Archana Sharma Foundation of Calcutta
(ASFC)
Department of Botany
University of Calcutta

Newsletter 2023

FROM THE PRESIDENT'S DESK

Archana Sharma Foundation of Calcutta (ASFC) is a registered Society under the West Bengal Societies Registration Act 1961, which was founded in the year 2009. Since then the activities of the Foundation are continuing as per the desire of our Revered Sir, Prof. Arun Kumar Sharma.

With heavy heart I announce the untimely death of our member, Professor Nanda Dulal Paria, an extraordinary teacher, ace expert in taxonomy with incredible human touch. On behalf of the Foundation and myself I offer my heartfelt condolences to his bereaved family. May his soul rest in peace.

We are now back to our normal routine duties, organizing most of the meetings offline rarely holding the meetings in hybrid mode. Nevertheless, first half of the last year (2022) was undoubtedly bizarre. However, all the activities undertaken by the Archana Sharma Foundation of Calcutta (ASFC) during the last one year were made possible only because of the proactive support and coordination of our members. I would like to thank all the members of ASFC, especially the members of the Governing Body and all the Editorial Board members of 'The Nucleus' for assisting the Foundation and actively participating in all the academic and social activities, simultaneously complying with their own respective academic responsibilities. I wish members will also co-operate fulfilling the mandates of ASFC in this current financial year (2023-2024).

Over the years the Editorial Board (EB) members of the journal '*The Nucleus'* are trying hard to improve the quality of the journal. I sincerely appreciate the time and energy Editorial Board members are providing for the journal '*The Nucleus*', despite their own academic commitments. The print versions of three issues of volume 65 were published within the stipulated time, which includes a special theme issue (number 5 in the Series) on "Concerns and Potentials in Medicinal and Aromatic Plant Research" by Dr. Maumita Bandyopadhyay and Dr. Sreetama Bhadra. The journal has received its first impact factor from Clarivate- the web of science with an "impact factor" of 1.8 (IF: 1.8) – a great news to share with all the members.

During the last financial year we have collaborated with Department of Botany, University of Calcutta in organizing a National Symposium on "Frontiers in Plant Science Research" held on 10th June, 2022 to fulfill one of the objectives of the Foundation. ASFC also collaborated with All India Congress of Genetics and Genomics (AICGG) in organizing 20th Meeting of AICGG, the National Symposium on "Impact of COVID 19: A Retrospective Analysis on Human Health and Environment". Dr. Sreetama Bhadra delivered an

interesting seminar talk on “Effect of genome size on Angiosperm Trait Flexibility and Evolution” on 20th April, 2022.

We the members of ASFC were lucky to have with us Prof. Annette Becker of Justus-Liebig-University of Giessen, Germany with us to deliver a seminar talk on “And what about food? On the molecular evolution of carpels”. This was held on 29th March, 2023 at the Botany Department, University of Calcutta, curtsey: Dr. Malay Das of Presidency University. Prof Becker emphasized that since most of our food grains, nuts, and fruits develop from the carpels. As such carpels are considered as the most important and evolutionary complex plant organ of flowering plants (angiosperms) involved in reproduction. Components of the gene regulatory network (GRN) responsible for carpel development and their genetic interactions were discussed at length. Prof. Becker elucidated the origin and evolution of carpel GRNs and discussed how novel carpel development regulators were identified. She also presented their recent findings on analyses of gene functions in non-model flowering plants.

Some members also tried to disseminate, integrate scientific knowledge amongst the common people having scientific temperament. The recent pandemic, climate change phenomenon demand public accountability and open discussion.Traditionally, new scientific knowledge is shared mostly through scientific papers, and presentations at the conferences to an audience comprised mainly of researchers and academicians. The right platforms and delivery methods must be adapted in communicating science to the public. Successful science communication can have an impact on political leaders, policy makers and healthcare agencies. Inclusion of burning issues under political agendas would benefit both human health and the environment. I welcome members of ASFC to come forward and contribute immensely in this direction. And if they are already contributing, then kindly use the banner of ASFC with a prior intimation to the Secretary, ASFC for the necessary permission.

In respect to our beloved mentors the 5th ‘Professor Archana Sharma and Professor A.K. Sharma Oration was held in a hybrid mode on 5th May, 2022 Prof. Syamal Roy FNA, FASc, FNASc, FAScT and J C Bose National Fellow of IICB, Kolkata delivered a scintillating, mesmerizing talk on “Two Summers: Rambling Thoughts in Mental Landscape during Pandemics”. It was highly appreciated by all the participants. Prof. Roy has amalgamated science in poetic language and shown his wide, in-depth knowledge in the subject area, especially on Epigenetics.

