SESSION 2021 – 2022

ZOOLOGIQUE

NEWSLETTER BROUGHT TO YOU BY ZOONOMIA

WHAT'S INSIDE?

Picture Courtesy : Kumkum Rana

NEWSLETTER

INTRODUCTION

ZOOLOGIQUE

It gives us immense pleasure to announce the second edition of Zoologique, the newsletter of Zoonomia, the Zoological Society of Kalindi College. This newsletter has been possible only due to the constant and persistent hardwork of the entire team. We take this opportunity to congratulate our team for performing this arduous task so efficiently. We also applaud the contributors for the interesting, stimulating and creative thoughts in the content contributed by them. Zoologique is a French word that means Zoological. One of the world's earliest and most gifted naturalists, Jean Baptiste Lamarck wrote a book called Philosophie Zoologique, which contributed greatly towards our current knowledge of evolution. That's where the inspiration for our newsletter's name comes from. Zoologique'22 presents a report of all the activities, contributions and commitments of Zoonomia for the year 2021–22. Our society endeavours to create an interest among students for extracurricular and co-curricular activities. Zoonomia consistently works to ignite young minds by providing them opportunities to interact with eminent persons in the field of Biological Sciences. With this newsletter we aim to connect our readers with the stimulating world of Zoological Science. We hope that Zoologique not only develops a taste for reading among students but also develop a sense of belonging to the Department.

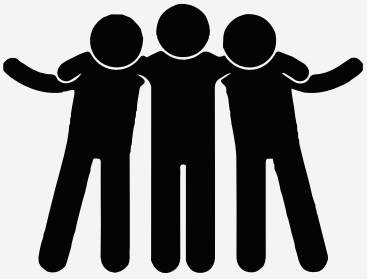
Editorial Team

Sneha Sharma
2nd Year, Zoology Hons

Arushi Gupta
2nd Year, Zoology Hons

Ritika Dewra
1st Year, Zoology Hons

Janvi Tagra
1st Year, Zoology Hons



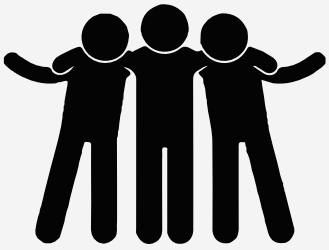
CREATIVE TEAM

Kumkum Rana
2nd Year, Zoology Hons

Sneha Sharma
2nd Year, Zoology Hons

Surbhi Maheshwari
1st Year, Zoology Hons

Simran Prajapati
1st Year, Zoology Hons



FROM PRINCIPAL'S DESK

Zoology Department of Kalindi College is an active Department and is involved in many activities involving the students. The student are the most important resource of the nation and education makes them a valuable asset and responsible citizen. Zoological Society has been organising events taking care to broaden the horizons of its students, with exposure to different themes and ideas.

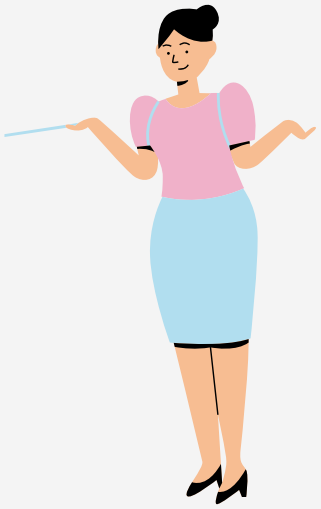
I wish them and the Department all the best.

Prof. Anula Maurya

NOTE FROM TEACHER IN-CHARGE

“Nothing can stop you from achieving your goals as long as you work hard. Your goals are simply dedication and determination away” I am immensely pleased that Zoology Department of Kalindi College is releasing its annual departmental newsletter for the academic session 2021-22. I congratulate the convenor, co-convenors and students of zoological society for publishing this newsletter. The Zoology Department has great credentials of nurturing young minds into thoughtful leaders under the guidance of versatile faculty members. There has been an all-round holistic development of students in the department.

Wishing good luck and bright future to all the students!



Dr. Kanchan Batra

NOTE FROM CONVENER

I take this opportunity to congratulate the editorial team for bringing out this newsletter as per schedule, which in itself is an achievement considering the effort and time required. May all our students soar high in uncharted skies and bring glory to the world and their profession with the wings of education!

Wishing good luck and bright future to all the students!

Dr. Varsha Singh

NOTE FROM CO-CONVENER

Ms. Rani Kumari

Greetings from teachers of Zoological Society Kalindi college, together we sprawling wings in its best of tradition and modernity and unity. Together with rigorous academic standards the society involved in vibrant of co-curricular activities. Together we make the body and soul of the Zoological society. I am fortunate to be a part of family which untiringly assists each other in our success.

Dr. Mamta Tripathy

I would like to congratulate the entire team of Zoonomia, Zoological Society of Kalindi College for successful completion of their tenure during which they skillfully organized several curricular, co-curricular and extra-curricular events. It is very heartening to witness the sincere efforts of office bearers of Zoonomia and all students of Zoology Department that has culminated into successful formulation of the Departmental newsletter. I hope the experiences of the past year as members of Zoonomia team been a fun filled learning experience for all which will help them take up future challenges with skill and grace. Wishing everyone the very best.

About the College

Kalindi College
(University of Delhi)

Kalindi college is the epitome of hardwork and perseverance which guides us to keep working for the better of every being. Since its inception in 1967, through perseverance, all the people association with it achieved various milestones in different fields and they continue to do so with a dream to achieve something they always wanted. The college works on the very principles of knowledge, modesty, hardwork and sense of duty and inspire the students to do the same through proper guidance with the help of its esteemed faculty members, supporting staff and administration. The students aquiring knowledge or the graduates of Kalindi always carries a spirit of it and will continue to do so.

FACULTY MEMBERS

Dr. Prem Prakash Saini

Dr. Saini did his graduation from Govt. College, Neem Ka Thana, Rajasthan and his Masters as well as Ph.D. in Zoology from University of Rajasthan, Jaipur. His topic of research in Ph.D. was "Study on Modifications of Body Resistance of Swiss Albino Mice by βCarotene Rich Plant Extract" and has published many papers on Radiation Biology. Saini sir love to learn new things by surfing on the internet or studying in his free time.

Dr. Manisha Arora Pandit

Dr. Manisha did her graduation from University of Delhi, her post-graduation from Sardar Patel University. She did her PhD from University of Delhi in the field of Endocrinology and has published many papers in the field of endocrinology. Beside her interest in science Dr. Manisha is an avid traveller who never misses an opportunity to hop on a plane, train or car to a new and unexplored destination. Interests range from snorkelling in Phuket to trekking to the top of Mount Batur in Bali to biking in Singapore or exploring the wonders of Uttarakhand, relaxing on the beaches of Goa or the islands of Greece ,dragon boating and kayaking.

She can be frequently seen planning her next escapade with family and friends. Hobbies include sweating it out in the gym or going for long walks to reading fiction novels along with binging on Netflix. Her "to do" list for 2022 currently includes wall climbing,

Dr. Tarkeshwar

Dr. Tarkeshwar did his graduation and masters from Kirorimal College, University of Delhi. He did his PhD in Zoology from University of Delhi and later joined Kalindi College as a professor in 2014. His research interest are Applied Entomology,
Insect–Plant Resistance, Microbiology and Bioinformatics. He has written a thesis titled “Behavioral and Physiological responses of Spilosoma towards Chinaberry”. He has published many papers in renowned journals. Apart from scientific contribution Dr. Tarkeshwar loves to play flute and enjoy singing.

Dr. Kanchan Batra

Dr. Kanchan did her graduation from Maharishi Dayanand University, Rohtak and masters as well as PhD in Zoology from Kurukshetra University, Kurukshetra. Ecology has been her main subject of interest in research. She also received gold medal at Kurukshetra University during her M.Sc. in 1996. She believes that the most difficult part about teaching is to satisfy her students in every class. Her goal has always been to make each and every student in the class, no matter how slow a learner, understand the concepts being taught. Apart from science she also loves reading books, exploring new ideas related to her field and listening music.

Dr. Shanuja Beri

Dr Shanuja Beri, a graduate student of the University of Delhi, did her Masters from Jawaharlal Nehru University. Her PhD was in the field of Neurophysiology and Biochemistry from JNU. She has avid interest in research having worked as a Fellow in The Energy Resources Institute (TERI) in various projects related to Biofertilizers and Bio fuels. She has been teaching in Kalindi College for the past 8 years where she continues to engage undergraduate students in research projects in order to inculcate a passion for research and develop an inquisitive mind. Her hobbies are gardening, cooking and reading apart from music

Dr. Varsha Singh

Dr. Varsha has completed her Graduation and post-graduation from University of Allahabad. She did her Doctorate in Philosophy from Banaras Hindu University and Post doctorate from University of Delhi. She is actively involved in research and have more than a dozen of papers in reputed international journals. She is a member of IUCN CEM and is actively involved in Environment conservation and sustainability. She has also bagged the best Societal Impact award from University of Delhi for her project in Butterfly Conservation.

Dr. K. Vandana Rani

Dr. Vandana has completed her M.SC, M.Phil and PhD from University of Delhi. She has also received "University Faculty Development fellowship 2015" to do Master of Research from University of Nottingham. She has more than a dozen of publication in well reputed peer reviewed or indexed journals with good impact factor. Also wrote book chapters in several published books. In the area of research she have 2 major (DBT & University of Delhi) and 4 minor projects (In house college project) in account and mentored several undergraduate students for the same. She has received several awards like Fellowship of ABRF (FABRF), Innovative Idea award, Best Paper award.

To exchange academic knowledge she organized several National or International (8) both in offline and online (10) and also delivered lectures in different institutions as invited speakers. Apart from scientific world she has done Prabhakar in classical vocal music and professional training in Madhubani painting and dancing. She is actively participating in several sports like Badminton, Cricket, throw ball, Hand ball.

Dr. Mayanglambam Rojina Devi

Dr. Rojina completed graduation (2010) and post-graduation (2012) from University of Delhi. Awarded Ph.D. degree in the year 2017 from University of Delhi. Her hobbies are teaching, gardening, baking, cooking and knitting. She believe in perseverance, patience and doing everything with good faith.

