गति को धीमा करने के लिए दुनिया भर में लागू प्रकृति संरक्षण सम्बंधी नीतियों के

माध्यम से कार्बन शोषण के स्रोतों जैसे जंगलों और दलदलों को बचाये जानें की आवश्यकता है। जलवायु परिवर्तन के साथ–साथ जैव विविधता को भी समान रूप से महत्वपूर्ण मुद्दा माना जाना चाहिए। जैव विविधता में गिरावट न केवल एक पर्यावरणीय मुद्दा है बल्कि यह आर्थिक सुरक्षात्मक तथा नैतिक मुद्दा भी है। सबसे बड़ी चुनौती तथा अवसर का सम्बंध विकास के प्रति दृष्टिकोण में बदलाव से है। लोगों को प्रकृति की रक्षा के लिए स्वच्छ प्रौद्योगिकियों में बदलाव करना होगा। अतः प्रकृति को बचाने के लिए कए वैश्विक डील के लिए सभी देशों को एकमंच पर आने की जरूरत है।

tho fofo/krk ij tyok;q ifjorZu dk çÒko

विभा पाण्डेय
भूगोल विभाग
के0 एस0 साकेत पी0जी0 कालेज, अयोध्या

धरती पर विद्यमान जीव जातियों की विविधता एवं उनका अस्तित्व ही जीव जगत जिसमें प्रमुखता से मनुष्य भी शामिल है के सतत अस्तित्व और विकास का कारण है। वर्ष में 2019 संयुक्त राष्ट्र के माध्यम से आई बी पी एस के रिपोर्ट जारी की गई जिसके मुताबिक मानव के कारण पृथ्वी पर मौजूद प्रजातियों पर नियुक्ति का संकट मंडरा रहा है 1000000 । इस रिपोर्ट का कहना है कि 19ः सौ से लेकर अब तक भू पर्यावास होने स्थानिक प्रजातियों की संख्या में 00 20ः की कमी आई है। 40ः से अधिक उभयचर प्रजातियां, 33ः प्रवाल तथा एक तिहाई से अधिक समुद्री स्तनधारी संकटापन्न है।

tho fofo/krk dk {kj.k

सीमा पाण्डेय
समाजशास्त्र विभाग–एम0एल0के0 कालेज, बलरामपुर

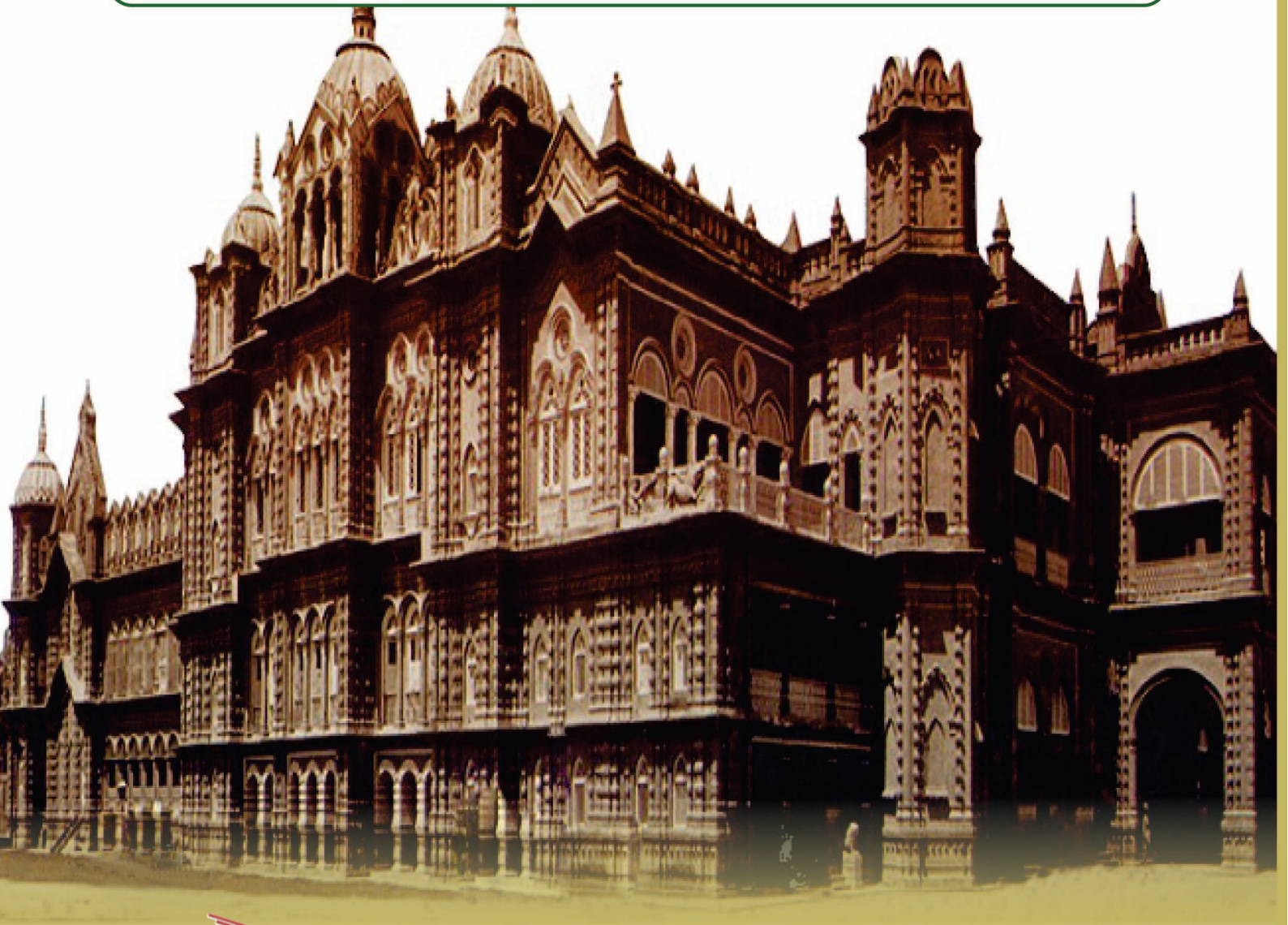
जैव विविधता का पारिस्थितिकीय एवं आर्थिक दोनों प्रकार से महत्व है क्योंकि यह मानव के जीनें की आवश्यकताओं की पूर्ति करता है तथा अर्थव्यवस्था का आधार तैयार करता है।

