

DCT's DHEMPE COLLEGE OF ARTS AND SCIENCE
Miramar, Panaji-GOA
Bharat Ka Amrut Mahotsav

EXTENSION AND OUTREACH ACTIVITIES

- 1. Title:** Street Play awareness on various issues (such as proper disposition of masks, promotion of organic food, garbage problems and protection of our natural and cultural heritage.)

Date: 15th August 2021

Department: Philosophy

Name of the Faculty: Ms. Sendra Pereira



2. Title: Street Play on the occasion of 'World Mental Health Day' and 'International Girl Child Day'.

Date: 10th October 2021

Department: Philosophy

Name of the Faculty: Ms. Sendra Pereira, Akash S. N. Salgaonkar

Philosophy Association in Collaboration with NGO Uzwaad- the Ray's of Hope, SCAN Goa, and Women Police Cell- Panaji, organized a public awareness programme through a street play. The topic of the Street play was 'Mental Health and Respect for Girl Child'. Awareness was created at Panaji Bus stand, Miramar Beach, and Panaji Municipal Market on at 10 am to 3pm.



3. Title : Created An Awareness Based Video

Date: 13th October, 2021

Department: Philosophy

Faculty: Ms. Sendra Pereira

An outreach programme of the Department on the topic 'Effects of Menopause on Mental Health', the video created social awareness. This video was created in association with NGO- UZWAAD and Alumni of Philosophy Department. The video was released on YouTube, face book on. Participants - 06 (03 Male, 03 Female)

Link of the video: <https://www.youtube.com/watch?v=JdJC1dtP7Ss>



4. Title : Project of Creating 'Impersonal Wealth' Through Farming

Date: 3rd October, 2021

Department: Philosophy

Faculty: Dr. Roshida Rodrigues, Akash S. N. Salgaonkar.

Helped a local farming community in Kevnem Village, Taligao, to organise their project of creating 'Impersonal Wealth' through farming .



5. Title: Clean Up Drive at Viridi Waterfall

Date: 16th January 2022

Deptment : Philosophy

Faculty: Dr. Roshida Rodrigues, Akash S. N. Salgaonkar



6. Title: Celebrate the Spirit of Christmas with the Underprivileged.

Date: 22nd December, 2021

Department: Philosophy

Faculty: Dr. Roshida Rodrigues, Ms. Sendra Pereira, Mr. Akash S N Salgaonkar



7. Title: Blood Donation at GMC Bambolim

Date: 31st December 2021

Department: Philosophy

Faculty: Akash S N Salgaonkar



8. Title: Cleanup Drive at Shirdao Beach, Bambolim

Date: 26th January, 2022

Department: Philosophy

Faculty: Dr. Roshida Rodrigues, Ms. Sendra Pereira, Mr. Akash S N Salgaonkar



9. Title : International Women's Day Celebration Through Street Plays

Date: 8th of March 2022

Department: Philosophy

Faculty: Miss Sendra Pereira, Mr. Akash S.N. Salgaonkar



10. Title: Farming Project to Create Impersonal Wealth Known as 'Apourushey Lakshmi'

Date: 10th February to 7th March 2022

Department: Philosophy

Faculty: Akash S. N. Salgaonkar



11. Title: 'Clean And Green' Clean up Drive at Siridao Beach

Date: 9th April 2022

Department: Philosophy

Faculty: Ms. Sendra Pereira, Mr. Akash S. N. Salgaonkar

Students of Philosophy Department and Swatch Bharat Student Internship (SBSI) Unit DCT's Dhempe College of Arts and Science in collaboration with NGO Uzwaad- The Ray Hope participated in the cleanliness drive, "clean and green", organized by "IamConnected" on, Saturday at Siridao Beach.



12. Title : Summer Internship - ‘Sharing Treasure of Knowledge with Underprivileged’

Date: 10th -21st April, 2022

Department: Philosophy

Faculty: Dr. Roshida Rodrigues, Ms. Sendra Pereira, Mr. Akash S. N. Salgaonkar

The Department of Philosophy with Swatch Bharat Student Internship (SBSI) Unit, DCT's Dhempe College of Arts and Science organized an Summer Internship titled ‘Sharing Treasure of Knowledge with underprivileged’ for underprivileged kids staying around College Campus and at Kamra Bhat.

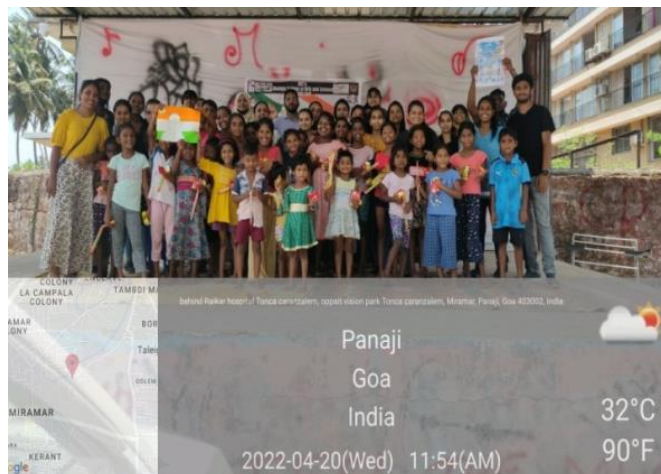


13. Title : Remedial classes for Underprivileged Kids, in Kamrabhat village Taleigao

Date: 9th - 20 April 2022

Department: Philosophy

Faculty: Dr. Roshida Rodrigues, Ms. Sendra Pereira, Mr. Akash S. N. Salgaonkar, SBSI Unit in collaboration with Department of Philosophy of Dhempe College of Arts And Science organized remedial classes for the underprivileged kids in Kamrabhat village Taleigao.

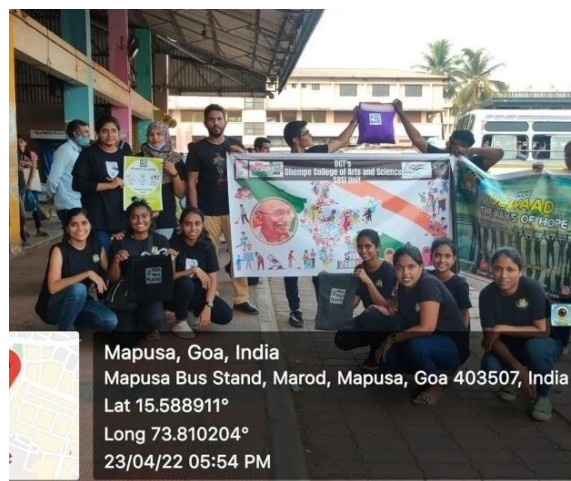


14. Title: "Say No To Plastic - Maka Naka Plastic" Street Play at Mapusa Market and Mapusa Bus stand.

Date: 23rd April 2022

Department: Philosophy

Faculty: Ms. Sendra Pereira, Mr. Akash S. N. Salgaonkar
Philosophy Association and Swatch Bharat Student Internship (SBSI) Unit, DCT's Dhempe College of Arts and Science in collaboration with NGO Uzwaad-The Rays of Hope and NGO Sensible Earth #Maka Naka Plastic, Goa, organized awareness based street play on "SAY NO TO PLASTIC- Maka Naka Plastic" at Mapusa Market and Mapusa Bus stand.



15. Title : Kaushalya Saptakskill development vacation camp, organized by the Directorate of Higher Education, Goa

Date: 08-11-2021 to 13-11-2021

Department: English

Name of Faculty: Dr. Svetlana Fernandes, Clarinda Dias, Dr. Akshata Bhat and Krutika Navelkar.



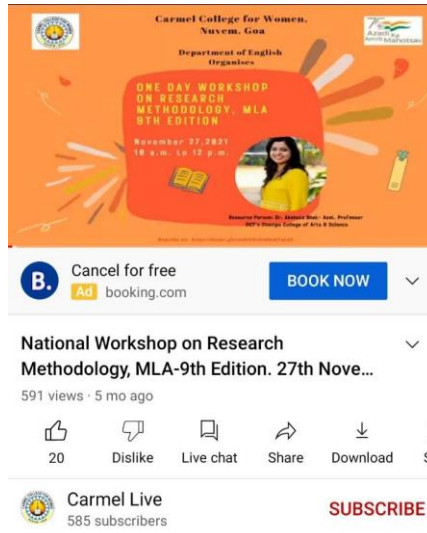
16. Title : One-Day Workshop on Research Methodology, MLA 9th Edition

One-Day Workshop in Research Methodology, MLA 9th edition, by Carmel College for Women, Nuvem, Goa

Date: 27-11-2021

Department: English

Name of Faculty: Dr. Akshata Bhatt



17. Title: Animal Care and Welfare

'Happy Tails' is a rescue, care and rehabilitation facilitation programme for street/injured animals and birds.

Department: English

Name of Faculty: Rochelle Fernandes

Akshata Bhatt (involved in rehabilitation)



18. Title: COVID-19 Relief - worked alongside the Primary Health Centre, Candolim and Lions Club, Candolim to monitor covid affected patients.

Date :22nd of January up to the end of February.

Department: English

Name of Faculty: Clarinda Dias



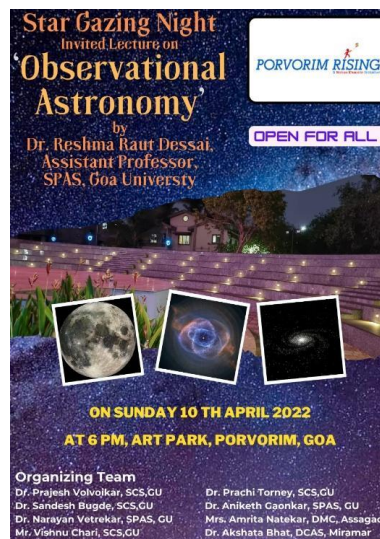
19. Title : Public Lecture on Observational Astronomy

A Public Lecture on Observational Astronomy followed by star gazing was organised for general public on April 10, 2022 in Art Park, Porvorim Goa with Dr. Reshma Raut Dessai from Goa University, India as Resource Person.

Date: 10-04-2022

Department: English

Name of Faculty: Dr. Akshata Bhatt

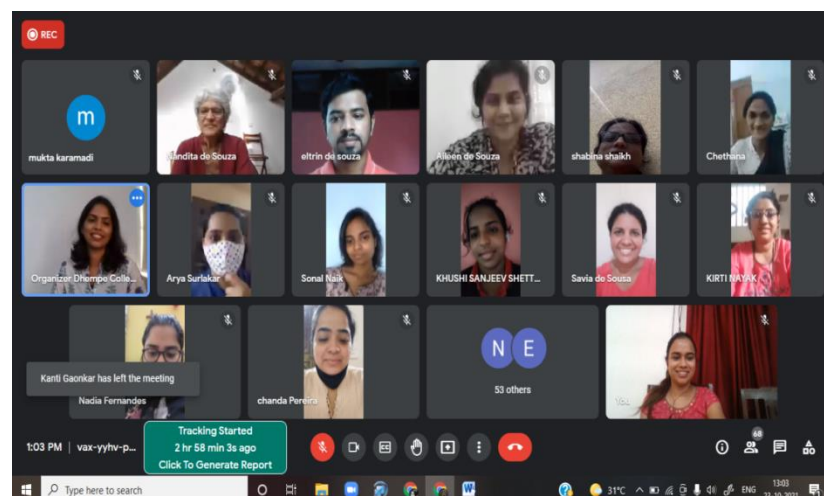


20. Title : Two-day International Webinar titled 'Fostering Optimal Development and Well-Being in Children and Adolescents'

Date: 23rd and 24th October 2021

Department: Psychology and Computer science

Name of the Faculty: Dr. Mukta Karamadi, Dr. Joslyn Henriques, Pratisha Harmalkar, Dr. Cindy D'Silva and Ms. Sweta Matonkar and Mr. Snehal Harmalkar



21. Title : Skill development training program on psychological testing for students of Government College of Arts, Science and Commerce Khandola Goa

Department: Psychology

Date: 16th December, 2021

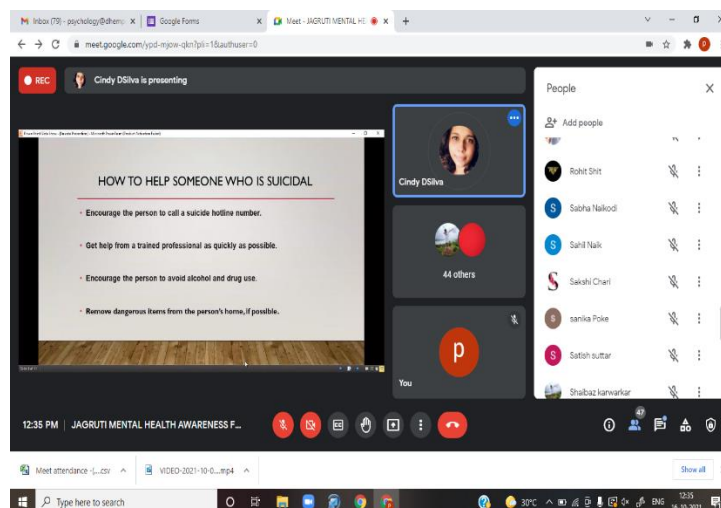
Name of the Faculty: Dr. Mukta Karamadi, Pratisha Harmalkar

22. Title: An online workshop on suicide prevention and the other on stress management for the students of Our Lady of Mercers High School, Mercers

Department: Psychology

Date: 16th October 2021

Name of the Faculty: Dr. Mukta Karamadi, Dr. Joslyn Henriques, and Dr. Cindy D'Silva

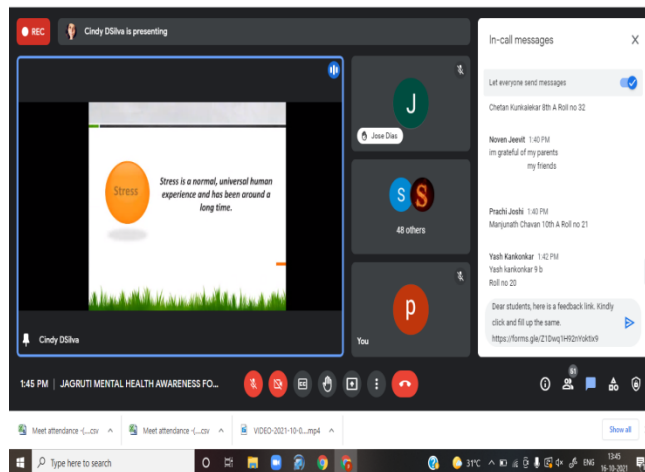


23. Title:An online workshop on suicide prevention and the other on stress management for the students of St. Cruz High School, Goa

Department: Psychology

Date: 16th October 2021

Name of the Faculty: Dr. Mukta Karamadi, Dr. Joslyn Henriques, and Dr. Cindy D'Silva



24. Title:videos on mental health awareness and edited the videos(Guided students to create these videos)

Department: Psychology

Name of the Faculty: Dr. Mukta Karamadi, Dr. Cindy D'Silva

25. Title:Volunteer for event – “Fun with Football” organized for underprivileged children by Stars NGO

Date: 22nd –

Department:
Computer

Name of the
Karamadi, Dr.



