

Online Launching of e-Paper “Scientifica Communica”

1^{5th} of August 2021, the auspicious 75th independence day of India, was chosen for the inauguration of the English e-paper named “Scientifica Communica”. Amid the COVID-19 pandemic, the inauguration programme of the e-paper was arranged on the Google Meet platform. It started from 11.00 a.m. Dr. Amit Krishna De, one of the Honorary Secretaries of Indian Science News Association (ISNA), said in his introductory speech that “Scientifica Communica” is the first ever e-paper and it is a part of the 34th Training Programme on Science Communication and Media Practice organised jointly by ISNA and Vigyan Prasar, DST, Govt. of India, New Delhi. The welcome speech was delivered by the eminent journalist and science communicator, Sri Pathik Guha.

Prof. Manas Chakrabarty, the other Honorary Secretary of ISNA, said in his speech that ISNA has been the host for new science communicators since mid 1930s. When India was going through grave crisis, several science stalwarts like Acharya P.C. Ray and Meghnad Saha had initiated the journey of ISNA. In June 1935, the first issue of *Science and Culture* was published. It has been 87 years since then, *Science and Culture* is regularly published by the ISNA. Many great people including several Nobel Laureates like Amartya Sen have contributed in *Science and Culture*. It is a multidisciplinary journal. Prof. Chakrabarty also thanked all involved in successful organization of the 34th Training Programme on Science Communication and Media Practice course.

Dr. T. V Venkateswaran, Joint Convener, 34th Training Programme and Scientist F, Vigyan Prasar spoke about Vigyan Prasar. He said that this e-paper is the outcome of joint efforts of ISNA and Vigyan Prasar. He recollected the freedom struggle of India and said that most of freedom fighters had talked about igniting scientific temper, knowledge-and evidence-based thinking in common people. Dr. Venkateswaran also said that importance of Science Communication is immense. Without proper scientific knowledge and approach society would have suffered more in this COVID pandemic. Initially though there were many

misconceptions about COVID-19, but as knowledge spread, prejudices dropped off. Work of science communicator has brought a change in our society. Dr. Venkateswaran also wished all a very happy 75th Independence Day of India.

The Guest of Honour, Dr. Nakul Parashar, Director of Vigyan Prasar expressed his pleasure to be a part of the inaugural programme of “Scientifica Communica”. He said that electronic, digital and social media have now become new ways for communicating science. He congratulated ISNA and said that all should come together for such a wonderful initiative for promoting science communication. Dr. Parashar also wished all a very happy independence day and thanked all.

Then Dr. Amit Krishna De, Convener, 34th Training Programme in his speech elaborated about the 34th Training Programme of ISNA. He said that last year it was not possible to arrange the Training Programme of Science Communication and Media Practice because of the COVID pandemic. As the pandemic is still prevailing, the training programme in this year may be conducted only through online mode. Two e-papers have been incepted as a part of the 34th Training Programme. One is the “Scientifica Communica”, launching on that day and the other one is in Bengali, named as ‘Bigyan Kahon’ to be launched in October. Dr. De Said that an online 7 day workshop in Science Communication in Bengali has also been organized as a part of the 34th Training Programme of ISNA and will be held from 26th September to 3rd October, 2021. Also, an advanced certificate course on “Science Communication for Social Media” is being planned to be undertaken by ISNA jointly with Sisiter Nivedita University and Vigyan Prasar from this year.

Sri Prasanta K. Bose, Editor of “Scientifica Communica” spoke about the e-paper. He quoted Leonardo De Vinci and said, “Knowing is not enough; we must apply. Being willing is not enough; we must do.” He also said that India holds 2nd rank in the world in use of smart phone and we must utilize this technological break to deliver science to doors. He added that definitely this shouldn’t be the diversion from hard copy of science-newspaper but it should be the methods of delivering science news to people. Sri Bose added that the faculty

members and students of ISNA scratched their brain and thought about this unique *e*-paper. The names “Bigyan Kahon” and “Scientifica Communica” were suggested and were spontaneously accepted by all happily. The English *e*-paper to be launched on 15th August, 2021, 75th Independence Day of India. The Bengali *e*-paper, “Bigyan Kahon” has been decided to be launched in the month of October, 2021 on the auspicious festive occasion of Mahalaya.

