



ZOOLOGY BUZZ

Department of Zoology St. Bede's College, Shimla - 2

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ZOOLOGY HIGHLIGHTS

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About us :

Zoology department helps to create awareness among students about recent environmental issues and challenges, its protection and conservation, imbibe the importance of nutrition and health aspects in human life.

Departmental objectives :

- To facilitate higher education and research in Zoology.
- To provide quality education in offering skill based programs and motivate the students for self employment in applied branches in Zoology.
- To inculcate entrepreneurial skills among the students.

Indian finds solution for drug-resistant diseases

Discovers *Planctopirus hydrillae*, antibiotic-producing bacterium



CO HELPS ANTIBIOTICS

Carbon monoxide may significantly improve the effectiveness of antibiotics, according to a study which may open up novel ways to fight antibiotic resistance.

The study led by researchers at Georgia State University in the US paired carbon monoxide with the antibiotic meropenem.

The researchers found carbon monoxide enhanced the efficacy of the antibiotic against *H. pylori*, a type of bacteria that infects the stomach and causes peptic ulcers.

"We found that if you administer carbon monoxide with an antibiotic called meropenem, it can kill bacteria towards the same antibiotic by 25-fold," said Shiguo Wang from Georgia State.

Carbon monoxide is infamous for its toxicity at high concentrations, but it also has promising potential as a medical gas.

The bacterium will also help clean anaerobic waste: (Sneha) Varunka Ramana.

Last male northern white rhino dies

Only 2 females remain in world | Scientists still seeking to preserve subspecies using IV



Estimated 20,000 rhinos in the wild, but only 400 left in 1970. A few remain in zoos and one in a sanctuary in South Africa.

Living rhino horns are valuable than gold.

A rhino horn is made of keratin, a protein that grows in the skin. It is not made of bone or ivory. The horn is made of keratin and is valued for its medicinal properties in traditional Chinese medicine.

Rhino horns are worth up to \$30,000 per kilogram on the black market.

Scientists are using IVF to preserve the subspecies.

Genes influence empathy

London: Human empathy is not only shaped by a person's upbringing and experience but also by their genes, scientists including one of Indian origin have found. Empathy has two parts: the ability to recognise another person's thoughts and feelings, and the ability to respond with an appropriate emotion to someone else's thoughts and feelings. The first part is called 'cognitive empathy' and the second part 'affective empathy'. Fifteen years ago, scientists at the University of Cambridge in the UK developed the Empathy Quotient (EQ), a brief self-report measure of empathy. The EQ measures both parts of empathy. PT1

Drones to read heart rate

Sydney: Australian researchers have developed a drone capable of measuring a person's breathing and heart rate from 60 metres away, an advance that may help during humanitarian crises. The researchers led by Javahar Chahl from the University of South Australia (UnISA), showed that the drone was able to measure a subject's heart beat by using a camera to sense the top a person's head pulsing by approximately one millimeter with each beat, reports Xinhua news agency. "Basically in a disaster, unfortunately you have to prioritise who's living, who's dead and perhaps who's dying, and this might allow a drone to map a scene and establish the general condition of people," Chahl told the Australian Broadcasting Corporation (ABC). IANS



Vit D helps prevent cancer

Tokyo: High levels of vitamin D may lower the risk of developing liver cancer, a study has found. Vitamin D is made by the skin in response to sunlight. It helps to maintain calcium levels in the body to keep bones, teeth and muscles healthy. While the benefits of vitamin D on bone diseases are well known, there is growing evidence that Vitamin D may benefit other chronic diseases, including some cancers. However, so far, most studies have been carried out in European or American populations, and evidence from Asian populations is limited. As vitamin D concentrations and metabolism can vary by ethnicity, it is important to find out whether similar effects would be seen in non-Caucasian populations. PT1

SIMIEN SAGA

Selfie monkey named PETA 'Person of Year'

JAKARTA: An Indonesian monkey who shot to fame after it snapped a grinning selfie – and sparked a landmark US copyright case – was named "Person of the Year" on Wednesday by the animal rights group that took on the simian's cause.

The People for the Ethical Treatment of Animals said it was honouring Naruto, a crested black macaque, to recognise that "he is someone, not something".

In 2011, the monkey pressed the shutter button while staring down the lens of a camera set up by British photographer David Slater. The photos went viral and PETA launched a lawsuit claiming the then six-year-old Naruto should be "declared the author and owner of his photograph".