23rd, 24th April, 2022

Psychology and
science

Faculty: Dr. Mukta
Joslyn Henriques,
Pratisha Harmalkar, and

Ms. Sweta Matonkar and Mr. Snehal Harmalkar ,Mr. Akbarali Shaikh

26. Title : Workshop for Parents at Vivekanand High School, Keri, Sattari – Goa

Date: 28th April 2022

Department: Psychology

Name of the Faculty: Dr. Mukta Karamadi and Ms. SwetaMatonkar



27. Title : Educative video recording on ‘Suicide Prevention’ under Jagruti mental health awareness program

Department: Psychology

Name of the Faculty: Dr. Joslyn Henriques

28. Title: Workshop for Students at Government High School, Guleli, Sattari – Goa

Date: 28th April 2022

Department: Psychology

Name of the Faculty: Dr. Joslyn Henriques

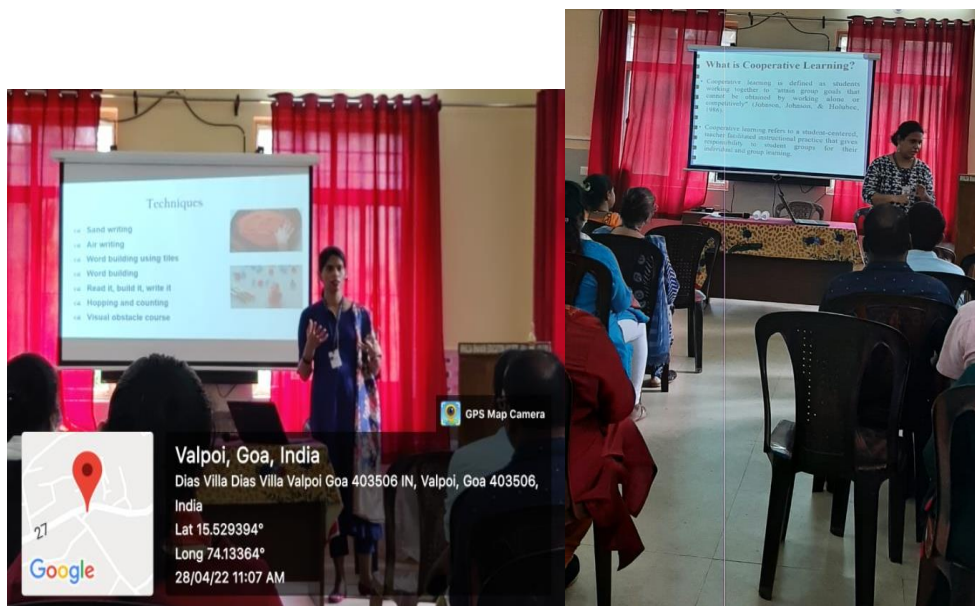


29. Title: Workshop for Primary School Teachers, at ADEI Office, Valpoi, Sattari – Goa

Date: 28th April 2022

Department: Psychology

Name of the Faculty: Pratisha Harmalkar, Dr. Cindy D'Silva



30. Title : Created an educative video recording on ‘Myths and Facts related to mental health’ under Jagruti mental health awareness program

Department: Psychology

Name of the Faculty: Dr. Cindy D'Silva

31. Title :Cleaning of Chimbel Lake

Date:21st August 2021

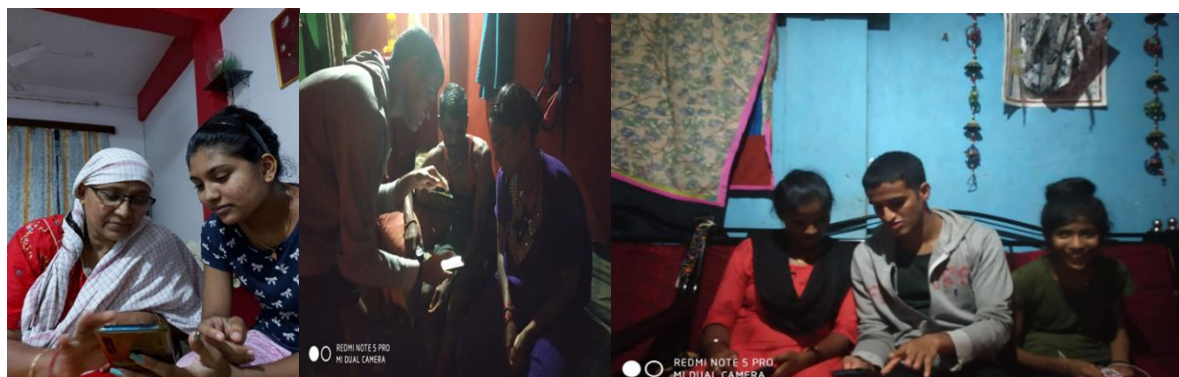
Department: Economics

Name of the Faculty: Mr. Edwin Cortez



32. Title :Use of UPI transactions

Students of TYBA economics conducted an extension activity with regard to adult education on financial transactions in the months of October/ November 2021. This activity was conducted under the guidance of Dr. Shilpa Samant. The main purpose of this activity was to teach aged individuals especially homemakers, the financial transactions which they can do at ease through their mobile. Students started it by contacting their neighbours and creating awareness about it. They visited various households and personally explained to them the process. They also gave them the systematic information regarding steps involved in such transactions.



33. Title : Students participated in Environment awareness campaign.

Date: 21st September 2021

Department: Economics

Name of the Faculty:Mr. Edwin Cortez



34. Title :Garbage problems: Local community leaders had a meeting to find solutions for dry waste.

Date:26th September, 2021

Department: Economics

Name of the Faculty:Mr. Edwin Cortez



Before the activity

After the activity

35. Title:Installation of the works Bio-digester in Mercedes village.

Date:3rd October, 2021, 26th January, 2022

Department: Economics

Name of the Faculty:Mr. Edwin Cortez

36. Title : Mapping of Miramar Heritage Fort for awareness

Date: 11/12/2021

Department: History

Name of the Faculty: Mr. Prajal Sakhardand

37. Title : An Inter-disciplinary approach - Content Creator of Computer Terminology

Date:29thOctober, 2021, 30th November, 2021, 16th December 2021, January, 2022.

Department: Indian Languages

Name of the Faculty: Ms. Anju Sakhardande

38. Title :Session for local students in Pernem on ‘The Importance of Computer in day today life’.

Date:27 th November, 2021.

Department: Indian Languages

Name of the Faculty: Ms. Vidita Shet

39. Title : Plantathon programme of distributing plants, planters and its maintenance towards the garden of Magnum Residency, Miramar.

Date: 22 nd January, 2022, 29th January, 2022, 1st February, 2022, 7th February, 2022.

Department: Indian Languages

Name of the Faculty: Ms. Vidita Shet, Ms. Radhika Nagvenkar, Dr. Vaishali Naik

40. Title : Session local students in Porvorim on ‘Workshop on RangoliDesigning’

Date: 29 th November, 2021.

Department: Indian Languages

Name of the Faculty: Ms. Radhika Nagvenkar

41. Title: Documentary film “SONG OF HOPE” for NGO Caritas.

Date: month of August and September 2021

Department: Political Science

Name of the Faculty: Mr. Mohit Sukhtankar



42. Title: Cleanliness Drive with Nehru Yuva Kendra, in the remote villages of Goa's Dharbandoda Taluka.

Date: 17th October, 2021

Department: Political Science

Name of the Faculty: Mr. Mohit Sukhtankar



43. Title : Andolan against Bhumi Putra Bill at Azadm Maidan, Panaji, Goa

Date: 15/08/ 2021

Department: History

Name of the Faculty: Mr. Prajal Sakhardande

44. Title : Andolan against Bhumiputra Bill at Caranzol, Sattari, Goa

Date: 20/08/ 2021

Department: History

Name of the Faculty: Mr. Prajal Sakhardande

45. Title: Mapping of Miramar Heritage Fort for awareness

Date: 11/12/2021

Department: History

Name of the Faculty: Mr. Prajal Sakhardande

46. Title: Exploration of the Rivem Darwaza Caves and Tunnels and visit to Ravan village to study its history and heritage accompanied by alumni and colleague along with the locals.

Date: 30/12/2021

Department: History

Name of the Faculty: Mr. Prajal Sakhardande

47. Title: Awareness camp for clean and green Village (Zero littering -IEC Material) including banning of single use plastic. Based on theme -waste management

Date: 14th March 2022

Department: Economics

Name of Faculty: Ms. Irena Mesquita



48. Title: Videos created for YouTube channel on kitchen garden and terrace garden

Date: 24th May 2022

Department: Economics

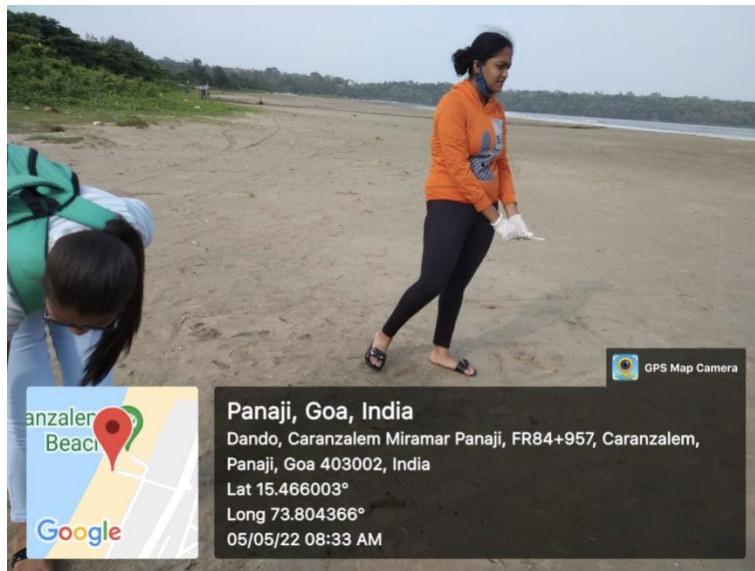
Name of Faculty: Ms. Irena Mesquita

49. Title: Clean the surrounding -sanitation and hygiene-in Miramar/Siridao/donapaula

Date: 5th April 2022 ,8th April 2022

Department: Economics

Name of Faculty: Ms. Irena Mesquita



50. Title: YouTube videos on reducing carbon footprints via intelligent purchase standards operating procedures.

Date: 24th March 2022

Department: Economics

Name of Faculty: Ms. Irena Mesquita

51. Title: awareness on healthy diet and nutrition

Date: 14th march 2022

Department: Economics

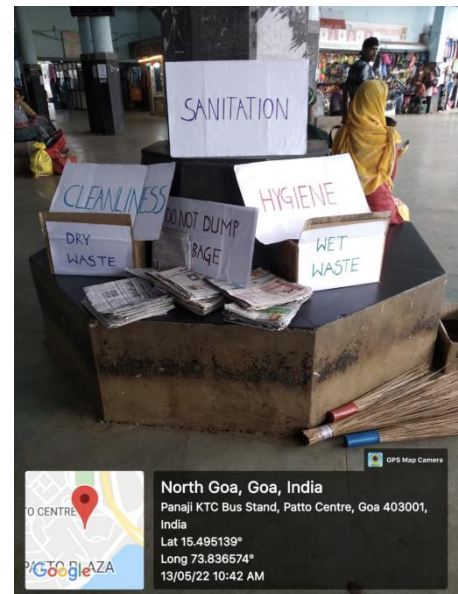
Name of Faculty: Ms. Irena Mesquita

52. Title: street plays on swachata and covid 19 at Panjim and mapusa

Date: 14th & 13th may 2022

Department: Economics

Name of Faculty: Ms. Irena Mesquita



53. Title:Free dental check up

Date: 24th may 2022

Department:Economics

Name of faculty: Ms. Irena Mesquita



54. Title:

Date: 25th

Department:Economics

Visit to orphanage

May 2022

Name of faculty: Ms. Irena Mesquita

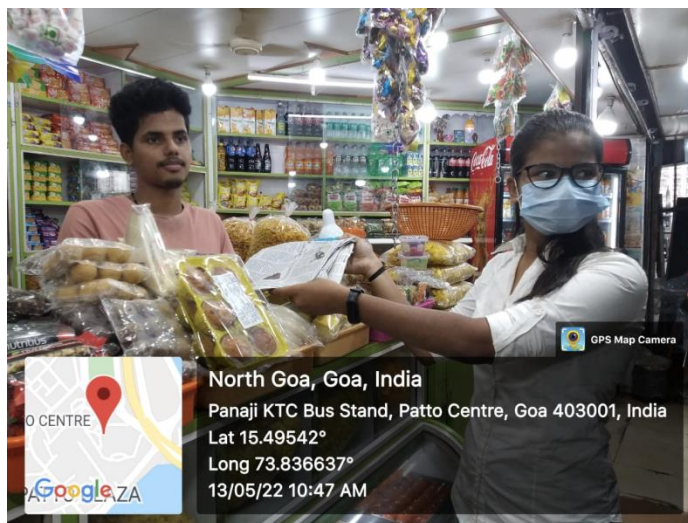


55. Title: distribution of paper bags

Date: 13th May 2022

Department: Economics

Name of faculty: Ms. Irena Mesquita



56. Title: visit to old age home

Date: 2nd April 2022

Department: Economics

Name of faculty: Ms. Irena Mesquita



57. Title: ‘Learn Chemistry with Fun’ for Dr. K.B. Hedgewar High School

Department: Chemistry

Date: 12/11/2021-20/11/2021

Name of the faculty: Prof. Vrinda Borkar, Mrs. Varsha Virginkar, Mrs. Deepa Audi, Mrs. Manisha Mhalsekar, Dr. Durga Kamat Timble, Dr. Sonia Parsekar, Dr. Bhanudas Naik, Dr. Chandan Naik, Mr. Shashank Mhaldar, Mrs. Dipika Gosavi, Ms. Monica Ghadi, Ms. Rashmi Chodankar.



58. Title: ‘Learn Chemistry with Fun’ for Our Lady of the Rosary High School

Department: Chemistry

Date: 21/11/2021-27/11/2021

Name of the faculty: Prof. Vrinda Borkar, Mrs. Varsha Virginkar, Mrs. Deepa Audi, Mrs. Manisha Mhalsekar, Dr. Durga Kamat Timble, Dr. Sonia Parsekar, Dr. Bhanudas Naik, Dr. Chandan Naik, Mr. Shashank Mhaldar, Mrs. Dipika Gosavi, Ms. Monica Ghadi, Ms. Rashmi Chodankar.