The “Scientifica Communica” was digitally inaugurated by Sri Uday Basu, former Co-ordinating Editor of The Statesman and is presently serving as the Editor of Orissa Post. He congratulated ISNA. He said that it is indeed a difficult task to convert complex scientific facts in common man’s idioms and serving them in understandable. Proper training is really necessary for doing justice to this honorable task. Unless and until the scientific temper is instilled in every man, human civilization won’t progress. Historically, the print media has been dedicating pages to science. Now a days newspapers bring out articles on scientific developments. The Statesman dedicates a whole section on science. Journalists find topics and learn about it and then write on it. It is an important task to find out topics which will be interesting to common man. Lucidity and readability are the key stones of journalism. If scientists would have communicated facts to common people they would have burdened the mind of people with scientific terms and jargons. Sri Basu said that in the opinion of scientists global warming will soon take its toll on all mountains. As a result, snow and glaciers will melt and this will cause floods in different places around the world. Atmospheric concentration of carbon dioxide, methane and nitrogen oxides has increased in unprecedented manner. Temperature has increased by 4.8 °C than that of the preindustrial times. Green House gases have increased by 60%. We need to reverse the situation by decreasing Green House gases in the atmosphere. For this, we need to decrease automobile emissions, use more alternative energy like solar energy etc. Use of Nuclear is a good alternative but has some risk factors associated with it. We need to ensure proper disposal of radioactive wastes and then can use nuclear energy as alternative source of energy. We need to plant more and more trees and plants. For centuries we have been destroying our forest cover of the planet. It’s time to stop. Sri Basu also said that the space scientists have considered several planets in our solar system. Venus gives us evidence about the harms of Green House gases. There, the temperature is 900°F, that can melt tin. Green House gases in Venus have caused

this rise in temperature there. Green House gases are reality and the effect of their rising concentration can be as deadly as in Venus. Sri Basu said that Mars has no ozone and so uv radiation enters the planet uninterrupted and the result is that there is no trace of any organic molecule in Mars. Life is precious and only on the planet Earth. We need to take care of our life on this planet. The concept of protecting the environment and life on earth started years ago in the ancient India. Sri Basu quoted an example mentioning that epic writer of Ramayana, Sage Valmiki, he cursed a hunter for killing a pair of cranes while they were making love. This is actually a symbolic protest against destroying nature. Same curse has fallen on man by nature for his violence against nature. Sri Basu added that we need science to protest against this violence on nature and to make people understand what is good for them and how important nature is and can thus remove the curse on mankind.

Dr. K. Muraleedharan, President of ISNA addressed the audience and said that Kolkata gave us many things and now two *e*-papers have come up from Kolkata for the purpose of popularizing science. Many people are still not aware of what danger ignorance can do to living organisms in this world. We need to learn to distinguish between good and bad information. He also gave example of vaccine against COVID-19 and said that we first need to get the right information about which clinic possesses the vaccine and then only can go and get it from there. So communication is important for making information reachable. Aim of ISNA is to train young students to spread the message of science and to train them the correct way of spreading information to people.

Experiences were shared by two former students of ISNA, who had taken active part in preparing the *e*-paper. Ms. Barnini Bhattacharya, Research Scholar, Indian Statistical Institute said that she has learnt a lot while working on “Scientifica Communica” and is looking ahead to the future issues of the *e*-paper. Mr. Sukalyan Gain, Research Scholar, Kalyani University, another student of ISNA expressed his gratitude to all teachers of ISNA for their guidance. He said that he has got enlightened on various aspects of science communication being a part of ISNA. He also expressed his thanks to all team members of the “Scientifica Communica” for their support.

