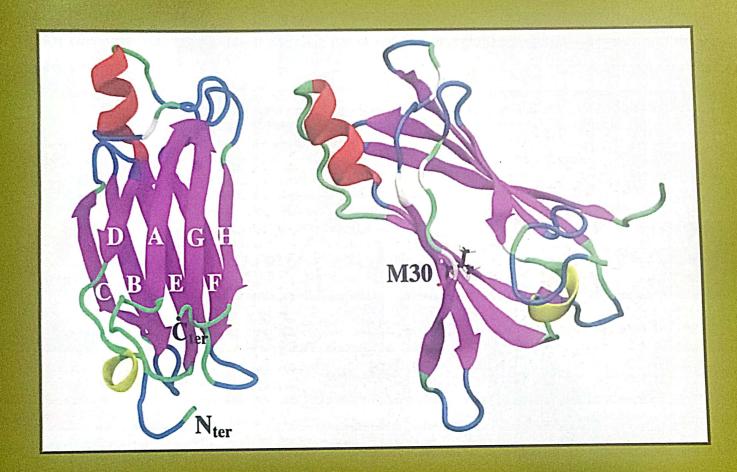
## GURRENT SCIENTE

Volume 126 Number 11

10 June 2024



Sea buckthorn in Ladakh

Hastinapur archaeological site

Civilizational antecedents in G20 countries

Current Science Association

**Indian Academy of Sciences** 

## CURRENT SCIENCE

10 June 2024

| Volume | 126 | Number | 11 |
|--------|-----|--------|----|
|        |     |        |    |

|     | 1298 | In this issue  |
|-----|------|--|
|     |      | GUEST EDITORIAL  |
|     | 1299 | GUEST EDITORIAL Initiatives to enhance student support during Ph.D. training   |
|     |      | Shubha Tole  |
|     | 1301 | CORRESPONDENCE  Land restoration and promotion of Alpine medicinal and aromatic plants: a practical approach in context of Himalaya of Uttarakhand, India approach in context of Himalaya of Uttarakhand, Ajay Hemdan and Rajeev Ranjan Pradeep Dobhal, Vijay Kant Purohit, Jaidev Chauhan, Ajay Hemdan and Rajeev Ranjan  |
|     |      | Kumar of eusocial  |
| 22. | 1304 | NEWS  Current Science Reports 1308 Unique nest building strategies of eusocial insects to merge cells of variable sizes, Sudipta Adhya 1309 Amber Analysis insects to merge cells of variable sizes, Sudipta Adhya 1309 Amber Analysis insects to merge cells of variable sizes, Sudipta Adhya 1309 Amber Analysis insects to merge cells of variable sizes, Sudipta Adhya 1309 Amber Analysis insects to merge cells of variable sizes, Sudipta Adhya 1309 Amber Analysis insects to merge cells of variable sizes, Sudipta Adhya 1309 Amber Analysis insects to merge cells of variable sizes, Sudipta Adhya 1309 Amber Analysis insects to merge cells of variable sizes, Sudipta Adhya 1309 Amber Analysis insects to merge cells of variable sizes, Sudipta Adhya 1309 Amber Analysis insects to merge cells of variable sizes, Sudipta Adhya 1309 Amber Analysis insects to merge cells of variable sizes, Sudipta Adhya 1309 Amber Analysis insects to merge cells of variable sizes, Sudipta Adhya 1309 Amber Analysis insects to merge cells of variable sizes, Sudipta Adhya 1309 Amber Analysis insects to merge cells of variable sizes, Sudipta Adhya 1309 Amber Analysis insects to merge cells of variable sizes, Sudipta Adhya 1309 Amber Analysis insects to merge cells of variable sizes, Sudipta Adhya 1309 Amber Analysis insects to merge cells of variable sizes, Sudipta Adhya 1309 Amber Analysis insects to merge cells of variable sizes, Sudipta Adhya 1309 Amber Analysis insects to merge cells of variable sizes, Sudipta Adhya 1309 Amber Analysis insects to merge cells of variable sizes, Sudipta Adhya 1309 Amber Analysis insects to merge cells of variable sizes, Sudipta Adhya 1309 Amber Analysis insects to merge cells of variable sizes, Sudipta Adhya 1309 Amber Analysis insects to merge cells of variable sizes, Sudipta Adhya 1309 Amber Analysis insects to merge cells of variable sizes, Sudipta Adhya 1309 Amber Analysis insects to merge cells of variable sizes, Sudipta Adhya 1309 Amber Analysis insects to merge cells of variable sizes in section sizes in sectin |
|     | 1312 | OPINION  Design and development of robust and precision personalized medicine, Anamitra Goswami, Moumita Sil, Prashant Ratnaparkhi, Arunava Goswami, Nabanita Mukherjee and Igor Polikarpov 1313 Harmony in the fields: millet cultivation's resurgence as a beacon of hope for declining bird populations, Dileep Kumar Pandey and Sreenath Dixit   |
|     | 1315 | COMMENTARY Revisiting Nawaschin: does double fertilization not occur in the family Orchidaceae?, Chengqi Ao 1317 Glacial lake outburst flood incidences in the Indian Himalayan region are climate change and host terrain conditions responsible?, Nikita Roy Mukherjee, Pranata Hazra and Akhouri Pramod Krishna   |
|     |      | CORRESPONDENCE   |
|     | 1319 | Amendment to the National Biological Diversity Act: loaded provisions and a few concerns  A. Arunachalam, S. Suresh Ramanan and Rinku Singh  |
|     | -    | GENERAL ARTICLES   |
|     | 1321 | Unpacking inconsistencies in the NIRF rankings Abhishek Singh and V. Ramgopal Rao  |
|     | 1325 | Civilizational antecedents and evolving ecoscapes of scientific research in G20 countries Gangan Prathap   |
|     | -    | REVIEW ARTICLE   |
|     | 1220 | Sea buckthorn in Ladakh: navigating the path from traditional use to globa   |
|     | 1330 | Dea Ducking in Lanakii, havigating the path from traditional use to g  |