59. Title: Arrangement of Kaushal Saptak for Schools

Department: Chemistry

Date: 06/11/2021-13/11/2021

Name of the faculty: Prof. Vrinda Borkar, Mr. Shashank Mhaldar.

60. Title: COVID awareness drive- Visit to Campal Gardens Panjim, distribution of face masks

Department: Chemistry

Date: 05/02/2022-10/02/2022

Name of the faculty: Prof. Vrinda Borkar, Mrs. Varsha Virginkar, Mrs. Deepa Audi, Mrs. Manisha Mhalsekar, Dr. Durga Kamat Timble, Dr. Sonia Parsekar, Dr. Bhanudas Naik, Dr. Chandan Naik, Mr. Shashank Mhaldar, Mrs. Dipika Gosavi, Ms. Monica Ghadi.



61. Title: Exhibition and demonstration of various Instruments from our Research Laboratory for Goa University Botany students (MSc part II) on National Science Day

Department: Chemistry

Date: 24/02/2022-28/02/2022

Name of the faculty: Prof. Vrinda Borkar, Mrs. Varsha Virginkar, Mrs. Deepa Audi, Mrs. Manisha Mhalsekar, Dr. Durga Kamat Timble, Dr. Sonia Parsekar, Dr. Bhanudas Naik, Dr. Chandan Naik, Mr. Shashank Mhaldar, Mrs. Dipika Gosavi.



62. Title: ‘Learn Chemistry with Fun’ for Dr. T B Cunha Government Higher Secondary School in Panjim, Goa and PACE IIT & Medical, Miramar, Panaji Goa

Department: Chemistry

Date: 14/03/2022-21/03/2022

Name of the faculty: Prof. Vrinda Borkar, Mrs. Varsha Virginkar, Mrs. Deepa Audi, Mrs. Manisha Mhalsekar, Dr. Durga Kamat Timble, Dr. Sonia Parsekar, Dr. Bhanudas Naik, Dr. Chandan Naik, Mr. Shashank Mhaldar, Mrs. Dipika Gosavi, Ms. Monica Ghadi.



63. Title: Distribution of paper bags at Cardoz Waddo, Taleigao, Miramar Panaji and Caranzalem, Taleigao

Department: Chemistry

Date: 13/04/2022

Name of the faculty: Mrs. Varsha Virginkar, Mrs. Deepa Audi, Mrs. Manisha Mhalsekar, Dr. Durga Kamat Timble, Dr. Sonia Parsekar, Dr. Bhanudas Naik, Dr. Chandan Naik, Mr. Shashank Mhaldar, Mrs. Dipika Gosavi, Ms. Monica Ghadi.



64. Title: ‘Learn Chemistry with Fun’ for Association of Friends of Astronomy Goa

Department: Chemistry

Date: 25/04/2022-02/05/2022

Name of the faculty: Mrs. Varsha Virginkar, Mrs. Deepa Audi, Mrs. Manisha Mhalsekar, Dr. Durga Kamat Timble, Dr. Sonia Parsekar, Dr. Bhanudas Naik, Dr. Chandan Naik, Mr. Shashank Mhaldar, Mrs. Dipika Gosavi, Ms. Monica Ghadi.



65. Title: Awareness Quiz Celebrating 4th Poshan Pakhwada under Poshan Abhiyan 2022 theme- integration of traditional and modern practices in Healthy India.

Department: Botany

Date: 31/03/2022

Name of the faculty: Mrs. Manjiri Barve, Ms. Rashmita Mhaldar



66. Title: Awareness poster on Traditional Food in Healthy Mother and Child in Tribal Areas celebrating 4th Poshan Pakhwada under Poshan Abhiyan 2022 theme – Integration of Traditional and Modern Practices in Healthy India.

Department: Botany

Date: 31/03/2022

Name of the faculty: Mrs. Manjiri Barve, Dr. Shilpa Bonsle



67. **Title:** In collaboration with Society of Ethnobotanists (SEB) - Goa Chapter, in memory of Late Prof. S. K. Jain (Father of Indian Ethnobotany) Title of the activity: “Wild Vegetables and Fruits Exhibition

Number of participants: 33 Students, 3 Administrative staff, 6 teaching staff = 42

Department: Botany

Date: 28/04/2022

Name of the faculty: Mrs. Manjiri Barve, Dr. Purnima Ghadi, Dr. Shilpa Bhonsle, Dr. Pratibha Prabhugaonkar, Dr. Ashish Prabhugaonkar, Ms. Rashmita Mhaldar



Title: Stray Cow management (NGO)/ Injured Cows recovery and Conservation /Preservation of rice varieties (on going work for seven years) and preparation of various materials in combination of dung and straw (or any agro waste/harvested crop residues).

Department: Botany

Date: 1 September 2021 to 30 March 2022

Name of the faculty: Dr. Shilpa Bhonsle



69. **Title:** Celebrating science lecture series resource person for the talk on Biodiversity of rice and its conservation at Vasant Rao Dhempo Higher Secondary School

Department: Botany

Number of faculty and students attended: Faculty: 11, Students: 98

Date: 11/03/2022

Name of the faculty: Dr. Shilpa Bhonsle

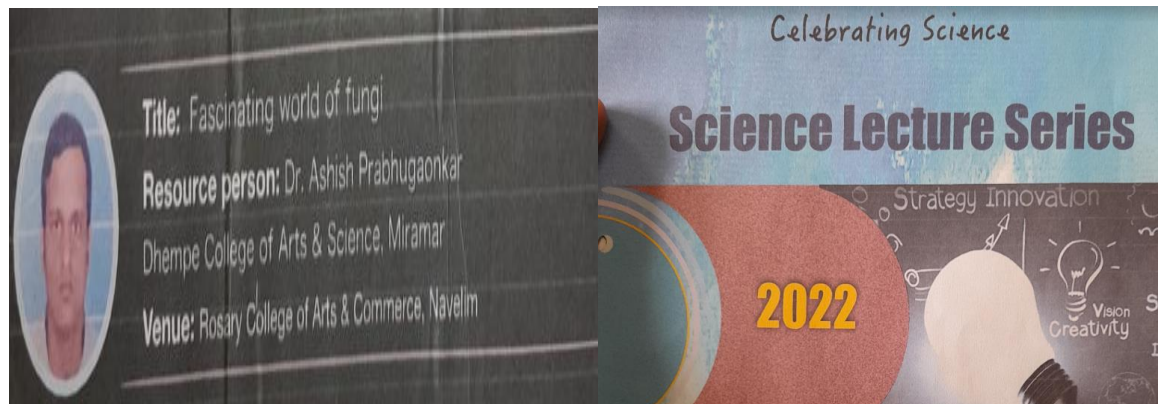


70. **Title:** Celebrating science lecture series resource person for the talk on Fascinating Word of Fungi at Rosary College of ARTS AND science Navelim

Department: Botany

Date: 11/03/2022

Name of the faculty: Dr. Ashish Prabhugaonkar



71. **Title:** Mangrove Awareness walk as a resource person at Dr. Salim Ali Bird sanctuary chorao organised by WWF.

Department: Botany

Date: 2/02/2022**Name of the faculty:** Dr. Ashish Prabhugaonkar



72. **Title:** Delivered a lecture in Dyanprasarak Mandals College and Research centre mapusa Goa on Awareness on Sand Binders and their role

Department: Botany

Date: 22/03/2022

Name of the faculty: Dr. Ashish Prabhugaonkar



73. **Title:** Identification of plant for M. Pharm student of Goa college of Pharmacy

Department: Botany

Date: 11/03/2022

Name of the faculty: Mrs. Manjiri Barve and Dr. Ashish Prabhugaonkar

74. **Title:** Leading Guiding and managing two day training program on Nanobiomedicine

Department: Biotechnology

Date: 22/04/2022 and 23/04/22

Name of the faculty: Mrs. Manjiri Barve, Mrs. Mrunal R. Phadke, Ms. Gauri Avdhut Silimkhan, Ms. Valinka Afila Fernandes, Ms. Sujata Limaye, Dr. Amara Mulla, Ms. Kameshwari Raikar, Ms. PriyNaik Parrikar and Ms. Rizelia Rodrigues



75. **Title:** Coordinated for the workshop conducted by faculty members of Department of Psychology for parents and teachers and students in three different schools of Sattari taluka ADEI Sattari

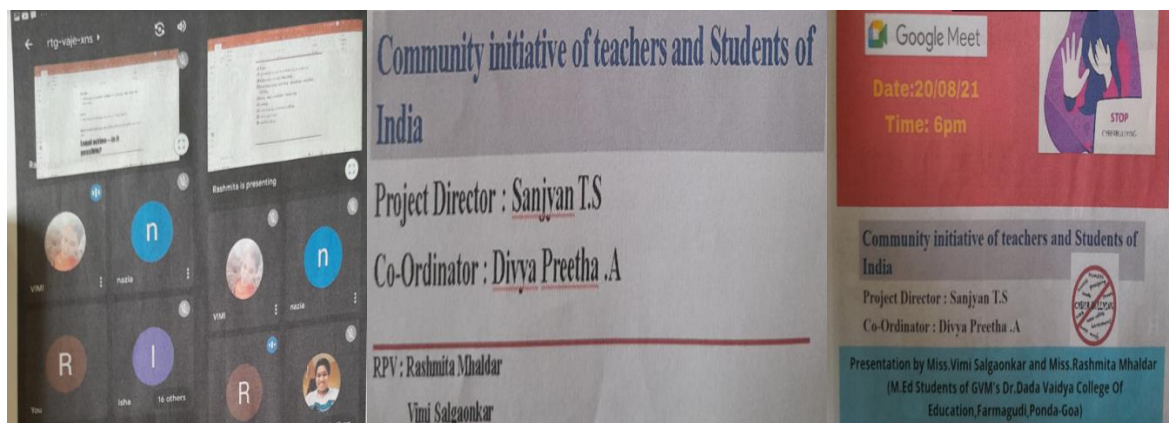
Date: 28/04/2022

Name of the faculty: Mrs. Manjiri Barve

76. **Title:** Project cyberwellness sessions conducted on awareness on cybercrimes and other issues in cyber security in schools and colleges of North Goa (Pernem and Bardez taluka)

Date: 1st september 2021 to 30 April 2022

Name of the faculty: Ms. Rashmita Mhaldar



77. **Title:** Plantathon : Distribution of plants and planters and maintainance for the garden of magnum residency Miramar

Date: 15/11/2021 to 8/02/22

Name of the faculty: Ms. Rashmita Mhaldar



78. Title: Conducted laboratory sessions in Physics for the 12th Std. students of Dempo Higher Secondary School of Science (PACE) Academy, Panaji-Goa

Department: Physics

Date: 29/01/2022 and 31/01/2022

Name of the Faculty: Prof. S.S. Burye, Dr. Swati Pawar

79. Title: Demonstration on Optics experiment conducted for the students.

Department: Physics

Date: 29/01/2022 & 31/01/2022

Name of the Faculty: Prof. S.S. Burye, Dr. Swati Pawar



80. Title: Voluntary Services to Goa Science Centre by interacting with visitors

Department: Physics

Date: 12/12/2021 & 19/01/2022

Name of the

Faculty: Prof. S.S. Burye



81. Title: Beach Swachhta Abhiyan Program Miramar Beach, Panjim-Goa

Department: Physics

Date: 06/01/2022 and 07/01/2022

Name of the Faculty: Prof. S.S. Burye, Dr. Swati Pawar, Dr. Ramu Murthy, Dr. Miskil S.Naik, Dr. Kapil Salkar

82. Title: Conducted laboratory sessions in Physics for the 12th Std. students of Dempo Higher Secondary School of Science (PACE) Academy, Panaji-Goa

Department: Physics

Date: 29/01/2022 & 31/01/2022

Name of the Faculty: Dr. Swati Pawar, Dr. Ramu Murthy, Dr. Miskil S.Naik, Ms. Siddhi Parsekar, Dr. Kapil Salkar



88. Title: Voluntary Services to Goa Science Centre by interacting with visitors

Department: Physics

Date: 19/01/2022 & 01/02/2022

Name of the Faculty: Dr. Swati Pawar

89. Title: Lecture and practical demonstration for STD IX students of Auxilium High School, Caranzalem, Goa.

Department: Physics

Date: 26/11/2021

Name of the Faculty: Dr. Ramu Murthy



90. Title: Organised in association with Don Bosco Higher Secondary School and IAPT ,Goa State Level webinar on e-Content Creation using OBS, Active Presenter software Open Shot Editor, Audacity software, OERs in Physics, for Higher Secondary Physics Teachers

Department: Physics

Date: 2nd Oct 2021



91.Title: India International Science Festival 2021.

Department: Physics

Date: 8th -14th December 2021

Name of the Faculty: Dr. Miskil S.Naik



92. Title: Invited to judge Essay writing Competition organised by Goa Science Centre, on the occasion of 20th Anniversary Day Celebration of Goa Science Centre

Department: Physics

Date: 22nd to 27th Dec. 2021.

Name of the Faculty: Dr. Miskil S.Naik



93. Title: “Be Creative” to create memes for voter awareness for greater voter Voters awareness programme participation.

Department: Physics

Date:

Name of the Faculty: Dr. Miskil S.Naik



94. Title: Volunteered for the India International science Festival (IISF) and co-ordinated events at the Science Village.

Department: Biotechnology

Date: 10th December to 14th December 2021

Name of the Faculty:Dr. Amara Begum Mulla



95. Title: Mentored Ms. Shwetakshi Mishra (student of T.Y. BSc. Biotechnology) for an online session entitled “India @75” as part of Conclave-student’s webinar series.

Department: Biotechnology

Date: 18th December 2021

Name of the Faculty:Dr. Amara Begum Mulla

<https://youtu.be/58nYRSHmVbE>

96. Title: Participated in plogging event (Beach cleaning) conducted at Miramar beach, Panaji Goa on.

Department: Biotechnology

Date: 26th January 2022

Name of the Faculty: Dr. Amara Begum Mulla



97. Title: Collection and segregation of used milk packets was done from Mangor Hill, Vasco area, for safe disposal at waste management unit, AYYA, Dona-Paula Goa.

Department: Biotechnology

Date: February, March, April and May, 2022

Name of the Faculty: Mrs. Mrunal R. Phadke, Ms. Gauri Avdhut Silimkhan, Ms. Valinka Afila Fernandes, Ms. Sujata Limaye, Dr. Amara Mulla, Ms. Kameshwari Raikar, Ms. Priyanka Naik Parrikar and Ms. Rizelia Rodrigues



98. Title: Collected clothes for children below 15 years of age from families in residential area, Vasco and donated at 'Hamara School', St. Inez, Panjim

Department: Biotechnology

Date: 2nd March 2022

Name of the Faculty: Mrs. Mrunal R. Phadke, Ms. Gauri Avdhut Silimkhan, Ms. Valinka Afila Fernandes, Ms. Sujata Limaye, Dr. Amara Mulla, Ms. Kameshwari Raikar, Ms. Priyanka Naik Parrikar and Ms. Rizelia Rodrigues



99. Title: Collected old clothes from residents of residential area in and around Panjim.

Department: Biotechnology

Date: April 2022

Name of the Faculty: Mrs. Mrunal R. Phadke, Ms. Gauri Avdhut Silimkhan, Ms. Valinka Afila Fernandes, Ms. Sujata Limaye, Dr. Amara Mulla, Ms. Kameshwari Raikar, Ms. Priyanka Naik Parrikar and Ms. Rizelia Rodrigues



100. Title: Rendered services as part of the organizing committee for the SCI-FFI, Science film festival of India, organized by Vidnyan Parishad, Goa from 26th-28th April 2022.