Keeping our focus on the objectives of the society, I am glad to mention that we had extended financial help to the less privileged, needy girl students of Sri Sarada Math, Dakhineswar, in their academic activities. This we are continuing since the inception of the ASFC.

I, on my personal behalf and on behalf of all the members of ASFC would like to thank the Springer-Nature India publisher’s Life Science Journal Associate Editor Ms. Deepshikha Chauhan and Editor Dr. Mamta Kapila, for their constant support and co-operation for any matters related to the journal.

Like every other year, I am seeking your active interest and support in fulfilling the future endeavours of the foundation. I am sure that our collective wisdom would be translated into the benefits at large for the society. Feeling honoured and privileged to provide leadership to the foundation for the last 5 years fulfilling the vision of my mentor and missions of the foundation.

Amita Pal

Obituary

PROF. NANDA DULAL PARIA

(1.11.1950 –15.01.2023)

Prof. Nanda Dulal Paria, student and long time associate of Prof. AK Sharma and Prof. Archana Sharma, was associated with the ASFC since its inception, being one of our society's esteemed founder members. Growing up under humble circumstances, Prof. Paria stood out because of his sheer commitment to his duties and his passion for teaching and research in botany. He served the Department of Botany, University of Calcutta, in different capacities in a long and glorious career, and took up the mantle of different administrative duties at the University too. He was also appointed the VC of Vidyasagar University and Prof. of Botany at Netaji Subhash Open University.

An authority in Angiosperm Systematics, Prof. Paria has worked extensively on Floristics, Palynology, Ecology, Biodiversity and Conservation, and has established the exciting field of Seed and Seedling Morphology. He supervised over twenty PhD students and his research was funded by a number of national and international grants. He has published over a hundred research papers and seven books. Prof. Paria's calibre in Plant Sciences was acknowledged by different agencies like the Botanical Survey of India, West Bengal Biodiversity Board, West Bengal Forest Department where he was often invited as an expert. He was also appointed as Adjunct Faculty of a number of universities across Europe and USA.

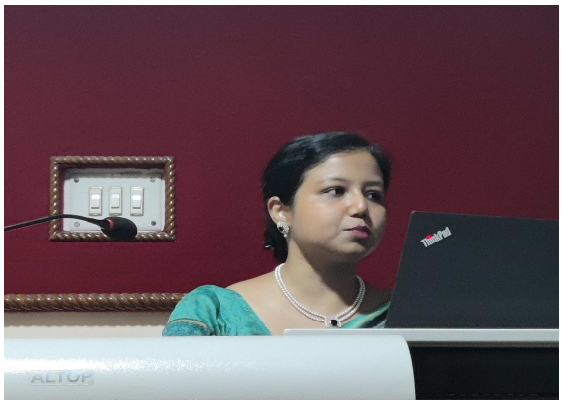
Prof. Paria was also an exemplary teacher who imbibed the passion for Angiosperm Systematics among his students. Students remember him not only as an excellent academic, but also for his empathy and his caring nature. He always remembered his students by name and several generations of students of the PG department of Botany, University of Calcutta, visited the department just to get recognized by their revered teacher. He encouraged everyone to work hard and reach their goals. Prof. Paria's colleagues and associates remember him as someone who worked tirelessly, be it in academics or in administrative roles. His zeal for work was remarkable and he was involved in a number of projects till his last days.

Professor Paria was visiting his daughter in Dallas United States of America when he had to be hospitalized for a cardiac emergency and breathed his last on January 15th 2023.With his demise, the whole fraternity of students, teachers and researchers of botany in West Bengal and across the globe were left bereft.

We pray for peace to his departed soul and extend our condolences to his bereaved family. His inspirational leadership and qualities will forever inspire his students to take forward his ideals and his missions.

ACTIVITIES OF THE FOUNDATION

Invited lecture held on 10th June 2022 by Dr. Sreetama Bhadra
***Postdoctoral Researcher* Evolution and Adaptation group, German Centre for Integrative Biodiversity Research (iDiv) Halle-Jena-Leipzig, Germany**



Title of the Lecture: Effect of genome size on angiosperm trait flexibility and evolution

Prof. Amita Pal, President ASFC, delivered a recorded message where she welcomed the audience and introduced the speaker Dr. Sreetama Bhadra. Members of ASFC, faculty members of Department of Botany, CU, research scholars and post graduate students attended the talk.