"Naruto's historic selfie challenged the idea of who is a person and who is not and resulted in the first-ever lawsuit seeking to declare a non-human animal a copyright owner, rather than being declared prop-



Naruto FILE PICTURE

erty himself," PETA Founder Ingrid Newkirk said on Wednesday.

The court case set off an international debate about personhood for animals.

Slater maintained he owned the rights to the photos since he engineered its creation. He won the first hearing in California but PETA then appealed.

The case was settled in September with Slater agreeing to donate 25% of any future revenue from using or selling the monkey selfies to help protect the habitat of crested macaques in Indonesia. AFP

Olive Ridley turtles hatch on Versova beach after 20 years

Badri Chatterjee
badri.chatterjee@timesofindia.com

MUMBAI: For the first time in 20 years, at least 80 baby Olive Ridley turtles were spotted at Versova beach on Thursday, making their way to the sea.

Morning walkers and beach clean-up crusaders were pleasantly surprised when they went to Versova beach and spotted the newly hatched turtles waddling into the sea. The hatchlings were first spotted by beach clean-up crusader Afroz Shah and his team at around 9.30am.

Olive Ridelies are sea turtles found in the warm tropical

currents of the Indian and Pacific oceans. An endangered species, they travel thousands of kilometres, with females returning to their original nesting sites within a minimum of two years to lay eggs.

Both marine experts and officials from the state mangrove cell said this is the first time in two decades that hatchlings have been reported on a Mumbai beach.

Shaunka Modi from Marine Life, a group promoting marine life welfare, said: "We counted 80 individuals, saw that they were healthy, and they moved all obstacles in their path as they moved toward the

sea. We kept birds and dogs away from the site. All 80 successfully entered the sea."

Residents believe the turtles have come back because the beach is clean. "It was a delightful sight to see our clean-up efforts bear fruits, as turtles have made their home at Versova beach, probably the only beach in Mumbai where they are present," Shah said.

Over a period of 126 weeks, Shah and other members of Versova Residents Volunteers (VRV) have removed 13 million kg of plastic and other garbage from what was till then the dirtiest beach in the city. "Such an incident has hap-

pened after 20 years. The presence of more turtle nesting sites cannot be ruled out," said Prashant Deshmukh, range forest officer, Mumbai mangrove conservation unit of the state mangrove cell.

"There were reports of turtle nesting near the private beach at the governor's bungalow, but we have never heard of something like this. This is a historical documentation for Mumbai, and citizens like Afroz Shah should be proud that they ensured the beach is clean enough..." said Vinay Deshmukh, marine biologist and former chief scientist, CMFRI.



Witnesses said a total of 80 turtles made their way to the sea. PT PHOTO

CLEANING EFFORTS PAY OFF

From the Editor's Desk

TIME TO WAKE UP?

Do we realise we are running out of water faster than we could have imagined? Water scarcity has turned into a major global crisis. Water has become the most precious commodity and it would not be wrong to say that the Third World War for water may indeed be inevitable. With the United States wanting to pull out of the United Nation's Paris Climate Agreement, the problem becomes more grave. This would mean that US which is the second largest emitter of carbon dioxide might no longer be part of a deal to limit global temperature rise. The growing impacts of climate change are extremely serious and require urgent action.

Over development, population growth and climate change have upset the balance between water use and supply. As a result many parts of the world are increasingly facing threats of severe drinking water shortages. A staggering 844 million people live without access to clean water, that's roughly 1 in 10 people on earth. Nearly 2 million people die from a lack of safe drinking water every year. Water-borne diseases kill more children under the age of five than malaria, measles and HIV-AIDS combined.

Water crisis in Cape Town, South Africa has reached a point where the residents have been warned that they are likely to face "Day Zero". That's the day, previously projected for mid-April but now mid-July, when the city says it will be forced to shut off taps to homes and businesses because reservoirs have gotten perilously low - a possibility, officials now consider almost inevitable.

Water scarcity has become an everyday problem. What we can do is start saving at our homes. If everyone starts using judiciously, it will definitely make a difference. This can be the first step. Every year March 22 is celebrated as World Water Day to focus on the importance of water and the need to preserve it. But we have reached a point where we need to talk about it everyday and make everyday World Water Day. We have come very close to running out of water. Not in the coming 50 years or so but with the current scenario we just have 10 to 20 years.

It's time to wake up!

Diksha Rathore
6th Semester

(statistics have been taken from the internet).