Department: Biotechnology

Date: 26th-28th April 2022

Name of the Faculty: Dr. Amara Begum Mulla



101. Title: Awareness programme on COVID-19 on Miramar beach.

Department: Physics

Date: 01/02/2022

Name of the Faculty: Dr. Kapil Salkar



Resource Persons: Dr. Sanjay Kumar Prajapati, Mr. Balachandra Jaddar, Mr. Sachin Naik



Name of the faculty: Mrs. Manjiri Barve, Dr.Purnima Ghadi, Dr. Shilpa Bhonsle, Dr. Pratibha Prabhugaonkar , Dr. Ashish Prabhugaonkar , Ms.Rashmita Mhaladar



104. Title: Science lecture Series on the occasion of Goa @ 60 organized a talk titled : Nanobiotechnology for Better Tomorrow

Resource person was Dr. Sheryanne Velho Pereira.

Department: Botany

Date: 09/03/22

Name of the faculty: Mrs. Manjiri Barve, Dr.Purnima Ghadi, Dr. Shilpa Bhonsle, Dr. Pratibha Prabhugaonkar , Dr. Ashish Prabhugaonkar , Ms.Rashmita Mhaldar



105. Title: Exhibition for school students titled Know Your Medicinal Plants

Department: Botany

Date: 02/05/22

Name of the faculty: Mrs. Manjiri Barve, Dr.Purnima Ghadi, Dr. Shilpa Bhonsle, Dr. Pratibha Prabhugaonkar , Dr. Ashish Prabhugaonkar , Ms.Rashmita Mhaldar



106. Title: Thousand Shades of Talent - Entrepreneurship Development Exhibition

Department: Economics

Date: 12th April, 2022

Name of the faculty: Dr. Shilpa Samant



107. Title: COVID awareness drive- Visit to Miramar beach, distribution of face masks

Department: Chemistry

Date: 31/01/2022-05/02/2022

Name of the faculty: Prof. Vrinda Borkar, Mrs. Varsha Virginkar, Mrs. Deepa Audi, Mrs. Manisha Mhalsekar, Dr. Durga Kamat Timble, Dr. Sonia Parsekar, Dr. Bhanudas Naik, Dr. Chandan Naik, Mr. Shashank Mhaldar, Mrs. Dipika Gosavi, Ms. Monica Ghadi.



108. Title: Awareness programme regarding beach cleanliness under the “Beach Cleaning Drive” organized by One Goa Girls Bn. and Dhempe College NCC- Army Wing under the “Puneet Sagar Abhiyan”.COVID awareness drive- Visit to Miramar beach, distribution of face masks

Department:Zoology

Date: 18/12/2021

Name of the faculty: Mrs. Suchana P. Amonkar,Dr. Trupti Jadhav,Ms. Neha Shetkar,Ms. Tejaswi Naik



109. Title: Awareness of some local fauna through making of a “Calendar 2022” based on photos clicked by our students and distributing it to some faculty members and higher authorities.

Department:Zoology

Date: 24/01/2021, 25/01/2021 and 26/01/20213 days

(Editing and printing ofcalendar)

Name of the faculty: Mrs. Suchana P. Amonkar, Lt. (Dr.) K.K. Therisa, Dr. Trupti Jadhav



110. Title: Awareness programme on Cancer on the occasion of “World Cancer Day” in the form of Online Quiz- “Cancer Quest”. The forms were distributed to different educational institutions and local offices in and around Panaji. E-certificates were provided to all the participants.

Department:Zoology

Date: 03/02/2021 and 04/02/2021

Name of the faculty: Mrs. Suchana P. Amonkar, Ms. Neha Shetkar



111. Title: Outreach programme in association with Friends of Astronomy- Exhibition of Zoological specimens in Zoology lab, Dhempe college of Arts & Science.

Department:Zoology

Date: 28/04/2022, 29/04/2022 and 02/05/2022

Name of the faculty: Mrs. Suchana P. Amonkar, Dr. Trupti Jadhav, Ms. Neha Shetkar, Ms. Tejaswi Naik.



112. Title: Awareness programme on “Say No To Plastic”. Distribution of hand painted jute cotton bags to general public in the Panjim local market, Taleigao Panchayat, Chimbél Market, Panjim-Ponda Highway, Altinho and Porvorim.

Department: Zoology

Date: 16/06/2022 to 30/06/2022, 10/07/2022, 11/07/2022, 12/07/2022, 04/08/2022, 05/08/2022

Name of the faculty: Mrs. Suchana P. Amonkar, Lt. (Dr.) K.K. Therisa, Dr. Trupti Jadhav, Ms. Neha Shetkar, Ms. Tejaswi Naik



113. Title: Newspapers Articles

Department:Geology

Dates: 23.08.2021, 24.08.2021,25.08.2021,25.09.2021, 25.10.2021, 08.11.2021, 19.11.2021, and 08.12.2021.

Name of the faculty: Dr. Raghav Gadgil



people'sedit

THIRD GENDER IS NOT AN ODDITY IN THE SOCIETY

RAGHAV GADGIL

I was aghast after hearing the spine chilling news that a young boy (in his twenties) from Haryana killed four members of his family on August 27, 2021. With the motive of the murder lying on shaking ground in the initial interrogations, the boy later uncovered the real cause: his family's unacceptance of his true gender and its rejection of his sex reassignment surgery. The insensitivity of the police in the press conference accompanied by reportage in the media about this gruesome murder was more horrific than the actual crime. A reputed TV channel ran a series of insensitive headlines ("murder conspiracy by a boy to become a 'girl'"; "Boy kills family for his love for gay partner"), essentially criminalising his belonging to the third gender. Such a portrayal by unsympathetic anchors creates unwanted phobia against the acceptance and existence of transgender people in society. Media houses narrate incidents in a thoughtless, casual manner that pushes the societal attitudes into shackles of hatred towards this community. That being said, alternative gender has always been a disputable topic in Indian society. The crime shouldn't have happened at all. I condemn this act of murder. But is this not due to the systemic failure of the society that refuses to accept the third gender? Many individuals remain closeted, fearing the discrimination against universally imposed gender ideals, and the consequent ostracisation. Equality of all before the constitution is inconsequential when the mindset of the people is discriminatory. The families feel frightened to approve such 'behaviour' in their children, wary of repercussions from the society. They feel betrayed, and the children are, often forced into heterosexual marriages in a bid to 'normalise' their orientation. In the case of the Haryana boy, he 'freed' himself from the constant coercion by the family that unfortunately ricocheted in the form of cold-blooded murder, one of the rewards being able to elope with the partner. The process of alienating, and stigmatisation practised in schools, colleges, workplaces, public places enrages and hurts them, everyday. Such individuals are looked upon with shame. While some, like the Haryana boy, found a way out whilst committing a heinous crime, there are others who are equally oppressed. In the 21st century, we must expect more acceptance of such individuals rather than rhetoric of an 'oddy'. These people are from amongst us. The acceptance must start from home. People claiming to have 'cures' and who call for 'counselling sessions' must be counselled themselves. Sex is a biological truth that has descended upon the individuals at birth while gender takes shape in puberty. Some permutations and combinations do not appeal to the social construct resulting in the third gender. I pity those 'doctors' purportedly 'treating' this anomaly and passing it off as a 'mental syndrome'. Such quacks thrive due to the dogma associated with the third gender. Engagement with students at an early age on the notions of prevailing gender inequities is the need of the hour. This will help structure broader societies in which they live. Strict implementation of legal standards to protect third gender individuals against violence also form an essential arm of the awareness. Finally, teaching young adults to respect people for their choice of expression, even if it contrasts with their own, is a necessity.



people'sedit

CAN ARTIFICIAL INTELLIGENCE REPLACE TEACHERS?

RAGHAV GADGIL

Recently I came across an article that mulled about applications of artificial intelligence (AI) in Teacher Education Programmes. The authors were rather confident of simulating the human intelligence process by machines especially in the activities involving knowledge, reasoning, planning, speech recognition, problem solving, perception etc. Agreed that AI has a lot of applications in as trivial as daily mundane jobs to the more sophisticated ones that operate the stock market and has made life more effortless. The article emphasises the use of AI for a customised curriculum, identifying gaps in understanding and making tailored suggestions, solving difficulties by answering questions and the like. Such grand plans of integrating AI would require humongous quantities of data to be fed as an input for the algorithm or depend on machine learning to do that. Teaching is a profession that creates other professions,' says anonymous. First, the policy-makers should not regard teachers as algorithms that work on a set of instructions. A teacher keeps molding themselves into new skins as experience enriches one's mind. A teacher's job is not repetitive, structured and well-defined, exactly opposite to what an algorithm is good at. A+B is not always equal to C for a teacher, but for an AI it is. Research in AI is moving at trailblazing speed. But scientists are not yet able to separate how electrical signals in the brain translate into thoughts or feelings. They are not yet able to insert 'emotions' in the script of the algorithm. 'Empathy' probably can never be automated via a machine. Hence, an AI will only respond to a certain limited set of situations by providing innumerable options for the student to learn. Here, they miss a crucial point: students' learning ability also depends on hand-face gestures of teacher; the vividness of the concepts created in the imaginative minds, the connect established with eye-to-eye contact, ability to recognise the learning difficulty experienced by the student, incorporating all these in AI is an arduous task. Moreover, AI has not yet stepped into the realm of being humorous and understanding sarcasm. Humans are gregarious in nature, and children are more so. Humans are afflicted by decision making problems and biases as outlined by psychologists Daniel Kahneman, Amos Tversky, Richard Thaler and others. If such biases and flaws are ingrained into the code that develops an AI, imagine the cascading effect it would have, if it is a self learning algorithm, especially if all the machines across borders are connected. The software will itself be bitten by confirmation bias which will snowball into devastating consequences. Even if such AI is used in Teacher Education Programmes, these biases will travel across the brains for eternity. If such a problem goes unnoticed, then the consequences cannot be imagined. The quality of teachers trained in this manner will wholly depend on the humans who have written the code. Such a loophole cannot be justified.

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वाचावे असे

डॉ. राधव गाडगीळ

ते

संपूर्ण मानवजातीला शेकडो वर्षांपासून भेडसावणारा हा प्रश्न दिसतो तसा सोपा, पण सत्यत पाहिले तर

आहे एका कोड्यासारखा. आपल्या भारतात पश्चिम, उत्तर आणि उत्तर-पूर्व दिशेच्या सर्व राज्यात राहणाऱ्या लोकांसाठी भूकंप हा दैनंदिन आयुष्याचा अविभाज्य घटक आहे. माणसाने आजच्या काळात खूप प्रगती केली असली तरी अजून त्याला भूकंप कधी येणार याचे अचूक भाकीत करता येणे शक्य झालेले नाही. 'भूकंप' या घटनेविषयी असलेल्या अज्ञानामुळे पुरातन काळात काही मानवसंस्कृतींनी भूकंपाच्या घटनेला देवाचे स्वरूप मानले होते. भूकंप म्हणजे जणू माणसाच्या हातून घडणाऱ्या चुकामुळे देव-देवतांचा होणारा कोप असही एक समज होता. आता जरी वैज्ञानिकांच्या दृष्टीने भूकंप कधी येणार हे अचूकपणे सांगता येत नसले तरी, भूकंप म्हणजे देवतांचा प्रकोप नव्हे, हे एवढे तरी निश्चित सिद्ध झाले आहे. मी एक भूगर्भशास्त्रज्ञ असल्याने बऱ्याच वेळा मला 'माणूस भूकंपाची भविष्यवाणी करू शकतो का? किंवा येणाऱ्या भूकंपाची प्राण्यांना लागणारी चाहूल, यात किती तथ्य आहे?' असे प्रश्न विचारले जातात. 'भूकंप' या घटनेचे वेगवेगळे पैलू आपण आता पाहूया.

भूकंप याचा संधीविग्रह 'भू' + 'कंप' असा होतो. यातील 'भू' म्हणजे जमीन (पृथ्वी) व 'कंप' म्हणजे हादरणे किंवा हलणे. पृथ्वीच्या अंतर्गत होणाऱ्या हालचालींमुळे जमीन कंप पावणे किंवा हादरणे म्हणजे भूकंप. पृथ्वीचे अंतरंग मुख्यत्वे तीन स्तरांचे बनलेले असते. सर्वात कच्चा स्तर भूकवच (crust), त्याखालील स्तर प्रावरण (mantle) आणि सगळ्यात खालचा स्तर गाभा (core). भूकवच आणि त्याखालील प्रावरणाचा थोडा भाग मिळून शिलावरण (lithosphere) हा १०० किलोमीटर जाडीचा स्तर बनतो. हा स्तर अनेक छोट्या छोट्या भूभागामध्ये (lithospheric plates) विभागलेला असतो. भूगर्भात सतत होणाऱ्या हालचालींमुळे हे भूभाग वेगवेगळ्या दिशांनी हळूहळू सरकत असतात. त्यांचा या अंतरात घर्षणामुळे भूकंपाची क्रिया घडते. उदा.

भविष्यात होणाऱ्या भूकंपाची पूर्वकल्पना देणे शक्य आहे का?



भूकंपप्रवण क्षेत्रात शास्त्रज्ञांनी वेगवेगळ्या साधन सुविधांचा वापर करून नानाविध प्रयोग केले आहेत. काही शास्त्रज्ञांना यात थोडेफार यश मिळाले असले तरी एकाही शास्त्रज्ञाला किंवा शास्त्रज्ञ संघाला अद्याप येऊ घातलेल्या भूकंपाविषयी आगाऊ माहिती मिळवणे शक्य झालेले नाही.

भारत देशाचा भूभाग उत्तरेकडे आशिया खंडाच्या भूभागाकडे सरकत असल्याने संपूर्ण हिमालय पर्वतरांगांमध्ये कमी-अधिक तीव्रतेचे भूकंप सतत होत असतात.