In her talk Dr. Bhadra elucidated the mechanisms working behind functional trait flexibility that help plants adapt to their ever-changing environment. She focused on the molecular drivers of these changes and gave a comprehensive outline of her work in progress. Her correlation studies incorporating genome size variations and trait flexibility in context of evolution of plant diversity was very interesting. After her talk there was a question-and-answer session where Dr. Bhadra fielded questions on her presentation and on its implications in plant science.

Prof. Anita Mukherjee delivered the vote of thanks and led the ASFC members and Department of Botany, CU, faculty members in felicitating the speaker on behalf of the Foundation. Dr. Maumita Bandyopadhyay conducted the session.

The audience dispersed after partaking tea and snacks.

5th Professor Archana Sharma and Professor A.K. Sharma Memorial Oration

Held on 5th May, 2022

Title of the Lecture: "Two Summers: Rambling Thoughts in Mental Landscape during Pandemics"

Delivered by Prof. Syamal Roy FNA, FASc, FNASc, FAScT and J C Bose National Fellow

The oration was organized in collaboration with the Department of Botany, University of Calcutta. Professor Binay Chaubey, Head of the Department of Botany, congratulated the members of the Archana Sharma Foundation (ASFC) for taking the initiative to hold the oration offline and welcomed the speaker and the audience for their participation. The vice-president of the foundation, Prof. Anita Mukherjee delivered the opening remarks as the president of ASFC could not be present on account of her health issues. She informed the audience about the aims and objectives of the foundation and reiterated the duties of the members for achieving the goals set by our Professor AK Sharma in establishing the foundation in memory of Professor Archana Sharma. Dr Maumita Bandyopadhyay, assistant secretary conducted the event and introduced the speaker to the audience.

Professor Syamal Roy initiated his talk by paying tribute to Professors AK Sharma and Archana Sharma. His presentation included their contribution to science at national and international stature. The oration was very interesting and most unusual. He presented the topic combining philosophy, poetry, history with science (neurobiology and epigenetics). The participants enjoyed this amazing lecture and wondered about Professor Roy's depth of knowledge. The oration ended with the vote of thanks offered by the Secretary, Professor Rita Kundu followed by felicitation of the speaker by the vice-president. The lecture is available on the following platforms:

Zoom : https://us06web.zoom.us/j/84577086359?pwd=c1FkWENtcDRkdkw3ZnVmM0FzTW51UT09

Youtube : https://youtu.be/sbgVsK6ButE

National Symposium on Frontiers in Plant Science Research

Organised by

Archana Sharma Foundation of Calcutta

In collaboration with The Department of Botany, University of Calcutta on 10th June, 2022

A one day National Symposium on "Frontiers in Plant Science Research" was organized by the Archana Sharma Foundation of Calcutta, Kolkata in collaboration with Department of Botany, University of Calcutta on 10th June, 2022 at Archana Sharma Memorial Hall, Department of Botany, University of Calcutta. Abiotic stress tolerance responses in plants, plant-microbe interaction, and plant developmental biology were the three themes of the conference. The event began with inaugural song by scholars of the Department followed by the welcome address by Prof. Binay Chaubey, Head of the department of Botany. The event was presided by Prof. Anita Mukherjee, Vice President, Archana Sharma Foundation of Calcutta. The inaugural program was graced by chief guest, Prof. Sampa Das, INSA Senior Scientist, Bose Institute and key note Speaker Prof. Swapan K Datta, honourable Vice Chancellor, Biswa Bangla Biswavidyalaya. It was an honour that eminent scientists from different institutions shared their research experience with us. Four invited speakers from various institutions delivered their speech. The first technical session was chaired by Prof. Maitrayee Dasgupta, Department of Biochemistry, University of Calcutta. Prof. Debasish Chakrabarty, Senior Scientist, National Botanical Research Institute, Lucknow and Dr. Sourav Datta, Associate Professor, IISER-Bhopal delivered lectures on "**Arsenic stress tolerance mechanism of rice**" and "**Light-mediated germination and photomorphogenetic responses in plants**" respectively. At the end of the session, there was interaction between research scholars and the speakers. Post lunch session was chaired by Prof. Krishnendu Acharya, Department of Botany, University of Calcutta. Dr. Sujit Roy, Assistant Professor, Department of Botany, University of Burdwan delivered a lecture on "**Chromosome repair mechanism in plants in response to UV light**" followed by the lecture by Dr. Kutubuddin Ali Molla, Scientist, ICAR-National Rice Research Institute, Cuttack on "**Crisper-CAS- the recent advancement of genome editing in plant science research"**. 16 oral and 14 posters were presented by young researchers. Certificates were awarded to 4 best participants for oral and poster presentations. More than 100 participants from different colleges and Universities from West Bengal attended the seminar. In the valedictory session, Prof. Rita Kundu, Secretary, Archana Sharma Foundation of Calcutta delivered the concluding remarks and distributed the certificates to all the registered participants. The programme was conducted by Dr. Maumita Bandyopadhyay, Assistant Professor, Department of Botany, University of Calcutta and Convenor of the conference and ended with vote of thanks by Dr. Soumitra Paul, Assitant Professor, Department of Botany, University of Calcutta and joint-convenor of the conference.

