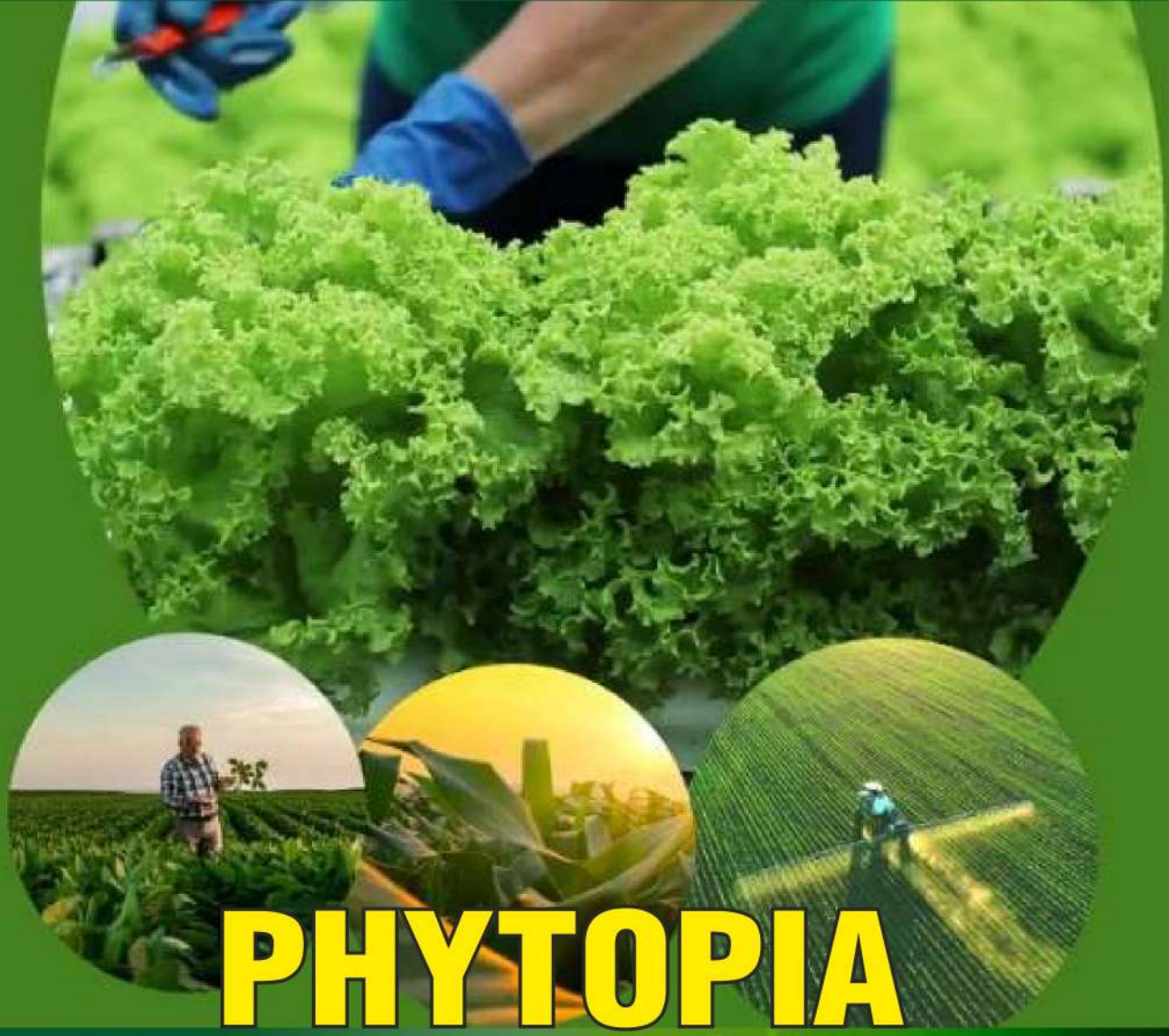


PHYTOPIA

REAP life

(An extended publication of Vegetos)

Volume 4, Aug 2025

Society For Plant Research
Estd. 1988
INDIA

A Newsletter of
SOCIETY FOR PLANT RESEARCH

SPR PARADOX

FOUNDER CHAIRMAN'S REPORT

Society for Plant Research and it's journal VEGETOS have attained global status now with a giant readership across 47 countries. It happened due to the dedicated efforts of our team during 36 golden years of its existence. Though the juvenile magazine PHYTOPIA is taking shape and is in the budding stage, we are confident that the highly skilled Editorial team of PHYTOPIA will soon make it a regular and widely circulated popular magazine. We are working on its regular periodicity and would love to receive articles, poetry, event reports from surroundings, farmers concern, environmental awareness and all related news and reports from our scientists, students and vigilant readers. These articles will not only motivate the society but will also guide a common man about the ease of living with nature's protection.

We would also welcome news related to the employment, research scholarships in India and abroad, startup opportunities, success stories, foreign visit and best practices worth adopting by our youths. There are a variety of subtitles in the magazine on which our vigilant youths and senior scientists can write and submit.

I am sure that our devoted group of Editors will transform PHYTOPIA into a loved and informative bulletin with the passage of time.

My best wishes and greetings to the editorial team headed by Prof (Dr) Ashish Bhatnagar and duly supported by Dr Renu, Dr Rajbala Junia, Dr A K Paliwal, Dr Seema Sharma and Dr Rizwana Tabassum.

