



ZOOLOGY BUZZ

DEPARTMENT OF ZOOLOGY

ST. BEDE'S COLLEGE SHIMLA-2

Vol. 6

2023

ZOOLOGY HIGHLIGHTS



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- India has approved its first nasal Covid vaccine.
- Made by Bharat Biotech, iNCOVACC is administered in the form of drops and stimulates an immune response in the tissues that line the nasal cavity.
- India launched the iNCOVACC vaccine on Republic Day.
- Scientists say that nasal vaccines may offer added immunity in the lining of the nose and upper airways, where Covid typically enters the body.
- iNCOVACC uses an adenovirus as a carrier for the genetic code that teaches the body how to fight the infection. Adenoviruses used in the vaccines are harmless transporters which have been modified so they cannot replicate or cause infection.
- The vaccine will cost 800 rupees (\$10; £8) per dose in private hospitals and 325 rupees per dose in government hospitals and can be booked on the government's online platform. Two doses are to be taken 28 days apart.

ADITI

B.Sc. III

EDITOR'S NOTE

“Nothing in life is to be feared, it is only to be understood. Now is the time to understand more, so that we may fear less.” – Marie Curie

Science is curiosity and it is through curiosity that we better understand the world and how things work. It will always be challenging until the solution is found but once it's found it becomes a discovery.

Zoology is a branch of biology which specializes in the study of animals both living and extinct, including their anatomy and physiology, embryology, genetics, evolution, classification, habits, behaviour and distribution. It is a complex branch of science having immense number of problems yet to solve. This alone is a challenge to an enquiring mind, but there are also other motives for zoological study.

Through the study of zoology, one can gain an understanding of the natural world and how to help with conservation. It also offers the opportunity to consider ways to face global challenges such as climate change and food security, trying to find solutions to help both animals and humans alike.

There are numerous opportunities for someone who pursues a degree in Zoology such as Academic researcher, Animal nutritionist ,Ecologist, Environmental consultant , Environmental education officer, Professors, Marine scientist, Nature conservation officer, Science writer, Zookeeper, Zoologist, Animal physiotherapist, Environmental manager, Field trials officer, Marine biologist, Research scientist (life sciences), Toxicologist, Veterinary nurse, Veterinary surgeon.

So we as the editor of the 6th addition of Zoology Buzz, welcome you to enjoy the fascinating facts of zoology and enhance your knowledge. As it is said great scientists is not just the one who gives great answers but one who ask great questions. Happy reading everyone!!!

Era Chauhan and Aditi

B.Sc 3rd year.

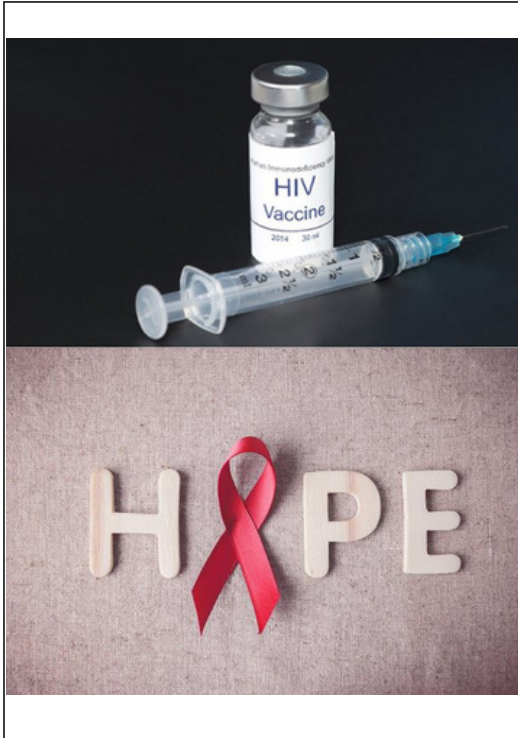
TRANSPLANT PROMISE

A group of Yale scientists reported in the journal Nature this summer that they succeeded in reviving cells in the hearts, liver, kidneys, and brains of pigs that had been lying dead in a lab for an hour. The researchers accomplished the feat by using a device much like a heart-lung machine to pump a custom-made solution, dubbed OrganEx, into the pigs' bodies. The pigs' hearts started beating and sent the solution through their veins.



CURING HIV

A 53-year-old man became the fifth person to be cured of HIV following a stem cell transplant he received shortly after being diagnosed with the disease. The "Dusseldorf patient," who was also diagnosed with a severe form of blood cancer, received a bone marrow transplant 10 years ago that gave him HIV-resistant stem cells, according to The Washington Post. He has been off anti-retroviral medication for four years with no trace of the virus in his body. With five cases of HIV having been cured, scientists are hopeful for the future. "Following the intensive research, they can now confirm that it is fundamentally possible to prevent the replication of HIV on a sustainable basis by combining two key methods," including anti-retroviral medication and stem-cell transplants, Jensen said.