भूगर्भशास्त्रात जशी जशी प्रगती होत आहे तसतशी ती सामान्य माणसाच्या उपयोगी कशी पडेल यावरच जास्त भर दिला जात आहे. किंबहुना शास्त्रज्ञांवर तशी नैतिक जबाबदारीच आहे. भूकंपप्रवण क्षेत्रात शास्त्रज्ञांनी वेगवेगळ्या साधन सुविधांचा वापर करून नानाविध प्रयोग केले आहेत. उदा. खडकांची घनता तपासणे, विभिन्न स्तरातील होणारे चुंबकीय बदल, भूगर्भ जलतील बदल किंवा भूगर्भातील दगडांमधील ताण बदल अभ्यासणे इत्यादी. ह्या घटकांचा एकमेकांशी असलेला परस्परसंबंध व त्यामुळे होणारे भूगर्भातील बदल एवढे संवेदनीय आहेत की त्यावरून होणाऱ्या भूकंपाचे भाकीत

करणे खूपच अवघड आहे. काही शास्त्रज्ञांना यात थोडेफार यश मिळाले असले तरी एकाही शास्त्रज्ञाला किंवा शास्त्रज्ञ संघाला अद्याप येऊ घातलेल्या भूकंपाविषयी आगाऊ माहिती मिळवणे शक्य झालेले नाही. शास्त्रज्ञांनी भूकंपाच्या केंद्रातून तयार होणाऱ्या दोन प्रकारच्या लहरींचा इतंयभूत अभ्यास केलेला आहे. या अभ्यासाचा आधार भूगर्भ शास्त्रज्ञ जेव्हा पृथ्वीवर एखाद्या क्षेत्रात भूकंप होतो तेव्हा त्याचे आजूबाजूच्या प्रदेशावर होणारे परिणाम फक्त काही सेकंदांआधी वर्तवू शकतात. अशावेळी भूकंपामुळे होणारे परिणाम आणि हानी टाळणे वेळेअभावी अशक्य होते. त्यामुळे भूगर्भशास्त्रज्ञांचा हा निष्कर्ष निव्वळ निरर्थक असतो.

खूप जुन्या काळापासून चालत आलेला आणखी एक समज म्हणजे प्राण्यांच्या काही संवेदना माणसांपेक्षा जास्त जागृत असतात. म्हणून भूकंप होण्याआधी वारळातल्या मुंग्या अचानक सेरावेरा धावत वारळाबाहेर येऊ लागतात, कुत्रे विचित्र आवाजात भूकायला लागतात वगैरे वगैरे. यात अजिबात तथ्य नाही असं म्हणण्यापेक्षा जिथे शास्त्रीय आधार सापडत नाही तिथे अशा समजुती वेगाने फोफावतात. माणसाच्या मूळच्या जिज्ञासू वृत्तीला जेव्हा काही वैज्ञानिक खुलसा सापडत नाही तेव्हा ते मिळेल तिथे सोयीस्कररित्या उत्तर शोधत फिरतो. काही शास्त्रज्ञांनी भूकंपा आधी होणाऱ्या प्राण्यांच्या विचित्र वर्तनांचा अभ्यास केलेला आहे. यात मुंग्या, कुत्रे, गायी-गुरे, उंदीरे, सरपटणारे प्राणी व हत्तींचा

सुद्धा समावेश आहे. वैज्ञानिकांनी या अभ्यासात तपासलेल्या नमुन्यांची संख्या शास्त्रीयदृष्ट्या सांख्यिकीय वैधता (statistical validity) सिद्ध करण्यासाठी फारच कमी आहे. कमी नमुन्यांच्या अभ्यासामधून एखादा ठोस निष्कर्ष काढणे चुकीचे ठरू शकते. भूकंप प्रवण क्षेत्रात राहणाऱ्या लोकांचे अनुभव विचारात घेतले असता ते सुद्धा प्राण्यांच्या विचित्र वागण्याला पुष्टी देतात. मानसशास्त्र यावर असे म्हणते की माणूस प्राण्यांच्या विचित्र वागण्याचा घेत संबंध भूकंप होण्याशी लावतो कारण त्याचा विचार त्यावेळी ह्याच प्रवाहाने जात असतो. भूकंपावेळी गर्भगळीत झालेले लोक कुठच्याही गोष्टीचा संबंध भूकंप होण्याशीच लावतात. प्राण्यांच्या विचित्र वागण्याला काही वेळा वेगळी कारणे पण असू शकतात, ज्याबाबत आपण अजून अनभिज्ञ आहोत. बरे, प्राण्यांचे असे वागणे 'बिचित्र' या गटातच का मोडते यावरही विस्तृतपणे संशोधन करणे आवश्यक आहे. आपल्याला जे 'बिचित्र' वाटते, ते प्राण्यांसाठी सामान्य असूच शकते.

काही वैज्ञानिकांनी तर सामान्य विचारांच्या परिसीमा ओलांडून अवाक करतील अशा संकल्पना सुद्धा मांडल्या आहेत. त्यातील एक म्हणजे प्राण्यांच्या शरीरातून निर्माण होणाऱ्या 'दुःखी लहरींचा' (pain waves) भूकंप होण्याशी थेट संबंध लावणे. त्यांच्या म्हणण्यानुसार कत्तलखान्यांची संख्या जास्त असलेल्या प्रदेशात भूकंप होण्याचे प्रमाण अधिक असते. कत्तलखान्यात कत्तल होणाऱ्या प्राण्यांना अतोनात क्लेश, दुःख सहन करावे लागते व त्यामुळेच त्यांच्या शरीरातून बाहेर पडणाऱ्या दुःखी लहरी पृथ्वीत प्रवेश करून जमिनीला हादरे बसविणाऱ्या क्रियेला कारणीभूत ठरतात. अशा वैज्ञानिकांची मला खरेखरच कीव करावीशी वाटते. खरेतर 'मानसिक' संवेदना व 'भौतिक' लहरी यांचा संबंध निव्वळ कपोलकल्पित व सामान्य माणसाच्या आकलन क्षमतेपलिकडचा आहे! एकंदरीतच या सगळ्याचा सांगोपांग विचार करता असे लक्षात येते की इतकी प्रगती करूनही अजूनही माणसाच्या बुद्धीची झेप भूकंपासारख्या आपत्तीची पूर्वसूचना करण्यास असमर्थ आहे. येणाऱ्या आगमी काळात यावर अधिकाधिक संशोधन होऊन आपल्याला न समजलेले, न दिसलेले असंख्य पदर उलगडतील आणि आपल्या भावी पिढ्यांसाठी तरी हे कोडे सुटेल असे म्हणूया....

(टीप: लेखक भूगर्भशास्त्राचे गथासक असून थेंपे कला आणि विज्ञान महाविद्यालय मिरामार, पणजी-गोवा या ठिकाणी भूगर्भशास्त्राचे प्राध्यापक म्हणून कार्यरत आहेत.)



people'sedit

GLOBAL CRISES IN NEED OF GLOBAL RESPONSE

RAGHAV GADGIL

It has been a while since global warming has been knocking at our doorstep, but all the policy makers did not want to acknowledge the elephant in the room. Inter-governmental Panel on Climate Change (IPCC) has released its sixth Assessment Report (AR6) and has rung alarm bells for all the countries with its explicit statement "Global warming is unequivocally caused by anthropogenic activities". This is the first time when all the scientists have had a consensus.

Each of the IPCC reports has developed 'emission scenarios', that are actually 'predictions' with each of them having equal likelihood of occurrence. Such predictions are much bigger unknowns than the variables from the past assumed to calculate such scenarios.

I, along with other geologists did ascribe the global warming phenomenon to be largely controlled by geological processes rather than human. These include strength of the Sun, changes in the Earth's orbit, axial tilt and precession, quantity of greenhouse gases in the atmosphere, ocean currents and carbon dioxide content, volcanic eruptions, meteorite impacts and changes in land cover. About 18000 years ago, the world was 6 degrees cooler than today. In contrast, at the AR3 (in 2001), scientists predicted about 6 degrees warmer world in the worst case scenario by 2100. In 2021, this prophecy has partly come true (in AR6) when the temperatures are poised to rise by 1.5 degrees by the next 20 years and by 2 degrees by the end of 2050. The planet has been recording many firsts in quick successions in terms of highest average temperature, incessant rainfalls, frequency of floods and droughts, forest fires, heat-waves to name a few evidenced by higher number of extreme weather events (227 between January-July 2021 as opposed to 157 in 2011).

It is also harshly true that even if all the countries meet the zero-emissions target immediately, the planet is still going to see temperature stabilisation of up to 1.5 degrees warmer due to Earth's thermal time lag. The natural carbon sinks (oceans, forests and soils) of the planet have reached their tipping points. Though India's share in the global CO2 budget was a mere 3 per cent for the period between 1870 and 2019, India can be the torchbearer for innovations in climate solutions. Energy derived from fossil fuels, the main drivers of climate change since the industrial revolution, has been at a centre stage of any discussion. It has been hard for countries to drive fossil fuels off the table due to their easy availability and utilisation.

The primary implication of global warming is climate extreme. Goa has been slowly threatened by higher average temperatures, erratic & excessive rainfall, lowering duration of winters, lesser agricultural productions, destruction of crops & landslides in hilly areas. The next critical effect of global warming is the melting of permafrost regions leading to rising sea levels. Major towns of Goa are situated close to the coast, thus, even a metre rise in sea level threatens to inundate such areas.

people'sedit

MUSINGS OF A DEMOCRATIC CITIZEN

RAGHAV GADGIL

Although the electronic voting process has been completed in Goa, ballot counting is still pending. The future of all candidates has been sealed and the machines lie manned by security personnel in strong rooms. The government machinery is put to test by Election Commission of India, ensuring a fair election process. The alacrity at which the otherwise lax government servants issue circulars, letters and show-cause notices for those who don't pay heed to the demands of ECI, is commendable.

This attitude by the authorities may also be due to the impending strict actions under several sections of IPC that one may be tried with, if s/he falters in duty. If only such an attitude had to prevail consistently, people would not deem any government process as 'long and cumbersome'. The involvement of people from various government offices, selected at random and then combined in myriad permutations and combinations to form polling teams, helps to ensure miniscule probability of any kind of malpractice that the government servants may connive if they were under normal circumstances. Here, people themselves act as hawk eyes to prevent any misdeeds.

There is little to know about the working of the allotment process of election duties to various personnel. My instinct says it must be happening via a non-human intervention through a computer algorithm. This is more likely, as an algorithm is an efficient way to manage such huge volumes of data viz. names of people, place of work, voting details, etc. As the algorithm is devoid of feelings, it does not care if a person from Canacona or Sanguem has to report to Valpoi.

The statistical probability of a driver meeting with a road accident is high, especially if the fatigued person after an election duty drives long distances. But human brains cannot fathom the depth and power of statistical data. The physical hardships ensued due to such an allotment has to be borne by the govt servant. People expressing displeasure are silenced by a barrage of rules that one has to abide being a government 'servant'.

If this wasn't fair then think about those people, elderly and young alike, who have health problems. There is little doubt that some health problems are tailored and spun by those who want to distance themselves from such an energy-demanding, responsibility laden duty. The reasons for the fright can be infinite. This brings to mind an episode wherein an employee who was assigned election duty pleaded for exemption by producing medical certificates, but to no avail. As a last resort, a medical examination by the competent authority deputed by CEO revealed the grave health concern that prompted them to dial 108. I don't blame the authorities, if they were lenient, then one would have seen queues for duty cancellations. Furthermore, Swachh Bharat campaign adjectives such as 'eco-friendly', 'plastic-free' go for a toss. A conservative approach is needed to limit the paperwork involved.

Finally, I must also admit that conducting elections in the world's largest democracy is a tough job. In spite of the above highlighted shortcomings, one must wholeheartedly appreciate the zeal of common citizens serving at the designated places.

people'sedit

CAN HUMANS PREDICT EARTHQUAKES?

RAGHAV GADGIL

As a geologist, I am confronted by a layman with the most nagging question, 'can earthquakes be predicted?' followed by 'can animals sense the earthquake?' The answer is multifaceted. In ancient times, the theist explanation was that the imaginary supreme divine unleashed its wrath on the heretics of the society for not following the commandments. However, such concocted stories do not hold ground in light of scientific advancement.

"Earthquakes are triggered when two slabs of rock meeting at a fault-line can no longer resist the forces acting on them, and slip", most common along plate boundaries. This geological process happens underground, anywhere from the surface to deep depths of 700 kms, within the layers of earth. As the rocks are hard and brittle at these depths, the movement of plates builds up stress within the rocks that ultimately gives way to the stress release in the form of breakage.

Scientists have the moral responsibility to minimise the loss of human life by developing techniques to predict earthquakes using deterministic variables. Predictions of such a disaster seek to analyse the precursor events having statistical coherence to the occurrence of earthquakes. Geologists all over the world have tried several algorithms that take into account several factors related to stress build up in the crust, movement of plates, and anomalous release of gases, groundwater changes or changes in electrical conductivity of crustal material etc, using a plethora of sophisticated geophysical devices. These parameters are highly heterogeneous and affect each other in a very sensitive and complex way. An earthquake generates energy that travels around the globe in the form of two types of waves, and if we track these waves, prediction of an impending disaster is possible, albeit only by a few seconds.

The inability of science to provide a satisfactory answer to this question opened doors to various instances of strange animal behaviour preceding an earthquake. One study conducted in 2018 highlighted that the search term 'animal earthquake precursor' on Google yielded 28000 results, while a search on Web of Science yielded 2327 results. This discrepancy between public perception and scientific research shows that speculations and the craving for sensations exist on the one hand, and complete rejection exists on the other.

In reality, this behaviour may be influenced by some hitherto unknown parameters. One also needs to assess the purported 'strange' behaviour that is proven to be unusual within the group of animals under study. The scientists also possibly carry a bias in relating any behavioural change to the future chance occurrence of an earthquake.

Lastly, some have proposed a theory of 'pain waves' that cause earthquakes. The theory contends that intense stimulation of nociceptors in sentient beings (such as in animals being butchered) produces a signal that travels to the brain that makes it aware of 'pain', emanating pain waves that travel through the crust and rupture it. Here, I stress that equating subjective experience of 'pain' with an objective reality of 'waves' is a work of fiction!

THE INBOX >>

Paradox of 'no' offline exams but 'yes' to theatres!

Students from a reputed school made a representation to oppose the conduct of offline exams to the Education Minister of Goa. In a parallel universe, government officials released a circular of opening of cinema halls at 50% capacity, without attracting any opposition.

The delegation that met the CM and posed for a photo brazenly weren't wearing masks displaying first hand instance of callous behavior towards Covid-19.

These are the same people who would not hesitate working out in the gym, visiting markets (crowded), and now watch movies in the theatre halls but recoil when authority decides to conduct an offline exam.

The situation is as if the virus has decided to infect everyone when students join school. The Covid-19 protocol is in place and if students behave wisely, threat can be lowered.

This virus is here to stay as an endemic disease, this is the only plausible endgame. The suggestions must come towards safe starting of school/colleges, not against it.