Prof (Dr) Subodh Bhatnagar

Founder Chairman & Secretary General

Society for Plant Research

INFOCUS

Ashish Bhatnagar

This year, the Smart city projects of many cities got over. Despite their completion, no significant change could be noted in a city in the spirit of the word Smart. As per Cambridge University Dictionary, Smart means having a clean, tidy and stylish appearance, intelligent or able to think quickly or intelligently in difficult situations. However, the term smart city is conventionally used where information and communication technology are used to improve the quality of life of people. Most of the definitions included sustainability of fuel, resources, infrastructure, growth and quality of life.

The philosophies and religions that originated in the West, rested everything in one book, one messenger and supremacy of the followers of a particular faith, race or region. The Indian peninsula can boast of creation-centered or nature friendly responsibilities that do not focus on human supremacy rather wellbeing of every living being as well as that of the entire creation. Acknowledging that no growth can be sustained, unless theoutlook or smartness of habitations/societies is selfless. Our quoted guiding philosophies are:

सर्वेभवन्तुसुखिनःसर्वेसन्तुनिरामया ।सर्वेभद्राणिपश्यन्तुमाकश्चित्दुःखभाग्भवेत् ।। (बृहदारण्यक)

“May all be happy, may all be free from illness, may all see goodness and may no one suffer”.
or

ॐ द्यौः शान्तिरन्तरिक्षँ शान्तिः ।
पृथिवी शान्तिरापः शान्तिरोषधयः शान्तिः ।
वनस्पतयः शान्तिर्विश्वेदेवाः शान्तिर्ब्रह्म शान्तिः
सर्वँ शान्तिः शान्तिरेव शान्तिः सा मा शान्तिरेधि ।।
ॐ शान्तिः शान्तिः शान्तिः ।।

“May peace radiate there in the whole sky as well as in the vast ethereal space. May peace reign all over this earth, in water and in medicinal herbs and all vegetation. May peace flow over the whole universe. May peace be in the supreme being Brahman. Peace be there in everything and all beings, also provide peace to me. Om peace, peace and peace”.

But ponder if smartness is just ease of all functions of life and luxury. Because doing so is already affecting the system adversely. Thus not ease, but efficiency and sustenance must be the criteria of our smartness and may this be the topmost parameter to determine the success of smart city projects.

Earlier, the editorial board requested contributions from members for various columns of the Phytopia. As an initiative to encourage such activities from students themselves, we have taken news materials for Biscope from students of the Department of Microbiology, Maharshi Dayanand Saraswati University, Ajmer and will like to request all members to encourage their students to get into the habit of writing such pieces of interesting discoveries and innovations of life sciences. This may allow some of them to opt for career in scientific journalism. However, all contributors must also ensure that the piece they provide must be free of plagiarism and sources of information and additional references be added to it. The editorial board will scrutinize such contributions for their relevance to publishing in Phytopia.

BISCOPE

Contributions by the students of

M.Sc. SEM–I (MICROBIOLOGY)
DEPARTMENT OF MICROBIOLOGY
MAHARSHI DAYANAND SARASWATI UNIVERSITY, AJMER

The Sixth Mass Extinction Looming: A Human-Induced Crisis

SONIYA KANWAR KHANGAROT

The Earth is on the verge of its Sixth Mass Extinction, a crisis unlike any before—driven not by natural disasters but by human activities. According to reports from the United Nations (UN) and the Intergovernmental Panel on Climate Change (IPCC), species are disappearing at a rate nearly 1,000 times higher than the natural background extinction rate. Pollinators such as bees and butterflies, which are vital to ecological balance and food security, are among the most threatened.

Key drivers of this biodiversity crisis include climate change due to excessive fossil fuel use, pollution across air, water, and soil, overexploitation of natural resources, and large-scale habitat destruction resulting from deforestation and urban sprawl.

These disruptions threaten food chains, ecosystem services, and ultimately human survival—impacting access to resources and increasing disease risks. Urgent global action is needed: adherence to international agreements like the Paris Agreement and the UN Sustainable Development Goals (SDGs), restoration of degraded ecosystems, expansion of conservation initiatives, and a shift toward renewable energy are all vital. On an individual level, embracing sustainable lifestyles, minimizing waste, and supporting conservation efforts can collectively make a difference. The time to act is now.

Source:

Sayer, Catherine A. et al. (2025). One-Quarter of Freshwater Fauna Threatened with Extinction. Nature 638, 8049: 138–145. doi:10.1038/s41586-024-08375-z

Evidence Against Alzheimer's Being Solely a Brain Disease

SHAIFALI CHOUDHARY

Alzheimer's disease, a progressive neurodegenerative disorder, is the most common cause of dementia worldwide. Characterized by cognitive decline, memory loss, and impaired reasoning, its impact intensifies over time, profoundly affecting daily life.

However, emerging research challenges the long-standing view of Alzheimer's as solely a brain disease. Increasing evidence points to systemic factors—including vascular dysfunction, insulin resistance, and autoimmune responses—as contributors to its onset and progression. Links have also been identified between Alzheimer's and disruptions in the gut microbiome and metabolism.

This broader perspective redefines Alzheimer's as a complex, multisystem condition. Understanding it as such may revolutionize both preventive and therapeutic strategies, offering hope for more effective interventions and improved quality of life for patients.

Source:

Iadecola C. & Gottesman R. F. (2019). Neurovascular and cognitive dysfunction in Alzheimer's disease. The Lancet Neurology, 18(1), 75–86.