- ERA CHAUHAN (B.Sc. III Yr)

FOOT-AND-MOUTH DISEASE :

AN ONGOING THREAT TO LIVESTOCK AROUND THE GLOBE

What is foot-and-mouth disease?

Foot-and-mouth disease (FMD) is a severe and highly contagious viral infection that affects cattle, swine, sheep, goats, water buffalo, and other ruminants.

FMD recently made headlines with the April 2022 outbreak in Indonesia.

How does it spread?

FMDV can be found in feces and body fluids, including saliva, urine, milk, and semen. FMD transmission can occur through direct contact with infected animals, inhalation of infectious aerosols, and consumption of contaminated meat products. Another common route of transmission is direct contact between susceptible animals and contaminated hands, footwear, clothing, and vehicles. FMDV can become airborne and spread over long distances, particularly in milder climates.

What does FMD look like?

- Fever
- Depression
- Anorexia
- Listlessness
- Nasal discharge
- Lameness
- Drooling or excessive salivation
- Reluctance to move
- Reduced milk production
- Blisters



- ERA CHAUHAN (B.SC. THIRD YEAR)

CANCER TREATMENTS ADVANCE

Cancer treatments have always been in frontline in terms of scientific research. Chris Jones, a professor of Paediatric Brain Tumour Biology at the Institute of Cancer Research and his team worked with the company BenevolentAI to come up with a new drug using Artificial Intelligence to fight diffuse intrinsic pontine glioma, an incurable childhood brain cancer. It led to a 14 percent increased chance of survival in mice and it has been tested in a small group of children.

In another potential breakthrough, Dr. Luis A. Diaz Jr. of Memorial Sloan Kettering Cancer Centre wrote a paper in the New England Journal of Medicine describing that by the intake of drug there was complete remission in all 18 rectal cancer patients undergoing treatment. He also said that "I believe this is the first time this has happened in the history of cancer".



INJECTING HUMAN CELLS INTO RATS' BRAINS TO STUDY PSYCHIATRIC DISORDERS

Scientists from Stanford University successfully injected human nerve cells into the brains of new born lab rats and found that they formed connections with the animals' own brain cells, guiding their behaviour, and also develops in ways similar to a human brain, which could help researchers understand more about schizophrenia, autism spectrum disorder, bipolar disorder, and other neuropsychiatric disorders.

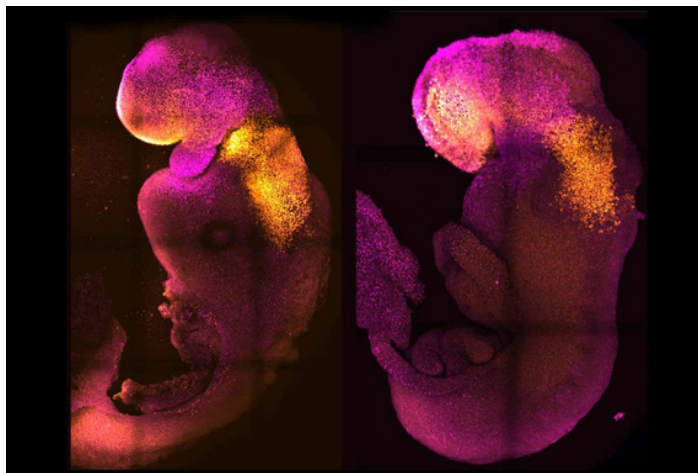
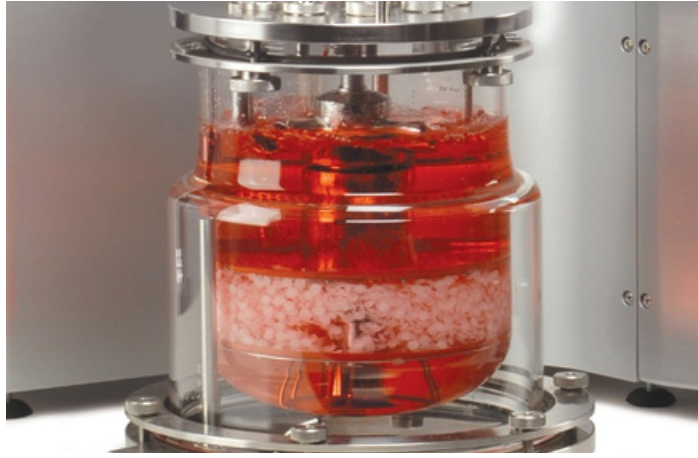
Some bioethicists are uneasy about the implications of putting human cells into rats, but Dr. Sergiu Pasca, a professor of psychiatry and behavioural sciences at Stanford who developed the transplant technique said, "No matter how long we keep them in a dish, they still do not become as complex as human neurons would be in an actual human brain,"