Safal

Kunzang Lamo, Feroz Din Sheikh, D. Namgial, Stanzin Dorjey, Jigmet Laskit and Rigzin



### RESEARCH ARTICLES

- A systematic approach for identifying and reducing gaps between the pharma and software industry and transforming quality through digitalization in the pharma industry

  Smritic Sheth, Rohit Goyal, Ajay Ghatpande, Siddhi Kinkar, Avinash Kamthe, Chaitrali Bakhale, Atul Khandekar, Ravindra Khare and Narendra Chirmule
- Probing the role of V30M mutation in human transthyretin aggregation using molecular simulations

  Kamini Vishwakarma and Sumit Mittal
- Improving flood simulation by integrating divergent streams in Upper Kuttanad, Kerala, India
   T. K. Drissia, P. Sreya and George Abe
- 1357 An intelligent optimized ReliefF model for autism gene selection from microarray data G. Anurekha and P. Geetha
- 1367 Antennal transcriptome of melon fly, Zeugodacus cucurbitae (Diptera: Tephritidae): identification of candidate chemosensory genes
  Subhash Shivaramu, Gandham Krishnarao, Meenal Vyas, Akshay Kumar Chakravarthy and Kamala Jayanthi Pagadala Damodaram
- 1377 Field evaluation of indigenous Spodoptera frugiperda nucleopolyhedrovirus NBAIR1 for the management of maize fall armyworm in India
  Sivakumar Gopalsamy, Ram Kumar Pandi, Mohan Muthugounder, Venkatesan Thiruvengadam, Kannan Malaichamy, Kandan Aravindaram, Manjunatha Channappa, Rangeshwaran Rajagopal, Subaharan Kesavan and Sushil Satya Nand

### RESEARCH COMMUNICATIONS

- 1381 Ironmaking at Hastinapur archaeological site from 8th century BCE to 16th century CE Dibishada Brajasundar Gartagak, Sivan Sankar Panda, Mainak Gantait, Rajan Kumar Verma and Gautam Anand
- 1384 Impact of rainfall and slope conditions on soil organic carbon dynamics under tea and coffee land cover in Western Chats Mountain ranges, India K. Rajan, R. Ragupathy, D. Dinesh, Deepthi Eswar, P. Raja and U. Surendran

### **BOOK REVIEWS**

--- -- -- ---

- 1390 The Five Million Year Odyssey: The Human Journey from Ape to Agriculture. Peter Bellwood; *reviewed by* Ravi Korisettar
- **Annual Review of Earth and Planetary Sciences, 2023.** Raymond Jeanloz and Katherine H. Freeman (eds); *reviewed by* C. P. Rajendran
- **Annual Review of Physiology, 2023.** Mark T. Nelson and Kenneth Walsh (eds); *reviewed by* Mario Vaz



◆ COVER. Geometrical representation of wild type (left) and V30M (right) mutation of transthyretin, a prealbumin protein. See page 1343.