Polyethylene Terephthalate (PET) Hydrolysis Engineering

MAHESH SHARMA

Polyethylene Terephthalate (PET), widely used in packaging, textiles, and electronics, is a persistent pollutant contributing significantly to plastic waste. PET hydrolysis is an emerging solution that enables its breakdown into monomers—terephthalic acid (TPA) and ethylene glycol (EG)—via chemical or enzymatic methods.

Chemical hydrolysis includes both acidic and alkaline processes. Acidic hydrolysis, using concentrated acids at high temperatures, offers high yield but poses environmental and energy concerns. Alkaline hydrolysis is safer and more sustainable, though it requires careful optimization.

Enzymatic hydrolysis represents a cutting-edge, eco-friendly alternative. The bacterium Ideonella sakaiensis 201-F6 produces PETase and MHETase—enzymes that degrade PET into reusable monomers under mild conditions. PETase first converts PET into mono-(2-hydroxyethyl) terephthalate (MHET), which MHETase further breaks down into TPA and EG.

Integrating both hydrolytic techniques holds great promise for mitigating plastic pollution, conserving resources, and aligning with global sustainability goals.

Sources:

Yang, W. et al. (2021). Hydrolysis of waste polyethylene terephthalate catalyzed by easily recyclable terephthalic acid. Waste Management, 135, 267–274.

Reisky, L. et al. (2019). Structure of the plastic-degrading Ideonella sakaiensis MHETase bound to a substrate. Nature Communications, 10, Article 1717.

Dark Genes: Unveiling the Hidden Regulators of the Genome

KISMATUN MANSURI

Once labelled as “junk DNA,” dark genes are now recognized as critical regulators within non-coding regions of the genome, collectively referred to as dark DNA. Though they do not code for proteins, these elements significantly influence gene expression and are implicated in a variety of diseases, including cancers and neurological disorders.

Their function is governed by epigenetic mechanisms—such as DNA methylation and histone modification—and regulatory elements like enhancers and silencers. Post-transcriptional changes, including alternative splicing and RNA editing, further affect how these genes impact development and cellular functions.

Detecting dark DNA remains a challenge due to its elusive nature. However, advances in next-generation sequencing (NGS), AI-powered bioinformatics, and genomic technologies are progressively unlocking their mysteries. Understanding dark genes holds transformative potential for novel therapeutic strategies and deeper insights into evolution, disease, and development.

Source:

Malliari, K. et al. (2023). Dark DNA and Stress (Review). International Journal of Molecular Medicine, 51(8). doi: 10.3892/ijmm.2022.5211.

Xenobots: The Living Machines

MUSKAN GOWALANI

Xenobots are an innovative blend of biology, artificial intelligence (AI), and robotics, comprising programmable, living robots made from Xenopus laevis (African clawed frog) stem cells. Unlike traditional machines, xenobots are biodegradable, self-healing, and capable of autonomous movement, coordination, and even self-replication under specific conditions.

Their potential applications are vast ranging from targeted drug delivery and regenerative medicine to microplastic cleanup and environmental restoration. They also provide unique insights into cellular behavior, tissue engineering, and AI-guided biological design.

While the promise of xenobots is immense, they raise ethical questions about synthetic life, self-replication, and biocontrol. As research continues, responsible development and ethical oversight will be critical in shaping this emerging frontier.

Sources:

Becher, B. (2023). Xenobots: The Self-Replicating Living Robots. Builtin. Sumi, M. & Sneha, K. (2022). Xenobots—World's First Living Robots Using Artificial Intelligence. JETIR, 9(5), F244–F248.

Integration of Artificial Intelligence (AI) and Machine Learning (ML) in Biotechnology

SOURABH JUNAWA

Artificial Intelligence (AI) and Machine Learning (ML) are revolutionizing biotechnology, enabling unprecedented data analysis, process optimization, and discovery acceleration. AI mimics human cognition, while ML derives predictive insights from vast biological datasets.

These technologies enhance genetic analysis, making genome projects faster and more cost-effective. AI improves biomarker identification and disease prediction, reducing reliance on traditional model organisms. In drug development, AI accelerates screening, protein engineering, and personalized medicine.

Despite their advantages, challenges remain—including algorithmic bias, regulatory barriers, clinical acceptance, and the need for rigorous validation. Addressing these concerns is essential for ensuring that AI-powered biotech innovations are both trustworthy and transformative.

Source:

Chakravarthi, P. G. et al. (2024). AI and Machine Learning in Biotechnology: A Paradigm Shift in Biochemical Innovation. International Journal of Plant, Animal and Environmental Sciences, 14, 70–80.

FOOTPRINTS

RIZWANA TABASSUM

ROLE OF CLIMATE IN SHAPING INDIAN HISTORY

A new study highlights the crucial role of climate-driven vegetation changes in shaping human history in the Indian subcontinent over the past 2000 years. Researchers from BSIP examined paleoclimate records from the Central Ganga Plain (CGP) using pollen analysis, multiproxy studies, and Earth System Paleoclimate Simulation (ESPS) models. Their findings reveal alternating warm and cold periods—such as the Roman Warm Period and Little Ice Age—impacted vegetation patterns, influencing human migration and the rise and fall of Indian dynasties like the Guptas and Cholas. The study, published in Catena, underscores the importance of historical climate understanding for predicting future impacts. It also suggests that identifying climate-resilient crops could help adapt agricultural practices, ensuring food security and economic stability.