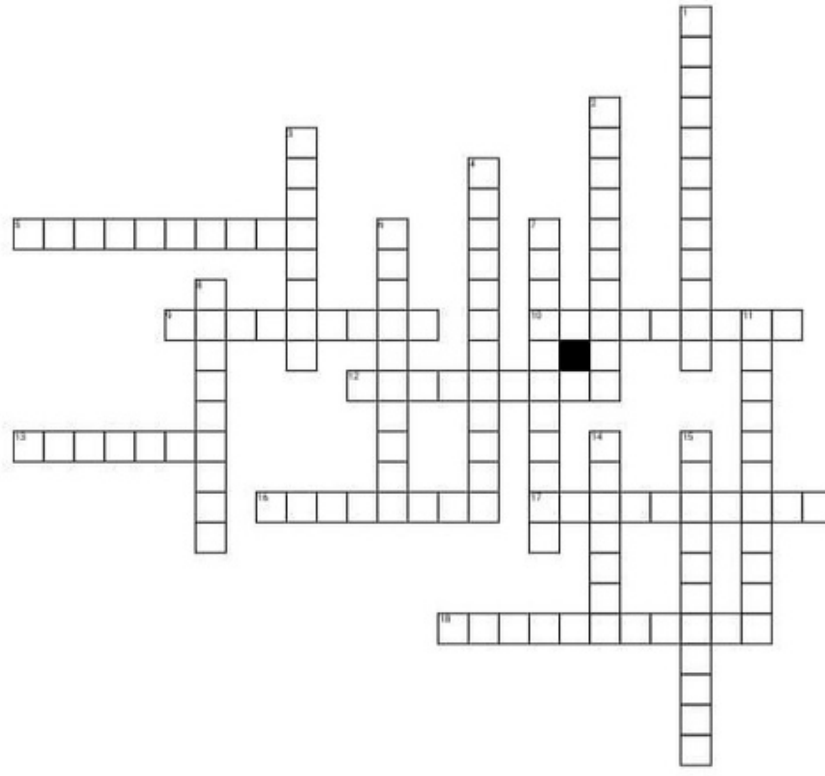
CREATING LIFE WITHOUT SPERM OR EGGS

In experiments at the Weizmann Institute of Science in Israel, researchers created mouse embryos inside a bioreactor that were made up of stem cells cultured in a Petri dish without using sperms and eggs. The embryos developed normally, elongating on day three and developed a beating heart by day eight. It was the first time scientists ever managed to grow fully synthetic mouse embryos outside the womb.

The experiment marked a leap in how stem cells work and give rise to the organs, which suggests one day it will be possible to go all the way to creating a living organism with just a use of a Petri dish.



CROSS - WORD PUZZLE



Across

- 5. _____ zoology is the study of animals with backbones
- 9. An organism that can make its own food
- 10. A change over time
- 12. Study of mammals
- 13. The study of animals
- 16. The science of naming and classifying organisms
- 17. Single celled organism with no nucleus or membrane-bound organelles

Down

- 1. _____ zoology is the study of multicellular animals without backbones
- 2. Study of insects
- 3. Passing of traits from parents to offspring
- 4. Study of parasites
- 6. Inherited characteristics that's increase an organism's chance of survival
- 18. Study of fish

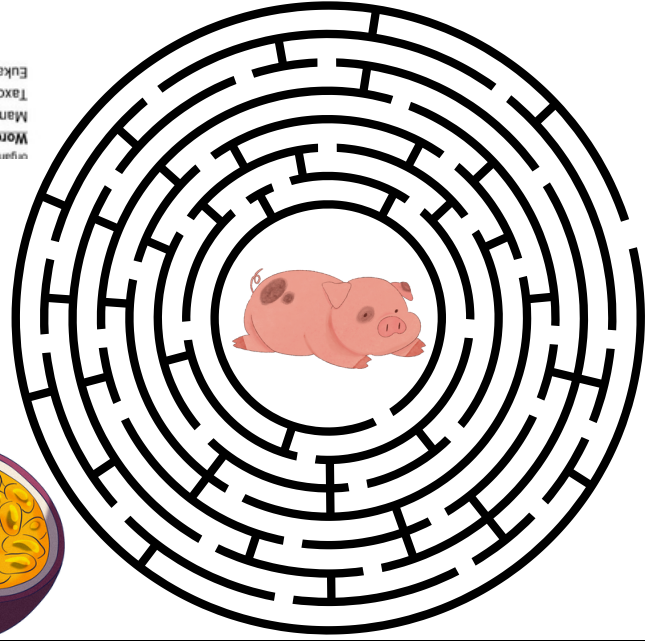
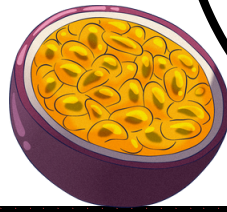
7. An organism that gets its energy by consuming other organisms

