St. Aloysius' College (Autonomous) Jabalpur

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DEPARTMENT OF ZOOLOGY

ZOOHUNT 2020-2021

VOLUME - VII ISSUE - I

NEWSLETTER

HOD'S Desk

Dear Readers,
It gives me immense pleasure that the Department of Zoology is releasing the annual newsletter, "ZOOHUNT" - Vol. VII. The newsletter imparts the good insights through the activities being conducted by the Department of Zoology and also helps build the coordination between the students and the teachers as well, which holds a paramount importance in this intensive competitive world. The newsletter also showcases the testimonials of the department.
I am gladsome to the teacher editor, Dr. Runa Paul as well as the student editors - Mr. Abhishek K Singh and Mr. Swastik Kumar for their spirited contributions and endeavours to make this edition enlightening. I extend my heartfelt thanks to all the fellow teachers and the students for the successful divulgation of the newsletter.

Regards,
Dr. Priyanka Sinha

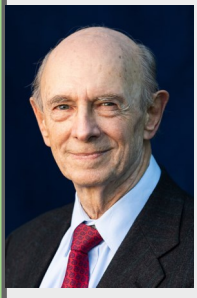
Why Zoology ?

Zoology makes a huge impact on our world through the scientific study of the evolution, anatomy, physiology, behaviour, habitats, and health of animals and humans. It includes diverse approaches such as electron microscopy, molecular genetics, and field ecology.

By studying animals we develop a better understanding of how we, ourselves, function and interact with the world around us. The search for answers to our questions puts us in the incredible position of being able to affect change, empower better choices, and develop solutions for a stronger, healthier

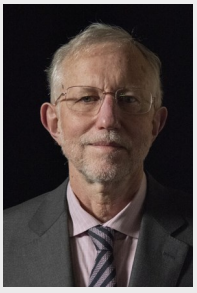
The Nobel Prize in Physiology or Medicine 2020

"The Discovery of Hepatitis C Virus"



Harvey J. Alter (New York, USA)

Michael Houghton (UK)



Charles M. Rice (California, USA)

HIGHLIGHTS

EDITORIAL BOARD

YEAR of INTROSPETION

STUDENTS' ACHIVEMENTS

Kapooraj Sharma, MSc. III Semester was selected as **"One day RJ"** on My FM to share his views on "Mask Awareness" wrt COVID-19

Girish K Pathak, MSc. I Sem secured 1st position in Speech competition at National Online Workshop-JIGYASA-2020

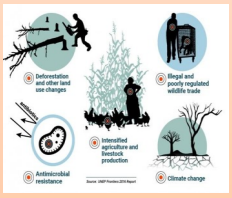
Purva Aditi, BSc. III year secured 2nd position in National Poster (Handmade) Drawing e-Competition. Organised by ESDA, Delhi.

Pallavi Tiwari, BSc. II year has participated in Heatfulness Essay event 2020 organised by SRCM-UNIC.

Vaishanvi Sharma, BSc. III year stood 3rd in 7th MP Shooting Championship.

FACULTY CORNER

Wildlife destruction: Origin of pandemic diseases



Habitat destruction like deforestation and agricultural development on wildland are increasingly forcing disease-carrying wild animals closer to humans, allowing new strains of infectious diseases to thrive.

Scientists say the coronavirus pandemic is the most recent instance of how human degradation of wildlife habitats is linked to the spread of infectious diseases. The total number of disease outbreaks has more than tripled each decade since the 1980s. More than two thirds of the diseases originated in animals and most of those were directly transmitted from wildlife to people.

- Dr. Priyanka Sinha

African catfish posing threat to Indigenous species (*Clarias batrachus*)

Clarias gariepinus, the **African catfish** commonly known as Thai Magur and Moi Fish has been illegally introduced and is posing a threat to the **native catfishes of Indian** rivers. Scientists have termed the species (***Clarias gariepinus***) a main threat, and have said it causes imbalance in the natural trophic level of the ecosystem and deprives other indigenous species of their food and breeding space. The African catfish is popular among fish-culturist since it proliferates easily due to its high fertility and survival rate, can withstand adverse water quality conditions. One African catfish can lay 400,000 eggs in a breeding season, in comparison; the local tigur species (*Clarias batrachus*) has a lower fecundity, in the range of 7,000 to 15,000 eggs.

