NEWSLETTER

ST. ALOYSIUS' COLLEGE
(AUTONOMOUS), JABALPUR(M.P.)
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DEPARTMENT OF ZOOLOGY

ZOOHUNT(2022-23)

VOLUME IX ISSUE - I

HOD'S DESK

Dear Readers,

It gives me immense pleasure that the Department of Zoology is releasing the annual newsletter,

"ZOOHUNT"- Vol. IX. 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 – Ms. Amita Saxena & Ms. Surabhi Saha 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

ZOOLOGY

Zoology is both descriptive and analytical. It can be approached either as a basic science or as an applied science.

A worker in basic zoology is interested in knowledge of animals for its own sake without consideration of the direct application of the information gained.

In contrast, workers in applied zoology are interested in information that will directly benefit humans and animals (medicine, for example).

Nobel Prize for Medicine 2022

Sequencing the genome of the Neanderthal and discovering the hominin Denisova

Svante Paabo

HIGHLIGHTS

Editorial Board

FACULTY CORNER

'Climate change affecting abundance of Indian oil sardine and mackerel

Climate change is affecting distribution patterns and abundance of many resources such as Indian oil sardine and mackerel in Indian waters, said J K Jena, Deputy Director General of Indian Council of Agricultural Research (ICAR). J K Jena presenting plans and perspectives on marine fisheries research of India at the global symposium on innovations in fishing technologies for sustainable and resilient fisheries, he said that stock and abundance of Indian oil sardine and mackerel was heavily affected by the climate crisis.

"Marine scientists of the country are working on this", he said, adding that collaboration and cooperation among the countries and research institutes are necessary to improve the sector. He further said that Indian scientists are also working for a healthy and sustainable marine fish production through measures such as deploying artificial reefs in the sea besides sea ranching. "Around 20 per cent increase in fish production was noticed in areas where artificial reefs were deployed", he added.

J Balaji, Joint Secretary, Fisheries said the country focuses on providing low-cost technology to fishermen. "Only one third of the total fish production in the country comes from marine fisheries. Giving technology access to the country's fishermen is one of the prime tasks of the government", he said.

By – Dr. Priyanka Sinha

America's crocodile-like fish found in Bhopal, fishermen in shock

People of Bhopal are surprised to see the fish with crocodile-like jaw and power to attack humans which is the native of America. This fish has been found in the big pond located in Bhopal, the capital of Madhya Pradesh. The weight of this crocodile-like jawed fish is about two and a half kilos and its length is one and a half feet. The name of this crocodile-like fish is Alligator Gar. In the language of science, it is also called crocodile fish. Experts say that crocodile fish are basically found in freshwater lakes in North America. This fish is also reared in the Indian state of Kerala. Since these fishes are of carnivorous nature, their teeth are big and sharp. The special thing is that this fish can live up to 20 years and can be up to 10 feet long. It is said that this fish can even kill humans. According to media reports, cases of this fish attack keep coming up in North America. However, in Kerala, the cost of a 5-inch baby fish ranges from Rs 1,000 to Rs 2,000.

By – Dr. Runa Paul

FACULTY CORNER

Cytotoxicity of Paper Cups & Covid-19 Pandemic

The use of Paper cups has been increased in modern era. These are used for the service of liquid drinks like tea, cold drinks water etc. Paper products (cups & Plates) have been used since last many years as well as during COVID lockdown period also for the service of needy people in the form of wrapping food material worldwide. These products are coated with chemicals to make them water proof. It has been found through in vitro study of cytotoxicity of Paper cups on Human Peripheral blood lymphocytes using MTT assay that these paper cups were found to be toxic as compared to controls in our study. We suggest that use of paper cups should be avoided in wrapping edible hot food and drinking items as it may be harmful to the health and our immunity.