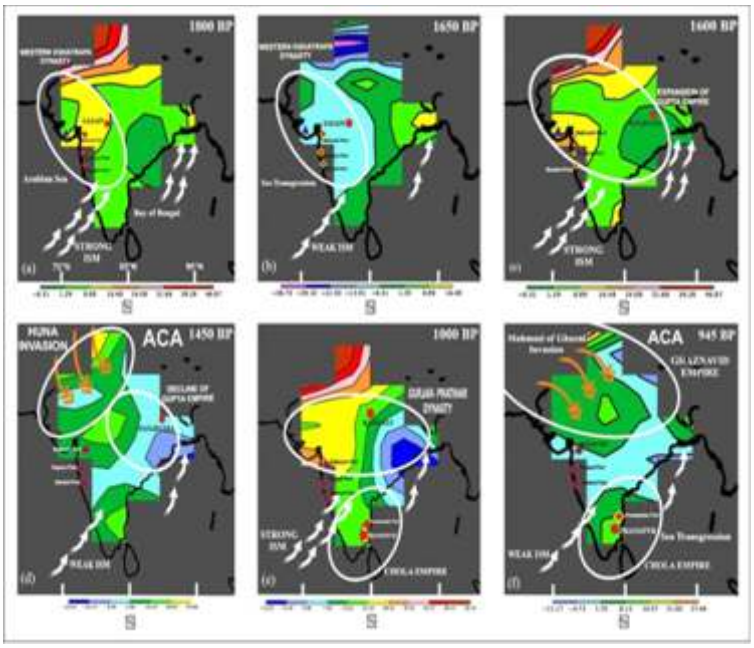
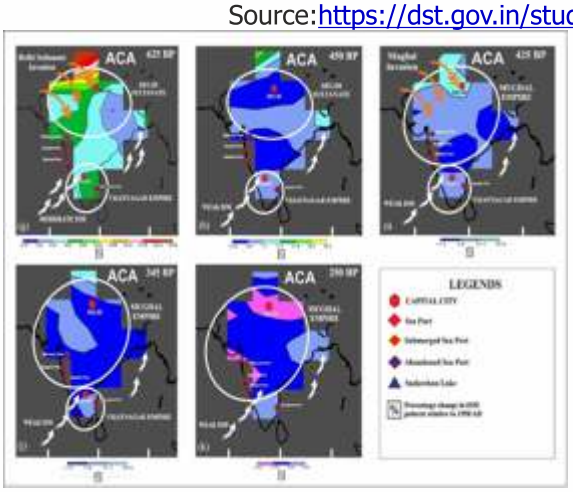
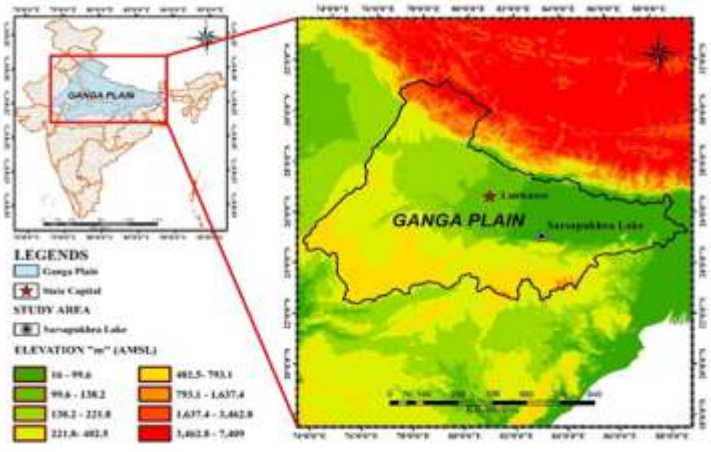


Figure: Digital Elevation Model (DEM) of Ganga plain showing the location of study site.

Figure: (a-f), (g-k): Diagram showing mapping and modeling of Indian Summer Monsoon region and their impact on ancient prominent dynasties over the past two millennia.

Source:https://dst.gov.in/study-finds-role-climate-shaping-indian-history





Indian Dishes with Highest Biodiversity Footprints in World

A new study reveals that even some seemingly “healthy” foods, like India's beloved idli, have a surprisingly high biodiversity footprint. Researchers assessed 151 popular dishes worldwide and found that rice and legume-based meals — staples of Indian cuisine — significantly impact biodiversity due to large-scale agricultural encroachment on biodiverse regions. Dishes like chana masala, rajma, and chicken jalfrezi ranked among the top 25 foods with the highest biodiversity imprints.

While India's high proportion of vegetarians helps mitigate this impact, the study warns that a shift toward more meat consumption would drastically worsen biodiversity loss. Globally, meat production remains the biggest threat, driving deforestation and biodiversity decline, with roast lamb from Spain and Brazilian beef dishes topping the list. As food demand is projected to rise 70% by 2050, the research, published in PLOS One, highlights the need to consider not only what we eat but how it affects the planet.