The programme ended with vote of thanks from Dr. Arnab Kumar Banerjee, Joint Editor, “Scientifica Communica”. Dr. Banerjee thanked all delegates. At the end on the auspicious occasion of the 75th Independence Day of India, the National Anthem of India was sung in

chorus by all who attended the programme online on Google Meet platform. □

Debosree Ghosh
Department of Physiology
Government General Degree College
Paschim Medinipur, West Bengal- 721149
e-mail: ghoshdebosree@gmail.com

Report on 10th Prof. J. J. Ghosh Memorial Lecture

Prof. J. J. Ghosh Foundation organised an online International Webinar by arranging 10th Memorial Lecture for birthday celebration of Prof. J. J. Ghosh on 19 July, 2021. The speaker of the 10th Memorial Lecture was Prof. Sankar Ghosh, Chairman and Silverstein and Hutt Family Professor of Microbiology and Immunology, Columbia University Medical Centre, Fellow, National Academy of Sciences (NAS), USA and Fellow, American Association for the Advancement of Science.

Dr. Swapna Mukherjee, Head of the Department of Microbiology, Dinabandhu Andrews College was the coordinator of the whole programme. She greeted all the participants and the invited speaker and initiated the program by giving a brief introduction of Prof. J. J. Ghosh.

Prof. Mrinal K. Poddar, President, Prof. J. J. Ghosh Foundation delivered his welcome address in a very elegant way. He introduced Prof. J. J. Ghosh before the audience by revealing various qualities of Prof. J. J. Ghosh. He told that Prof. J. J. Ghosh was the founder of Biomathematical School and established active school of Neurochemistry and Neurobiology in Calcutta University. Contribution of Prof. J. J. Ghosh is incomparable in development of Biochemistry in the University of Calcutta. He mentioned about the dynamic, vibrating and inspiring personality of Prof. J. J. Ghosh. Prof. Poddar lastly highlighted about the objective of Prof. J. J. Ghosh Foundation. The Foundation is working for the fulfilment of Prof. Ghosh's commitment towards the benefit of the students.

Dr. Aditi Nag Chaudhuri, Secretary, Prof. J. J. Ghosh Foundation, presented the last 10 years speakers of the Prof. J. J. Ghosh Memorial Lecture through the power point presentation. The slides were beautifully prepared, and her presentation gave a glimpse of the past events for celebration of birthday of Prof. J. J. Ghosh. The first program of Prof. J. J. Ghosh Foundation was organized on 19th July 2012. Chronologically the speakers of this

program were Dr. P. K. Sarkar, INSA Senior Scientist (2012), Prof. N. C. Mandal, INSA Fellow (2013), Prof. P. K. Ray (2014) Director, Bose Institute, Prof. Asis Datta, Distinguished Scientist (2015), Dr. Pijush Das, NASI Scientist (2016), Dr. Ambika C. Banerjee, Former Corporate Advisor R and D, East India Pharmaceutical Works Ltd. (2017), Dr. Pratap K. Das, Scientist, IICB (2018), Prof. Dhrubajyoti Chattopadhyay (2019), Pro-Vice-Chancellor, University of Calcutta; Vice-Chancellor, Amity University and Prof. Sankar Adhya, National Cancer Institute, USA (2020).

Dr Sumantra Das, Treasurer of Prof. J. J. Ghosh Foundation proposed the name of Dr. Ishwar S. Singh, University of Maryland, School of Medicine for introducing Prof. Sankar Ghosh. Dr. Ishwar S. Singh introduced Prof. Sankar Ghosh before the august gathering. Dr. Singh revealed that Prof. Sankar Ghosh got gold medal in his M.Sc. in the year 1981 from the Department of Biochemistry, University of Calcutta. After that he went abroad to pursue his PhD under Prof. Umadas Maitra at Albert Einstein College of Medicine, Bronx, New York. We came to know from Dr. Singh that Prof. Ghosh did his post Doctorate under Prof. David Baltimore, Nobel Prize Winner in 1991. At first the area of research of Prof. S. Ghosh was Immunobiology but after that he moved to the field of study on transcription factor NF- κ B regulation, function, and signalling. Prof. Ghosh has expertise in Immunology, Cancer Biology and Molecular Pathology. Finally, he was elected by the National Academy of Sciences, USA. Dr. Singh also mentioned that Prof. Sankar Adhya, the speaker of 9th Memorial Lecture was one of the seven Bengalis who became member of National Academy of Sciences (NAS), USA.