Dr. Daya Shankar Gautam

In Japanese waters, a newly describes anemone lives on the back of a hermit crab

A newly described anemone species has been found off the coast of Japan and appears to live exclusively on the shells of one hermit crab species. First-of-their-kind video recordings of the hermit crab and anemone duo show the hermit crab moving to a new shell and spending more than 40 hours poking, peeling and dragging the anemone to come along. Researchers believe the hermit crab and anemone are in an obligate symbiotic relationship, or that they need each other to survive. The anemone eats falling debris and protects the hermit crab from parasites and predators, and in turn, gets to hitch a ride to fresh feeding ground

By – Dr. Manju Dixit

Pet rabbits need freedom to exercise

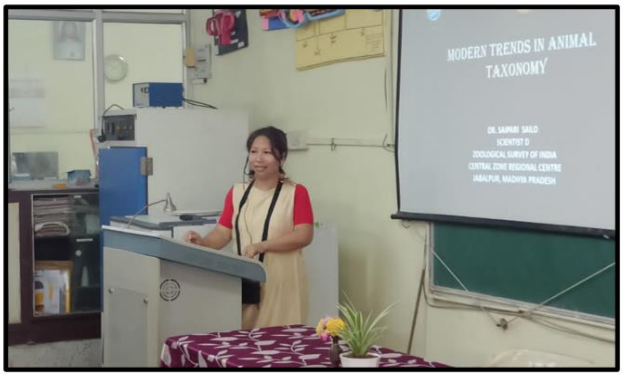
Pet rabbits have higher levels of the stress hormone -- corticosterone -- and show activity rebound when kept in small hutches with restricted exercise, new research led by the University of Bristol Vet School has found. The research highlights the importance that pairs of pet rabbits should have the freedom to exercise outside their home enclosure even when they are kept in hutches larger than the traditional size. The study showed rabbit pairs were more active when run access was restricted to three hours. Irrespective of the hutch size, physical activity including play jumps increased significantly when the pairs with restricted access were released into the run. The researchers suggest this activity rebound demonstrates the rabbits' need to move every day, and their welfare is compromised when they can only do so at midday.

DEPARTMENTAL ACTIVITES

International Tiger Day celebrated on 29th July 2022

Guest Lecture on Modern Trends of Animal Taxonomy on 17th Sseptember 2022

By – Dr. Saipari Sailo Scientist D Zoological Survey of India,



Inaugration of AloysianZoological Society

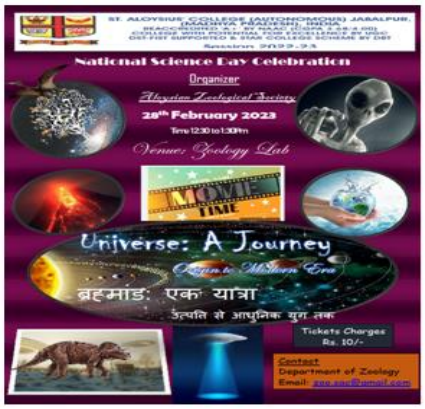
A visit to Dumna Nature Reserve, Jabalpur on 1st October 2022, was organised for PG Zoology Students to mark the commencement of Wildlife Week . The objective of the visit was to study the diversity of animals species found in the reserve

Some Glimpses of the Educational Visit

Red Ribbon Club - World AIDS Day Awareness programme conducted in collaboration with Deptt of Zoology on 1st Dec 2022

Two Days Workshop on Sericulture:
Guest Lecture and Farm Visit held on 20th – 21st January 2023

National Science Day Celebration on 28th February – 1st March 2023



Educational Visit - Phoenix Poultry Farm Gosalpur, Jabalpur on 4th March 2023

Awareness programme on Lifestyle for Environment (Energy Conservation) conducted by Zoological Survey of India , Jabalpur on 20th March 2023

Certificate Courses

CERTIFICATE COURSE IN "MICROTOMY"

16th AUG – 16th SEPT 2022 CREDITS - 2 , DURATION – 30HRS

CERTIFICATE COURSE IN INNOVATIVE ZOOLOGICAL PRACTICES

9th JAN -23rd JAN 2023 CREDITS - 2 , DURATION – 30HRS

STUDENT'S CORNER

AMAZING FACTS

1. One species of jellyfish is immortal. It can revert back to its child state after having become sexually mature, and therefore never dies.

2. A snail can sleep for three years at a time.

3. There are 1 million ants for every human in the world.

4. A pig's orgasm lasts 30 minutes. Lucky pigs.

5. A blue whale weighs as much as three elephants and is as long as three Greyhound buses.

6. A bat can eat up to 1 thousand insects per hour.

7. Octopuses have three hearts.

8 Sharks kill fewer than 10 people per year. Humans kill about 100 million sharks per year.

9. Wild dolphins call each other by name. "Oi, Flipper!"

10. Elephants have a specific alarm call that means "human".

11. Dogs' sense of smell is about 100, 000 times stronger than humans. However, they have only one-sixth our numbers of taste buds.