Source:

Cheng EMY, Cheng CML, Choo J, Yan Y, Carrasco LR (2024) Biodiversity footprints of 151 popular dishes from around the world. PLOS ONE 19(2): e0296492. https://doi.org/10.1371/journal.pone.0296492

THE BIGWINDOW

RAJBALA JUNIA

1. National Network Project of National Institute of Immunology, New Delhi” funded by DBT Tenable till -08-10-2028 Senior Research Fellow (Project) (One position only) Dr. Bichitra K. Biswal Staff Scientist-VII bbiswal@nii.ac.in BRIC-NATIONAL INSTITUTE OF IMMUNOLOGY ARUNA ASAF ALI MARG, NEW DELHI. https://www.nii.res.in/en/announcements
2. Advertisement (ICMR-NARI/Estt/002/2025-26/1005) for the position of Consultant & Young Professional-II at ICMR-NITVAR, Pune ICMR-NITVAR, PUNE, https://www.icmr.gov.in/employment-opportunities
3. Advertisement No. Regular 2/2025 dated 11.07.2025 A unique opportunity for a research career in Science & Technology CSIR-CENTRAL SCIENTIFIC INSTRUMENTS ORGANISATION (Council of Scientific & Industrial Research) Sector 30-C, Chandigarh160 030 (India) https://www.csio.res.in/Recruitment-Regular-Positions/Final-Advt-No02-2025
4. Applications are invited for the following posts in the Population Research Centre (PRC)VACANCY NOTIFICATION No.glrh/ESTT/0 1 lprc"l 1 5512025'2026 THE GANDHI GRAM INSTITUTE oF RURAL HEALTH AND FAMILY WELFARE TRUST. Tamil Nadu https://www.mohfw.gov.in/?q=en/vacancy

SPR TIDINGS

RENU

ANNUAL MEETING OF EXECUTIVE COUNCIL, SOCIETY FOR PLANT RESEARCH (VEGETOS)

Society for Plant Research(SPR) organized the annual meeting of the Executive Body in virtual mode. It took a thoughtful start by the suggestive and useful address by the Founder Chairman Prof. (Dr.) Subodh Bhatnagarwho motivated the members and presented the outline of Vision-2026. Dr. Manisha Mangal, Secretary, North zone and Sulaiman CT, Secretary South zone proposed for Lecture series and International conference respectively. It was brought to the notice that an international conference in association with SPR shall be held at Jaipur from January 15-17, 2025, and at Kochi, Kerala during September 2025. Dr. Sumit Purohit invited EC members and delegates to Pantnagar during February 3rd -5th for another conference.

Besides approval of the previous meeting dated 21.6.2024, various fruitful issues were discussed by EC members. Dr. Anuj Saxena suggested the start of a Scientific forum at our website for interaction and discussion. All EC members offered their services as reviewers to the journal VEGETOS. Many other suggestions to enhance membership, guidelines for SPR awards, their number etc. were thoughtfully interacted and finalized. Office bearers including Prof. K Muthuchelian, Prabhuji, Prof. Ramaswamy Nanna, Prof. SC Tripathi, Dr. S K Khari, Prof. M Madlani, Er. Shilpa Saxena and many EC members participated in the meeting with their valuable inputs. The need to display a Standy containing desired information about SPR and VEGETOS was felt in all the places where SPR activity is going on. Founder Chairman assured to provide it to all EC members for display. The meeting was addressed by Prof. (Dr.) Bandana Bose, President, SPR with her concluding remarks and appreciation to the pro-active support by the entire EC in the growth of SPR and VEGETOS.

The meeting was very meticulously convened by Prof. Meenakshi Vohra Vaidyaand Dr. Manisha Mangal extended Vote of thanks.

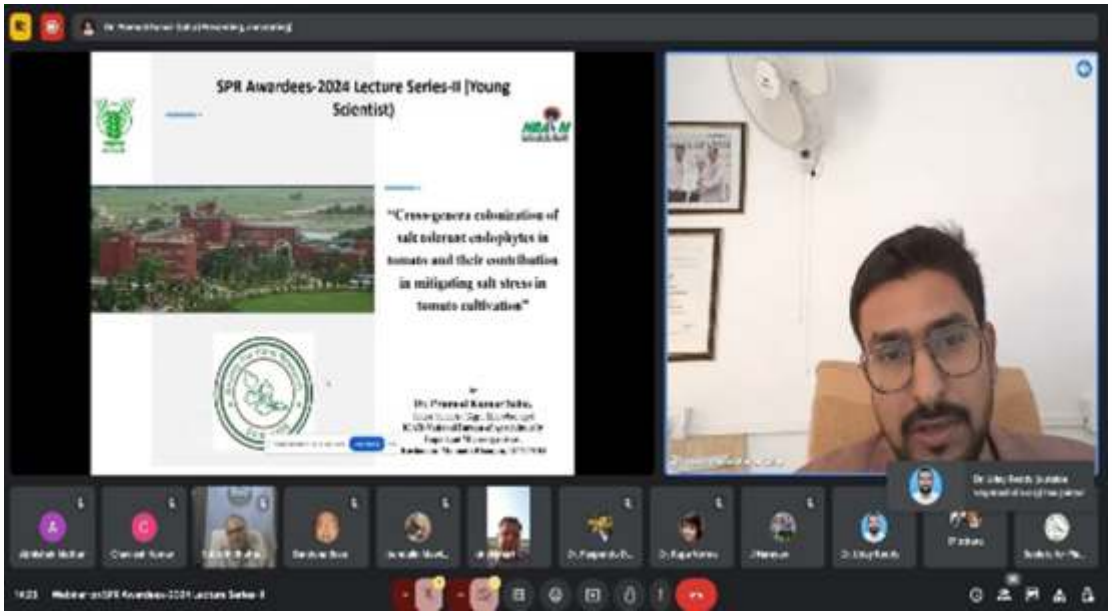
SPR YOUNG AWARDEES LECTURE SERIES-II

Under the aegis of the Society for Plant Research (Vegetos), the virtual lecture series-II was organized which was especially meant to have the presentations of those SPR awardees-2024 under Young scientist category who could not attend the Award ceremony at AMU, Aligarh.