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

# ELIHER SEE

Volume 126 Number 12

25 June 2024



Multi-fuel biomass furnace

Forensic DNA technology in India

Fractal dimension of protein-protein interactions

urrent Science Association a Indian Academy of Science

### GURRENT SCIENCE

25 June 2024

Volume 126 Number 12

| 1410 | In this issue  |  |
|------|--|--|
|      | EDITORIAL  |  |
| 1411 | Anti-vaxxers<br>Gayatri Saberwal                       |  |
|      | CORRESPONDENCE Rethinking of technology acceptant      | ce models and their relevance in contemporar |
|      | research<br>Raj Kishor Kampa; <i>Response by</i> Bai F |  |

MA COL

- 1414 Current Science Reports
- Thermodynamics of the Earth sys 1418 Asifa Mehraj Baba

### **OPINION**

An overview of planarian species used for testing the effect of pharmaceuticals and 1419 contaminants on regeneration

Deepika Eknath Walunj and Ravindra Vasant Kshirsagar

### **COMMENTARY**

An emerging groundwater crisis in parts of Chhattisgarh state, India 1421 Sudarsan Sahu, Shikhar Panday, Twinkle Chaddha, Sangam Samal, Vishal, Sudhanshu, Masarul Islam, Ramakant Mishra, Mahendra Chouhan, Dhiren K. Mahanta, Josabanta Jani, Subhransu Sekhar Rout and Satyaban Sahoo

### **GENERAL ARTICLES**

- Establishment of forensic DNA technology in India: progress and future prospects 1424 Sadhna Sahu, Neha Agarwal, Kunal Mahobiya, Suchitra and Pradeep K. Mishra
- 1431 When 2023 is the International millet year, are healthcare professionals aware about millets?

Swagata Dilip Tavhare, Asmita Wele and Gunvant Yeola

### **REVIEW ARTICLE**

Understanding the influence of diabetes on wound healing and exploring effective 1438 management study Deepraj Singh Rautela, Saumya Das, Avijit Mazumder, Bhawana Sharma, Fahad Khan and M. V. N. L. Chaitanya

### RESEARCH ARTICLES

- Market competition for imported agricultural raw materials in the Indian animal 1446 feed industry
  - Partha Pratim Saikia, Sanjib Bhuyan, Dipanjan Kashyap and Kishor Goswami
- 1454 Fractal dimension of protein-protein interactions: a tool for cancer protein identification

Sminu Izudheen, Bee Fateema T. Shiras, R. Anamika, Annie Jaimy and R. Anna



- 1464 A study on analytical techniques and statistical design for tertiary treatment of secondary wastewater using Zetag-4120 coagulant
  Priya Singh, Mahendra Kumar Pal, Prabhat Kumar Singh Dikshit and Goutham Banerjee
- Exploring community attitudes and perceptions towards solid waste management: a case study of Kerala, India
  Vishnudatha Venu, Akshay Ranjith and S. Ambika
- Genetic diversity of Melipona mandacaia, Smith 1863 in natural and rational breeding populations
   Amaro Antonio Silva Neto, Eva Mônica Sarmento da Silva and Michely Correia Diniz
- Monitoring of pesticide residues and risk assessment for consumer safety in rice samples from Andhra Pradesh, India
  Jhansi Hima Varsha Valluri, Cherukuri Sreenivasa Rao, Ch. Chiranjeevi, V. Srinivasa Rao and P. Kishore Varma
- Arsenic contamination in groundwater of the Majhe belt of Punjab and its probable carcinogenic and non-carcinogenic health hazards

  Hardev Singh Virk

### RESEARCH COMMUNICATIONS

- 1501 A low-cost multi-fuel biomass furnace for food processing in rural areas Anil K. Rajvanshi and Nandini Nimbkar
- 1503 A study on the role of epidermal tissues in limb regeneration in a ladybird beetle, Cheilomenes sexmaculata (Coccinellidae)
  Saumya Rawat, Shriza Rai and Geetanjali Mishra

### **BOOK REVIEWS**

- 1507 Analysis and Entrywise Positivity Preservers. Apoorva Khare; reviewed by Tanvi Jain
- **Annual Review of Genetics, 2023.** Tatjana Piotrowski, Andrew G. Clark and Zemer Gitai (eds); *reviewed by* Anasuya Chakrabarty
- **Annual Review of Phytopathology, 2023.** Gwyn A. Beattie and John M. McDowell (eds); *reviewed by* Shweta Singh and Rasappa Viswanathan



◆ COVER. A ladybird beetle, Cheilomenes sexmaculata (Credit: Wikimedia). See page 1503 for more details.

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