12. Animals with smaller bodies and faster metabolism such as chipmunks and squirrels see in slow motion.

13. The now extinct colossal penguin stood as tall as 2.03 metre basketball legend LeBron James.

14. The male Gentoo and Adelie penguins "propose" to females by giving them a pebble.

15. Polar bears have black skin and see-through fur.

- *Amita Saxena, M.Sc. IV Sem*

'NEW ELECTRIC EEL SPECIES PRODUCES STRONGEST ANIMAL SHOCK'

What was once known as a single species of electric eel is actually three different species, with one of the newly classified organism producing the highest voltage discharge of any known animal, according to a study. The research, published in the journal Nature Communications, offers new insights into the origin and production of strong electric discharges in fishes.

Electric eels belong to the knife fish family, and are closely related to catfish and carp than to other eel families, the study found. While some of its close relatives are capable of producing a weak electric field for communication and navigation, the researchers found that one of their newly discovered species can produce up to 860 volts -- the strongest discharge by any known animal.

The researchers mentioned that the strongest shock previously recorded was 650 volts. "The electric eel, which can reach 2.5 metres in length, is the only fish that produces such a strong discharge; it uses three electric organs. The shock is used for defense and predation," said Carlos David de Santana, an associate researcher at the US National Museum of Natural History (NMNH) and first author of the study.

Pratibha Patel M.Sc II Sem

KNOW THE NEW ZOOLOGY WORLD

THE MAGICAL FAIRY WRASSE

This rainbow-coloured fish is called *Cirrhilabrus finifenmaa* or rose veiled fairy wrasse and it was found in the Maldives reefs. It can live 160 to 500 feet beneath the ocean's surface in unexplored coral ecosystem dubbed the twilight zone.

Pragati Pathak, M.Sc. IV Sem

Gymnures (*Podogymnura intermedia* and *P. minima*), Philippines

The specific epithet 'intermedia' is derived from the Latin word 'intermedium', translating to 'intermediate'. It was used for this new hedgehog-like as the species is intermediate in size between *P. auroespinula* (the largest member of the genus) and the other two species, P. truei and P. minima. It is also intermediate in the amount of golden colour in its fur. "*P. truei* and *P. minima* have dark fur with tiny golden sparkles, *P. intermedia* has golden streaks in the fur, and *P. aurospinula* has long golden hairs mixed into its pelage," says Heaney. "They are all pretty cute animals.

Chhavi Pillai B.Sc II Sem

Omorguskhandesh

A new beetle species has been discovered in India, according to a paper published in the New Zealand-based journal Zootaxa. The bug was discovered by scientist Aparna Sureshchandra Kalawate, working with the Zoological Survey of India, Western Regional Centre (WRC), Pune. Omorguskhandesh is necrophagous and is also called a keratin beetle. During the decomposition of a body, the final successional stage is with the arrival of the keratin feeders, thus their importance in forensic science.

The new species belongs to the Trogidae family. The beetles of this group are sometimes called hide beetles as they tend to cover their body under the soil and hide. They are usually black or grey and encrusted in the dirt. The new species is morphologically most similar to Omorgus tremulous.Omorguskhandesh is mainly associated with bird and mammal nests or burrows and the details of their life histories are poorly known. They feign death upon being disturbed and become motionless.

Madhumita Shoyam, M.Sc. II SEM

Ancient bird with T. rex-like skull discovered in China

A 120-million-year-old bird fossil from China has some rather unusual dinosaur-like features in its otherwise standard avian skeleton, including a weirdly T. rex-like skull.

About 120 million years ago, a fearsome bird with a skull that looked eerily similar to that of a Tyrannosaurus rex flew the early Cretaceous skies, hunting for a meaty meal to gobble down, a new study finds. A newly described specimen of this previously unknown species provides clues about how birds began to finalize their evolutionary divergence from the rest of the dinosaurs.