Dr. Mamta Tripathy

Dr. Mamta Tripathy completed her graduation from Miranda House, University of Delhi and then went on to pursue her masters and Ph.D. in Zoology from Department of Zoology, University of Delhi. Her research interest lies in the field of comparative immune-endocrine interactions and reproduction. Her Ph.D. thesis deals with reproductive endocrinology of female wall lizards. She has published her research in peer-reviewed International Journals of repute. Apart from research her interest lies in literature and music.

Dr. Priya Singh

Dr Priya Singh has completed her schooling from St. Xaviers's Senior Secondary School, Rajniwas Marg, Delhi. Following her interest in biology, she pursued her graduation from S.G.T.B Khalsa College, University of Delhi. Continuing the same line of interest, she was ranked no. 1 in the entrance exam for masters conducted by Department of Zoology, University of Delhi, and completed her master's degree from the same (Hindu College, University of Delhi). Her Ph.D work is in the field of neuroscience and majorly concentrates on "metabolic perturbations in psychiatric disorders such as PTSD and MDD".

The PhD experimentation was conducted at the prestigious Institute of Nuclear Medicine and Allied Sciences (INMAS), DRDO in conjugation with Department of Zoology, Delhi University. Apart from academics, Dr. Priya Singh holds a keen interest in fashion and literature and her hobby includes cooking, music and reading.

Dr. Jahanwi Ojha

Dr. Jahanwi has completed her B.Sc. (Hons) from zoology department BHU in 2010 and M.Sc. from zoology department B.H.U with specialization in Molecular human genetics in 2012. She has completed PhD from School of Life Sciences, JNU in the field of Molecular parasitology in 2019. She worked as Assistant Professor of Zoology at Manav Rachna University 2019–2021. Currently she is working as Assistant Professor of Zoology, Kalindi College, University of Delhi. Dr. Jahanwi is actively doing research on women centric issues with a team of women researchers.

Have work ongoing in the field of environmental biology, Protein biology and scientific social collaboration areas. Have long experience with molecular biology work with one of the best labs in India. She has experience and passion in social work in villages as well as basti in Delhi and have been working from last 10 years.

Ms. Rani Kumari

Ms. Rani have completed her graduation from Dyal Singh College (University of Delhi), Post-graduation from Hindu college (University of Delhi) and M.Phil. from Department of Zoology (University of Delhi). She has also qualified examinations like GATE (315 rank) and UGC-JRF (twice) and have published a research paper in Tumour Biology in international peer reviewed journal. She has a keen interest in sports and enjoy Volleyball, badminton and cricket, watching movies and web series.

LAB STAFF

(Department of Zoology)

Mr. Sunil Dhyani

Ms. Sushma Devi

Mr. Anoop Singh

Mr. Ashish Kumar

OFFICE BEARERS

(ZOONOMIA 2021-2022)

Nahid Kausar
President (3rd year)

Kumkum Rana
Vice-President (2nd year)

Vini
Treasurer (3rd year)

Palak
Cultural Secretary
(2nd year)

Arushi Gupta
Media and Publicity
(2nd year)

Ritika Dewra
General Secretary
(1st year)

Annual Report

Zoonomia, Zoological Society
Kalindi College
Annual Report 2021- 2022

Teacher In-charge: Dr. Kanchan Batra
Convenor: Dr. Varsha Singh
Co-convenor: Dr. Rani Kumari, Dr. Mamta Tripathy

Zoonomia, the Zoological society, Zoology Department, Kalindi College, organizes various events and activities in the college every year. In the academic session 2021-2022, the council members of the society were elected through an online election conducted on 4th September 2020. All the students of B.Sc (H) Zoology (Second year and Third year) participated in the election process. All office bearers were elected during this election except the Joint secretary as first year admissions were delayed due to Covid-19 Pandemic. A separate election for the post was held after admission of all first-year students. The elected members of the council for the session 2021-2022 were

Ms Nahid Kausar B.Sc (H) III year President
Ms Kumkum Rana B.Sc (H) II year Vice- President
Ms Vini B.Sc (H) III year Treasurer
Ms Ritika Dewra B.Sc (H) I year General Secretary
Ms PalakB.Sc (H) III year Cultural Secretary
Ms. Arushi GuptaB.Sc. (H) II year Media and Publicity

Annual Report

Celebrating

AZADI KA AMRIT MAHOTSAV
Date- 11th November 2021
Time- 11 AM- 5 PM
Venue- Google meet

An Online Inter College Slogan Writing and Poster Making Competition on the Occasion of "National Education Day" -11th November 2021.
Education is one of the fundamental human rights bestowed to all citizens by our own Constitution. The Right to Education entitles every citizen of India to receive formal training from a world-class educational institution. Without knowledge, the society we live in cannot progress. Every year, November 11 is celebrated as National education day, which commemorates the birth anniversary of independent India's first education minister, Maulana Abul Kalam Azad. To celebrate this day, an online Inter-College Slogan Writing and Poster Making Competition were organized by the Department of Zoology and IQAC, Kalindi College, University of Delhi onl1th November 2021. The Convener and Co-Convener of the event were Dr. Varsha Singh and Ms. Rani Kumari, respectively. Nationwide responses for both slogan writing and poster-making competition were received. A total of 48 responses were received for both competitions.

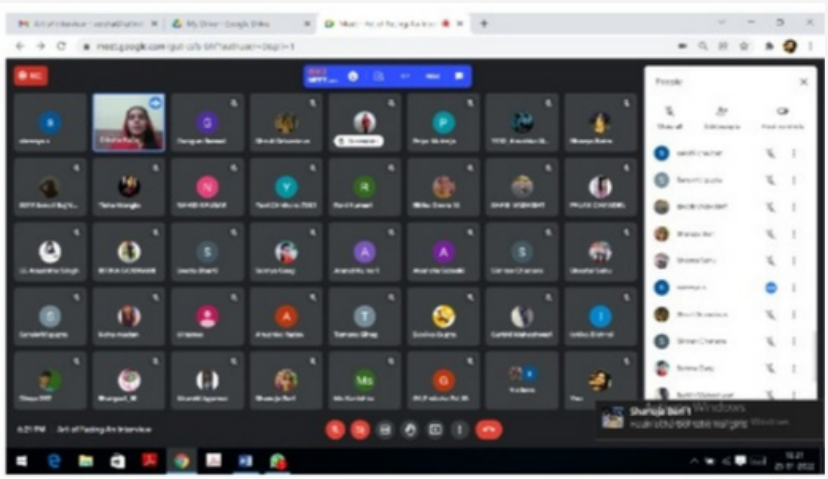
Skill Workshop – The Art of Facing an Interview.

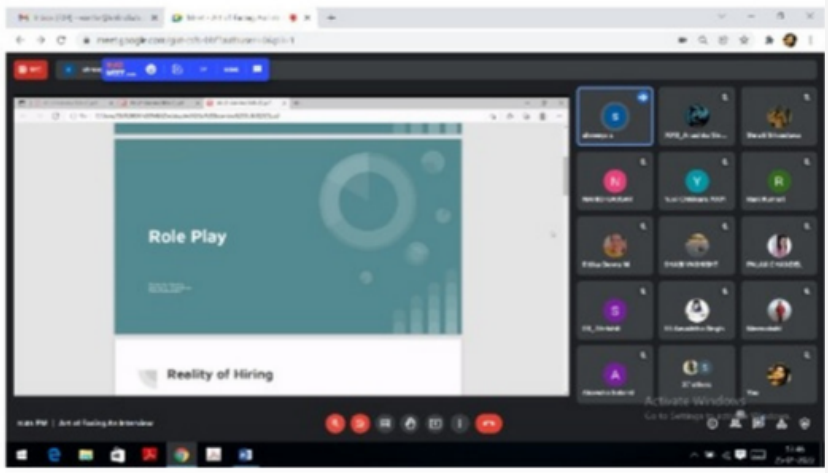
Date– 25th January 2022

Time– 5:30 PM

Venue– Google Meet

Celebrating Azadi ka Amrit Mahotsav, Zoonomia, the Zoological Society, Department of Zoology in Collaboration of Internal Quality Assurance Cell (IQAC) of the Kalindi College organized a Skill Workshop on the topic "The Art of facing an Interview" on 25th January 2022 at 05:30 PM. The Coordinator and Convener of the event were Dr. Shanuja Beri, and Dr. Varsha Singh respectively. The total number of registered candidates was around 111 the list is attached along with this report. The speaker for the event was a Professional Coach Ms. Shreya S. The students actively interacted with the speaker which was encouraging during this pandemic time and an eye-opener for us giving us the way how to prepare for facing an interview, do's and don'ts.

