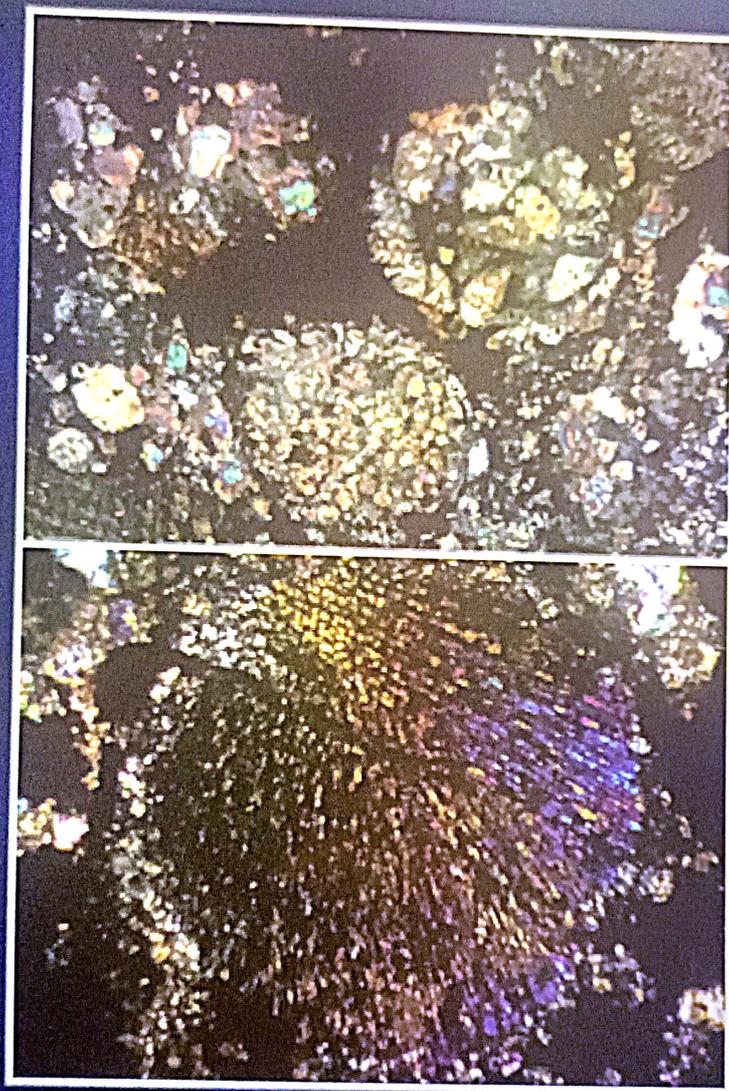


# CURRENT SCIENCE

Volume 126 Number 5

10 March 2024



**Groundwater monitoring network**

**Morphological changes in erythrocytes**

**Mineral chemistry of Mahadevpur H4/5 chondrite**

**Current Science Association ■ Indian Academy of Sciences**

# CURRENT SCIENCE

Volume 126 Number 5

10 March 2024

518 In this issue

---

**GUEST EDITORIAL**

519 **Critical thinking and integration of history-and-philosophy-of-science content in college-science education**  
Anantanarayanan Raman

---

**CORRESPONDENCE**

521 **Shanghai Ranking's Global Ranking of Academic Subjects 2023**  
Gangan Prathap

522 **G-20 countries and research collaboration**  
Bakthavachalam Elango; *Response by* Vivek Kumar Singh, Anurag Kanaujia, Prashasti Singh, Jyoti Dua and Hiran H. Lathabai

---

**NEWS**

524 **Current Science Reports**

528 **The 2024 King Faisal International Prize for Science and Medicine**  
Sameen Ahmed Khan

529 **The Hutton Symposium**  
Abhishek Kumar Madhesiya

530 **BRICS Young Scientists and Innovators Forum**  
S. K. Vazeed Pasha, Sanjeev Kumar Varshney and Arindam Bhattacharyya

---

**OPINION**

532 **The Biological Diversity (Amendment) Bill 2023: a balancing act of rights and obligations**  
Padmesh P. Pillai