- 8. A cell with a nucleus and membrane-bound organelles
- 11. Study of birds
- 14. Study of how organisms interact with each other and their environment
- 15. Study of reptiles and amphibians

ANSWERS -

Word Bank
 Eukaryote
 Taxonomy
 Mammology
 Vertebrate
 Ichthyology
 Entomology
 Invertebrate
 Zoology
 Herpetology
 Ornithology
 Evolution
 Adaptation
 Parasitology
 Ecology
 Autotroph
 Heterotroph
 Heredity
 Prokaryote

Reach upto the Pig and Help him.



DEPARTMENTAL ACTIVITIES

VISIT TO HIMALAYAN FOREST RESEARCH INSTITUTE PANTHAGHATI SHIMLA

On September 13, 2022, a group of B.Sc. - III students from the Department of Zoology at St. Bede's College went on a field trip to the Himalayan Forest Research Institute in Panthaghathi Shimla. During the visit, the students were given the opportunity to explore the Forest Protection Division, which was equipped with advanced tools and equipment for research purposes.

Under the guidance of scientist Dr. Pawan Rana and his research team, the students were introduced to a wide range of species, including mushrooms, pink rhododendrons (the state flower), moths, and butterflies, and their importance in the ecosystem. The students were also introduced to species-specific mycorrhiza, a type of biofertilizer that, when applied to the roots of plants such as deodar, promotes their growth. The students were able to gain hands-on experience by dissecting genitalia and stretching the wings of butterflies for taxonomic studies. In addition, the students learned about the preparation of agarose gels, DNA isolation, and gel electrophoresis for molecular studies.

Overall, the field trip to the Himalayan Forest Research Institute provided the students with a valuable opportunity to learn about the latest research techniques and explore the rich biodiversity of the region. The experience was both educational and exciting and will undoubtedly inspire the students to pursue further studies and research in the field of Zoology



HEALTH AND FITNESS WORKSHOP

The Departmental Club of Zoology, "Zoo Quest" organized a workshop on health and fitness on September 23, 2022. The event was aimed at promoting awareness among the students and the local community about the importance of maintaining good health and fitness.

The workshop featured two resource persons - Dr. R. K. Patial, MBBS, MD, PhD, Retired Professor and Head of Medicine at IGMC, Shimla, and Mr. Sharik, a skilled aerobics instructor. Dr. Patial discussed the benefits of a balanced diet and the importance of regular exercise in maintaining good health. He also provided tips on how to maintain a healthy lifestyle through proper nutrition and exercise.

Mr. Sharik conducted an aerobics and flexibility session to demonstrate the various ways in which physical activity can contribute to overall fitness and well-being. Participants of all ages, including local residents of Shimla, took part in the session and learned about the different exercises that can be done at home to improve their fitness levels.

The workshop proved to be an informative and engaging session, with participants gaining valuable insights on how to stay healthy and fit.

The guests were felicitated by Dr. Shramja Munjal and Dr. Anupama Tandon.



The workshop session included 4 events:

- **Presentation on health and fitness**
- **Significance of vitamin D in the human body by Dr. R.K. Patial**
- **Nukkad Natak on health and fitness**
- **Aerobic and Flexibility session**

PRESENTATION ON HEALTH AND FITNESS

During their presentation on health and fitness, the students emphasized the importance of maintaining a balanced diet that includes the necessary macro- and micronutrients, as well as an active lifestyle. They pointed out that good health is not just about the absence of illness, but encompasses a comprehensive state of physical, mental, and social well-being.

The presentation highlighted the need for regular physical activity, adequate rest, a balanced diet, and a positive mindset in achieving optimal health. The students emphasized the importance of essential nutrients such as water, fats, proteins, vitamins, and minerals in maintaining a healthy body and mind.