Modern birds are descended from dinosaurs, making them the only dinosaur lineage that survived the planet-shaking asteroid impact that wiped out the rest of their kind around 66 million years ago.

But exactly how birds evolved from the rest of the theropods — a bipedal group with hollow bones and three toes or claws on each foot, which includes avian dinosaurs' as well non-avian dinosaurs, such as raptors like Velociraptor — is still unclear.

Researchers unearthed the new species, which they named Cratonaviszhui, at a fossil site in China. The fossil's age suggests C. zhui likely appeared somewhere between the earliest known bird, Archaeopteryx, which lived about 150 million years ago during the Jurassic period, and the Ornithothoraces, a dinosaur-era group which had already evolved many traits of modern birds.

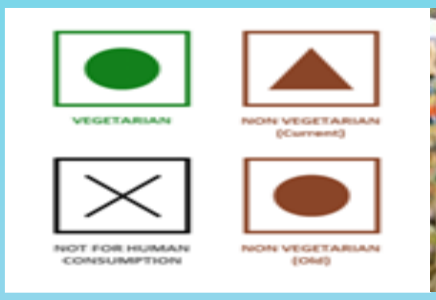
Himanshu Thakur, M.Sc. IV SEM

A New Species Discovered 2022

Sela macaque has a tail longer than the Tibetan macaque, Assamese macaque, Arunachal macaque and the white-cheeked macaque but shorter than the bonnet macaque and toque macaque. Sela macaque belongs to the sinica species-group of Macaca, but it differs from all other members of this group through attributes such as brown collar hair and muzzle, thick brown hair around the neck and the absence of chin whiskers. Sela macaque is a major cause of crop loss in the West Kameng district of the State.

Isha Sambath, M.Sc. II Sem

Food Safety: A Consumer's Right and Duty



As consumers of the 21st century, which is continuously growing and developing, it is our right to have access to quality and safe food items that provide us with all essential nutrients required for proper functioning of the body. Due to the growing demands of food material there has been an increase in adulteration in almost all the edible products that are sold in the market. Some of these adulterants are merely a means to increase the quantity of the original product while others are harmful and can cause serious health problems if consumed for a long time. Hence, as a vigilant citizen and consumer of our country, it is very important to check for adulterations and other indicators before buying any food item. They are as follows:

1. *Expiry date: the first and foremost thing to do before buying any item is to check the back of the packaging and look for manufacturing date and expiry date. Many shopkeepers and retailers try to sell the expired products to clear off their old stock and hence the buyer may get fooled if he/she doesn't check these dates.*
2. *Look for a green dot or a brown triangle that is present on the packaging label. A green dot inside a white square indicates that the food item is vegetarian and if it is a red dot/brown triangle, then it means it is a non-vegetarian product derived from an animal source. If there is a cross sign in grey colour it means that the item is not safe for consumption.*
3. *Check the ingredient list for items that may be allergic for you or harmful for your specific health condition. For example, if there is nuts or oil derived from nuts present in the food item, it might affect you if you suffer from nut allergy. Similarly, if you are lactose intolerant, look for milk or its derivatives in the ingredient list.*
4. *Some products mention on the labels that they are diabetic safe but make sure to check the ingredient list and nutritional value table for a detailed information about the quantity of sugar present and the type of sugar (sucrose, fructose, lactose, etc.) as the labels can often be misleading.*
5. *Check the packaging material well. If you are buying an item which is in a cardboard carton, notice if the carton is perfectly cuboid or has it swelled up due to excess gas formation. If it has blown up, then do not buy. Similarly, if the seal is broken in jars, lid is loose of bottles and caps are not sealed, refrain from buying such items and choose another jar or bottle which is perfectly sealed.*
6. *Lastly, check the MRP (maximum retail price) of the product and pay the same amount of money to the shopkeeper. The shopkeeper should not charge you more or less than mentioned in the MRP value in any case as it is against the law.*

- ***Surabhi Saha, B.Sc. II Year***

Applied Zoology –Scope & Importance

Animal-related industries produce food (meats and dairy products), hides, furs, wool, organic fertilizers, and miscellaneous chemical by-products. There has been a dramatic increase in the productivity of animal husbandry since the 1870s, largely as a consequence of selective breeding and improved animal nutrition.

