SCIENCE AND CULTURE

JANUARY-FEBRUARY 2023/VOLUME 89/NO. 1–2

Contd. next page.

A JOURNAL OF NATURAL AND CULTURAL SCIENCES

LODRIQUED DI LUE		EDITORIAL		
INDIAN SCIENCE		Some Problems of Nation-Building		
NEWS ASSOCIATION		— Subhas Chandra Bose		1
EDITORIAL BOARD Professor Sudhendu Mandal Editor-in-Chief		ARTICLE The Menace of Locusts		
Professor Avijit Banerji		— D. K. Srivastava and V. S. Ramamurthy		3
Dr. Satyabrata Chakrabarti Professor Syamal Chakrabarti Professor Manas Chakrabarty		Science and Arts: Interpretation of Interrelationship		
Dr. Sabyasachi Chattopadhyay Professor Arnab Rai Choudhuri		— Sajal Bhattacharya and Syamantak Dey		8
Dr. Amit Krishna De Professor Prabir Kumar Saha Dr. T. V. Venkateswaran		Application of Microbial Enzymes in Food Industry: A Review — Baishali Pandit		13
COLLABORATORS		Arsenic, Selenium and Fluoride Induced Toxicity on Fish and Other Aquatic Organisms – A Review		
Amiya Kumar Bagchi (Kolkata)	Punam Kakkar (Lucknow)	— Nimai Chandra Saha		21
Kelvin Brown (Australia) D. P. Chattopadhyaya (Kolkata)	Deepak Kumar (New Delhi) Abhijit Lahiri (New Delhi) Monoj K. Patairiya	Looking at COVID-19 Pandemic Through the Lens of Epidemiological Transition Theory — Pia Ghoshal and		27
A. D. Choudhuri (Kolkata) Mrinal K. Dewanjee (USA)	(New Delhi) B.K. Pattnaik (Kanpur) V. Ravichandran (Kolkata)	Aniruddha Banerji Remembering Seymour Benzer in His Post Centenary Year — Moumita Das and	•••	21
R. Gadagkar (Bangaluru) Ajoy Ghatak (New Delhi)	Amit Roy (Kolkata) Satyesh Chandra Roy (Kolkata)	Chinmoy Kumar Ghosh TRAVELOGUE		33
Arfan Habib (New Delhi) Amiya K. Hati (Kolkata) Mridul Hazarika (Guwahati) S. Kailas (Mumbai)	Nimai Chandra Saha (Burdwan) Rajinder Singh (Germany) Srinivasan Srikanthan (Chennai)	Colonial Encounters: Documenting Japan Through Bengali Travellers' Eyes — Somdatta Mandal		38



MEMBERS OF THE COUNCIL

President

Dr. K. Muraleedharan

Vice-Presidents

Professor S. K. Talapatra

Professor (Mrs.) Julie Banerji

Professor Bikas K. Chakrabarti

Professor Dhrubajyoti Chattopadhyay

Professor Basab Chaudhuri

Dr. Anil K. Rajvanshi

Honorary Secretaries

Professor Manas Chakrabarty

Dr. Amit Krishna De

Honorary Treasurer

Professor Barun Kumar Chatterjee

Editor-in-Chief, Science and Culture

Professor Sudhendu Mandal

Members

Professor Avijit Banerji

Shri Prasanta K. Bose

Dr. Manoj Kumar Chakrabarti

Dr. Satyabrata Chakrabarti

Professor Syamal Chakrabarti

Dr. Sabyasachi Chattopadhyay

Dr. (Mrs.) Sumitra Chaudhuri

Dr. Manas Pratim Das

Dr. D. P. Duari

Shri Pathik Guha

Dr. Balaram Majumder

Professor Partha P. Majumder

Shri Sitendu Mandal

Dr. Shankarashis Mukherjee

Professor Sajal Ray

Professor Arnab Rai Choudhuri

Professor Prabir Kumar Saha

Dr. Devaprasanna Sinha

Dr. D. K. Srivastava

Professor (Mrs.) Bani Talapatra

Dr. T.V. Venkateswaran

RESEARCH COMMUNICATION

Impact of Variation in Thermal Working Environment on Cardiac Performance in Bengalee Male Crop Cultivators of a Southern District of West Bengal

— Ayan Chatterjee, Neepa Banerjee, Sandipan Chatterjee, Surjani Chatterjee and Shankarashis Mukherjee ...

45

Facebook Addiction Among College Students of Tripura: Dissecting the Roles of Gender and Age

— Deepak Upadhyaya and Ivan Das

52

NOTES AND NEWS

58

Cover: Left Side Photo 1-4: Locusts found in India (Page 4)
Right Side Photo 1: Control of Locusts (Adopted from BBC.COM)
(Page 6)

Right Side Photo 2: Flying Gregarious Locust (Adapted from National Geographic) (Page 5)

Right Side Photo 3: A Desert Locust Adult Female Laying Eggs (Page 4)