Overall, the presentation by the students was informative and insightful, emphasizing the importance of a holistic approach to health and wellness. By emphasizing the importance of proper nutrition and an active lifestyle, they encouraged the audience to take responsibility for their own health and well-being. The presentation serves as a reminder to prioritize our health and make conscious choices that support our overall well-being.



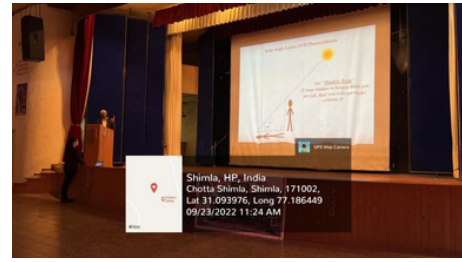
SIGNIFICANCE OF VITAMIN D IN THE HUMAN BODY BY DR. R.K. PATIAL

During his speech, Dr. R. K. Patial emphasized the importance of maintaining good health and fitness, with a particular focus on the role of vitamin D. He highlighted that vitamin D is the body's third most important contributor to overall health and is essential for survival, defense, and reproduction.

Dr. Patial discussed how proper nutrition can help feed our genes with the essential vitamins and nutrients they need to function optimally. He specifically emphasized the importance of vitamin D in maintaining a healthy body and mind.

The resource person further discussed vitamin D as the key to the genomic library, and how its deficiency can contribute to various diseases. He elaborated on the diseases associated with vitamin D deficiency and provided insights on how to prevent and treat them.

The session was informative and engaging, with the audience gaining valuable insights on the importance of vitamin D and its role in maintaining good health. The resource person also took the time to answer questions and address the concerns of the audience. Dr. Patial's talk served as a reminder of the importance of proper nutrition and the role of vitamins and minerals in supporting our overall health and well-being.



NUKKAD NATAK ON HEALTH AND FITNESS

The students of the college performed a Nukkad Natak called "Babu Rao Ki Kahani" on the theme of health and fitness. The play showcased the story of Babu Rao, a middle-aged man who had been ignoring his health for a long time. It highlighted the consequences of ignoring one's health and the importance of leading a healthy lifestyle.

The play emphasized the significance of a balanced and healthy diet, regular exercise, practicing yoga, and consuming fruits and vegetables for maintaining good health. It showcased how small changes in one's lifestyle can make a big difference in one's overall well-being.



AEROBIC AND FLEXIBILITY SESSION

Mr. Sharik, a certified aerobics instructor, spoke about the importance of aerobic exercise for maintaining good health. The attendees of the workshop, including students and local residents of Shimla, participated in a 30-minute aerobics workout led by Mr. Sharik.

The entire health and fitness workshop was recorded, and the video has been uploaded to YouTube for others to benefit from. By sharing the video, the organizers hope to encourage more people to prioritize their health and fitness and make positive changes in their lives. The link is: <https://www.youtube.com/watch?v=CWRJyN93Pwk&t=180s>



WILDLIFE WEEK CELEBRATION

Under the 'Azadi Ka Amrut Mahotsav initiative,' the Department of Zoology and Botany celebrated Wildlife Week from October 2-8, 2022. The aim was to raise awareness about the conservation of biodiversity and to encourage people to contribute to its protection.

As part of the celebration, the department organized an inter-college poster making competition to encourage students to use their creativity to highlight the importance of wildlife conservation. Additionally, students delivered lecture series on 'Raising Awareness on Biodiversity Conservation' at Government Senior Secondary School in Sanjauli and at Government Senior Secondary School in Lakkar Bazar, Shimla.

The lecture series provided valuable insights into the importance of biodiversity and the need to preserve it for future generations. The students highlighted the various ways in which human activities have adversely affected the environment and its inhabitants. They also discussed the role of conservationists in protecting endangered species and their habitats.

Overall, the Wildlife Week celebration was a success, and the activities organized by the department helped to spread awareness and encourage people to take action towards biodiversity conservation.

Lecture Series on Raising Awareness on Biodiversity Conservation

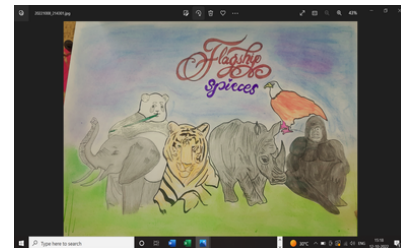
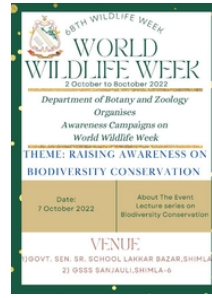
The students of the Botany and Zoology Department organized a lecture series on Raising Awareness on Biodiversity Conservation on October 7, 2022, at two government senior secondary schools in Shimla. The aim of the event was to educate school students about the importance of wildlife conservation. The presentation was delivered by three students - Shaiful Dogra, Tavishi Sharma, and Shivangi - who gave a PowerPoint presentation on the topic of Biodiversity Conservation.