- Dr. Runa Paul

Precautions for COVID 19

Protect yourself and others around you by knowing the facts and taking appropriate precautions. Follow advice provided by your local health authority.

To prevent the spread of COVID-19:

- Clean your hands often. Use soap and water, or an alcohol -based hand rub.
- Maintain a safe distance from anyone who is coughing or sneezing.
- Wear a mask when physical distancing is not possible.
- Don't touch your eyes, nose or mouth.
- Cover your nose and mouth with your bent elbow or a tissue when you cough or sneeze.
- Stay home if you feel unwell.
- If you have a fever, cough and difficulty breathing, seek medical attention.

- Dr. Daya Shankar Gautam

New purple tree-spider crab species found in India

Leptarma biju, the new species of tree-spider crab, , was found on the pillars of a bridge near mangroves at the mouth of Chithari River in Kerala, India. It's purple and very small — 14 by 13 mm, or 0.6 by 0.5 in. — and is the first of its genus to be found in the country. Crabs are considered "ecosystem engineers" of mangrove ecosystems, as their burrowing aerates the soil and their diets recycle nutrients. Researchers plan to further explore the area for hidden diversity.

- Dr. Manju Dixit

STUDENTS' CORNER

Compare but Positively

It's quite a common slang we use to insult by calling them out as donkey or owl or dog. But inspecting characteristically it's an insult to these animals by comparing them with humans. Donkey is the most hard-working animal as It has the capacity to work 23 hours a day. Owls are the most elegant fliers in whole class aves. Dogs are among the most loyal domestic animals I would suggest that we should think twice before comparing a human to any animal.

- Abhishek Kumar Singh, MSc. III Sem

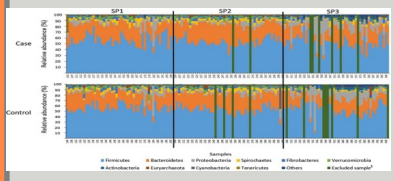
World's Oldest Genome Sequenced from Million-year-old Siberian Mammoths

Scientists have recovered the oldest DNA on record, extracting it from the molars of three ancient mammoths buried in northeastern Siberian permafrost 1.2 million years ago, the oldest full genome known to date. The finding provides new insights into how mammoths evolved and broadens the horizons for understanding extinct species. DNA analysis showed two different genetic lineages of mammoths in Siberia during the early Pleistocene epoch. Study suggests Columbian mammoth was hybrid between Woolly mammoth and Krestovka mammoth. The oldest of the three, discovered near the Krestovka river, was approximately 1.2 million years old. Another, from near the Adycha river, was approximately 1 to 1.2 million years old. The third, near the Chukochya river, was roughly 700,000 years old. By way of comparison, our species, *Homo sapiens*, first appeared roughly 300,000 years ago.

- Swastik Kumar, MSc. III Sem

Faecal bacterial composition in horses with and without free faecal liquid : A case control study

Free faecal liquid (FFL) is a condition in horses which manifests as differential defecation of solid and liquid phases of faeces. The etiology of FFL is currently unknown, but deviances in the hindgut microbiota have been suggested to be of importance. The present study aimed to compare the faecal bacterial composition of farm-matched horses with (case, n = 50) and without (control, n = 50) FFL. Samples were collected at three different occasions. The V3 and V4 regions of the 16S rRNA gene were amplified and sequenced using Illumina sequencing. Also, samples were cultivated for detection of *Clostridioides difficile* and *Clostridium perfringens*. Analysis revealed similar faecal bacterial composition between case and control horses, but an effect of sampling period ($p = 0.0001$). Within sampling periods, 14 genera were present in higher or lower proportions in case compared to control horses in at least one sampling period.



- Kapooraj Sharma, MSc. III Sem

Re-evaluation of human relationship with nature.