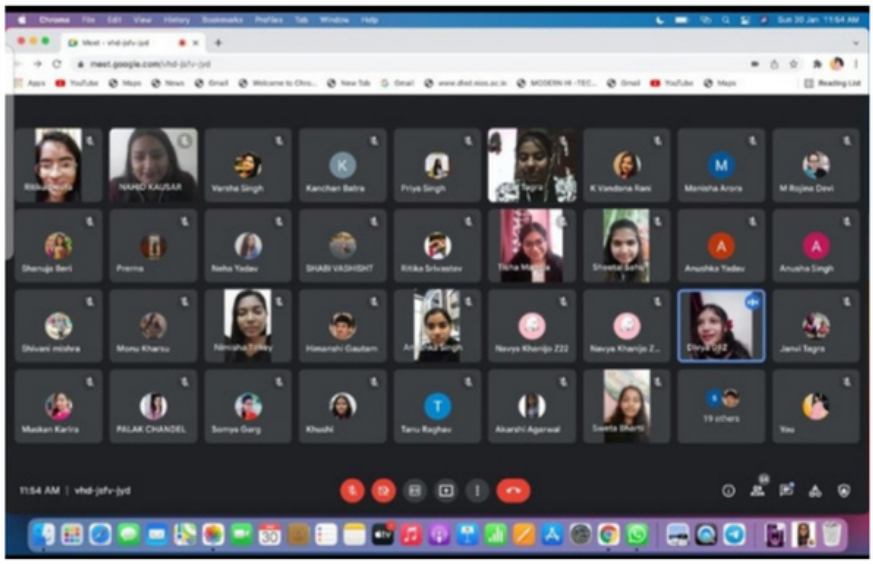


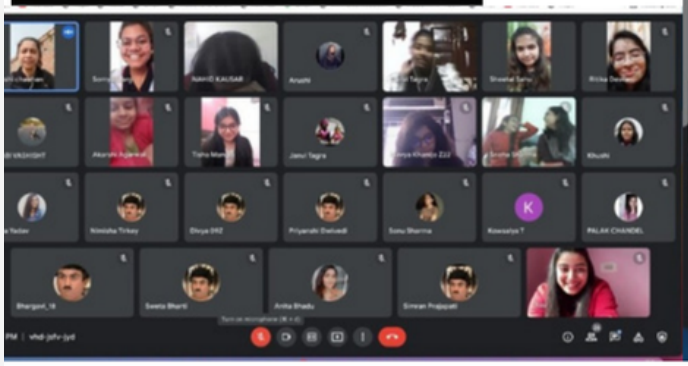


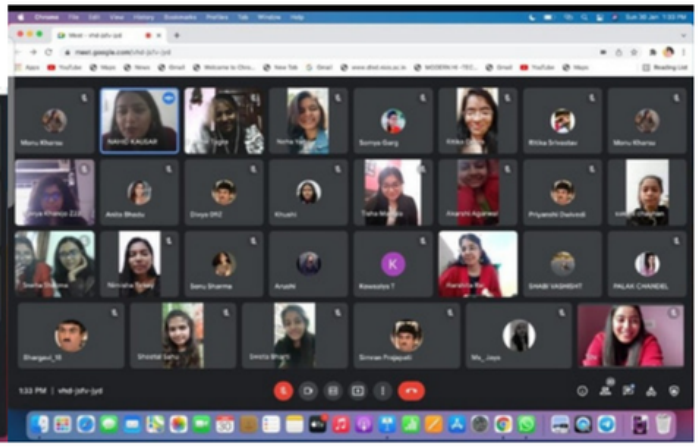
Department Fresher's
Date- 30th January 2022
Time- 11AM
Venue-Google meet

On 30th January 2022, the Department of Zoology, Kalindi College had organized a virtual Fresher's Party, for the batch of 2021. The event was enhanced by the presence of our Convenor Dr. Varsha Singh and Co-convenor Ms. Rani Kumari and Dr. Mamta Tripathy and other teachers of the Department.

The students got a great chance to interact with their seniors and departmental teachers and had a lot of fun games and activities organized
by seniors.

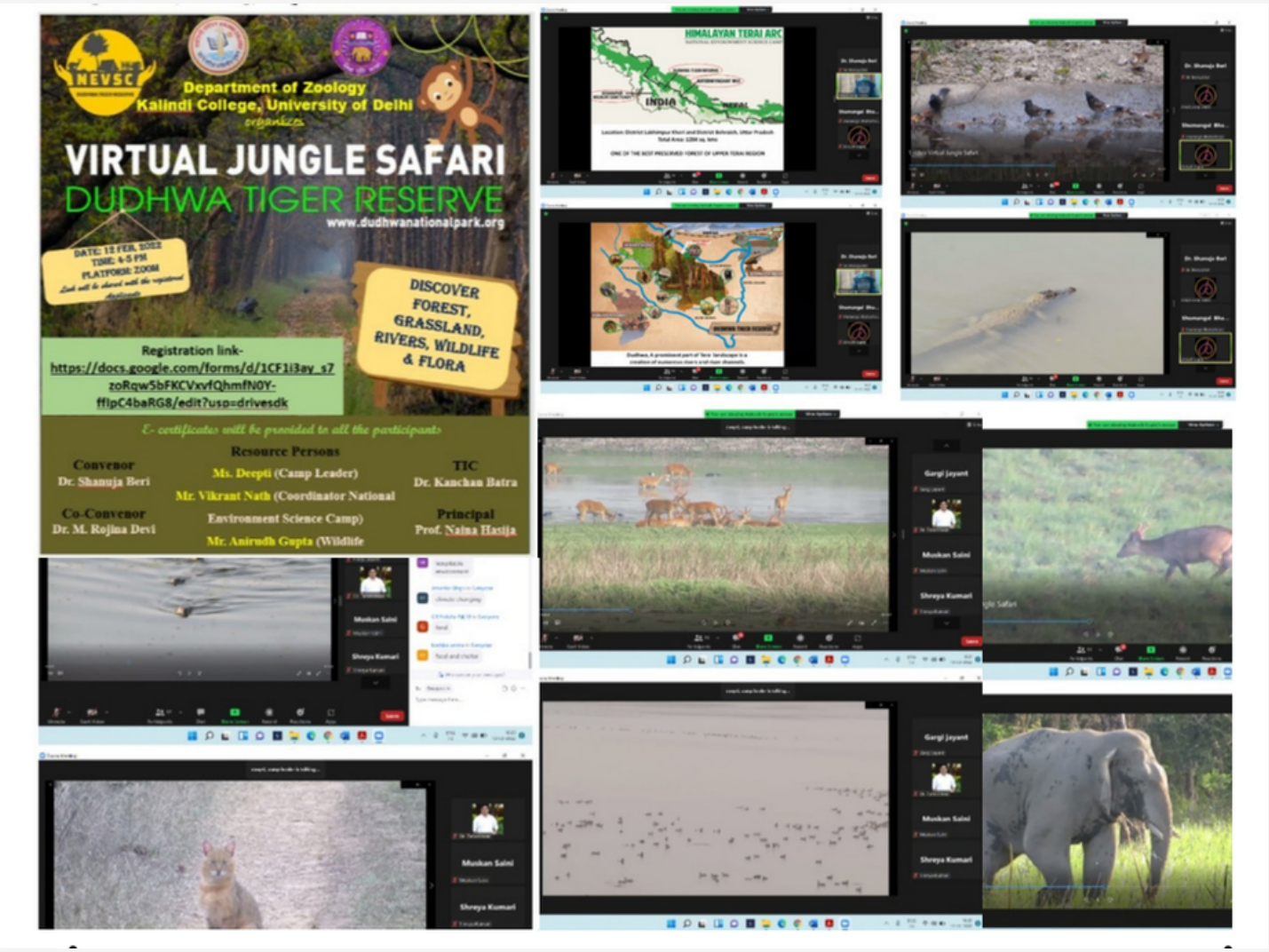






Virtual Jungle Safari
Date– 12th February 2022
Time– 4–5 PM
Venue–Zoom

On 12th February, the Department of Zoology, Kalindi College has organized a Virtual Jungle Safari, to Dudhwa Tiger Reserve. The virtual tour of the reserve was given by Ms. Deepti, the Camp Leader. Another resources person was Mr. Vikrant Nath, the coordinator national Environment Science Camp. The students were briefed about the forest, flora, and fauna.
The event was embellished by the presence of the Convenor Dr. Shanuja Beri and Co–convenor Dr. M. Rojina Devi.
E–certificate were provided to all the participants.



Campus Bird Count Organized by the Department of Zoology

Date– 19th February 2022

Time – 8:00 AM

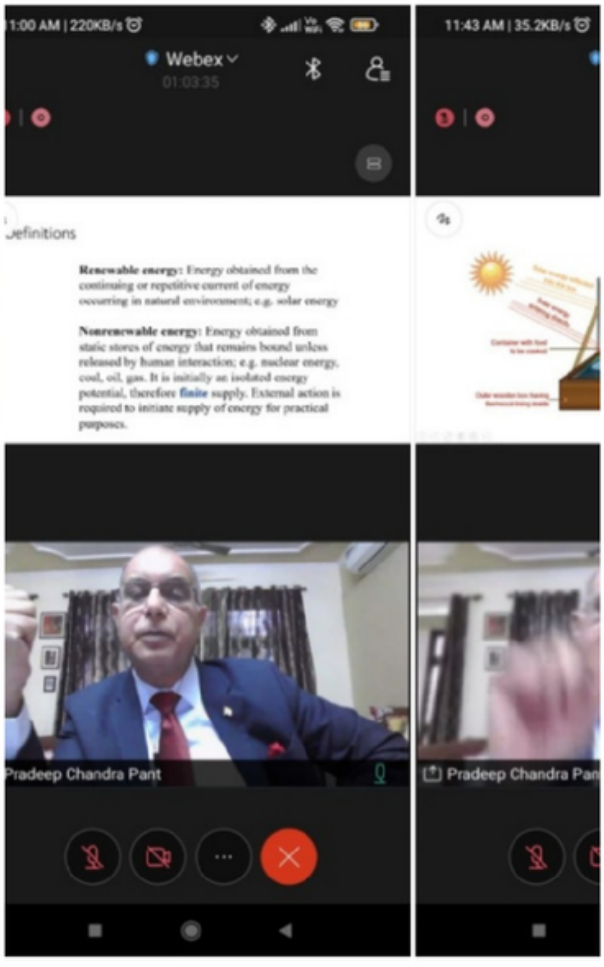
Venue– Kalindi College

On 19th February 2022, the Department of Zoology, Kalindi College has organized a Campus Bird Count for the students, in association with GREAT BACKYARD BIRD COUNT INDIA. Throughout the event, they briefed the students about the identifying features of various birds present in the college. The event was embellished with the presence of the Convenor Dr. Shanuja Beri and the Co– Convener Dr. M. Rojina Devi.

Webinar on Sustainable Energy
Date– 26th February 2022
Time– 10:30 AM

On 26th February 2022, the Department of Zoology, Kalindi College has organized a webinar on Sustainable Energy. The speaker of the event was Dr. P.C Pant, the former Advisor/ Scientist G ministry of New and Renewable Energy.

The event was organized under the supervision of our co-ordinators Dr. K Vandana Rani, Dr. Kanchan Batra, and Dr. Ravindra Palakurthy. E-certificates were als provided to the participants.