TEACHER'S CORNER

Dr. Shweta Thakur

- Ph. D degree was awarded in the faculty of life sciences (ZOOLOGY), Himachal Pradesh University, Shimla on May 9, 2017.
- A text book on Comparative Anatomy and Developmental Biology by Sharma Publishers, Jalandhar for B.Sc. II semester, Himachal Pradesh University was published in Dec. 2017. It will be valuable resource for both the taxonomists and those interested in general Zoological evolution.

Ms Shivani Chauhan

MA Education Degree was awarded by Himachal Pradesh University in December 2017.

NEW INNOVATION IN THE DEPARTMENT OF ZOOLOGY

Setting up of a Vermicompost Unit

- The site was finalized by the Principal and some faculty members of the college under the supervision of Dr. G.S. Jhobta, District Horticulture Officer, Shimla.

- The construction of the unit started on April 5, 2013, the unit was again revisited by Dr. Jhobta where he guided us about the basic information about the unit

- Measurement of the unit i.e. 35 x 6 x 2.5
- Ten chambers were made each measuring 3 x 6 x 2.5.
- The base was cemented to prevent earthworm from entering into the soil, a slope was given in each chamber for collection of Vermiwash liquid
- Roofing of the chamber was done in order to prevent it from direct sunlight, rain & snow

- On May 6, 2013 Vermiculture bed was prepared by placing sand (2"), saw dust, coir waste, straw trash (3-4"). A layer of cowdung (8-15") spread over the culture bed followed by a layer of Red worms (*Eisenia foetida*). 10-15 kg of kitchen organic waste followed by 4kg of leaves. All these layers must be moistened with water. Lastly, the chamber was covered by gunny bags and the chamber was regularly watered twice a day.



generating around 200 kg of manure annually which is being used for the college beautification purposes.

New technology introduced in the department - A Stereo Zoom trinocular microscope

This stereo zoom scope provides incredibly sharp, clear stereo images with a wider magnification range and larger stage platform. It is versatile enough for educational, clinical and medical studies.



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DEPARTMENTAL ACCOMPLISHMENTS



We are delighted to report that on the occasion of World Honey Bee day an Environment Awareness Programme was organized by Zoology Major students of St. Bede's College Shimla on August 22, 2017. The theme of this awareness programme was "Conservation of Honeybees and their Role in Pollination". The students took an initiative to make the people aware about the silent threat emerging due to honey bees being endangered. Dr. Shweta Thakur, Ms. Anuja Sharma and Mr. Ankush Sharma accompanied the students to respective schools and colleges. The names of schools were as follows: Government Girls Senior Secondary School Portmore, Government Senior Secondary School Phagli, Government Middle High School Theog, Government Degree College Theog and Mahila Mandal Committee Theog. The students demonstrated a programme by interacting and explaining how honey bees are a boon to the society and why there is a need to conserve them.



Portmore School Shimla



The department was pleased to welcome students from Badrinarayan Barewale Mahavidyalaya Jalna. A Student exchange programme on 25 Sept, 2017 in which an interaction among the major students of Zoology department, St. Bedes college and students of Badrinarayan Barewale Mahavidyalaya Jalna was held. Various topics were discussed and presented for eg: Vermicomposting, Deoli fish farm, "Honey Bee a selfless creature" and Biodiversity of Himachal Pradesh.



We are thankful to Himalayan Forest Research Institute, Shimla for inviting our students for a Training Programme on "Application of Mycorrhiza in Forestry and Eco-friendly Management of Insect-Pest and Diseases" that was organised from 7th -8th March, 2018. Eight girls of 4th semester from our college had attended this workshop. Major focus of the training included application of mycorrhizae to raise healthy planting stock and the insect- pests and disease incidences in the nurseries of forestry species and their subsequent management. On the second day, a field trip was organised to Model Nursery, Baragaon, Shimla. It was a wonderful experience for our girls with a lot of information to take back.

The department was delighted to work in collaboration with environment cell, St. Bede's College. A presentation was presented on awareness about conservation of honeybees in the college auditorium on 21 August 2017.