It's amazing how the science of zoonotic viruses has literally accelerated right before our eyes. The fact that the pathogen has started to be a problem for humans and the 21st century is solely our fault for breaking into the wildlife and taking their habitat away from them, easily exposing yourself to close contact with them. This year we see our earth with a much cleaner environment, a healing Ozone layer and a rise in the number of animals foraying into and human spaces. Nature and wildlife don't need humans, humans need nature, nature will go on. Planet earth will evolve wildlife in nature which are intrinsic and essential to human survival. As covid-19 is rooted within the animal kingdom and originates from the loss of the buffer between human and wildlife it is time to re-evaluate our relationship with nature.

- Jewel Noronha, MSc. III Sem

SOCIAL DISTANCING IN VAMPIRE BATS HELP DECELERATE DISEASE SPREAD

A new paper in *Behavioural Ecology*, published by Oxford University Press, finds that wild vampire bats that are sick spend less time near others from their community, which slows how quickly a disease will spread. The research team had previously seen this behaviour in the lab, and used a field experiment to confirm it in the wild.

As a pathogen spreads across a population, changes in social behaviour can alter how the disease spreads. Transmission rates can increase when parasites change host behaviour or decrease when healthy individuals avoid sick ones. In certain social insects, sick ones might self-isolate voluntarily or be excluded by their colony mates. A simpler mechanism causing reduced transmission is that infected animals often show sickness behaviour, which includes increased lethargy and sleep, and reduced movement and sociality. This sickness-induced social distancing does not require cooperation from others and is probably common across species.

- Aditi Singh, MSc. I Sem

NEW SPECIES OF CENTIPEDE DISCOVERED

A new species of endemic, troglobiont centipede was discovered by an international team of scientists in the Romanian cave Movile: a unique underground ecosystem, where the oxygen in the air might be half of the amount of what we're used to, yet the sulfurous abounds; and where the animal life only exists because of chemosynthetic bacteria feeding on carbon dioxide and methane.

This hellish ecosystem — where breathing alone could be lethal for most of us — seems to have finally crowned its king. At a size of between 46 and 52 mm in length, the centipede Cryptops speleorex is the largest of the cave's inhabitants known to date.

"The centipede we described is a venomous predator, by far the largest of the previously described animals from this cave. Thinking of its top rank in this subterranean system, we decided to name the species Cryptops speleorex, which can be translated to the "King of the cave," they added.

- Girish K Pathak, MSc. I Sem

Highest Level of Microplastics found in Molluscs among seafood

Researchers from the *Hull York Medical School and the University of Hull* have said mussels, oysters and scallops have the highest levels of microplastic contamination, among seafood molluscs collected off the coasts of Asia were the most heavily contaminated by plastic. The study shows microplastic content was 0-10.5 microplastics per gram (MPs/g)in molluscs,0.1-8.6 (MPs/g) in crustaceans, 0-2.9 (MPs/g in fish). The latest consumption data in the research shows China, Australia, Canada, Japan and the US are amongst the largest consumers of molluscs, followed by Europe and UK. Microplastics have been found in various parts of organisms such as the intestines and the liver. Scientists are still trying to understand the health implications for humans consuming fish and shellfish contaminated with these tiny particles of plastic,which finds its ways into waterways and oceans through waste mismanagement.

- Mansi Tyagi, MSc. I Sem

CRYPTOBENTHIC FISH

WHAT IS CRYPTOBENTHIC?

It means fish that are both benthic (live on near the seabed) and cryptic (hide in crevices or are camouflaged).

WHAT ARE CRYPTOBENTHICS REEF FISHES?

On reefs around the world, fishes display a remarkable abundance and diversity of shapes and colours. Adults fishes typically less than 5cm long that are visually or behaviorally cryptic and live near to or even within the seabed.

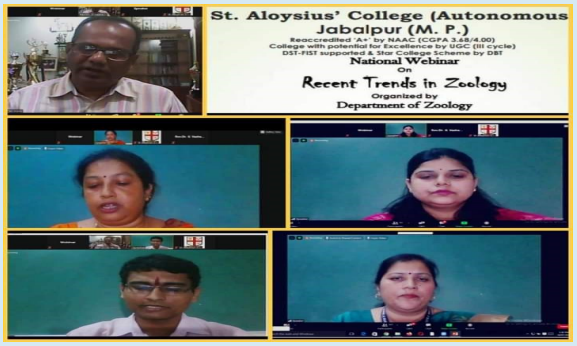
WHERE ARE CRYPTOBENTHICS FISHES FOUND?