Webinar started with the address by the Founder Chairman, SPR & Editor in Chief, VEGETOS, Prof. (Dr.) Subodh Bhatnagar who extended a warm welcome to Prof. (Dr.) Bandana Bose, National President, SPR; Prof.(Dr.) Manoj Kumar Dhar, Director, ACSIR; Prof. (Dr.) Sadanandam Ambagini; Prof. Anjuli Agarwal; Dr. Sangita Bansal; Dr. Deepika Arora, other attendees and all young researchers & esteemed SPR awardees. He congratulated them for remarkable achievement and wished for their continued dedication towards SPR & Vegetos.

Prof. Manoj Dhar also extended his best wishes to SPR awardees.

The session had wonderful research presentations on their dedicated research topics by Chavlesh Kumar; Pramod Kumar Sahu; Ibandalin Mawlong; Rajinikanth Marka; Shobhit Raj Vimal; Babli Mog; Anywar Godwin; Pradeep Kumar; Rupa Verma; Dr. Kiranmayi Kasula ; Dr. Radhika Tippani; Madhu Kamle; Soham Hazra and Dr. Uday Govinda Reddy. Lectures by two scientists from Canada (Dr. Rishi Somvanshi) and Morocco (Dr. Noureddine Chaachouay) could not be delivered due to time zone difference and will be done later. All virtual presentation proved the worth and potential of young researchers whose contributions have been duly acknowledged by the SPR. During this session, an eye catching documentary on 35 years sustained but considerably tough journey of SPR & VEGETOS was played and applauded by everyone present. This documentary was prepared for SPR by Startupmedia group, Pantnagar. The session was beautifully convened by Abhishek Mathur Ph.D, FAPSR, FSPR who also extended vole of thanks to all officials of SPR, attendees and SPR awardees. The flawless technical support was provided by the team of Mr. J Narayan, Technical Head & Coordinator.



BIOSCOPE

RENU

Janaki Ammal : Pioneering Indian Female Botanist

EdavalethKakkat Janaki Ammal's extraordinary life story is characterized by a profound love of botany, a steadfast dedication to the preservation of indigenous knowledge, and an unbreakable spirit that transformed India's botanical landscape.

ANCESTRAL HISTORY

EK Janaki Ammalwas born in 4th November 1897, the tenth child in a family of nineteen brothers and sisters in Tellicherry (now Thalassery), a coastal town in the Indian state of Kerala. Her father was Dewan Bahadur EdavalathKakkat Krishnan, a judge in a subordinate court system in Tellicherry, kept a garden in their home and authored two books on birds in the North Malabar region of India. Her mother, Devi (1864-1941) was an illegitimate daughter of John Child Hannyngton and KunchiKurumbi. Janaki Ammal's early life was steeped in a unique blend of nature and intellect and environment led her towards a profound affinity for the natural sciences, setting the stage for her extraordinary journey.

EDUCATIONAL CAREER

Where many sisters of Ammal's wed through arranged marriages upon her turn she made a different choice. She plunged into lifelong quest for knowledge and choose scholarship over one of matrimony, obtaining a bachelor's degree from Queen Mary's College, Madras and an honors degree in botany from the Presidency College which was rare during those times for women to choose this route since women and girls were discouraged from higher education, both in India and internationally. After graduation, Ammal dedicated three years to teaching at the Women's Christian College in Madras. She received the Barbour Scholarship, established at the University of Michigan by philanthropist Levi Barbour in 1917 for Asian women to study in the U.S. and joined the botany department as Barbour Scholar at Michigan in 1924 and research in area of plant cytology, the study of the genetic composition and gene expression patterns in plants. Her specialization lay in breeding interspecific and intergeneric hybrids, involving the crossing of plants from different species and genera within the same family. This pioneering work led to her achieving a Master of Science in 1925 and a doctorate in 1931. Notably, Janaki Ammal became the first Indian woman to attain a doctorate in botany in the United States and remains one of the few Asian women to be conferred a D.Sc. (honoris causa) by her alma mater, the University of Michigan. During her time at Ann Arbor she lived in the Martha Cook Building, a all-female residence hall and worked with Harley Harris Bartlett, professor at the Department of Botany. She evolved a cross known as "Janaki Brengal", brengal being the Indian name for eggplant. Her Ph.D. thesis titled "Chromosome Studies in Nicandraphysaloides" was published in 1932.

SERVICE CAREER

After her doctorate Janaki returned to India to take up a post as professor of Botany at the Maharaja's College of Science, Trivandrum, and taught there from 1932 to 1934. From 1934 to 1939 she worked as a geneticist at the Imperial Sugar Cane Institute in Coimbatore, which later became the Sugarcane Breeding Institute with Charles Alfred Barber. From 1940 to 1945 she worked as Assistant Cytologist at the John Innes Horticultural Institution in London, and as cytologist at the Royal Horticultural Society at Wisley from 1945 to 1951. On the invitation of Jawaharlal Nehru, she returned to India in 1951 to reorganize the Botanical Survey of India (BSI). She was appointed as Officer on Special Duty to the BSI on 14 October 1952. She served as the Director-General of the BSI.From then onwards, Ammal was in the service of the government of India in various capacities including heading the Central Botanical Laboratory at Allahabad and was officer on special duty at the Regional Research Laboratory in Jammu. She worked for a brief period at the Bhabha Atomic Research Centre at Trombay before settling down in Madras in November 1970 as an Emeritus Scientist at the Centre for Advanced Study in Botany University of Madras.She lived and worked in the Centre's Field Laboratory at Maduravoyal near Madras until her demise on 7thFebruary 1984.