National Symposium on "Impact of COVID-19: A Retrospective Analysis on Human Health and Environment

Organized by
All India Congress of Genetics and Genomics
In collaboration with Archana Sharma Foundation of Calcutta
Held on Jan 30-31, 2023.

Inaugural session of the 20th All India Congress of Genetics and Genomics

Dr.Arun Bandyopadhay, Prof..P. P. Majumder, Prof. Indranil Manna, Dr.Ashok K.Giri, Dr. Anita Mukherjee and Dr. Pritha Bhattacharjee

The national symposium organized by AICGG in collaboration with Archana Sharma Foundation of Calcutta was held during January 30-31, 2023 at CSIR-IICB (Indian Institute of Chemical Biology). The Plenary session was chaired by Dr. Chandrima Saha and Dr. Amit Ghosh. Prof. Indranil Manna introduced the great scientist and founder of AICGG Prof. G.K. Manna to the audience. Dr. Sagar Sengupta, Director, NIBMG, delivered the "8th Prof. G. K. Manna Memorial Lecture".

Prof. A.K. Sharma Memorial Lecture was delivered by Dr. Arun Bandyopadhyay (Director CSIR-IICB, Kolkata) and Prof. Manju Sharma gave an introductory remark on the contribution of Prof. A.K. Sharma in Science, especially in the field of cytogenetics. The session was chaired by Dr. Chitra Mandal and Dr. Kunal Ray.

There were 5 technical sessions comprising of a total of 25 lectures and 50 posters on plant, animal and human genetics. More than 150 delegates attended the symposium from different parts of West Bengal and 6 other states of India. Interestingly, along with the senior scientists, a very good number of lectures were presented by young and mid-level scientists. Best poster awardees were awarded with a certificate of appreciation and a cash prize. Each session was brainstorming and opened further a path for collaboration and network.

The symposium was successful with the active participation of the delegates, technical support from Director, IICB, funding support from BRNS and Archana Sharma Foundation of Calcutta.

Invited lecture

By

Professor Dr. Annette Becker

Professor for Developmental Biology of Plants, JustusLiebig-University of Giessen, Germany;
Vice President of the European Society for Evolutionary Developmental Biology

On

"And what about food? On the molecular evolution of carpels"

Held on 29th March 2023

Dr. Malay Das (Presidency University), Dr. Maumita Bandyopadhyay (Asst. Secretary, ASFC),
Prof. Annette Becker (Speaker), Dr. Amita Pal (President of ASFC), Prof. Rita Kundu (Secretary of ASFC)

Abstract of the lecture

Much of our food, for example grains, nuts, and fruits ultimately comes from carpels. Carpels are the most important evolutionary innovation of flowering plants (angiosperms) and the most complex plant organ, composed of many clearly distinct tissue types to ensure reproductive success. Several theories on carpel origin exist which have been a matter of debate since many decades. Many components of the gene regulatory network (GRN) governing carpel development and their genetic interactions have been described, but mainly in Arabidopsis thaliana only. To elucidate the origin and evolution of carpel GRNs and to identify novel carpel development regulators, we follow two approaches: thorough phylogeny reconstructions to identify the age of the GRN components and phylotranscriptomics to identify evolutionary conserved co-regulated clusters of orthologs. For the latter, we generated transcriptomes from laser micro-dissected carpel developmental stages and compared co-expressed gene clusters of orthologous genes from phylogenetically distant species. Our data so far indicate that developmental processes present already in the most recent common ancestor of seed plants, such as reproductive meristem termination or adaxial/abaxial polarity specification requires few interacting transcription factors, which are purged after whole genome duplications (WGD). I will further present our recent finding on analyzing gene functions in non-model flowering plants.

Zoom Meeting link:
https://us06web.zoom.us/j/87446393244?pwd=OTVvN2ZsQThSMmQwRTZaaTRxL1ZvQT09
Youtube Link: https://www.youtube.com/watch?v=OmFz0yu7gS4

(Prepared in assistance from Dr. Bani Gajra, Dr. Maumita Bandyopadhyay, Dr. Anita Mukherjee and Ms. Anahita Mukherjee)