Report: National Conference “RASD 2022”

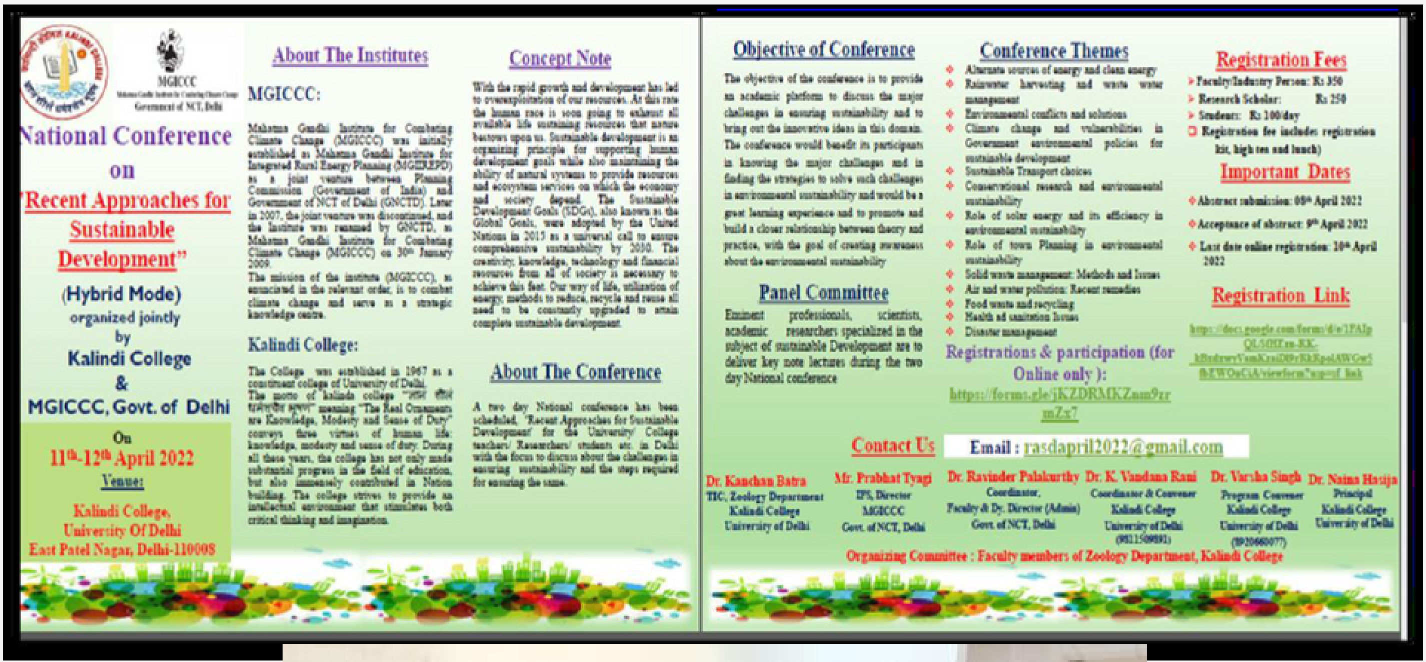
Zoology department, Kalindi College organised a Two day National Conference on "Recent approach for Sustainable Development" in Collaboration with MGICCC, Govt. of NCT on 10th –11th April 2022 in hybrid mode. Total 140 participants Participated out of which 20 were external and 120 was from College only.

Conference started with lighting of lamp followed by opening remarks from conference Coordinator Dr. Ravindra Palakurthy, Dy. Director, MGICCC, Govt. of NCT. Conference had 3 sessions each day followed by poster or oral presentation from the participants.

One day 1: The speaker of Ist session was Prof Anil Kr. Haritash from Environmental Enggineering Department, Delhi Technological University (DTU) who talked on “Rainwater harvesting and waste water– management”. Session II lecture was delivered by Dr. Sairam Dasari, Transport Planning, Transportation Engg. Dept,Delhi on “Sustainable urban transport systems”. In session III Environmental conflicts and solutions were highlighted by Mr. Nakul Kumar Tarun Director, Zone4 solutions, Dwarka, Delhi.

On Day 2: Session was continued with address of Dr. Anil Kumar from Ex. Director, Department of Environment, Govt. of NCT, Delhi on the topic “Government policies and programmes for combating climate change vulnerabilities and sustainable development”. Session II speaker was Er. Awdhesh Kumar, Assistant Professor, Dept. of Civil Engineering Invertis University, Bareilly (U.P.) and his talk was Alternate sources of energy and clean energy. Last talk was on Sustainable food production in urban areas for environmental protection, given by Ex–Scientist, TERI & Trainer & Consultant Sustainable Food Production, New Delhi. There were oral and poster presentation competition for participants on both day in post lunch session.

The event was closed next to vote of thanks proposed by Dr. K Vandana Rani coordinator & convener of the national Conference.


MGICCC
Mahatma Gandhi Institute for Combating Climate Change
Government of NCT, Delhi
National Conference
on
"Recent Approaches for Sustainable Development"
(Hybrid Mode)
organized jointly
by
Kalindi College
&
MGICCC, Govt. of Delhi
On
11th-12th April 2022
Venue:
Kalindi College,
University Of Delhi
East Patel Nagar, Delhi-110008
About The Institutes
MGICCC:
Mahatma Gandhi Institute for Combating Climate Change (MGICCC) was initially established as Mahatma Gandhi Institute for Integrated Rural Energy Planning (MGIIREPD) as a joint venture between Planning Commission (Government of India) and Government of NCT of Delhi (GNCTD). Later in 2007, the joint venture was discontinued, and the Institute was renamed by GNCTD, as Mahatma Gandhi Institute for Combating Climate Change (MGICCC) on 30th January 2009.
The mission of the institute (MGICCC), as enunciated in the relevant order, is to combat climate change and serve as a strategic knowledge centre.
Kalindi College:
The College was established in 1967 as a constituent college of University of Delhi.
The motto of kalinda college "ज्ञान शील तथा धर्म" meaning "The Real Ornaments are Knowledge, Modesty and Sense of Duty" conveys three virtues of human life: knowledge, modesty and sense of duty. During all these years, the college has not only made substantial progress in the field of education, but also immensely contributed in Nation building. The college strives to provide an intellectual environment that stimulates both critical thinking and imagination.
Concept Note
With the rapid growth and development has led to overexploitation of our resources. At this rate the human race is soon going to exhaust all available life sustaining resources that nature bestows upon us. Sustainable development is an organizing principle for supporting human development goals while also maintaining the ability of natural systems to provide resources and ecosystem services on which the economy and society depend. The Sustainable Development Goals (SDGs), also known as the Global Goals, were adopted by the United Nations in 2015 as a universal call to ensure comprehensive sustainability by 2030. The creativity, knowledge, technology and financial resources from all of society is necessary to achieve this feat. Our way of life, utilization of energy, methods to reduce, recycle and reuse all need to be constantly upgraded to attain complete sustainable development.
About The Conference
A two day National conference has been scheduled, "Recent Approaches for Sustainable Development" for the University/ College teachers/ Researchers/ students etc. in Delhi with the focus to discuss about the challenges in ensuring sustainability and the steps required for ensuring the same.
Objective of Conference
The objective of the conference is to provide an academic platform to discuss the major challenges in ensuring sustainability and to bring out the innovative ideas in this domain. The conference would benefit its participants in knowing the major challenges and in finding the strategies to solve such challenges in environmental sustainability and would be a great learning experience and to promote and build a closer relationship between theory and practice, with the goal of creating awareness about the environmental sustainability
Panel Committee
Eminent professionals, scientists, academic researchers specialized in the subject of sustainable Development are to deliver key note lectures during the two day National conference
Conference Themes
Alternate sources of energy and clean energy
Rainwater harvesting and waste water management
Environmental conflicts and solutions
Climate change and vulnerabilities in Government environmental policies for sustainable development
Sustainable Transport choices
Conservational research and environmental sustainability
Role of solar energy and its efficiency in environmental sustainability
Role of town Planning in environmental sustainability
Solid waste management: Methods and Issues
Air and water pollution: Recent remedies
Food waste and recycling
Health ad sanitation Issues
Disaster management
Registrations & participation (for Online only):
https://forms.gle/jKZDRMKZam9zrmZx7
Registration Fees
Faculty/Industry Person: Rs 350
Research Scholar: Rs 250
Students: Rs 100/day
Registration fee includes registration kit, high tea and lunch)
Important Dates
Abstract submission: 08th April 2022
Acceptance of abstract: 9th April 2022
Last date online registration: 10th April 2022
Registration Link
Contact Us
Email : rasdapril2022@gmail.com
Dr. Kanchan Batra
TIC, Zoology Department
Kalindi College
University of Delhi
Mr. Prabhat Tyagi
IPS, Director
MGICCC
Govt. of NCT, Delhi
Dr. Ravinder Palakurthy
Coordinator,
Faculty & Dy. Director (Admin)
Govt. of NCT, Delhi
Dr. K. Vandana Rani
Coordinator & Convener
Kalindi College
University of Delhi
Dr. Varsha Singh
Program Convener
Kalindi College
University of Delhi
Dr. Naina Hasija
Principal
Kalindi College
University of Delhi
Organizing Committee : Faculty members of Zoology Department, Kalindi College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National Conference
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Coral Reefs :
A world of its own

Coral Reefs!!! What are they ,one might ask? Are they rocks or formed by plants or something else?
The answer is simple yet astounding, they are animals. Yes, you read that correctly they are formed by animals. Found in the warm ,shallow waters of the tropical regions Coral Reefs are such wonders of world that not only quench your thirst for aesthetic beauty but are a world of its own full filling the needs of several other organisms.

One might now ask which animals form these reefs? It's the Cnidarians. The Polypoid forms of the Cnidarians specially from the class Anthozoa forms the corals which can either be soft corals(Octacorallians) or the hard corals (Hexacorallians).
The coral reefs are formed by the hard corals who secrets an exoskeleton from the epidermis made up of Calcium carbonate. These polyps or corals live in a symbiotic relationship with an algae called zooxanthellae who provides them with nourishment by performing photosynthesis and in return gets protection and Carbon dioxide from them. Due to the algae present in them corals appear to have a wide variety of colors.

The question that arises next is why are coral reefs not found everywhere in the world & only present in tropical regions? Why can't we introduce these organisms in various places to form reefs all over the world?