Members of the Advisory Committee of Indian Science News Association

Professor Padmanabham Balaram	Bengaluru	
Professor D. Balasubramanian	Hyderabad	
Professor Basudeb Barman	Kolkata	
Professor Ashoke Nath Basu	Kolkata	
Dr. Balaram Bhargava	New Delhi	
Professor Uday Bandyopadhyay	Kolkata	
Professor Sonali Chakravarti Banerjee	Kolkata	
Dr. Srivari Chandrasekharan	New Delhi	
Dr. Purnendu Chatterjee	Kolkata	
Professor Suranjan Das	Kolkata	
Dr. Rajesh S. Gokhale	New Delhi	
Dr. K. Kasturirangan	Bengaluru	
Dr. Shekhar C. Mande	New Delhi	
Dr. R. A. Mashelkar	New Delhi	
Professor Goverdhan Mehta	Hyderabad	
Dr. Trilochan Mohapatra	New Delhi	
Dr. Nakul Parashar	New Delhi	
Professor Ashoke Sen	Allahabad	
Dr. Bikash Chandra Sinha	Kolkata	
Professor M. S. Swaminathan	Chennai	

SCIENCE & CULTURE ADVERTISEMENT

RATE

	Single Insertion	
	(Full Page)	(Half Page)
COVER (Back)	Rs. 20,000/-	×
COVER (Front Inside)	Rs. 15,000/-	×
COVER (Back Inside)	Rs. 15,000/-	×
OTHER PAGES	Rs. 10,000/-	×

N.B.: For colour or any other special types of advertisement—rates may be negotiated.

A discount of 20% for insertions in all issues in a year and of 15% for atleast three insertions will be allowed.

TO OUR READERS

Your appreciation of the journal makes us bold to suppose that some of your friends would also like to read SCIENCE AND CULTURE, the premier scientific bi-monthly of India devoted to the publication of the progress in pure and applied sciences. The Indian Science News Association has been conducting the journal for 89 years with the editorial co-operation of eminent scientists of India with the object of promoting and diffusing knowledge laying special stress on the progress of scientific studies here and abroad, and advocating methodical application of science to problems of national regeneration.

Editorial correspondence should be sent to the Editor-in-Chief, *Science and Culture*, 92, Acharya Prafulla Chandra Road, Kolkata-700 009, E-mail: editorial.scienceandculture@gmail.com / chiefeditorscienceandculture@gmail.com Manuscripts prepared in accordance with the Instruction to Authors should be submitted through e-mail.

Correspondence relating to subscription, advertisement and other matters should be addressed to the Honorary Secretary, Indian Science News Association, 92, Acharya Prafulla Chandra Road, Kolkata - 700 009, Phone: 2350-2224. E-mail: editorial.scienceandculture@gmail.com Website: scienceandculture-isna.org

MEMBERSHIP FEE

Life Member (India)	Rs.5,0	00.00*+
Life Member (Foreign)	\$	600.00
Ordinary Member (without journal)	Rs.	100.00
Ordinary Member (with journal)	Rs.	500.00

ANNUAL SUBSCRIPTION

Inland (Institution)	Rs. 2,500.00
Foreign	U.S.\$ 125.00
Inland (Individual)	Rs. 400.00
Foreign (Individual)	US.\$ 60.00
Single Copy (Inland)	Rs. 125.00
Single Copy (Foreign)	\$ 20.00

^{*} Entitles to receive Science and Culture for 15 years

⁺ Rs. 1000/- towards the cost of delivery of the journal for 5 years

Past Special Issues

- Glass and Ceramic Research in India (May-June 2005)
- Water Resources in South Asia: An Assessment of Climate Change Associated
 Vulnerabilities and Coping Mechanisms (July-August 2005)
- Unconventional Applications of Physics (March-April 2007)
- Current Trends in Leishmania Research (May-June 2007)
- Forensic Science in Criminal Justice Delivery System (November-December 2007)
- Natural Products Chemistry (January-February 2008)
- Mysteries of the Earth's Interior (May-June 2008)
- Radio Science (September-October 2008)
- Scientific Legacy of Acharya J. C. Bose The Doyen of Indian Science (November-December 2008)
- Origin of Species-A Revolutionary Argument (March-April 2009)
- **Geomagnetism and Aeronomy** (July-August 2009)
- Cholera: A Disease that Eludes Technological Advance (May-June 2010)
- Fifteen years of Econophysics Research (September-October 2010)
- Emerging Trends in Genomics : Applications in Health and Disease (January-February 2011)
- Recent Trends in Tea Research (September-October 2011)
- Impact of CSIR-NEIST in the North East Region (November-December 2011)
- New Science of Synthetic and Systems Biology (March-April 2012)
- A Journey from Plant Physiology to Plant Biology (May-June 2012)
- CSIR-CSIO: Instrumental in Scientific-eco System Measurements (September-October 2012)
- CSIR-NML on the March (November-December 2012)
- Atomic Energy in National Development (January-February 2013)
- Communicating Science Through Science Museums, Science Centres and Planetaria towards Developing a Culture of Science (November-December 2013)
- Nuclear Chemistry Research : Past, Present and Future (September-October 2015)
- International Year of Light 2015 (November-December 2015)
- J. C. Bose, Bose Institute and Scientific Legacy (November-December 2017)
- Cooperative Learning and Social Games: Kolkata Restaurant Problems (January-February 2018)
- Meghnad Saha and the World of Plasmas (November-December 2018)
- How Bose Statistics Changed Our Understanding of Matter (January-February 2019)
- A Quantum Jump in Computation (May-June 2019)
- Climate Crisis in India: Issues and Concerns (January-February 2020)
- Fisheries of the Holy Ganga River (September-October 2022)
- Fisheries of River Ganga Under Changing Climate (November-December 2022)