CONTRIBUTIONS

Her work from 1934 to 1939 as a geneticist at the Sugarcane Breeding Institute, Coimbatore along with Charles Alfred Barber included cytogenetic analysis of Saccharum spontaneum as well as generation of several intergeneric crosses such as Saccharum x Zea, Saccharum x Sorghum. Ammal's work at the Institute on the cytogenetics of Saccharum officinarum (sugarcane) and interspecific and intergeneric hybrids involving sugarcane and related grass species and genera such as Bamboo (Bambusa sp.) were highly significant. The Institute was trying to bolster India's native sugarcane crop, the sweetest species of which (SACCHARUM OFFICINARUM) they had been importing from the island of Java. With Ammal's help, the Institute was able to develop and sustain their own sweet sugarcane varieties rather than rely on imports from Indonesia, bolstering India's sugarcane independence.

From 1940 to 1951 as Assistant Cytologist at the John Innes Horticultural Institution in London, and as acytologist at the Royal Horticultural Society at Wisley she did chromosome studies of a wide range of garden plants. Her studies on chromosome numbers and ploidy in many cases threw light on the evolution of species and varieties. The Chromosome Atlas of Cultivated Plants which she wrote jointly with C. D. Darlington in 1945 was a compilation that incorporated much of her own work on many species. Ammal also worked on the genera Solanum, Datura, Mentha, Cymbopogon and Dioscorea besides medicinal and other plants. She attributed the higher rate of plant speciation in the cold and humid northeast Himalayas as compared to the cold and dry northwest Himalayas to polyploidy. Also, according to her, the confluence of Chinese and Malayan elements in the flora of northeast India led to natural hybridization between these and the native flora in this region, contributing further to plant diversification. Following her retirement, Ammal continued to work focusing special attention on medicinal plants and ethnobotany. She continued to publish the original findings of her

research. In the Centre of Advanced Study Field Laboratory where she lived and worked, she developed a garden of medicinal plants. She also worked on cytology and ethnobotany.

As a geneticist working for the Royal Horticultural Society's Garden Wisley in the early 1950s, she studied the botanical uses of colchicine, a medication that can double a plant's chromosome number and result in larger and quicker-growing plants. One of the results of her investigations is the MAGNOLIA KOBUS JANAKI AMMAL, a magnolia shrub with flowers of bright white petals and purple stamens. Though Ammal returned to India around 1950, the seeds she planted put down roots, and the world-renowned garden at Wisley still plays host to Ammal's namesake every spring when it blooms.

After her return to India in the early 1950s, Ammal aimed to create a national platform for genetic studies and collect and survey India's floral diversity. It was an excellent timing because post-independence, India was still recovering from severe famines and Ammal helped identify and conserve the floral biodiversity of India.

AWARDS, HONORS AND RECOGNITIONS

Ammal was elected Fellow of the Indian Academy of Sciences in 1935, and of the Indian National Science Academy in 1957. The University of Michigan conferred an honorary LL.D. on her in 1956. The Government of India conferred the Padma Shri on her in 1977. In 2000, the Ministry of Environment and Forestry of the Government of India instituted the National Award of Taxonomy in her name in 2000.

Two awards were instituted in her name in 1999: EK Janaki Ammal National Award on Plant Taxonomy and EK Janaki Ammal National Award on Animal Taxonomy. A herbarium with over 25000 plant species in JammuTawi has been named after Janaki Ammal.The John Innes Centre offers a scholarship to PhD students from developing countries in her name.

To honour her work in plant breeding, the Royal Horticultural Society, Wisley, U.K.named a variety of Magnolia she created as Magnolia Kobus 'Janaki Ammal'. In 2018, to celebrate her remarkable career and contribution to plant science, two rose breeders, Girija and ViruViraraghavan bred a new rose variety which they named E.K. Janaki Ammal.

The name Janakia arayalpathra is also after her. Sonerilajanakiana, a species of plant in the family Melastomataceae and Dravidogeckojanakiae, a species of geckos found in India is also named after her.

THE ARTPART

RAJBALA JUNIA

आधी शताब्दी का उलटफेर

वायलिन से रोते हुए,
सेक्साफोन से चीखते हुए,
दर्जनों ने
इस घर में लगाए थे
पैदा होने पर पहले सुर,
आधी शताब्दी पहले

तब, जब
शहनाई देती थी
मंगल की सूचना,

खेतों के बीच से
निकलता था सूरज
और डूबता था क्षितिज पर
धरती और आकाश की सीप में रखे
चमकदार लाल–पीले मोती की तरह

कभी पीपल, कभी नीम, कभी आम की,
पत्तियों की चिक से झांकता था चाँद
चूम लेता था चांदनी से
छत पर बिछी सफेद चादरों को
कभी नाचता था मेड़ों पर,
कभी झूमता था पेड़ों पर।