During the presentation, the speakers highlighted some of the major threats to wildlife and discussed the effects of wildlife depletion. They also talked about the wildlife of India, both past and present, and mentioned the IUCN Red List. The students emphasized the importance of making an animal or bird an emblem of the state in wildlife conservation.

Inter-college Poster making

Department of Botany and Zoology organized an Inter-college poster making competition on the theme of "Flagship Species, Indicator Species and Keystone Species". The competition saw participation from various colleges in the region. After careful evaluation, Neha Thakur from the Centre of Excellence, Govt. College, Sanjauli and Sanjana Gupta from St. Bede's College, Shimla were declared the winners of the first position. The second and third positions were secured by Sakshi Bhardwaj of RKMV, Shimla and Jasmine Chauhan of St. Bede's College, Shimla respectively. The winners were awarded certificates and prizes by the faculty members of the department. The competition was a great platform for the students to showcase their artistic skills and their knowledge on the importance of various species in maintaining a healthy ecosystem. The entire event was recorded and a video of it has been uploaded on YouTube. The link is:

<https://www.youtube.com/watch?v=ivyucuQRr74&t=22s>



MASS AWARENESS RALLY AGAINST FEMALE FOETICIDE

On December 8, 2022, Zoo Quest, the Department of Zoology at St. Bede's College Shimla, organized a mass awareness program on the theme "Female Foeticide in India - A Bitter Truth of Society." A rally was conducted from Navbahar Chowk to Sanjauli Chowk to raise awareness against female foeticide. Students educated the public on how to raise a girl child without discrimination, and they showcased handmade posters and raised slogans to emphasize that sex determination should not be allowed. A slogan and poster-making competition was also held, with Anushka, Mannat, and Swati winning the first prize in the slogan writing competition, and Samriti, Priyanka, and Khushboo winning the first, second, and third position in the poster-making competition. The entire rally, as well as the slogan and poster-making competition, were recorded and uploaded to YouTube.

The link is: <https://www.youtube.com/watch?v=wN1RBhijzpA&feature=youtu.be>

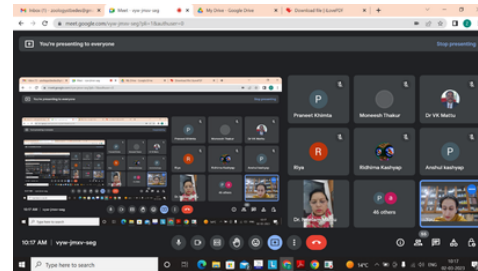
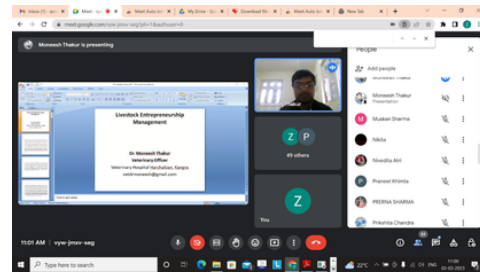


WEBINAR ON ENTREPRENEURSHIP

The Department of Zoology at St. Bede's College organized a webinar on March 2, 2023, focusing on entrepreneurship skills in insect farming and livestock management. The webinar was conducted by two distinguished resource persons, Prof. V.K. Mattu (Emeritus) from Himachal Pradesh University and Dr. Moneesh Thakur, Veterinary Officer at Veterinary Hospital Harchakian Kangra, Himachal Pradesh. The main objective of the webinar was to educate farmers and students about entrepreneurship and employment opportunities in beekeeping and livestock management.

The webinar was attended by around 80 participants, including students from various colleges and farmers. Prof. V.K. Mattu spoke about beekeeping and entrepreneurship in the era of digitalization, while Dr. Moneesh shared insights on livestock entrepreneurship management. The students were made aware of the various prospects in beekeeping and livestock entrepreneurship as a cottage industry.