That's because these amusing organisms need some specific conditions to grow. The first condition is warm water. The corals and the algae residing in them are very temperature sensitive so they need an optimum temperature range of water to flourish. Next they need shallow and sediment free , salty water for the photosynthesis by the algae they need sunlight which cannot penetrate deep in the ocean or get blocked by the sedimentary particles.

There are many types of Coral Reefs found , which may include Fringing reef, barrier reef, patch reef or atolls whose formation was explained by different theories most successful of which is Darwin–Dana's Subsidence Theory.

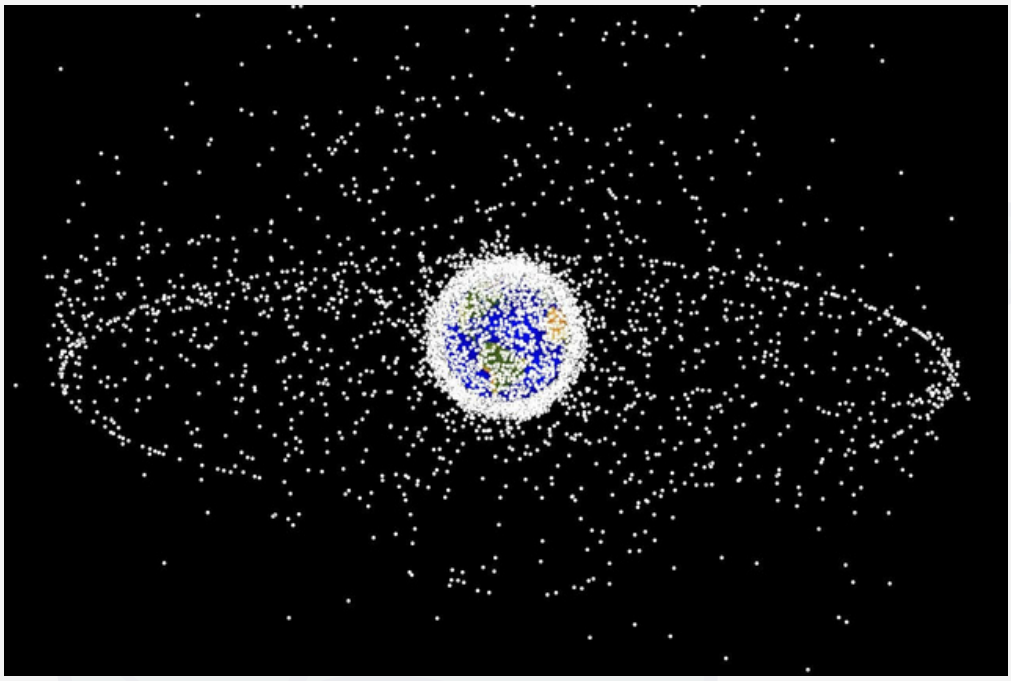
All these types and the theories tell us about the history of these beautiful corals. But however beautiful and useful things are nothing lasts forever. There are always threats present to the existence of the things and so these coral reefs are also under threat due to various reasons including anthropogenic and natural. These threats result in the bleaching of corals that is the breaking of symbiotic relationship of corals with the algae which eventually leads to its death due to lack of nutrition and they loose the radiant colors and turn white. Thus we need to protect them as the corals show their immense importance for our earth by providing habitat to several organisms and being used for various other purpose including their use as precious stones or in medicines.

Lets end this with a quote by Sylvia Earle which says "Ice ages have come and gone. Coral reefs have persisted". Thus lets all be aware about these fascinating creatures and take timely measure so that they can persist even longer.

Ritika Dewra
1 year, Zoology Honors

Space Debris

Do You Know, soon the earth will be seen with a ring around that like Saturn has, but this ring is not as beautiful as that of Saturn's rings. The ring that the earth is composed of is in fact made of space debris.



What is Space Junk?

- Space junk or debris consist of spent rocket stages, dead satellites, fragments of space objects and debris resulting from Anti-satellite (ASAT) System (ASAT).
- Hurtling at an average speed of 27,000 kmph in Low Earth Orbit (LEO), these objects pose a very real threat as collisions involving even centimeter-sized fragments can be lethal to satellites.
- This free-floating space debris is a potential hazard for operational satellites and colliding with them can leave the satellites dysfunctional.
- This is referred to as Kessler Syndrome, named after National Aeronautics and Space Administration (NASA) scientist Donald Kessler in 1978.
- It says if there is too much space junk in orbit, it could result in a chain reaction where more and more objects will collide and create new space junk in the process, to the point where Earth's orbit becomes unusable – a Domino Effect.

India's Initiative upon space debris/space junk: –

- About: 'Project NETRA' is an early warning system in space to detect debris and other hazards to Indian satellites.

o Once operational, it will give India its own capability in Space Situational Awareness (SSA) like the other space powers.

- Need: With countries launching more and more satellites, each one of them being a strategic or commercial asset, avoiding collisions could become a challenge in the future.

o For protecting its space assets, the ISRO was forced to perform 19 Collision Avoidance Manoeuvres (CAM) in 2021.

- Modus Operandi: Under NETRA, the ISRO plans to put up many observational facilities: connected radars, telescopes, data processing units and a control center.
- Benefits: NETRA can spot, track and catalogue objects as small as 10 cm, up to a range of 3,400 km and equal to a space orbit of around 2,000 km.

The NETRA effort would make India a part of international efforts towards tracking, warning about and mitigating space debris.

o More importantly, the SSA also has a military quotient to it and adds a new ring to the country's overall security, against attacks from air, space or sea.

o This is a vital requirement for protecting our space assets and a force multiplier.

The Current Scenario: –

- Currency SSA Capability: At present, India uses a Multi Object Tracking Radar at Sriharikota range (Andhra Pradesh), but it has a limited range.

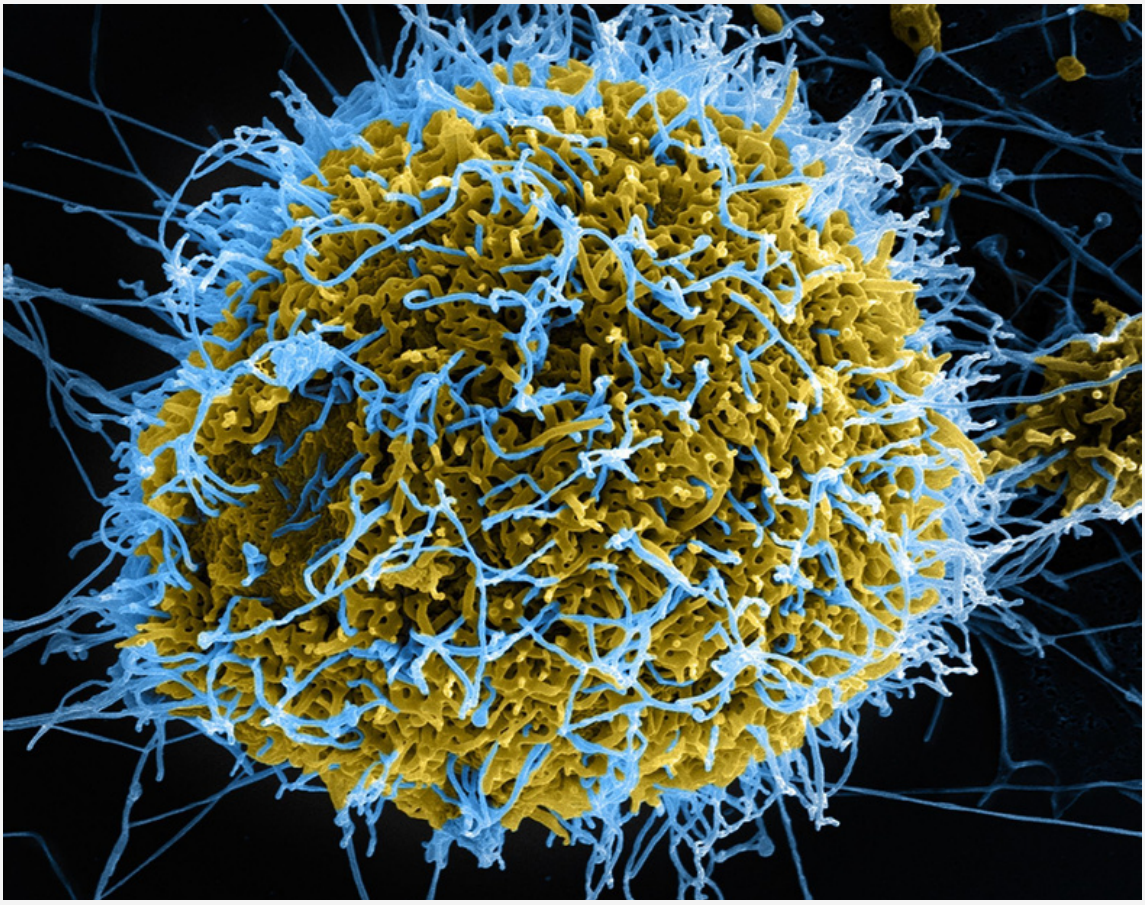
o Further, for SSA, India depends on data from NORAD and others available in the public domain.

o NORAD, or the North American Aerospace Defence Command, is an initiative of the U.S. and Canada that shares selective debris data with many countries.

- Implementing Agency: ISRO's efforts towards space situational awareness (SSA) is coordinated by the SSA Control Centre in Bengaluru and managed by the Directorate of Space Situational Awareness and Management at the ISRO headquarters.
- Global Initiative: Clearspace–1 (of European Space Agency), which is scheduled to launch in 2025, will be the first space mission to eliminate debris from orbit.

Tisha Mangla
I year, Zoology Honors

Microbes:
The Hidden Beings and their amusing facts



When we say 'microbes' the first thing that comes to someone's mind are bacteria that cause various illness, but the word microbes means much more than bacteria. Microbes are those organisms which remains hidden from the naked eyes of human and includes bacteria, archaea and other single celled eukaryotes. But are these microbes harmful, as most of the people might think ?

The answer is simple– NO , not all microbes are harmful and each and every microbe have their respective and significant role to play in this environment.

People must have heard or read that there are good bacteria's and bad bacteria's ,good are the one's that help us and bad are the one's that cause harm to humans either directly or indirectly. But this classification is done by humans, for nature each living organism is equally important and have their respective functions.