RAGHAV GADGIL, Khandola





Vote Right People For Better Governance

EVERYTHING we dream or the freedom we have bitterly fought for will evaporate in no time and make us paupers or refugees in our own land if the leaders sell us with impunity, look after themselves and finally run away! Therefore, when voting during elections, please think before believing the false promises about unsustainable development or emotional stirrings on religion, caste, national security and freebies offered with money siphoned through various means from government coffers and your piggy bank. Be willing to give it a thought, in your interest and the interest of the public. Your country is your family, friends, community (common unity). Work to build a community of love that will make a great happy nation and government and institutions that will

care for you, protect you, ensure justice equally for all and educate your children to be good citizens. Figuratively, forcing a river to suddenly change course with 'development' that creates imbalance, pollution, climate change, digital and financial disparities etc thus forcing the nature to strike back with devastating consequences is what we have been doing.

JOHN ERIC GOMES, PORVORIM

Paradox of No Offline Exams But Binge-watching In Theatres

STUDENTS from a reputed school made a representation to the Education Minister of Goa to oppose the conduct of offline exams. In a parallel universe, government officials released a circular of opening of cinema halls at 50 per cent capacity, without attracting any opposition. The members of the delegation that met the

Chief Minister and posed for a photo brazenly were not wearing masks, displaying first hand instance of callous behaviour towards COVID-19. These are the same people who will not hesitate to work out in the gym or visit markets (crowded) and now watch movies in theatre halls but recoil when authority decides to conduct an offline exam. The situation is as if the virus has decided to infect everyone when students join school. The COVID-19 protocol is in place and if students behave wisely, threat can be lowered. The attitude either implies trust deficit towards school authorities for conducting exams safely or students do not expect an element of discomfort in passing exams. This virus is here to stay as an endemic disease, this is the only plausible endgame. The suggestions must come towards safe starting of schools/colleges and not against it.

RAGHAV GADGIL, KHANDOLA

Tackling Begging

GANAPATHI BHAT, AKOLA

WHY do people beg? Is begging a crime? What do the laws say? Should the society be more considerate towards beggars? Destitution, discrimination, disability, disease and deprivation are common causes of begging. According to a number, there are more than four lakh men and women, who beg for a living in India. Arguably, beggars are not a sight for sore eyes. Dishevelled men and women running after people asking for alms from all can be repulsive. But does that mean beggars must be isolated and put behind bars? In other words, are beggars criminals? Different courts of India have regularly addressed the issue. Some High Courts have had divergent views on begging. The Delhi High Court, for example, had questioned how begging could be seen as a crime when it is a direct offshoot of the failure of a government to provide food and shelter to its citizens. Recently, the Bombay High Court, however, adopted a diagrammatically opposite view. Like any other citizen, those who beg should also "work for the country" it had said. The top court of the land, however, has said that beggars are products of socioeconomic depravity and begging is a source of livelihood to people, who are robbed of education or job. The apex court was hearing a petition that begged for removing the beggars from public places because they could be a potential COVID-19 threat. While a final judgment in the case is yet to come, the court's observation is both, sympathetic and empathetic. Control of begging is a state subject, and many Indian states have taken a strong view on beggar men and beggar women. Some have viewed begging as a social crime. But all are dictated by the Bombay Prevention of Begging Act, 1959. Some stringent penal provisions are provided in the Act. It is pertinent to recall that certain mafias are overactive in recruiting beggars to suit their needs. Therefore, states should tread carefully on the larger problem.

Waste collectors

We have clapped and banged thalis, lighted diwas/candles for the front line warriors much before the pandemic reached its peak in India, while this sort of appreciation was started in Europe and West countries as they were the hardest hit and truly the front line warriors deserved all sorts of accords.

The situation in Goa is turning out of control, when the Government begun lowering its guard to check on the possible spreaders of the Covid-19 virus. We have forgotten that a very important person who handles the waste is the one truly to be called a front-line warrior too. To earn his daily bread and butter he risks his life to collect the door to door wet/dry and biomedical waste unknowingly from houses that have been designated as home quarantine.

Lack of coordination between the Health Dept. and the Panchayat authorities of the village is not acceptable which may cost the life of such innocent people and family will lose their bread winner.

I request the Health Minister to appoint a separate contractor to collect the waste that is being generated from such homes that have been designated as home quarantine and fix a nominal fee to be paid by such patients.

This will protect the waste collector who goes to every door to pick up the waste which may be a source of spreading the virus to others. Secondly the health centres and Panchayats should submit the names of all the labourers who have been employed by the contractor as waste collector's to be insured or provided treatment if they contract the virus and if death occurs the family should be compensated.

The Disaster management

letterstotheeditor

For letters to the editor contact us at editor@herald-go.com.

All letters must contain correct postal address and telephone number. Letters are liable to be edited for brevity.

funds or funds from construction worker should be utilised for such labours who are directly involved in waste collection. Its time we respect these workers too.

Gregory E. D'Souza, Siolim

Beware of Cat Que Virus disease

At a time when India is still grappling with the novel coronavirus pandemic that started in China's Wuhan, scientists have warned of another virus CQV(CAT QUE VIRUS) from China that has the potential to spread diseases in India.

The CQV is an arthropod-borne viruses or arboviruses. Scientists at the National Institute of Virology (NIV) in Pune have found the presence of the antibodies for the CQV in two out of 883 human serum samples that were collected across India. But it is said that virus was not found in any of the human or animal samples at the time of the study.

The ICMR has revealed the presence of CQV in a species of mosquitoes called Culex, and also in pigs in China and Vietnam. Notably, India, too is home to species of culex mosquitoes. And this arthropod-borne virus (arboviruses) is usually carried by culex mosquitoes and pigs, and could cause fatal illness in humans in India.

K.G.Vilop, Chodan

Rape culture needs to end

Another rape and murder from Hathras village has made headlines pan India. Protests have

erupted across the nation for this dastardly act. The torture news has sent chills down the spine. Few other incidents that caught attention were in 2012 in Delhi, in 2017 at Unnao, 2019 at Hyderabad.

Though only handful of cases end up in waking up India as a whole, there are many more that go unnoticed.

87 rape cases per day were recorded in India in 2019 according to the official data and in 93% cases, the perpetrators were known to the victim. This is just the tip of the iceberg.

India's culture has deeply rooted patriarchy mired in misogyny. Women are always looked upon low, they are always victims of impish behaviour. The four convicts of 2012 Delhi rape case wanted to teach the girl a 'lesson' for allegedly cuddling her friend at late night. This 'victim-blaming' should end. Such issues need to be dealt with at grassroot levels.

The laws against rape in India are one of the harshest in the world, but the problem lies in their implementation. The lackadaisical approach by those on duty allows the perpetrators to find caveats to slide out of the accusations.

Since the number of victims gathering courage and registering the offence are only a handful, at this juncture, if the law enforcement officers are trained on how to deal with the victims of sexual abuse or assault, there will be increased reporting of such incidents.

The society has to be more humane and benevolent towards those vulnerable. All this also

leads us to one important question: if the "death sentence" of the 4 rapists of 2012 Delhi rape-murder was meant to counteract such crimes, then the validity of this death penalty should be reconsidered.

Raghav Gadgil, Khandola

Protect ecology and villagers

In recent time, we witnessed the protests led by the villagers of Melauli and others at Melauli. The villagers of Melauli say with one voice that they do not want the IT project to be implemented in their village.

According to them such a project will destroy the ecology of the village. Well, there is no doubt on that front. Further, the elders in the village say that they be made the owners of the Alvora land in Class 'A' category. Both reasons seem to be logical as the villagers have been residing and cultivating the crops on the said land for several years. And they are ready to die for their cause.

In many government projects, the government has to face the ire of the people. It only shows that the Government lacks willingness to take all the stake holders on board before planning and executing the projects. Using absolute power and brutal force to implement such projects will only aggravate the situation.

Therefore it is pertinent here that Government takes villagers-friendly measures. It has to take villagers into confidence thereby protecting the ecology of the village and villagers' interests as well.

Rui Pereira, Navelim

Capitalism form of economy

Capitalist form of economy has many critiques and proponents. The former's main accusations are, 'that capitalism is inherently exploitative, unsustainable and creates economic inequality, is anti-democratic and leads to an erosion of human rights while it incentivizes imperialist expansion and war.'

Goa is such a small place with a very great commercial value if put up for sale. Being small it can be easily bought by Indian Capitalists alone. What will be the fate of locals if this is done? Capitalists are eyeing every inch of Goa: for pleasure or profit. They need berths(marinas) for their yachts. They are ready to buy or lease - for 99 years- private jetties along all the rivers. They can and are ready to buy entire beaches or islands - Terekol, Divar...! For profit, they are open to buy the sanctuaries and even the Port.

What's blocking them is the fact that all these lands are not the property of the Goa Govt. Locals are not ready to part with the same. Hence, the first step is to get the lands transferred to the govt.

This is now being done by various laws being enacted. First the rivers have been taken over, next the Port, and the beaches. The HTL is now a mere 50 mts: enticing the 'crooked' Officials to sell off or lease the same. The Capitalists ready to buy Goa outright or through the Central Ministers. The local Govt. has been acting as a broker with not even a semblance of protest.

More alarming is even PSU's are being sold off to crony businessmen. India is moving from a part Social Capitalism to complete private crony Capitalism which does not bode well.

R Fernandes, Margao

people'sedit

(UN)SCIENTIFIC WAYS OF WRITING THAT FALLACIES PUBLIC

RAGHAV GADGIL

Society abounds with people whose opinions are shaped by trivial instances of nudging. However, there is a minority of people who are unshakeable and are blessed with a cognitive ability to see everything with a pinch of salt and assess subjects through a prism of scientific curiosity and rigour. Our brain is lazy in cross-checking facts, as it involves expending energy, and energy for the brain is a valuable resource. Therefore, knowing facts and analysing statistics to form judgements is a prerequisite for a well-informed society.

A few members of the public, owing to their ability of better assessing situations and put forth their opinions, are in usual parlance known either as scientists or philosophers. Both of them back their statements by solid research, with replicable results. With this aura, they can contribute opinion pieces to reputed newspaper. Therefore, a scientist is also expected to be open to criticism with humility. This is important as these people make the public rethink their beliefs.

Well, this article highlights traits of that proportion of scientists who regard themselves in high respect, with a hollow public following. They try to foray into uncharted territories expecting that people would believe in anything they say because of their glimmering doctorates. They write about their alleged 'discoveries' as opinion pieces in newspapers purportedly to pass on to the general public directly. These discoveries often rest on unfounded assumptions and are narrated by raconteurs. Such (un)scientific writing in the dailies bolstered by agreeable folks leads to a confirmation bias. Writing in one's domain is accepted fluidly amongst masses while proving yourself to be a multitude of experts calls for a jack of all trades, master of none. These 'experts' write opinions using a complex web of intricate scientific words in quick succession to attract the reader and turn him blind towards alternative possibilities. I do not doubt their super-active brains that crave information all the time.

What their brain fails to fathom is, there is a difference between cursory understanding and in-depth analysis. Such people also probably are victims of Armchair Quarterback Syndrome, which is a psychological condition of pretending to have expertise when there is none. When in public debate, such people pass combative arguments and are self-assertive, possibly ranking their cognitive ability to be greater than it is. Such debates are often one-sided. They are blind towards their blindness. They do not realise when they cross the thin line that exists between a scientist and a preacher, where the latter tries to persuade others into believing in them and turn to prosecutors by negating any criticism towards the findings.

Adam Grant says "Our beliefs are like a pair of reality goggles, any disruptive opinion cracks them up". It is at this time one turns defensive and dons up a shield goggle that will not contort the mind and keep the current view intact. People with such traits often bamboozle the public, without themselves knowing it.

people'sedit

THE PANDEMIC OF INFORMATION AND SOCIAL MEDIA DISTRACTION

RAGHAV GADGIL

Every cell phone buzz takes us away from the daily tasks that need to be completed. The WhatsApp messages, Facebook alerts, Instagram feeds, and other push notifications cause constant distraction. WhatsApp status is a reminder of the colourful lives others are enjoying against our washed-out life, causing FOMO to creep in. A study suggests that it is hard to concentrate on a task for more than 11 minutes in such an environment. Being focused is the biggest challenge in today's life. Adding to that is ever-increasing information constantly bombarded us through these social messaging platforms causing an information pandemic.

Technology, cheap Internet plans, easy access to smartphones have aggravated attention deficits in individuals. A study suggests that the brain needs an average of 25 minutes to get back to the original task once interrupted. We do not realise that subscriptions to OTT platforms like Netflix cost money (of course) but also our valuable 'time'. Such platforms and other social networking Apps essentially 'buy' your 'time', a commodity that is very rare in one's life. The young generation attending online classes are the worst hit. They are the ones who are the primary consumers of such distractions. As human minds are biologically wired to get 'distracted' quickly, such a gadget-dominated world quickly adds up reasons to get us defocused from work. Such distractions can be recurring due to instant gratification achieved each time we toggle through a Facebook feed or a WhatsApp forward. Over time the body cannot resist it. The stimulus provided by them is comforting for the brain, which can slice your attention.

The human brain has never been exposed to astronomical levels of information to process. About 2700 books get published every day & around 1.5 lakh scientific articles are published every month in the world. There are approximately 392 news channels on Indian television today. There are an estimated 2 billion websites out there waiting for a click. Extraordinary amounts of data have been pumped on the web every day. This is only going to increase exponentially in the near future.

Tens of videos, links, pieces of unverified forward messages, photos are received on every individual's phone every single day. Ideally, having so much information should make our lives easier and help us make informed decisions. It should enable us to gain knowledge, make us wiser, and produce an intelligent breed of individuals ahead of their previous generations. But unexpectedly, the information does more harm than good. Data from a plethora of sources occupies our brain and inundates it so much that critical analytical ability to filter out the correct information is lost. This is also called 'brain fog', essentially a cognitive overload.

How to deal with all this? An easy but challenging solution is to stay away from sources of distraction: Easier said than done. We must keep track of the number of times we check our smartphones for needless updates. Take a break. Remind yourself that you cannot process all the data.



people'sedit

READING SHOULD ALWAYS BE IN VOGUE

RAGHAV GADGIL

"A book is a gift you can open again and again" says Garrison Keillor. My father inculcated and nurtured my reading habit as he took me to local book exhibitions when I was young and made sure that I enrolled myself in the Goa State Central Library, then housed in Institute Menezes Braganza, Panjim. As a kid, as my reading grew, books espoused my curiosity to understand the world better. A study conducted by B Greene in 2001 says it aptly "Reading habit is best formed at a young impressionable age in school, but once formed it can last one's lifetime".

Reading encourages sound scholastic development of the mind. The most direct outcome of the reading is it strengthens vocabulary and leads to a fluid formation of comprehensible sentences. Reading allows the mind to go through an assortment of characters, their lives, ambitions, nuances thus allowing it to weave a story. It empowers and emancipates citizens, and it brings people together. It helps to form opinions and guide one's judgements. It fuels up the imagination and makes us receptive to new ideas. It allows and fosters re-thinking and questioning about themes to which non-readers cling without any understanding. It allows one to be empathetic and liberal in viewing society. Reading is an investment that pays rich dividends in life.