534 **Convalescent millets combating against non-communicable diseases**  
Aayushi Nagwanshi, Tapas Chakma, Suman Kumar Ray, Kritika Singh and Suyesh Shrivastava

---

**COMMENTARY**

536 **Save the Sundarbans**  
K. Kathiresan

---

**SCIENTIFIC CORRESPONDENCE**

539 **An endangered wild kiwi fruit *Actinidia callosa* var. *strigillosa* C. F. Liang (Actinidiaceae) from India**  
Abhilash Padhan, Dinesh Singh Thakur and Kumar Ambrish

---

**GENERAL ARTICLES**

542 **Revamping India's groundwater monitoring network**  
S. N. Dwivedi, Sujatro Ray Chowdhuri, Subhra Satapathy and Ratikanta Nayak

548 **Soil carbon footprints and climate-smart soils**  
T. Bhattacharyya

---



## RESEARCH ARTICLES

- 555 **Analysis of morphological changes in erythrocytes in malaria by shape descriptors prior to and after antimalarial drugs**  
Maombi Edison, J. B. Jeeva and Megha Singh
- 562 **Insights into bacterial communities: multidrug-resistant and biofilm-forming bacteria in poultry droppings**  
Namrata Jiya, Swapnil Kajale, Kunal Jani, Abhishek Keer, Chahat Markan, Monica Chavan, Ashwin V. Khandare, Mahendra D. Jamdhade, Alimuddin Zumla and Avinash Sharma
- 569 **Identification of tomato lines based on conventional and molecular tools for breeding**  
Jagesh Kumar Tiwari, Nagendra Rai, Manish K. Singh, Lokesh K. Mishra, Gaurav Mishra and T. K. Behera
- 574 **Mineral chemistry of Mahadevpur H4/5 chondrite: characterization of nanodiamonds through micro-Raman spectroscopic studies**  
Bhaskar J. Saikia, G. Parthasarathy, N. V. Chalapathi Rao, Vikas Seth and Rashmi R. Borah
- 583 **REE and Y enrichment in peralkaline felsic rocks of the Siwana region, Rajasthan, northwestern India**  
Suresh Kumar, Vivek V. Kumar, Shishir Bhardwaj, Rohit Sharma and Kiran J. Mishra
- 593 **Occupancy, coat colour pattern and social organization of mixed-species and mixed-morphotype groups of Nilgiri langur (*Semnopithecus johnii*) and tufted grey langur (*Semnopithecus priam*)**  
Santanu Mahato, Honnavalli N. Kumara, Mridula Singh and Mewa Singh



## RESEARCH COMMUNICATION

- 603 **Reconnaissance report of the 21 July 2023 Jaipur earthquakes in Rajasthan, India**  
Bal Krishna Maheshwari, Varun Kumar Singla and Sukanta Das

## BOOK REVIEWS

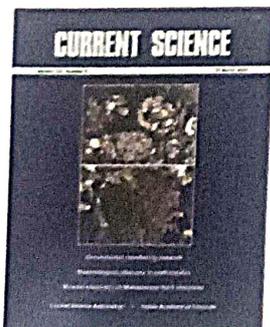
- 607 **Annual Review of Nutrition, 2022.** Patrick J. Stover and Rudi Balling (eds); *reviewed by* G. Bhanuprakash Reddy
- 609 **Plagues Upon the Earth: Disease and the Course of Human History.** Kyle Harper; *reviewed by* T. Jacob John

## PERSONAL NEWS

- 611 **M. S. Swaminathan (1925–2023)**  
P. C. Kesavan

## HISTORICAL NOTES

- 615 **The history of fingerprint identification in India**  
Jasjeet Kaur, Gurvinder S. Sodhi and Ritika Sayal



- ◀ **COVER.** Photomicrographs of the Mahadevpur meteorite exhibiting dominant olivine chondrule surrounded by Fe–Ni metallic phases in crossed polarized light. See page 574.