These microbes are cosmopolitan i.e. they are present everywhere from extreme climates like hot springs to animal guts and they are extremely fascinating creatures, so lets have a look at some facts which can surprise us.

•If all the fauna and flora present on this earth is taken into account it will still be less than the number of microbes present.

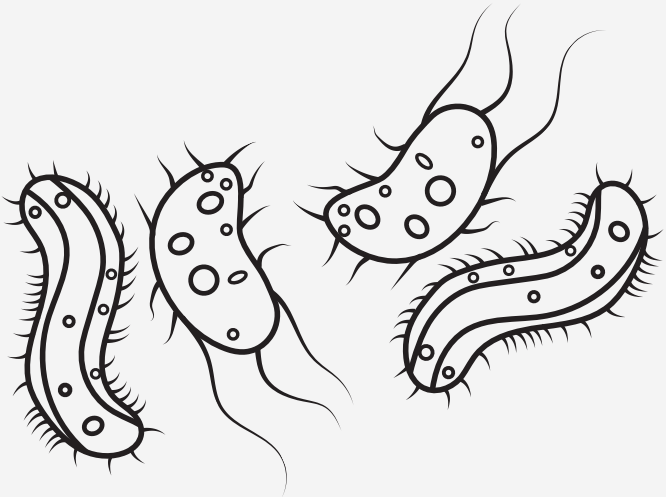
• All the microbes combined weigh more than all the flora and fauna combined.

• The total number of microbes present in our body is much more the total number of human cells present.

• If all the bacteria's are lined end to end they would cover the distance from here to end of the universe.

• The bacteria present in and on a human body collectively would weigh roughly equal to the weight of human brain.

• The only time our body is free from microbes is the time we spend in mothers womb. (During childbirth the new-born is exposed to vaginal bacteria's).



Ritika Dewra
I year, Zoology Honors

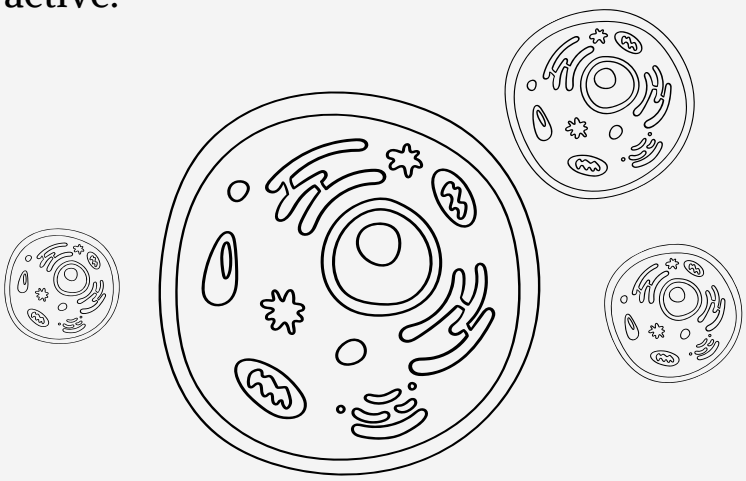
How Cells Move?

Researcher in Infection Medicine Pontus Nordenfelt at Lund University in Sweden has managed to describe and visualize cell migration on a molecular level. In time this could become significant in the treatment of Infectious disease, inflammation, cancer, etc. where cell migration plays an important role.

In his studies, he used T cells as models. The T cells are part of the immune system and must therefore be able to reach tissue which has been exposed to, for instance, a bacterial invasion.

To be able to move, the cell must attach itself to a surface and use its front to push to exert the force it needs. Meanwhile, the rear part of the cell must let go from the surface, allowing it to roll forward so to speak . When moving ,the cell converts chemical energy into mechanical force. This force can now be measured using the microscope tool.

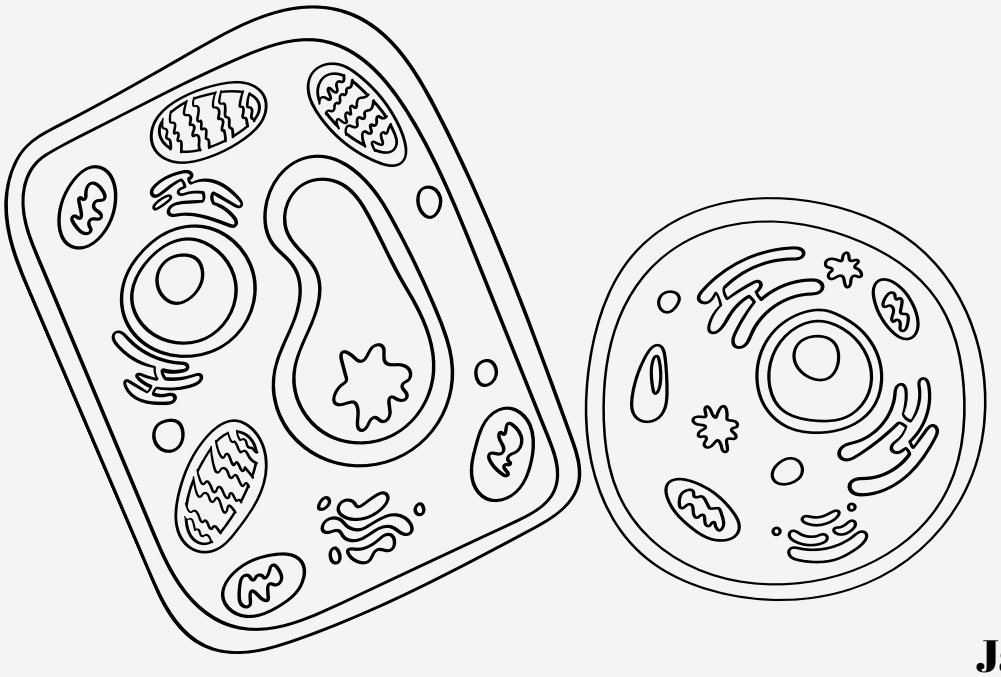
Cell migration is enabled by three molecules working together. Integrins are molecules located on the cell surface that are able to attach themselves to other surface. Actin are small building blocks on the inside of the cell membrane, and collectively form the skeleton of the cell. Finally the adaptor is a protein that links integrin and actin together. “Once the adaptor has connected the integrins and actin, the mechanical force form actin gives the green light”. Integrin molecule binds itself to a nearby surface, through which the cells can move forward. Once the cell’s migration is complete, the integrins and actin molecules separate from each other in this part of the cell, while another part of cell becomes active.



The key to cell migration is that the integrin molecules become active in the appropriate part of the cell and how this works has so far been unclear. Cell migration is based on activation of integrins through force from action was suggested several years ago by Timothy Springer at Harvard, where Pontus Nordenfelt spent three years examining how integrins become active. The work resulted in new microscopy technique i.e. used to test hypothesis of how cell migration works.

Technique is based on florescent biosensor which inserted into the cell, showing force changes in integrins through variations in colour. This helps to see process through colour images and measure the mechanical force on integrin. This enabled the development of more targeted drugs to strengthen the immune system or prevent tumor from metastatic etc.

Now he wants to continue with the study of phagocytes immune cells that eat the bacteria. The florescent biosensor measure when and how different bacteria are ingested, perhaps it also measure the opposite, he says.



Janvi
I year, Zoology Honors

Biodiesel Revolution

The day is not for when there would be self sufficiency in the field of energy, thanks to the technology of extracting biodiesel. At present India can produce only 30% of petroleum and the remaining 70% has to be imported which cost about 80 thousand crore rupees every year. It is an astonishing fact that if we mix only 5% biodiesel to the present diesel available in our country, we can save about four thousand crore every year. It is estimated that India will be able to produce 288 metric tones of biodiesel by the end of this year which will supplement the 41.14% of total demand of diesel consumption in India.

Planning Commission of India has recommend two plant species namely Jatropa (Tatropa cureas) and Karanj (Pongamic pinnata) for biodiesel extraction.

Advantages of biodiesel are:–

1. In contrast with fossil fuels, biodiesel liberates very low amount of carbon monoxide (80% or less) . Hydrocarbon and karliculate matters which cause green house effect.
2. Biodiesel is biodegradable and is therefore safe to handle and transport.
3. Biodiesel is the only alternative fuel that seems in any conventional modified dues engines.
4. Biodiesel is only 11% oxygen by weight and contain no sulphur. It extends the life of diesel engine because it makes it lubricating then petroleum diesel fuel.

So we can say that biodiesel is important not only for effecting and saving in the economy but also for keeping our environment pollution free.

Janvi
I year, Zoology Honors

Role of Science in Everyday Life

Science is creating wonders almost every day Almost everything that makes our daily life easy is the wonders of modern science.The term science comes from the Latin word scientía, meaning “knowledge” . It can be defined as a systematic attempt to discover by means of observation and reasoning,particular facts about the world and to establish laws connecting facts with one another and, in some cases to make it possible to predict future occurrences.

Science has invaded every branch of modern life. It is the noise of machines, cars, mills and factories, etc.which awakens us everyday in the morning. The food we eat, the recreations we enjoy, the game play–all have something or other to do with the application of science.

Science has conquered time and distance. We can travel from one place to another with a quickness which our forefathers couldn’t have dreamt of. In the morning, we get news of events that happened yesterday in all parts with the help of the radio,we can listen to and American speaking. If we want to talk to our friends far from us, there is mobile that will connect us.The things that we use in our daily life are mostly due to science. Our forefathers put on clothes woven by hand. Our clothes are made in large factories where scientific methods are used. We get so much paper to write on, Only because the paper mills can turn out huge quantities of it. Cloth and paper we had ever before science came on the scene, but no one could then think of the huge quantities in which they are produced now.