जमीन से चुना करते थे हम फूल
और बोती थीं रातें,
आकाश में तारे

शाम के साथ,
हमजोलियों की टोली के पैरों की थाप,
गिल्ली–डंडे और सितोलिया की चोट,
पीठ पर पड़ती गेंद, या
कभी हाथ की धप्प में,
होती थी तबले, मृदंग और पखावज की गूँज

चौराहों से शुरू होते,
गलियों में फैलते,
घरों के बाहर से,
घरों के भीतर तक,
भर रहे होते थे
कहकहे और गरम चाय के प्याले

लोग थे–
जो सारंगी, सरोद और सितार से बजा करते थे
संग था, साथ था, संगत थी
लोग थे, जो कहते थे–
''लोग हैं''

उनकी बहस के आलाप में
गांधी और मार्क्स,
तानपुरे और पेटी से
लगातार स्वर देते रहते थे

पैसा!
समेटने की चीजें न देकर,
देता था बांटने की चीजें

ठेलों पर सिकती–भुनती मूंगफली का धुंआ,
या कच्चे रास्तों पर पशुओं के लौटने से उड़ी धूल–
तय करते थे शाम के राग–रंग

खिड़कियों और रोशनदानों के अलावा,
सुबह करना,
आकाशवाणी का काम होता था।

अब,
आधी शताब्दी बाद,
विकास के यज्ञ में होम हो गए –
पेड़, बगीचे और जंगल,
गगनचुम्बी इमारतों के दांतों में फंसकर,
तार–तार हो गई है–
आकाश की चादर

घुटते–घुटते टूट गए हैं,
धुंए से बीमार तारे।
फूलों की जगह,
धरती पर फैली है पोलिथीन !

छोटे–छोटे दड़बों में जैसे फंसी हैं मुर्गियां,
और जैसे बाड़ों में अंटी पड़ी हैं गायें,
ऐसी ही किसी जगह पर
गूंजती है एक अकेली किलकारी
फिर ड्रमों और रॉक संगीत की धमक,
डिस्को लाइट की चमक
और शराब के प्यालों में डूब जाती है.

पालने में
खुद ही हिल–डुलकर झूलते–झूलते
बड़ा हो रहा है
एक रैप संगीत !
और उधर मंदिरों में,
फिल्मी गानों–नृत्यों को,
भजन–कीर्तनों में
बदल रहे हैं पालनहार

धन्य हो प्रभु जी !
सब ''बड़े'' हो रहे हैं
अकेले, और अकेले,
और अकेले हो रहे हैं.

हम लोगों के साथ नहीं
कंपनियों के लोगो के साथ हैं.
चमक आँखों में नहीं,
चीजों में है.
कहकहों से टूटती नहीं अब नींद
खुद मुस्कुरा लेते हैं लोग
स्मार्ट फोन पर सन्देश पढ़कर

आधी शताब्दी पहले
हर जेब में, हर मुट्ठी में, हर ड्राइंगरूम में
हर रसोई में, गली में, चौराहों पर
हर जगह

टेलीविजन नहीं था, मोबाइल नहीं था,
वीडियो गेम नहीं था
कार नहीं थी, मोटरबाइक नहीं थी,
कम्प्यूटर नहीं था

''वक्त था''

मेरी माँ की याद में,
अब भी हैं
वायलिन और सेक्साफोन के
मेरे बजाए सुर

अभी–भी संजो रखा है
वक्त उसने आँचल में
जिसे खोलकर हर शाम
वो करती है इंतजार बांटने का
मैं माँ को देखता हूँ
सोचता हूँ
माँ ने जो आँचल में भरा
'वक्त' – वो सांझा था

दस साल बाद
जो मेरी जेबों में
और मुट्ठियों में होगा–
मेरा वक्त,
कम्प्यूटर, मोबाइल और टेलीविजन से बांटा हुआ.
मैं उनके सामने अपनी पोटली खोलूंगा
अपने किस्से सुनाऊंगा.....
वो न हँसेंगे, न विस्मित होंगे, न रोयेंगे

मुझे पता नहीं होगा
पर दुनिया के किसी कोने में
सूचना तंत्र का जाल बनाकर बैठा
किसी बड़ी एम.एन.सी. का
बड़ा–सा मकड़ा,
अपनी आरामगाह में
ऊपर–नीचे हिलेगा
सरकेगा,
फिर जाल में फंसे शिकारों को देख
मुस्कुराएगा,

आधी शताब्दी पहले
हम जी रहे थे सम्बन्ध और कला,
ढूंढ रहे थे ज्ञान और सत्य.
आज
सामग्रियों के झंझावात में
अनर्गल सूचनाओं की रेत में,
ढूँढते रह गए हैं
सच, साथ और सुख.

————————

आशीष भटनागर
प्रोफेसर, माइक्रोबायोलॉजी
महर्षि दयानंद सरस्वती विश्वविद्यालय अजमेर

दिशाभ्रम

तू गुन–गुन कर मैं सुनता जाऊँ
चीख न मेरे कानों पर,
देश सुधारक घुन–घुन खाते
जनता के अरमानों पर
खेती बाड़ी चौपट कर दी
झूठ चढ़ा खलिहानों पर
मस्त हुए हैं जनसेवक जी
सत्य खड़ा है थानों पर
सत्यानाश हुआ शिक्षा का
युवा ख्वाब श्मशान हो गए
जिंदा भूतों का है तांडव
उम्मीद से भरे जवानो पर
तू गुन–गुन कर.....

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प्रोफेसर सुबोध भटनागर
पूर्व डीन, जैव प्रौद्योगिकी, मेरठ