However, reading habit has taken a backseat in this online world. There are three essential steps for any habit to form: a trigger, the process and a reward, says Adam Grant. This method has been mastered by the greatest distractors of all time: the social media giants! The smartphone notification (the trigger), countless feeds of pictures/videos (the process) and instant gratification one gets (the reward) fully utilise the caveat of habit formation. While on the other hand, reading a book or a newspaper compels the effortful mind to think over facts and assimilate the ideas. Though development in technology has brought books at our fingertips in the form of e-books, e-magazines or e-journals, it has been poorly successful in imbibing the reading habit. This notion is bolstered by the scene of students in the reading rooms of libraries seen fiddling with the smartphone screens.

The advent of audio books has tried to replace the traditional methods. Lack of dedicated time (or will for it) for reading has been monetised by companies that offer books to listen to on the go. Since the brain cannot multitask effectively, listening to a book while doing chores does not allow us to absorb the essence of a book. In contrast, reading a book evokes undivided attention and facilitates the development of focusing ability, thus also leading to more absorption of the contents.

I consider custodians of a library to be the luckiest people on earth, while the visitors to be next in the hierarchy to be lucky! However, as we move up through the educational hierarchy, the tradition of visiting a library slowly disappears from the curriculum. The students are embroiled with the syllabus and supplied with readymade notes, thus diminishing the need to visit a library. Therefore, visiting the library must be allocated a place in the regular timetable.

people'sedit

CAN HUMANS PREDICT EARTHQUAKES?

RAGHAV GADGIL

As a geologist, I am confronted by a layman with the most nagging question, 'can earthquakes be predicted?' followed by 'can animals sense the earthquake?' The answer is multifaceted. In ancient times, the theist explanation was that the imaginary supreme divine unleashed its wrath on the heretics of the society for not following the commandments. However, such concocted stories do not hold ground in light of scientific advancement.

"Earthquakes are triggered when two slabs of rock meeting at a fault-line can no longer resist the forces acting on them, and slip", most common along plate boundaries. This geological process happens underground, anywhere from the surface to deep depths of 700 kms, within the layers of earth. As the rocks are hard and brittle at these depths, the movement of plates builds up stress within the rocks that ultimately gives way to the stress release in the form of breakage.

Scientists have the moral responsibility to minimise the loss of human life by developing techniques to predict earthquakes using deterministic variables. Predictions of such a disaster seek to analyse the precursor events having statistical coherence to the occurrence of earthquakes. Geologists all over the world have tried several algorithms that take into account several factors related to stress build up in the crust, movement of plates, and anomalous release of gases, groundwater changes or changes in electrical conductivity of crustal material etc, using a plethora of sophisticated geophysical devices. These parameters are highly heterogeneous and affect each other in a very sensitive and complex way. An earthquake generates energy that travels around the globe in the form of two types of waves, and if we track these waves, prediction of an impending disaster is possible, albeit only by a few seconds.

The inability of science to provide a satisfactory answer to this question opened doors to various instances of strange animal behaviour preceding an earthquake. One study conducted in 2018 highlighted that the search term 'animal earthquake precursor' on Google yielded 28000 results, while a search on Web of Science yielded 2327 results. This discrepancy between public perception and scientific research shows that speculations and the craving for sensations exist on the one hand, and complete rejection exists on the other.

In reality, this behaviour may be influenced by some hitherto unknown parameters. One also needs to assess the purported 'strange' behaviour that is proven to be unusual within the group of animals under study. The scientists also possibly carry a bias in relating any behavioural change to the future chance occurrence of an earthquake.

Lastly, some have proposed a theory of 'pain waves' that cause earthquakes. The theory contends that intense stimulation of nociceptors in sentient beings (such as in animals being butchered) produces a signal that travels to the brain that makes it aware of 'pain', emanating pain waves that travel through the crust and rupture it. Here, I stress that equating subjective experience of 'pain' with an objective reality of 'waves' is a work of fiction!

people'sedit

GEARING UP FOR IRREVERSIBLE CHANGE

RAGHAV GADGIL

3.5 billion years after the first life appeared on Earth, mother nature must be vexed at the process of evolution that created a tawdry product, the humans. Since homo sapiens came into being, the species has been rapacious and mercenary in character. With the advent of cognitive ability, humans have always used mother nature for a better, enhanced life. This aspect of self-betterment has downgraded anything beyond humans. Moreover, the irony is that, World Earth Day today, April 22 is celebrated by humans for their own misdeeds made in a bid for a better future. Humans have teetered in the path of saving mother nature, and they continue to do so.

The first report of IPCC had highlighted that we will be in deep trouble in 40 years to come, and there we are. The 6th Assessment Report of IPCC attributed extreme weather events to climate change. The simple lackadaisical approach "Let it happen then we will see what to do" has brought us here. Human settlements near water resources like lakes and rivers face the threat of climate change and sea level rise. Beyond any doubt the losses and damages will be concentrated amongst this poor group of population. With the temperature increase happening unimpeded, we will be left with lesser sets of options to dodge the situation. In Goa and other states alike the effects of climate change is glaring at us in the face: high humidity had led to higher temperatures over the past decade. People flock to buy air conditioners, thus putting an immense load on power infrastructure, ultimately leading to burning of more coal that promotes emission of greenhouse gases, causing heat entrapment. The cycle is self-sustaining. Ignorance is the culprit.

Conducting meetings, discussing climate in cozy cool indoors, quenching thirst by drinking water in disposable plastic cups, devouring food in plastic cutlery, commuting in fuel-guzzling machines are some of the traits of humans. It is well-known that climate change will have a skewed effect on the poor and downtrodden who cannot afford to protect themselves in this high inflation world.

The implementation of the measures adopted to save mother nature at the highest inter-governmental levels get diluted and adulterated in the web of bureaucratic red-tapism. I would argue that these measures are not to save mother nature, but to save 'us', humans. We are just feigning to save nature.

Immense poaching pressures have pushed many animals in the wild habitats to extinction, and we are probably witnessing mass extinctions that have previously happened in the geologic past several times. But this time it is unique. Humans have themselves inflicted this injury. Several studies are teeming with facts of dying plant and animal species. Since humans have taken these threats of nature (climate change) 'personally', the human species is scrambling to survive. In the annals of nature, this must be a very unprecedented phenomenon, and if mother Earth is biologically active according to the author James Lovelock (Book: The Revenge of Gaia), it must be tee-heeing at the cinema unfolding over the past years.





प्रासंगिक

डॉ. राघव गाडगीळ

खोतोडे-सत्तरी येथील 'अग्निभूत जीवाश्म जंगल' समज आणि वास्तव

वि

ज्ञानाबद्दल आणि अनेक वैज्ञानिक घटनांबद्दल आपणा सर्वांच्या मनात

कुतूहल आणि उत्सुकता असते आणि जगातील एखादी दुर्मिळ अशी गोष्ट आपल्या भागात आहे असे आपणाला समजल्यास आपणाला त्याचा अभिमान आणि गर्व वाटतो व आपण मोठ्या आनंदाने ते सर्वाना सांगत सुटतो. परंतु अनेकवेळा असे करताना वस्तुस्थिती आपण व्यवस्थित समजून घेतलेली नसते आणि उगाच फुशाख्या मारण्याच्या या सवयीमुळे आपले हसे होण्याची शक्यता खूप असते. एखाद्या वैज्ञानिक घटनेबद्दल बोलताना तर आपणाला अतंल जागरूक रहावे लागते अन्यथा कृपा अभिमान बाळगण्याच्या ईश पोटी वैज्ञानिक सत्याकडेच पाठ फिरवत खोटे ते खरे करण्याच्या नादात आपण उगाचच सराख्यांची फसवणूक करीत रहातो व स्वतःचीही फसवणूक करून घेतो. सत्तरी तालुक्यातील खोतोडे या गावी अग्निभूत जीवाश्म जंगल सापडल्याचा जो दावा काही तथ्याकथित अभ्यासक व शास्त्रज्ञांनी केला आहे तो अशाच स्वरूपाचा आहे.

काय आहे प्रकरण-

या घटनेची सुरुवात

पहायची झाली तर साधारणतः

इ.स. १८७५-७६ पर्यंत मागे

जावे लागेल. या साली एका

ब्रिटिश सर्वेक्षकाचे या भागाचा

दौदा केला होता व त्यानंतर

खोतोडे येथे जमिनीची धूप

झाल्याने उघडा झालेला भाग

पाहिल्यानंतर या ठिकाणी

'अग्निभूत जीवाश्म जंगल'

असल्याचे नोंदवले होते.

अर्थात तो स्वतः एक जमिनीचे

नकाशे तयार करण्यासाठी आलेला सर्वेक्षक होता. तो भूगर्भाशास्त्राचा अभ्यासक नव्हता

हे या ठिकाणी मनुष्य केले पाहिजे. आपला भाग किती प्राचीन आहे व त्याची जैवविविधता

किती समृद्ध आहे हे सांगण्याची काही जणांना अगदी पाई झालेली असते. आपण ज्या

भागात रहातो तेथील नैसर्गिक विविधता, इतिहास, संस्कृती या बद्दल आपणाला अभिमान

आणि आदर असलाच पाहिजे पण हा आदर आणि अभिमान द्या नाही ना? याची प्रत्येकाने

ज्ञानाशिवाय केली पाहिजे, किमान स्वतःला अभ्यासक वा शास्त्रज्ञ म्हणवून घेण्याशींनी तर

केलीच पाहिजे. पण गोव्यातील काही तथ्याकथित शास्त्रज्ञ, अभ्यासक व पर्यावरण प्रेमींनी

कोणतीही खातरजमा न करता, स्वतः कोणातही अभ्यास न करता शे-दीडशे वर्षांपूर्वी एका

ब्रिटिश सर्वेक्षकने केलेला दावा सत्य मानून सत्तरीत, खोतोडे येथे 'अग्निभूत जीवाश्म जंगल'

असल्याचे जाहीर केले तसेच हे जंगल सुमारे साडेसाहस कोटी वर्षे जुने असल्याचा निष्कर्ष

ही मांडला. भूगर्भाशास्त्रीय दृष्टीने अतंल महत्त्वाचा असा हा दावा असल्याने या क्षेत्रातील

अभ्यासकांचा नजरा सहजिकेच याकडे खळत्या.

अग्निभूत जीवाश्म जंगल म्हणजे काय?

ही एकूण घटना समजून घेण्यासाठी आपणाला अगोदर अग्निभूत जीवाश्म जंगल

म्हणजे काय? हे समजून घेतले पाहिजे. आद्यंतिक उच्च तापमानात एका विशिष्ट भूगर्भाय

वातावरणात मृत लाकडाच्या ऑक्झिडच्या एकेका रेणूची प्रतिकृती स्फटिकासारख्या खनिज

पदार्थात पराक्रीत होते (silicification). या प्रक्रियेला 'अग्निभूत जीवाश्म जंगल'

(petrified fossil forest) असे म्हटले जाते. एका अर्थाने एका काळी अस्तित्वात असलेल्या

त्या जंगलाचे आता टाडी स्वरूपात झालेले ते संवर्धनच असते व म्हणूनच त्याला विशेष

महत्त्वही असते. राजस्थानमध्ये सापडलेले अग्निभूत जीवाश्म जंगल अशाच स्वरूपाचे

आहे व ते अग्निभूत जीवाश्म जंगल असल्याची खात्री जगातील मान्यवर भूगर्भ शास्त्राच्या

अभ्यासकांनी दिली आहे.

खोतोडे येथील वस्तुस्थिती

या प्रकराचा दावा केला गेल्यानंतर गोव्यातील भूगर्भशास्त्र संस्थेने आपल्या अभ्यासकांचा

एक समूह या ठिकाणी प्रत्यक्ष शास्त्राभ्यास करण्यासाठी पाठवण्याचे निश्चित केले. या समूहाचा

सदस्य म्हणून काम करण्याची संधी मलाही मिळाली त्यामुळे या सर्व गोष्टींचा मी खूप

जवळून अभ्यास करू शकलो. हा एकूण अभ्यास करता हे लक्षात आले की खोतोडे येथील

भूस्तरीय रचना अशा स्वरूपाची नाही. आतापर्यंत सापडलेली 'अग्निभूत जीवाश्म जंगल'

ही साधारणतः ३९ कोटी वर्षांपूर्वीची आहेत (उदा. राजस्थान येथे सापडलेले जंगल) परंतु

खोतोडे येथील खडक हे २५० कोटी वर्षांपेक्षा जुने असून ते अग्निजन्य व रूपांतरित गाळचे

खडक (लेह युल - banded iron formation) म्हणतात त्या प्रकारचे आहेत. त्या ठिकाणी

'अग्निभूत जीवाश्म जंगल' असण्याची कोणतीही शक्यता नाही. या ठिकाणच्या भूस्तरीय

रचना काहीकडे झाडांच्या साली व तुळ्यासारखी दिसत असली तरी हा टाडाला मिळालेला

फक्त विशिष्ट आकार आहे हे भूगर्भशास्त्राच्या सामान्य अभ्यासकांच्याही सहज लक्षात

येते. तसेच हे लेहयुल खडक असल्याने त्याकडे लेहयुल सहज अकर्षित होतो. पण

स्फटिकरूपात बनलेल्या अग्निभूत जीवाश्म जंगलाकडे लेहयुलक आकर्षित होत नाही ही

साधी गोष्ट सर्वांना लक्षात घेण्यासारखी आहे. भारतीय भूवैज्ञानिक संस्थेने १९८५

मध्ये या क्षेत्राचा जो भूवैज्ञानिक नकाशा तयार केला होता त्यामधील त्यात हा भाग लेहयुल

खनिजाचा पट्टा म्हणूनच सांगितले होते व असा गोवा भूगर्भाय संस्थेच्या शास्त्रज्ञांच्या समुहाने

केलेल्या संशोधनातून हिच गोष्ट पुन्हा एकदा सिद्ध झाली आहे.

वैज्ञानिक सत्याकडे डोळेझाड करणे घातक

या सर्व अभ्यासातून एक गोष्ट सिद्ध झाली आहे ती म्हणजे वैज्ञानिक गोष्टींच्या संदर्भात

ऐकीव माहितीवर कोणतेही दावे करणे हे एकूणच धोकादायक असते. अभ्यासकनी

व्यवस्थित अभ्यास करून आपले म्हणणे मांडले पाहिजे. अभिनिवेशातून केलेल्या दाव्यांना

वैज्ञानिक निकषांवर कोणताही आधार नसतो. खरेतर भूगर्भाय दृष्ट्या वेगवेगळ्या प्रकारचा

अभ्यास गोव्यातही होणे आवश्यक आहे. अशा अभ्यासातून आजपर्यंत अजून असलेली

अनेक आश्चर्य आपल्यासाठी येण्याची शक्यता आहे. आपली ही गोमंतपूमी वैविध्यपूर्ण आणि

ऐतिहासिक व सांस्कृतिकदृष्ट्या एवढी संपन्न आहे की अशाप्रकारचे वैज्ञानिक निकष लावताच

फोल ठरणारे दावे करून तिला संपन्न दखविण्याची काहीच गरज नाही. किमान पुढील

काळात तर आपणाला अभ्यासक म्हणवणारे लोक असे दावे करण्याअगोदर सर्व गोष्टींचा

वस्तुनिष्ठ अभ्यास करतील अशी आशा आहे.