Warm congratulation to the students who had completed their winter training at HFRI, Shimla. It was undertaken by three students of B.Sc. with Zoology w.e.f. Jan. 8, 2018- Feb. 10, 2018



Govt. Middle High School Theog



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CAREERS IN ZOOLOGY

Zoology is that branch of science which deals with the study of the animal kingdom. The branch deals with the structure, embryology, evolution, classification, habits, and distribution of all animals, both living and extinct. For someone who is interested in making a career in Zoology will be required to deal with both the existing, dead and quite possible the extinct species of the animal kingdom. This a great career interest for people who are fascinated with nature and would not mind spending time understanding it. There are several specializations that the students pursuing the field can venture into. There are physiologists that study the metabolic processes of animals, then there are taxonomists who deal with the naming and the classification of the animal species, one can think of becoming embryologist whose only job is to study and focus on the early stages of the animal life. So similarly there are many such options that one can venture into depending on his / her capabilities and interests.

On choosing this career, the person specializing in the field will be referred to as a zoologist. On being a part of this field, one will be carefully have to study the behavior, characteristics, evolutionary trends of the different species of animals and those factors having a direct impact on them.

A zoologist might even get to travel because the nature of his / her job. Channels like National Geographic, Animal Planet, Discovery Channel are in constant need of Zoologists for research and documentaries. Zoologists are also hired for zoos, wildlife services, botanical gardens, conservation organizations, national parks, nature reserves, universities, laboratories, aquariums, animal clinics, fisheries and aquaculture, museums, research, pharmaceutical Companies, veterinary hospitals, etc.

Not only this, few other people who are zoologists by nature: Animal Behaviorists, Animal breeders, Animal Trainers, Animal Caretakers, Animal and Wildlife Educators, Animal rehabilitator, Conservationists, Documentary Maker, Forensic Experts, Lab Technicians, Researcher, Wildlife Biologists, Veterinarian, Zoo keeper, Zoo Curator, and many more.

As well as working as a zoologist, your in-depth knowledge of animal sciences and lab and field work equips you for a career in the environmental, agricultural and pharmaceutical industries.

STUDENT'S ACHIEVEMENTS

Heartiest congratulations to Varsha Thakur

On the occasion of International Youth Day, a group of students from our college presented a play on awareness of AIDS and its prevention in the Gaiety Theatre, Shimla on 29th August 2017. Varsha Thakur of Zoology Department played a key role in it. Former Health and Welfare Minister, Shri Kaul Singh Thakur, awarded the students a token of appreciation.



Warm Congratulations to Rimple Kaul

It was a proud moment for our college when one of our students, Rimple Kaul of 5th semester Zoology Major was the first runner-up in the mega event "Dance Himachal Dance" organised by Divya Himachal on 7th October, 2017. Her dance group "The Obstinado Squad" won the accolade in the senior group category.

She also got selected for a dance performance in the upcoming Bollywood film starring Anil Kapoor, Sonam Kapoor, Juhi Chawla and Rajkumar Rao. The song was shot in Patiala in February, 2018.



JOB OPTIONS

- Ecologist
- Environmental consultant
- Field trials officer
- Marine scientist
- Nature conservation officer
- Physician associate
- Zookeeper
- Zoologist
- Research scientist (life sciences)
- Biomedical scientist
- Environmental education officer
- Marine biologist
- Higher education lecturer
- Environmental manager
- Toxicologist
- Veterinary nurse

One can specialize in various fields within zoology, some of them are listed as follows:

- Arachnology
- Entomology
- Arthropodology
- Apiology
- Cetology
- Anthrozoology
- Conchology
- Ethology
- Helminthology
- Mammalogy
- Neuroethology
- Myrmecology
- Nematology
- Ornithology
- Paleozoology
- Malacology
- Primatology
- Herpetology

Specialisation in any of these field grants a job as a specialist in various environmental, agricultural, veterinary, pharmaceutical industries, conservation organisations, zoological parks, universities, laboratories, etc.

CROSS WORD



ACROSS

1. Their no. Increases during tuberculosis
5. Source of enzyme lipase/ Lipase is secreted from
6. In blood group O there is absence of
10. Father of Zoology
12. Pyramid of _____ is always upright
13. Regulates body temperature
15. Smallest bone in the human body.

DOWN

2. Repeating unit of DNA
3. India's first test tube baby
4. Excretory organ in Ascaris
7. Vaccine for Poliomyelitis
8. Study of viruses
9. First mammal clone
11. Developer of binomial nomenclature
14. Pathogen of swine flu

Patron : Dr. (Sr.) Beena John
Principal
St. Bede's College, Shimla

Staff Editors :
Dr. Shweta Thakur
Ms. Shivani Chauhan

Student Editors :
Diksha Rathore, Titiksha Kamal
Student Co-Editors :
Sandhya Bhatt, Aishna Chauhan

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