Indexed in CURRENT CONTENTS/GEOBASE/CHEMICAL ABSTRACTS/IndMED/SCOPUS/  
WEB OF SCIENCE

# CURRENT SCIENCE

Volume 126 Number 6

25 March 2024



Metalized plastic

Cashless economy

Evolution of diabetes treatments

Current Science Association ■ Indian Academy of Sciences



# CURRENT SCIENCE

Volume 126 Number 6

25 March 2024

---

**634 In this issue**
**GUEST EDITORIAL**

- 635 The importance of evolution to academic biology and beyond**  
Amitabh Joshi

**CORRESPONDENCE**

- 637 Reservoir-influenced land ecosystem**  
Pulak Das
- 637 Insect-plant mutualism**  
Krishna Kumar
- 638 Cyril Cedric Dover (1904-61) – a forgotten entomologist, zoologist and anthropologist of India**  
Anantanarayanan Raman

**NEWS**

- 640 Current Science Reports**
- 644 Department of Science and Technology at the India Pavilion: COP 28 side event, Dubai, UAE**  
Susheela Negi and Anita Gupta

**GENERAL ARTICLES**

- 646 Laboratory science: representations of reproductive biology in Carl Djerassi's *An Immaculate Misconception: Sex in an Age of Mechanical Reproduction***  
Ajay Kumar and Adrene Freeda Dacruz
- 650 Cashless economy: the impact of digital innovation in India**  
S. Sangeeta Kumari, K. M. Singh and Nasim Ahmad

**REVIEW ARTICLE**

- 662 The evolution of diabetes treatments: from insulin therapy to synthetic biology**  
Shubhangi Sharma and Jaspreet Kaur

**RESEARCH ARTICLES**

- 671 Metalized plastic: a material for a better world**  
M. C. Rath
- 676 Climate-smart land management methods for enhancing the adaptive capacity of food production systems in the tropical regions**  
A. Velmurugan, T. P. Swarnam, D. Burman, S. Mandal and T. Subramani
- 686 Designing design of expert for the treatment of sulphur black dye in textile effluents using zinc-oxide nanobioadsorbents**  
Sangita Yadav, Subhash Chander and Asha Gupta
- 694 Spatial mapping of acidity and vegetal multi-micronutrients in soils of the Meghalaya Plateau, northeastern Himalaya, India**  
Burhan U. Choudhury, Md. Zafar, Arumugam Balusamy, Prabha Moirangthem, Ramesh Thangavel, Manoj Kumar, Bibhash C. Verma, Hamnylliende Talang, Samarendra Hazarika and Vinay K. Mishra

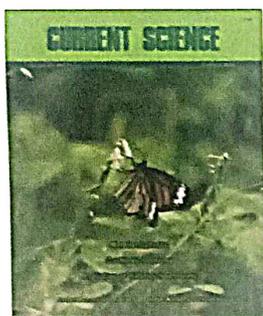


- 706 **AYUsearch: a repository to facilitate the biochemical understanding of natural products-derived chemical substances**  
Komal Tilwani, Abhishek Patel, Ghanshyam Patel, Mrugendra Rahevar and Gayatri Dave
- 714 **Pollination of *Dipcadi saxorum* Blatt. (Asparagaceae: Scilloideae)**  
Hensal Rodrigues, Kiran Chakral and Suchandra Dutta
- 721 **Mustard crop suitability mapping using analytical hierarchy process in the Imphal-Iiril river sub-catchment, Manipur, India**  
Ngangom Robertson and Oinam Bakimchandra

---

**BOOK REVIEWS**

- 731 **Resurgence of Agrometeorology: A Perspective Vision.** B. V. Ramana Rao and S. R. Ghadekar; *reviewed by* Rohini Mattoo
- 732 **Understanding the Physics of Toys: Principles, Theory and Exercises.** S. Rajasekar, R. Velusamy, Miguel A. F. Sanjuán; *reviewed by* Arvind Gupta
- 



◀ COVER. *Danaus genutia* on *Dipcadi saxorum*. See page 714.

Indexed in CURRENT CONTENTS/GEOBASE/CHEMICAL ABSTRACTS/IndMED/SCOPUS/  
WEB OF SCIENCE