Area- Indo- Pacific, Caribbean, Gulf of California, Mediterranean and Atlantic.

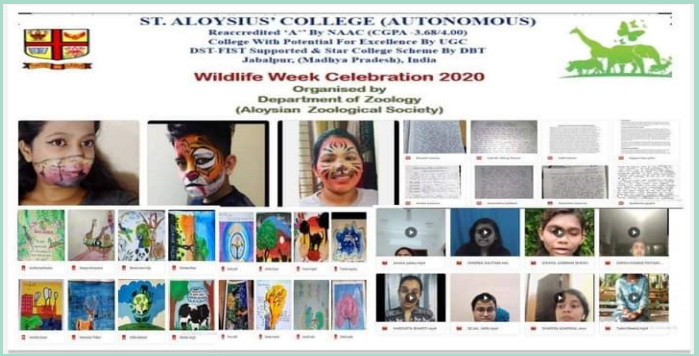
- Sneha Kotwar, MSc. I Sem

DEPARTMENTAL ACTIVITIES

National Webinar on **"Recent Trends in Zoology"** on 18th July 2020.

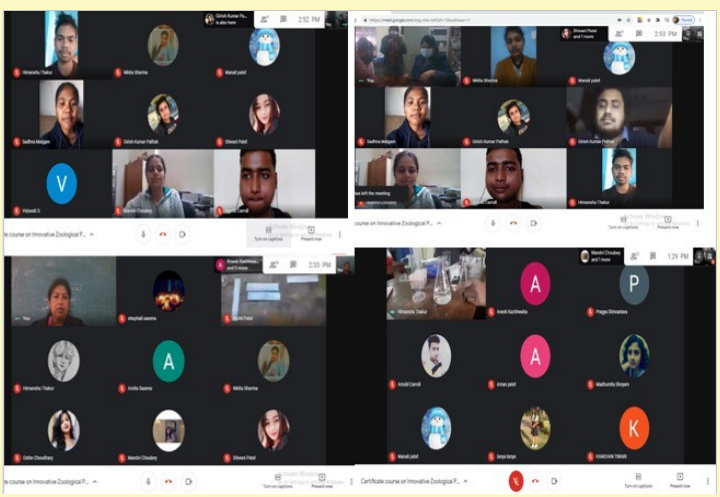


"Wildlife Week Celebration"
1st to 7th October 2020



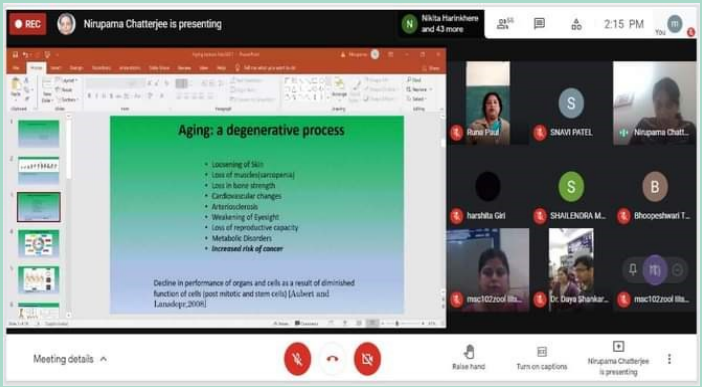
Training on **"Microtomy"**
21st October to 21st November 2020

Certificate Course on
"Innovative Zoological Practices"
4th January to 4th February 2021



“International Day of Zero Tolerance for Female Genital Mutilation”
6th February 2021

Lecture on “Role of Genetics and Epigenetic in the Process of Aging”
by Dr. Nirupama Chatterjee, Principal Scientist
13th February 2021



“National Science Day” Celebrated on 1st March 2021
[Science for the People and People for the Science]