उष्ण कटिबंधीय वर्षा वालें वन जैव विविधता की दृष्टि से समृद्धि है क्योंकि इनमें स्थलीय प्रजातियों, निरंतर जीवित एवं प्राचीन समुदाय से सम्बन्धित जीवों की अधिकता होती है।

जैव विविधता का क्षरण एक प्राकृतिक प्रक्रिया है परन्तु इसमें मानव का भी बहुत बड़ा योगदान है क्योंकि वह अपने लाभ के लिए जैव विविधता का अत्यधिक शोषण करता है।

About the Conference Organizers

M.L.K.P.G. College, Balrampur was established by Maharaja of Balrampur Estate, Sri Pateshwari Prasad Singh in 1955 in sweet memory of his mother Maharani Lal Kunwari. This College was popularly known as 'Oxford of Terai' for its academic environment, infrastructure and quality. The college is situated at a distance of 165 km in the east from Lucknow & 170 KM from Gorakhpur. The College is situated in the heart of city at distance 03 KM. from Balrampur Railway Station and 01 KM. from Jharkhandi Railway Station.



Swaranjali Publication
swaranjalipublication@gmail.com
1-B, 10-B, Vasundhara,
Ghaziabad, (U.P. - 201012)
www.nrjp.co.in
8700124880, 9810749840

ISBN 978-93-89703-08-5

ISBN- 978-93-89703-08-5

tyok;q ifjorZu dk oU; thoksa ij izHkko

Jherh e/kqfydk]

एस.वी.एन. कॉलेज, सागर (म0प्र0)

विश्व में जनसंख्या की अनियंत्रित वृद्धि मानव के क्रियाकलापों एवं विकास की अंधी दौड से जलवायु में तीव्र गति से परिवर्तन हो रहा है। वनों का अंधाधुंध विनाश, औद्योगीकरण, परिवहन के साधनों का अत्याधिक विकास आदि मिलकर धरातल के तापमान में निरन्तर वृद्धि कर रहें हैं। जिसके परिणाम बहुत ही भयावाह होंगे।

औद्योगिक मानव के करण मानव ने पृथ्वी के व्यापक वनाच्छादित क्षेत्रों में व्यापक वनोन्मूलन करके अदूरदर्शितापूर्ण एवं विवेकहीन कृत्य किया है। पृथ्वी पर लगातार वन क्षेत्रों का ह्रास हो रहा है। वर्तमान समय में विश्व में प्रतिवर्ष लगभग 6 करोड़ हेक्टेयर भूमि वन क्षेत्रों के लिए घट रही है। जिसके कारण अनेक जीवधारियों का अस्तित्व मिटता जा रहा है। मनुष्यों एवं पशुओं के दबाव के कारण वन्य जीवों के प्राकृतिक वासस्थल परिवर्तित एवं विघटित हो रहें हैं, जो कि जैव विविधता के ह्रास का प्रमुख कारण है। वनों का विनाश वनस्पति एवं जीव–जन्तुओं के लिए गम्भीर संकट है एवं उनका वितरण भी प्रभावित हो रहा है। जो केवल राष्ट्रीय उद्यानों तक ही सीमित रह गया है। जलवायु परिवर्तन से सम्पूर्ण जीव–जगत को खतरा है। बीमारियों में वृद्धि के कारण एवं विलुप्त होती प्रजातियाँ गम्भीर चिंता का विषय हैं। वर्तमान समय में देश में बाघों की कुल संख्या 1411 है एवं यह संख्या निरन्तर घटती जा रही है।

i;qDr 'kCnk%& वन्य जीव, जैव विविधता, राष्ट्रीय उद्यान, तापमान।