Prof. Sankar Ghosh at the beginning of his lecture recalled some of his fond memories about Prof. J. J. Ghosh. He remembered the exciting teaching techniques of Prof. J. J. Ghosh about operons and fundamental concepts on regulation of genes. The topic of the 10th Memorial Lecture was "Induction of Innate immune memory through microRNA mediated suppression of chromatin modelling". He carried out research on molecular regulation of Lipopolysaccharide (LPS) tolerance and its link to sepsis which is observed in hospitals. Sepsis occurs when we get infected with bacteria, and it can provoke profound inflammatory response leading to cascade of events terminating in multiorgan failure. His focus was on the tolerance and nontolerance of LPS induced genes, the relationship between micro-RNA, miR-222 and the expression of Brg1 and the protection against inflammation

in septic shock. He concluded by saying that miR-222 regulates chromatin remodeling complexes to prevent transcription of specific inflammatory genes subsets.

After this lecture Dr. Aditi Nag Chaudhuri presented a memento virtually to Prof. Sankar Ghosh. Dr. Nag Chaudhuri also summarized the whole lecture and expressed heartfelt thanks to Prof. S. Ghosh. She pointed about the application of the research work carried out by Prof. Sankar Ghosh in case of hospital patients.

Dr. Amit Krishna De, Honorary Secretary of Indian Science News Association and member of Prof. J. J. Ghosh Foundation announced the names of the prize winners of Critical Essay competition organized by the Foundation for the year 2020 and the names of the Toppers of M.Sc. in Neurobiochemistry, University of Calcutta for the year 2019 and 2020 respectively. Winners of the Critical Essay Competition 2020 were Shreya Mukhopadhyay, Microbiology, Acharya Prafulla Chandra College, West Bengal State University (First), Rima Ghosh, Microbiology, Acharya Prafulla Chandra College, West Bengal State University (Second) and Kanchan Shaw, Microbiology, West Bengal State University (Third). The toppers in Neurobiochemistry M.Sc. were Ananya Sarkar (2020) and Priyanka Das (2019).

For Reminiscence of Prof. J. J. Ghosh, the participants expressing their willingness were called by Dr. Souvik Roy, Assistant Prof. of Post Graduate Department of Biotechnology, St Xavier's College. The first participant was Prof. Hemanta K. Majumdar, NASI Senior Scientist and student of Prof. J. J. Ghosh in the year 1970 who recalled some of his interactions with Prof. J. J. Ghosh starting from his student life in M.Sc. to his appointment as scientist in IICB. The second participant of this session was Dr. Ambika C. Banerjee, Former Corporate Advisor-R & D, East India Pharmaceutical Works Ltd., and the speaker of 6th Memorial Lecture of Prof. J. J. Ghosh Foundation. He was the student of Prof. J. J. Ghosh in 1969 and later became a colleague in the Department of Biochemistry, University of Calcutta. He expressed his views about Prof. J. J. Ghosh as a successful and a great teacher. He reminded a story of a class lecture on Vitamin B1 (thiamine), deficiency of which causes Beri Beri, where Prof. J. J. Ghosh dramatically acted like the limping chickens and the normal ones.