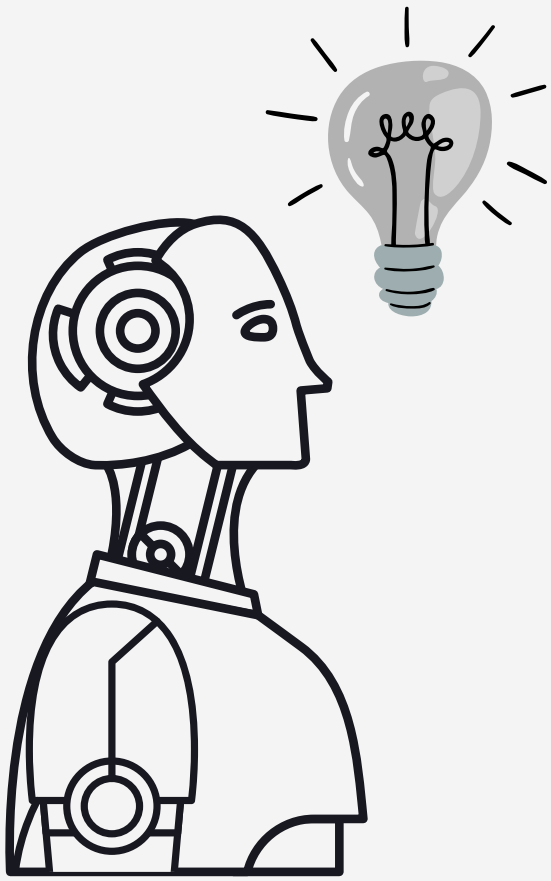
There are so many uses of science in everyday life. This fan and light works from the application of electricity. Electricity is one of the wonders of modern science. The bus which has an engine works with petroleum. The train is driven by the power of coal. This is possible only because of the application of Science. Medical science is another achievement of modern science.

It is true that science has added tremendously to the comforts and conveniences of mankind. By conquering time and distance, science has brought mankind together and so far made life richer. By inventing medicines it has made our day-to-day existence relatively free form diseases, and has, indeed added to our length of life.

Every person feels the effect of science in every sphere of life. It is not merely the electric light or the electric fan, the radio or the cinema that displays the power of science in our daily life, but everything we do or is done to us in some way or another connected with science.

From the above, it is clear that science is playing an important part in our everyday life. But man has not become a slave of machines. His own creative power is gradually becoming weaker and weaker.

It cannot be denied that there is some truth in the above criticism. But we cannot now go back to the old days. We should have all the comforts and conveniences, and we should try to improve upon them. But we must try to be masters of scientific appliances and not their slaves. We should make use of but our life must not be mechanized. If we can do so, science will make our lives richer and better.



Bhor Shrivastav
I year, Zoology Honors

Ravage caused by Humans

Animals are the incredible creatures. The world is not divided for any one but humans are using resources ruthlessly. They are looking on other organisms as they are just living on land which is tossed by them.

Cutting trees, making dams, converting forest land in agriculture fields these are the must reasons for animals to lost there house , and entering of wild animals into village and civilized areas. Some of the cruel breeders using such an innocent animals to earn money. And some of those humans just for there entertainment buying these animals.

All of these human activities in the search of success and development affect our mother nature causing global warming, climate changing, unconditional rainfall. But this destructive nature affective everyone undiscriminatingly.

Even now also its not too late. Now its our turn to do something for our nature even a single person can make a big change by taking public transport, feeding birds and animals. Make atleast one day in a week without AC, wasting food, and saving water.

Shambhavi Singh
l year, Zoology Honors

Medical Science v/s Human Health

“Health is like our mother, we never have a true idea of its value, until we lose it.” ‘HEALTH’ this term is frequently used by everybody, but how de we define it? It is not simply mean ‘absence of disease’ or ‘physically fit' but it is defined as the state of complete physical, mental and social well being. It is not possible for everybody to maintain a good health due to reasons :– presence of number of microbes, increasing pollution and our lifestyle. To deal with these problems we had developed a branch of Science known as ‘Medical Science’ which deals with the science and practice of diagnosis, treatment and prevention of diseases. It applies bio–medical science, biomedical research, genetic and medical technology to diagnose ant treat a disease.

The basic medical science gets rooted in 16th and 17th centuries, when different scientist like Robert Hooke, Robert Boyle and Issac Newton discovered the microscopic world through their experiments and thus initiating the modern scientific medicines.

A remarkable revolution took place in 19th century, when invention of different instruments is done. For example:– stethoscope, uses of X–ray, instrument for measuring blood pressure. In 20th Centaury, the progress in medical science is remarked with control on communicable diseases, development of penicillin, antibacterial and antiviral drug etc. Vaccines against diseases like Cholera, Typhoid, Small pox, Polio, Measles, evaluation of techniques to fight heart diseases implanting artificial pacemaker and so on.

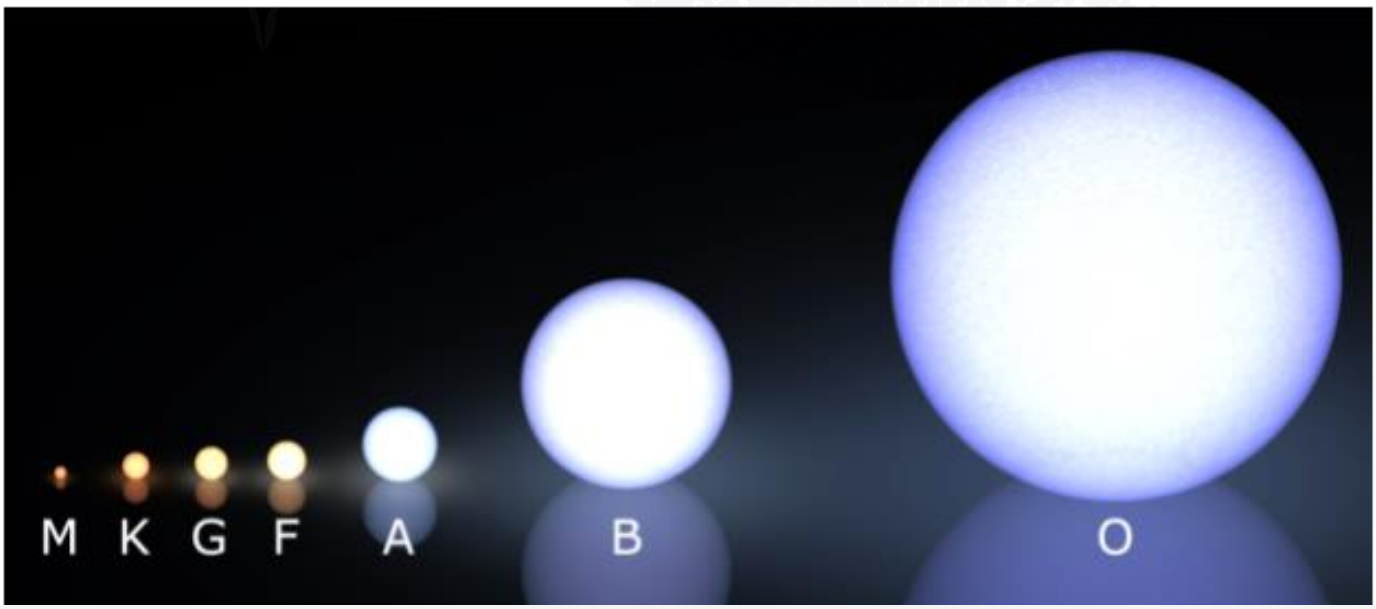
But as we know there are two phases of coin. Medical science since has no offered an effective technology toward some diseases like AlDS, Cancer, Diabetes efc. Some how it has developed some therapies to fight cancer but therapies also have harmful effects on us. To fight with these problems it is mandatory to continue the research for the understanding of complexity of these problems.

Janvi
I year, Zoology Honors

A STAR IS BORN

We all have shared our Nursery rhyme – “Twinkle, twinkle little star, How I wonder what you are.” But have we really wondered what a star actually is? Or what makes it so special even when it is so far away? They are widely recognized astronomical objects. For astrologers they are our fortune. According to NASA, The age, distribution and composition of galaxies trace the history, dynamics and evolution of the galaxy.

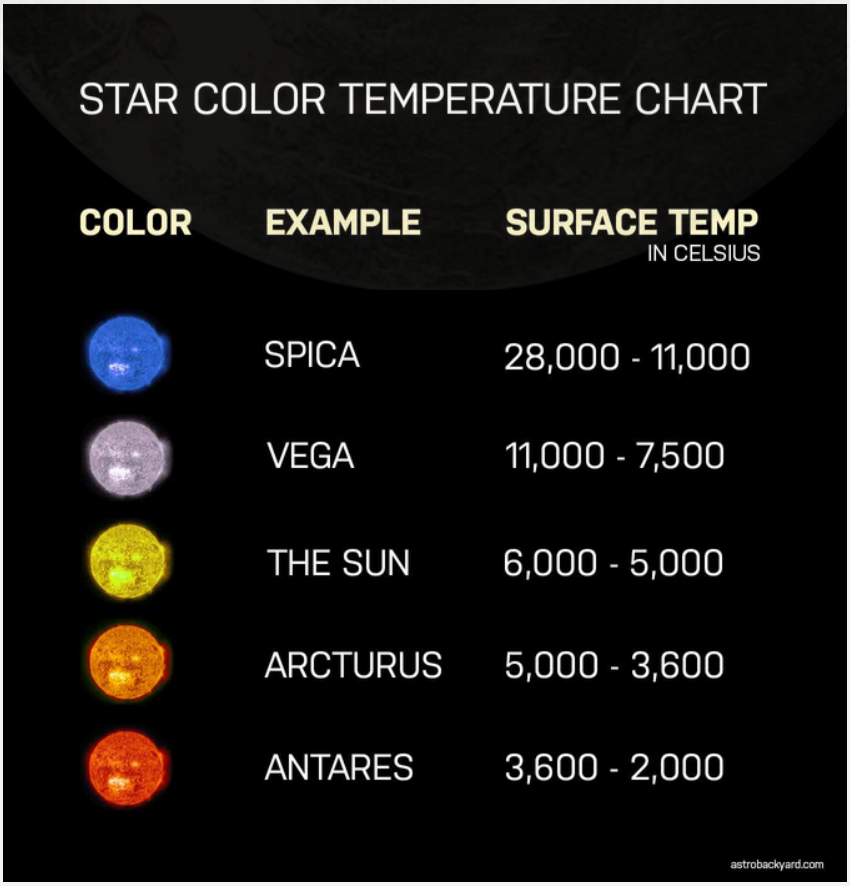
Stars are born within dust clouds. Orin Nebula is an example of such dust clouds. It is a diffuse Nebula situated in the milky way, being south of Orion’s Belt in the constellation of Orion. It is one of the brightest nebulae and is visible to the naked eye in the night sky. When these clouds undergo deep turbulence, these give rise to knots with sufficient mass that the gas and dust under its own gravitational attraction. After the collision the material at the center begins to heat up. This gives rise to what is known as “Protostar”. It is a hot core at the heart of the collapsing cloud that will one day become a star.