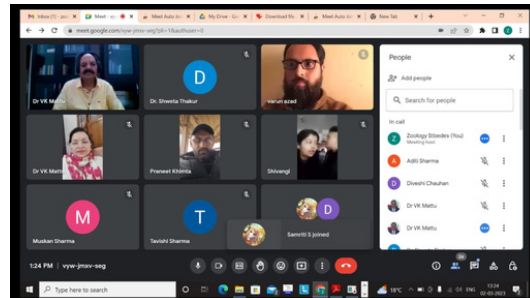
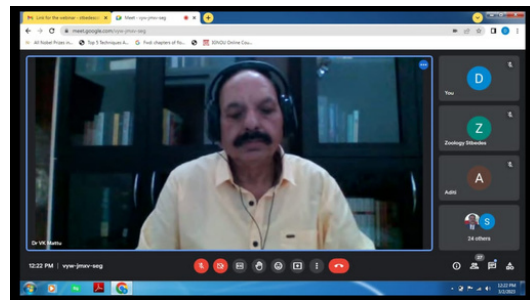
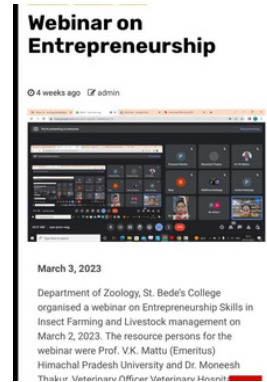
The webinar aimed to provide an in-depth understanding of the opportunities and challenges associated with entrepreneurship in insect farming and livestock management. The panelists shared their experiences and insights on the best practices, techniques, and strategies that can be adopted to succeed in this field. They also discussed the regulatory framework, market trends, and investment opportunities that can help entrepreneurs build successful and sustainable businesses.



Discussions and Recommendations on Entrepreneurship Skills in Insect Farming and Livestock Management

- **Learn about the industry:** Understand the beekeeping and livestock management industry, including market trends, demand, regulations, and competition to identify potential opportunities.
- **Develop a business plan:** Create a solid roadmap that outlines business goals, strategies, marketing plans, and financial projections to guide the business and ensure objectives are achieved.
- **Build a strong network:** Connect with other beekeepers, livestock farmers, suppliers, customers, and industry experts to gain insights, share ideas, and build partnerships that can help in finding new customers, suppliers, and investors.
- **Focus on quality:** Invest in the right equipment, techniques, and practices to ensure the beekeeping and livestock farming operations are efficient, effective, and sustainable, producing high-quality products that meet customer demand and exceed their expectations.
- **Market your products:** Develop a marketing plan to reach potential customers and promote products through social media, word of mouth, farmers' markets, and other channels to reach the target market.
- **Stay updated with industry developments:** Attend workshops, seminars, and industry events to continuously improve skills and knowledge, in beekeeping and livestock management.

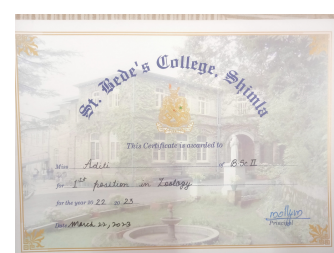
Overall, these recommendations can help in developing entrepreneurship skills in beekeeping and livestock management by combining industry knowledge, business insight, networking skills, and a commitment to quality and innovation.



STUDENT'S ACHIEVEMENTS

THIRD YEAR

Academic Performance: Aditi stood 1st in Zoology. She was bestowed with the all rounder certificate and also participated in Youth festival Group - 1



Academic Performance: Anushka Kapoor stood 1st in Zoology. She secured 1st position in poster making competition for Female Foeticide.



Academic Performance: Manisha Rawat stood 2nd in Zoology.



Academic Performance: Tavishi received a certificate for her academic excellence in Zoology.



Tavishi and Shaiful delivered lecture on Raising Awareness on Biodiversity Conservation on October 7, 2022, at two government senior secondary schools in Shimla. During the presentation, the speakers highlighted some of the major threats to wildlife and discussed the effects of wildlife depletion. They also talked about the wildlife of India, both past and present, and mentioned the IUCN Red List.



SECOND YEAR

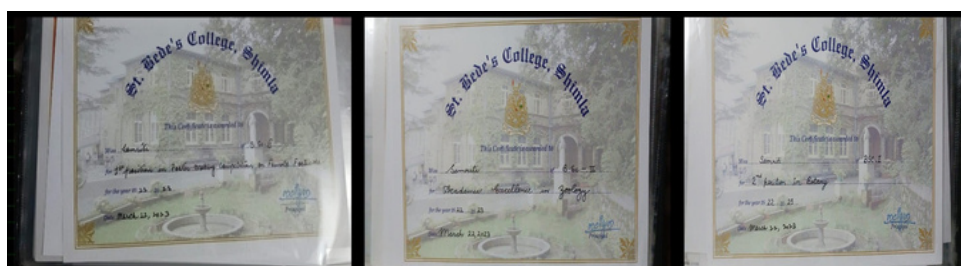
Academic Performance: Khushboo Sharma - Stood 1st in Zoology and also received a certificate for her academic excellence. She also stood 2nd in Chemistry. She secured 2nd position in poster making competition on the theme 'Equalize' on World AIDS Day 2022 organized by the Red Ribbon Club.