Vote of Thanks was given by Dr. Madhulika Gupta, Assistant Professor, Post Graduate Department of Microbiology, Lady Brabourne College. There were around

100 participants in this webinar. The webinar was a grand success. □

Rini Roy
Post Graduate Department of Microbiology,
Bidhannagar College
e-mail : for-rini-roy@yahoo.co.in

Enclosure Culture for Fish Production Enhancement in Inland Open Waters

Enclosure culture of freshwater fishes in cage and pen systems installed in one portion of large water bodies like reservoirs and floodplain wetlands offer good scope for increasing fish production and ensuring nutritional and livelihood security of rural poor. Under the broad head 'National Campaign on System Diversification in Aquaculture' and commemorating the occasion of 75th year of Indian independence, the National Webinar-cum-Training on 'Enclosure culture for fish production enhancement in inland open waters' was organized online by ICAR-Central Inland Fisheries Research Institute, Barrackpore on 1st September, 2021 in Zoom platform. Dr B. K. Das, Director, ICAR-CIFRI as the 1st speaker spoke on 'Status and prospects of enclosure culture for production enhancement from inland open waters in India'.

ICAR-CIFRI is pioneer for both cage and pen technology for both carp fingerling raising and table fish production in India. Dr Das enlightened participants about concept of enclosure culture; status of aquaculture production and fisheries in India; resource of reservoirs and floodplain wetlands in India, fish production rate; advantages of enclosure culture system (reduction in cost of harvesting, allowing rapid, sure, complete and easy harvesting, efficient and low cost raising of fingerlings in large numbers for stocking in grow-out culture systems, bulk amount of table fish production achievable from limited space). Dr Das pictorially highlighted on adoption and widespread of cage culture technology in a number of reservoirs in 20 states, most adoption in Jharkhand, Chattisgarh, Madhya Pradesh, Maharashtra where scaling up is going on. Technology packages include raising of carp fingerlings (single species culture or polyculture), table fish production of major and medium carps (monoculture or polyculture), air-breathing fish culture to table size, *Pangasianodon hypophthalmus* culture. Diversification with *P. hypophthalmus*, *Systomus sarana*, *Labeo gonius* and others is possible in cages.

Dr Das informed about funding patterns in cage culture; enclosure culture and entrepreneurship development; major constraints and issues (higher feed cost, non-availability of fish seeds in desired quantity, fish disease incidences in few cases); technology packages in pen culture (Indian major carp polyculture, giant prawn monoculture, carp and prawn polyculture, raising carp fingerlings); advancements in pen culture technology at Baksa, Morigaon, Dhubri, Darang, Nagaon in eastern India. As way forward, Dr Das emphasized on cluster approach, diversification of fish species of regional preference, looking for enhanced profitability, enormous opportunities to expand and promote enclosure culture, ensuring quality fish seed availability, development of sustainable feed, dissemination of packages of practices with capacity building, fund flow, value chain, infrastructure development, linking FPOs - which will enable better adoption of enclosure culture.

Dr A. K. Das, Principal Scientist (PS) and In-charge, Training and Extension Cell, ICAR-CIFRI presented on 'Cage culture: System and species diversification'. Dr Das briefed about numbers of Fishery Universities, College of Fisheries, KVKs, ICAR fishery research institutes in India; significance of cage culture in inland open waters in boosting protein food supply, social health and livelihoods; reservoir fishery resource, managed and unmanaged ponds; reasons of importance of cage culture technology; its evolution at ICAR-CIFRI and milestones during 1970-2019; initiation of cage designing during 1970s; number of fish cages in operation in India; cage culture adopted through NMPS Project in India in 2012. He described the ICAR-CIFRI Model GI Frame Cage that is already marketed; cage culture sites at Loni wetland, Ukai reservoir, Chandil reservoir and other places; techniques in cage fabrication; cage culture activities at Dahod reservoir and Dumbur reservoir, Tripura; cage culture in context of Blue Revolution; fish species experimented and salient findings of table fish production in terms of growth performance, stocking density, survivability and final production.