The 7 Main Spectral Types of Stars:

- O (Blue) (10 Lacerta)
- B (Blue) (Rigel)
- A (Blue) (Sirius)
- F (Blue/White) (Procyon)
- G (White/Yellow) (Sun)
- K (Orange/Red) (Arcturus)
- M (Red) (Betelgeuse)

The closest star to Earth (Proxima Centauri), is a Red dwarf. Red dwarfs include the smallest of the stars in the Universe, weighing between 7.5% and 50% the mass of the Sun. A simple star color temperature chart that provides examples of some of the most well-known stars in the night sky, and their colors.



Sneha Sharma
II year, Zoology Honors

Water Intoxication: A syndrome not known

•What happens if you drink too much water?

Every cell in the body needs water to function correctly. However, drinking too much can lead to water intoxication and serious health consequences.

It is difficult to drink too much water by accident, but it can happen, usually as a result of overhydrating during sporting events or intense training.

The symptoms of water intoxication are general — they can include confusion, disorientation, nausea, and vomiting.

In rare cases, water intoxication can cause swelling in the brain and become fatal.

This article describes the symptoms, causes, and effects of water intoxication. It also looks into how much water a person should drink each day.

•What is water intoxication?

Also known as water poisoning, water intoxication is a disruptionTrusted Source of brain function caused by drinking too much water.

Doing so increases the amount of water in the blood. This can dilute the electrolytes, especially sodium, in the blood.

If sodium levels fall below 135 millimoles per liter (mmol/l), doctors refer to the issue as hyponatremia.

Sodium helps maintain the balance of fluids inside and outside of cells. When sodium levels drop due to excessive water consumption, fluids travel from the outside to the inside of cells, causing them to swell.

When this happens to brain cells, it can be dangerous and even life threatening.

Bottom line: Water intoxication results from drinking too much water. The excess water dilutes sodium in the blood and causes fluids to move inside cells, causing them to swell.

•Dangers of drinking too much water

When a person consumes an excessive amount of water and cells in their brain start to swell, the pressure inside their skull increases. This causes the first symptoms of water intoxication, which include:

–headaches
–nausea
–vomiting

Severe cases of water intoxication can produce more serious symptoms, such as:

–drowsiness
–muscle weakness or cramping
–increased blood pressure
–double vision
–confusion
–inability to identify sensory information
–difficulty breathing

A buildup of fluid in the brain is called cerebral edema. This can affect the brain stem and cause central nervous system dysfunction.

In severe cases, water intoxication can cause seizures, brain damage, a coma, and even death.

Bottom line: Drinking too much water can increase the pressure inside the skull. This can cause various symptoms and, in severe cases, become fatal.

•What can cause water intoxication?

Water intoxication is rare, and it is very difficult to consume too much water by accident. However, it can happen — there have been numerous medical reports of death due to excessive water intake.

Water intoxication most commonly affects people participating in sporting events or endurance training, or people who have various mental health conditions.

•Sporting events

Water intoxication is particularly common among endurance athletes. It can happen if a person drinks a lot of water without correctly accounting for electrolyte losses.

F•or this reason, hyponatremia often occurs during major sporting events.

As the authors of one study report, out of 488 participants in the 2002 Boston Marathon, 13% had hyponatremia symptoms, and 0.06% had critical hyponatremia, with sodium levels of less than 120 mmol/l.

Instances of water intoxication at these events have resulted in death. One caseTrusted Source involved a runner who had collapsed after a marathon.

Because he was improperly rehydrated, his sodium levels fell below 130 mmol/l. The runner then developed water on the brain, known as hydrocephalus, and a hernia in his brain stem, which caused his death.

Mental health conditions

Compulsive water drinking, also called psychogenic polydipsiaTrusted Source, can be a symptom of various mental health conditions.

It is most common among people with schizophrenia, but it can also arise in people with affective disorders, psychosis, and personality disorders.

Bottom line: Water intoxication can be life threatening, and it is most common among soldiers in training, endurance athletes, and people with schizophrenia.

•Can it be fatal?

It is difficult to consume too much water by accident. However, it can happen, and there have been numerous reports of death due to excess water intake.

People at risk of death from water intoxication tend to be participating in endurance sporting events or military training. A person who is doing neither is unlikely to die from drinking too much water.

•How much is too much?

Overhydration and water intoxication happen when a person drinks more water than their kidneys can get rid of via urine.

The amount of water is not the only factor — time also plays a role.

According to figures quoted in a 2013 study, the kidneys can eliminate about 20–28 liters of water a day, but they can remove no more than 0.8 to 1.0 liters every hour.

To avoid hyponatremia, it is important not to outpace the kidneys by drinking more water than they can eliminate.

The authors of the study report that hyponatremia symptoms can develop if a person drinks 3–4 liters of water in a short period, though they do not give a specific time estimate.

According to one case reportTrusted Source, soldiers developed symptoms after consuming at least 2 quarts (1.9 liters) of water per hour.

Another reportTrusted Source describes the development of hyponatremia after drinking more than 5 liters in a few hours.

Water intoxication and prolonged hyponatremia also occurredTrusted Source in an otherwise healthy 22-year-old prisoner who drank 6 liters of water in 3 hours.

Finally, according to one reportTrusted Source, a 9-year-old girl developed water intoxication after consuming 3.6 liters of water in 1–2 hours.

Bottom line: The kidneys can remove 20–28 liters of water per day, but they cannot excrete more than 0.8 to 1.0 liters per hour. Drinking more than this can be harmful.

Ritika Srivastav
II year, Zoology Honors

Deforestation : A world falling down

Deforestation in simple terms means clearing of forest cover or tree plantations to accommodate agriculture, industrial or urban use.

Afforestation is the opposite of Deforestation

Deforestation involves clearing the forest land for the humne purpose and to make space for the various developments.

Deforestation has adverse effects on the environment. It reduces the fertility of the soil. And it is majorly due to soil erosion which occurs due to lack of trees,as the roots of trees binds the soil together and prevent the erosion.

Although most of the areas are cleared for crops and grazing represent permanent Deforestation, Deforestation can be transient.

Now,the following points will cover the major reasons of Deforestation:-

1. Agriculture activities:- It includes clearing forest land to cultivate crops out there .

2. Mining ,Paper and overpopulation:- all these causes are reported under the area of industrialization.

3. Livestock Ranching:- It states that people near forests let their animals graze in forests which finally causes deforestation and make it suitable reason for depletion of trees.

Deforestation has adverse effect on agriculture.The reduction of trees has also several ill effects on the air quality of a place .

On the other hand ,the sudden rise in temperature happening across the world has led to such a situation. The reason for global warming is also,rampant Deforestation.

Several wildlife species lost their habitats and lives.
Now ,there may be many more causes and reasons for Deforestation, I tried lining up some of them but observing the present situation,it is our sole duty that we all should do our part on individual scale ,it's not about any government or any state ,it's about us ,THE WHOLE SOCIETY,EACH AND EVERY INDIVIDUAL so plant more and more trees and try not to use the forest land for our own purpose!

Vini Kharsu
llyear, Zoology Hons.

STUDENT'S ACHIEVEMENT

The following students of brought laurels to the Zoology Deparment by winning various competitions on the university and state level. Our students won in various different fields ranging from sports, poster making, crossword etc.

S.NO	NAME OF THE STUDENT	NAME OF ACTIVITY	NATURE OF AWARD	LEVEL OF AWARD
1	SNEHA SHARMA	Data Analytics competiton	Certificate Cash Prize	University
2	ARUSHI GUPTA	Rangoli making	Certificate Cash Prize	University
3	KUMKUM RANA	Sports Table tennis Championship	Trophy Certificate	State
4	MANSHI SHARMA	Quiz	Certificate	University
5	RITIKA DEWRA	Crossword	Certificate Cash prize	University

S.NO.	NAME OF THE STUDENT	NAME OF ACTIVITY	NATURE OF AWARD	LEVEL OF AWARD
6	SWETA BHARTI	Rangoli Making	Certificate Cash Prize	University
7	TISHA MANGLA	Crossword Puzzle	Certificate Cash Prize	University
8	KHUSHI	16th Youth Parliament	Certificate	University
9	TAMANNA DALAL	Wildlife Photography	Certificate Cash Prize	University

The following students of 2020-21 batch have secured admission in various prestigious institutes of India for their post graduation. These included Indian Institute of Public Health, Jaypee Institute of Information Technology, Zakir Hussain etc.

S.NO.	NAME OF THE STUDENT	COURSE	INSTITUTE
1	SIMRAN JHA	PUBLIC HEALTH	INDIAN INSTITUTE OF PUBLC HEALTH GANNDHINAGAR (IIPHG)
2	PRERNA	ENVIRONMENTAL SCIENCE	ZAKIR HUSSAIN COLLEGE
3	ADITI TYAGI	Msc. MICROBIOLOGY	JAYPEE INSTITUTE OF INFORMATION TECHNOLOGY
4	ANKITA TYAGI	Msc. MICROBIOLOGY	JAYPEE INSTITUTE OF INFORMATION TECHNOLOGY
5	MAHAK BAGAI	Msc. BIOCHEMISTRY	KURUKSHETRA UNIVERSITY
6	NIKITA SHARMA	Msc. MICROBIOLOGY	JAYPEE INSTITUTE OF INFORMATION TECHNOLOGY
7	NUHI FATIMA	Msc. BIOSCIENCES	JAMIA MILLIA ISLAMIA
8	DIVYA SAJEEV	Msc. FORENSIC SCIENCE	CHRIST UNIVERSITY BENGALURU
9	KOMAL GUPTA	Msc. FORENSIC SCIENCE	GD GOENKA UNIVERSITY

Picture Courtesy : Kumkum Rana