Priyanka Sharma - She secured 2nd position in poster making competition on Female Foeticide.



Samriti - stood 2nd in Botany and received a certificate for academic excellence in Zoology. She secured 1st position in Independence day Slogan writing Intra-college competition on the theme "Intergenerational Solidarity: Creating a world for all ages" for awareness campaign on HIV prevention on International Youth Day. She secured 1st position for poster making competition on Female Foeticide.



SPECIAL MENTION

Era Chauhan student of B.Sc. 3rd year is going to pursue her Masters in Biotechnology from Harrisburg University, Pennsylvania(USA). St. Bede's has signed a MOU with the Harrisburg University and she will be one of the first student going to pursue her higher studies under this MOU.



Dear Era,

Congratulations! Harrisburg University of Science and Technology has reviewed your application for admission to the Graduate Program and it is our pleasure to offer you admission for entry in Fall 2023 which will begin on August 26, 2023. You have been granted admission for completion of the M.S. Biotechnology, Medical Biotechnology Concentration.

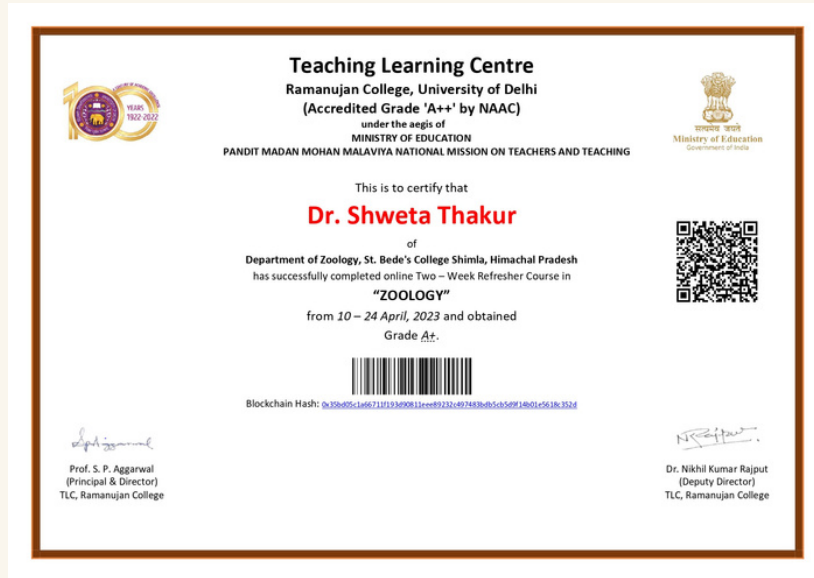
- FACTS TIME -

The human brain is getting smaller due to evolution. According to scientists, our brain started getting smaller around 20000 years ago.

Human beings share about 31% of their genes with a single living cell yeast that replicates itself every 90 minutes.

Teacher's Achievements

- **Dr. Shweta Thakur** attended Two- Week Refresher Course in Zoology from April 10- April 24, 2023 from Ramanujan College, University of Delhi.



- **Dr. Jyotika Brari** attended Two- Week Refresher Course in Zoology from April 10- April 24, 2023 from Ramanujan College, University of Delhi.



THE HIGHEST STANDARDS

THE HAPPIEST STUDENTS

REVIEWS FROM STUDENTS

Experience at zoology St.Bede's College
Being a student of zoology I personally had a great experience whether it's about learning or participating in various activities. Zoology department had always provide us a platform to showcase our talent and to come out of our comfort zone. Our teacher's provide us a source of motivation, encouragement, and support that can be long-lasting. The department was not only responsible for imparting knowledge but also for instilling values, ethics, and skills that we carry with us throughout our lives.
- Tavishi

The freedom that I enjoyed around the laboratory of my department helped me to develop an insight in scientific research. The Department boasts a group of extremely knowledgeable faculty who continually encouraged and mentored us. They were always willing to help us out whenever approached .
- Aditi

I had really great and wonderful time at St. Bede's College. I have learned so many things. Most important thing I have learned is how to deal with different situations without my family and friends and I have become very much independent by now. Thank you to all the teachers for teaching me so well and giving me so much confidence and courage which I will carry with me.
Manisha Rawat

“

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