Dr Das further spoke on available technology packages, modular Pootoon cage, extruded pelleted fish feed developed for growing fish in cages, stocked fish species as net cleaners, impact of herbivorous fishes on periphyton development in inner net walls, cage culture integration with duckery, cage culture in Bangladesh. While speaking on Rehab Pangas fish disease, winter management of fishes, White Spot Disease (including Ich in *P. hypophthalmus*) in cage cultured fishes, Dr Das informed

about recommended drugs and chemicals for use by cage aquaculturists. A production rate of 50-60kg/m³ achieved for *P. hypophthalmus* in cage culture.

Dr Sona Yengkokpam, Sr. Scientist, Guwahati Research Centre of ICAR-CIFRI spoke on 'Pen culture for fisheries enhancement and table fish production in wetlands'. She discussed about associated fish seed mortality occurring with transportation from hatchery to fish ponds, non-availability of advanced carp fingerlings, high cost of fingerlings as some constraints to aquaculture in pen enclosures; advantages of pen culture; described features of HDPE pen, net-lined *bana* pens, pens using nylon nets; pre-stocking, stocking and post-stocking management aspects in pen culture; battery of pens and pen culture demonstration in Assam in large scale in collaboration with AFDC Limited and Department of Fisheries, Assam. According to Dr Yengkokpam, pen of size 2500sq metre found to be most economically-viable size of pen; she highlighted on demonstration, validation and popularization of pen aquaculture technology as a climate resilient technology; stock enhancement with stunted carp fingerlings reared in pens; concept of fish stock enhancement in beels; collaborative pen culture demonstration in Manipur and that initiated in Arunachal Pradesh; CIFRI HDPE pen installation and fish culture in wetlands of Assam.

Dr M. A. Hassan, PS and Head, Fisheries Enhancement and Management Division, ICAR-CIFRI spoke on 'Fish nutrition and feeding management in enclosures'. Dr Hassan nicely explained about essentiality of good nutrition in fish production; new species-specific diet formulations supporting aquaculture industry; aquaculture systems, intensive fish farming; balance nutrient and energy; protein requirement in fishes under culture; nutrient and energy budgets; major nutrient deficiencies and toxicity signs in fishes; importance of pelletization of fish feed and features of extrusion feed mill. Dr Hassan also spoke in detail about feeding management in cage fish farming. Dr S. K. Manna, PS, ICAR-CIFRI spoke on 'Fish health management in enclosure culture systems'. Dr Manna comprehensively explained about host-environment-pathogen interaction in water bodies and disease situations in fish ponds and pen and cage culture systems; symptoms, fish species affected and causative agent (pathogen/parasite) of different fish diseases namely Tail Rot and Fin Rot, Gill Rot, Columnaris Disease, Aeromonas Septicemia, Catfish Septicemia, Cotton Wool Disease and others and discussed about the remedial measures, i. e., proper application of KMnO₄, common salt and other chemicals (fish bath

treatment and pond treatment) in correct dosage in prevention and control of fish diseases.

As the 6th and final speaker, Dr Aparna Roy, Sr. Scientist, ICAR-CIFRI gave an overview of PMMSY (Pradhan Mantri Matsya Sampada Yojana) scheme, launched by Ministry of Animal Husbandry, Fisheries and Dairying, Government of India aiming to increase our country's fish production to 22 million tonnes by the year 2024-2025. Dr Roy in her talk emphasized on key indicators of Indian fisheries sector (which is sunrise sector); importance of fisheries in agriculture and the committee formed in 2018 for doubling farmers' income; development in fisheries sector in India and schemes launched (Blue

Revolution in 2015-2016, FIDF (Fisheries and Aquaculture Infrastructure Development Fund) in 2018-2019, PMMSY in 2020-2021); clearly stated the objectives, funding pattern to fish farmers, fishermen, fish vendors and other stakeholders; anticipated outcome; thrust areas for projects under entrepreneur model. It was entirely a very informative session; a newer approach for effectively utilizing vast resources like reservoirs and wetlands for fish and prawn production. □

Subrato Ghosh
Fishery Extension Officer,
Directorate of Fisheries, Government of WB
e-mail: subratoffa@gmail.com