(टीप: लेखक भूगर्भशास्त्राचे अभ्यासक असून घेणे कला आणि विज्ञान महाविद्यालया

मिरामार, पणजी-गोवा या ठिकाणी भूगर्भशास्त्राचे प्राध्यापक म्हणून कार्यरत आहेत.)

Heraldo

people'sedit

PETRIFIED FOSSIL FOREST IN SATTARI TALUKA

RAGHAV GADGIL

The story begins back in 1875-76 when a British surveyor described the local rock exposures along a stream bed as 'petrified fossil wood'. This has been considered as a gospel truth by the pundits donning the hats of 'scientific thinkers' of today who have taken it at face value to propagate the idea of Goa hosting a 'petrified fossil forest' in the village of Khotode of the Sattari Taluka. Some even have claimed it to be 6.5 crore years old. This idea is not only bogus, but also misleading to citizens, and falls flat when investigated by a geologist. Therefore, the term 'petrified', instead of its technical usage, appears to be more of a metaphor as the mind appears to be "petrified" and blinded to the facts pointing otherwise.

Busting the myth is inconvenient as it tries to challenge the person/s who profess about it and break the conviction of their followers. This idea of Goan Petrified Forest is likened to the Akal Wood Fossil Park in Rajasthan. The latter is indeed a fossil forest, but in Goa it is not, due to the following reasons:

First things first: What is petrified fossil wood? It is a molecule-to-molecule replacement of dead wood/plant tissue by a mineral (commonly quartz) via high-temperature circulating fluids in geological environments. Characteristics of a fossil tree? Perfect preservation leading to the formation of a replica of the bark of a tree, now transformed into a rock. Occurrences in Goa? Anecdotal shreds of evidence exist in the form of some peat (type of coal) occurrences in the clay layers within iron ore mines of Goa. Rocks in Khotode? The area consists of meta-igneous and meta-sedimentary rocks (Gokul et al. 1985) which are more than 250 crore years old. These geological facts are unequivocal in their charm to hard-hit on those trying to cozen the people of Goa.

I was a part of the team of geologists from the Geological Society of Goa that visited the above mentioned site to investigate the tall claim. The observations were straightforward! The purported 'fossil wood' was screaming and pleading to us to reveal its true identity. It was in fact a Banded Iron Formation (iron ore bearing sedimentary rock), testified by the truthful magnet that got attracted to it.

This ground truth was cross-checked with the geological map of the area prepared by geologists from the Geological Survey of India in 1985 that reposed our faith in the field observation. For a layman, the rocks, in certain sections, showcased grooves and growth rings resembling the bark of a tree, but in fact, for a learned geologist, they were truly geological folds formed due to forces of nature. The first 'Trees' appeared on Earth 42 crore years ago, and the oldest fossil wood found is approximately 39 crore years old. As mentioned earlier, rocks from Khotode are 250 crore years old. Only people with math phobia would not grasp the number game. It is evident why the self-proclaimed 'scientific thinkers' get fooled. Such characters try to search for comforting evidence that suits their readymade results.

Scientific curiosity and inquisitiveness use the mind as a playground to chalk out various causalities for the myriad of observations and processes. An informed mind should always be careful about stitching the possibilities because the process does not always weave out a scientifically sound story, but the one that may convince the audience, the public.

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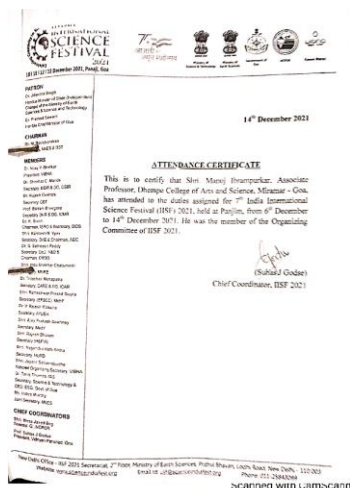


113. Title: Member of organizing committee of 7th Indian International science

Department:Geology

Date: Letters enclosed

Name of the faculty: Dr. Manoj Ibrampukar , Dr. Purnima Ghadi,Dr. Preethi Pandit and Mrs. Shilpa Naik



115. Title: organized 1st State Inter-Collegiate Volleyball Championship 2021-2022 for Men
Department: Department of Physical Education & Sports

Date: 13th & 14th May 2022

Name of the faculty: Shri. Pandurang Naik and Mr. Sachin Naik



116. Title: “Health and Nutrition” Course

Department: Department of Physical Education & Sports

Date: 27th December 2021 to 29th January 2022

Name of the faculty: Shri. Pandurang Naik and Mr. Sachin Naik



118. Title: Translation of Computer terminologies to local language Konkani and YouTube links are provided below for the same,

Department:Computer science

Date:

Name of the faculty: Mrs. Annie Rajan

1. <https://www.youtube.com/watch?v=NAwR-h8w2Do&t=2s>
2. <https://www.youtube.com/watch?v=hFo-1EvEnfQ&t=1s>
3. <https://www.youtube.com/watch?v=vSraj3lZGNk>
4. https://www.youtube.com/watch?v=S9Ma5G6_Ew&t=4s
5. <https://www.youtube.com/watch?v=eA3Vt1yeiiU>

120. Title: Exhibited hardware tool " AudioPustakam " in a three-day National level exhibition to boost to entrepreneurship in India titled 'Empower 2022' and exhibited the product 'Audiopustakam' organised by Indian Institute of Technology, IIT, Madras held from

Department:Computer science

Date: 13th to 15th October 2022.

Name of the faculty: Mrs. Annie Rajan

121. Title: Launching of AudioPustakam website/hardware tool developed by Mrs. Annie Rajan on the eve of completion of 30 years for "Inclusion of Konkani Language in the Eighth Schedule of the Indian Constitution" organised by Department of Indian Languages in collaboration with Institution's Innovation Council

Department:Computer science

Date: 20th August 2022

Name of the faculty: Mrs. Annie Rajan

122. Title: Webinar on Mathematics in Nature for school students days webinar on 'R'

Department:Mathematics

Date: 9 Aug 2021 and 25-27 Aug 2021 20th August 2022

Name of the faculty: Mr. Vitendra Mhatonkar

123. Title: Kaushalya Saptak

Department:Mathematics

Date: 6th Nov 2021, 7th – 13th Nov 2021

Name of the faculty: Mr. Vitendra Mhatonkar

124. Title: Conducted maths quiz competition: Mathematica 2.0 for school students

Department:Mathematics

Date: 15 Dec 2021

Name of the faculty: Mr. Vitendra Mhatonkar , Dr. Mamta Kumari

125. Title: Conducted sessions for SBI Preparation Course

Department:Mathematics

Date: 1st Feb-28th Feb 2022; 1st March-30th March 2022

Name of the faculty: Mr. Vitendra Mhatonkar , Dr. Mamta Kumari

125. Title: Resource person Webinar on Mathematics in Nature for school students

Department:Mathematics

Date: 9 Aug 2021

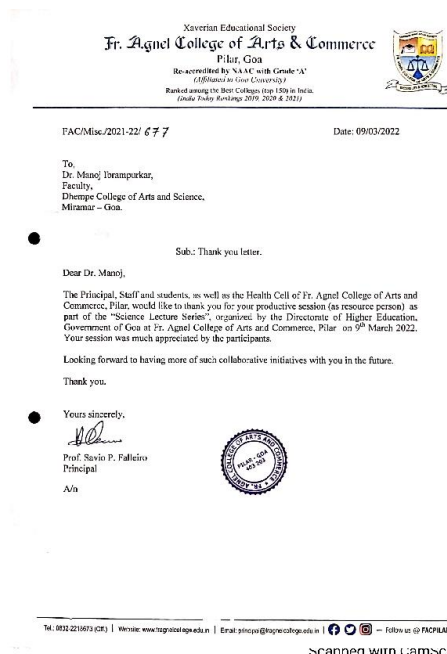
Name of the faculty: Dr. Mamta Kumari

126. Title: Delivered a lecture for science lecture series

Department:Geology

Date: 09/03/2022

Name of the faculty: Dr. Manoj Ibrampukar



127. Title: Delivered a lecture

Department:Geology

Date: 16/03/2022

Name of the faculty: Dr. Manoj Ibrampurkar



2262850

SARASWAT VIDYALAYA
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PIN 403 507
www.saraswat.edu-go.org

Ref. No. ST 4 2021-22

Date 16.03.2022

To,
Dr. Manoj M. Ibrampurkar,
Associate Professor,
Department of Geology,
Dhempo College of Arts and Science,
Miramar, Panaji-Goa.


Sir,

The Management, Staff and Students of Saraswat Vidyalaya, Khorlim, Mapusa-Goa would like to express their profound thanks and appreciation for the enlightening talk you gave to our students on how to evaluate and comprehend the Science films that will be screened for them.

Your talk will inspire our students to take an interest in Science and to understand the vital role of Science in the development of Society.

Thanking you once again for your valuable time and dedicated efforts to inculcate a scientific spirit among students.

Yours faithfully,


(Mrs. Swapnita D. Nagwekar)
Headmistress
Saraswat Vidyalaya
Mapusa - Goa

128. Title: Delivered a lecture on awareness on groundwater

Department:Geology

Date: 23/03/2022

Name of the faculty: Dr. Manoj Ibrampurkar



GOA STATE BIODIVERSITY BOARD
C/o Department of Science, Technology & Environment
Opp. Saligao Seminary, Saligao, Bardez, Goa - 403511.
Website: www.gsbbs.goa.gov.in E-mail: goastatebiodiversity@gmail.com
Phone No: (0832)2407032 Fax: 2407033

No. 14-1-2021-22/GSBB/Act/1663

Dated: 23.03.2022

To,
The Principal,
DCT's Dhempé College of Arts and Science,
Miramar, Panaji, Goa 403001

Sir,

Sub: Attendance Certificate.

This is to certify that Dr. Manoj Ibrampurkar, Assistant Professor, Department of Geology from DCT's Dhempé College of Arts and Science, Miramar, Panaji, Goa, attended and delivered lecture on Awareness on Groundwater on 23rd March 2022 for the Environment Education & Awareness campaign at "Conference Hall, Dnyanprassarak Mandal's college and Research Centre, Mapusa Goa.

Thanking you,



Yours faithfully

Dr. Pradip Sarmokadam
Member Secretary, GSBB

Copy to: Dr. Manoj Ibrampurkar, Assistant Professor, Department of Geology, DCT's Dhempé College of Arts and Science, Miramar, Panaji, Goa.

129. Title: Compering for IISF in the Science Village (Raman House)

Department: Biotechnology

Date: 10/12/2021 to 14/12/2021

Name of the faculty: Dr. Preethi Pandit



130. Title: Practical sessions and explained the concepts of glycemic Index and adulteration of food in various houses of the Azad Housing society, Curca Goa.

Department: Biotechnology

Date: 02/03/2022

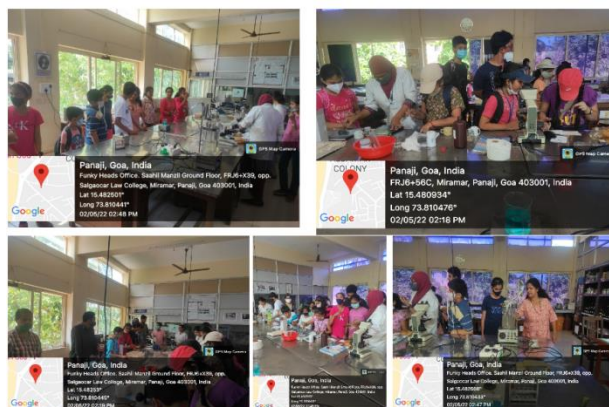
Name of the faculty: Dr. Preethi Pandit



Name of the faculty: Mrs.Mrunal Phadke,Dr.Swati Pawar,Mrs. Anju Sakhardande



Name of the faculty: Mrs. Mrunal R. Phadke, Ms.Gauri Avdhut Silimkhan, Ms. Valinka Afla Fernandes, Ms. Sujata Limaye, Dr. Amara Mulla, Ms. Kameshwari Raikar, Ms. PriyNaik Parrikar and Ms. Rizelia Rodrigues

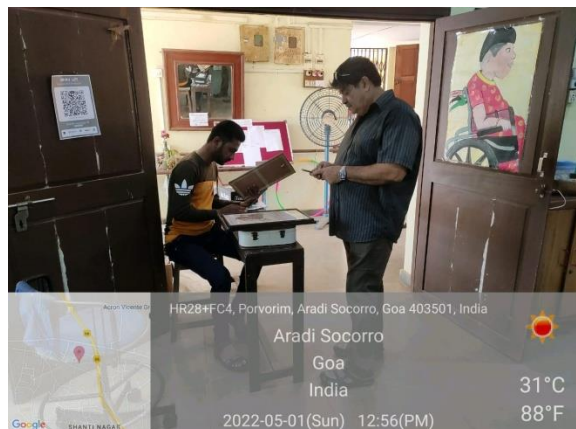


132. Title: Volunteer for Art Exhibition organized by Divya Sadan

Department: Indian Languages

Date: 1st May 2022

Name of the faculty: Mr. Akbarali Shaikh



133. Title: NSS- Activities organized and participated

Department: Geology

Date: Reports of NSS

Name of the faculty: Mr, Dinnath Parab

1. 2nd Oct. 2021 Gandhi Jayanti and Lal Bahadur Shastri Jayanti, cleaning activity.
2. 6th Oct. 2021, cleaning of DSYA and SAG indoor stadium Campal.
3. 7th Oct. 2021, Essay competition organized on Life of Sanitation Workers.
4. 13th Oct. 2021, Poster competition organized on Watershed Management.
5. 18th Oct. 2021, cleanliness drive in Torda village.
6. 28th Oct 2021, participated in Fit India Run.
7. 23rd Oct. 2021, participated in Walkathon.
8. 20th Oct. 2021, organized poster making on Tobacco Free Education.
9. 8th and 9th Nov 2021, volunteers were taken to participate in Women's Parliament at Shama Prasad Mukherji stadium.
10. 10th & 11th Nov. attended National Youth Parliament.

11. 18th Nov 2021 attended Youth Voter Festival at Goa Chamber of Commerce.

12. 12th Jan Swami Viveknand Jayanti.

13. 26th Jan activities organized for volunteers.

14. 2nd May 2022, organized geological exhibition in the department.

Refer to NSS report

Prof. Vrinda Borker
Professor & Principal,
DCT's Dhempe College of Arts & Science,
Miramar - Goa, India.
Mobile No: +919822129669