The purpose of selective breeding is to develop livestock whose desirable traits have strong heritable components and can therefore be propagated.

Heritable components are distinguished from environmental factors by determining the coefficient of heritability, which is defined as the ratio of variance in a gene-controlled character to total variance.

Another aspect of food production is the control of pests. The serious side effects of some chemical pesticides make extremely important the development of effective and safe control mechanisms.

Animal food resources include commercial fishing. The developments of shellfish resources and fisheries management (e.g., growth of fish in rice paddies in Asia) are important aspects of this industry.

- ***Shristi Mishra B.Sc II SEM***

Nemateleotris lavandula

On March 2023, Scientists from the Australian Museum Research Institute, the University of Sydney, and the Museum and Art Gallery of the Northern Territory have identified a new species of the genus Nemateleotris. The lavender-blushed dartfish, or *Nemateleotris lavandula*, was discovered in the western and central Pacific Ocean.

Nemateleotris currently includes five recognized species native to the Indian and Pacific oceans. The lavender-blushed dartfish, *Nemateleotris lavandula*, is the newest addition to this genus. The species was previously mistaken for the Helfrich's dartfish, *Nemateleotris helfrichi*.

The molecular analysis revealed a difference of 1% in sequence data between both species, in addition to differences in morphometric measurements, live and preserved coloration details. *Nemateleotris lavandula* is small in size, measuring only 5 cm (2 inches) in length. The species has lavender to lilac body that becomes increasingly pale toward the caudal peduncle.

It is widespread across much of the western and central Pacific Ocean, including Yakushima Island in southern Japan, the Caroline Islands, the Marshall Islands, and the Mariana Islands, among others.

The lavender-blushed dartfish is usually found in seaward sand channels and rubble pans adjacent to coral reefs at depths between 25- 100 m (82-328 feet). It is most commonly observed as single or paired individuals, with juveniles sometimes in small groups, often mixed with other plankton feeders.

- ***Shruti Agrawal, M.Sc II Sem***

Darjeeling Zoo

Darjeeling zoo recognised as best in India. The Padmaja Naidu Himalayan Zoological Park (PNHZP) in West Bengal's Darjeeling has been adjudged the best zoo in the country, while Kolkata's Alipore Zoological Garden has secured the fourth position. A zoo directors' conference was held in Bhubaneswar on September 10 and the Central Zoo Authority released the ranking list in the Odisha capital.

There are around 150 zoos across the country. As per the list, the Arignar Anna Zoological Park in Chennai has secured the second position, followed by the Sri Chamarajendra Zoological Gardens in Mysore, Karnataka.The Red Panda is one of the top attractions of PNHZP, besides others such as the Himalayan Black Bear, Snow Leopard, Goral and Himalayan Thar.

- ***Shephali Saxena, M.Sc. IV Sem***

New species of burrowing frog, *Synapturanus danta.*

In the Peruvian Amazon, herpetologists followed a distinctive frog call to one of the rarest habitats in the forest, the Amazon peatlands.

There, researchers dug up a new species of burrowing frog, *Synapturanus danta*. The frog has been nicknamed the tapir frog for its distinctive-looking snout.

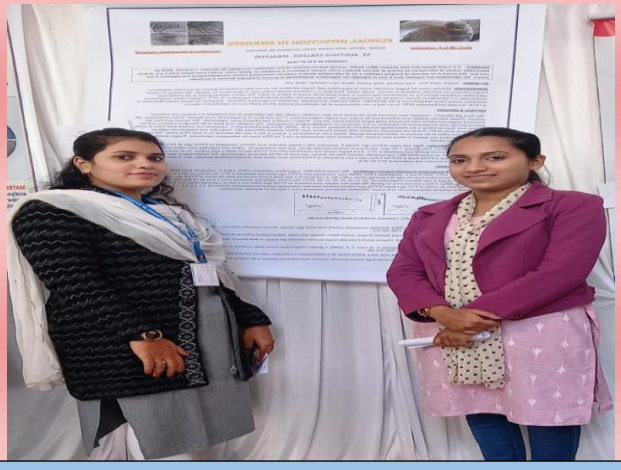
A newly described burrowing frog from the Peruvian Amazon. Image courtesy of Germán Chávez.

-Taraz Farhat B.Sc II Sem

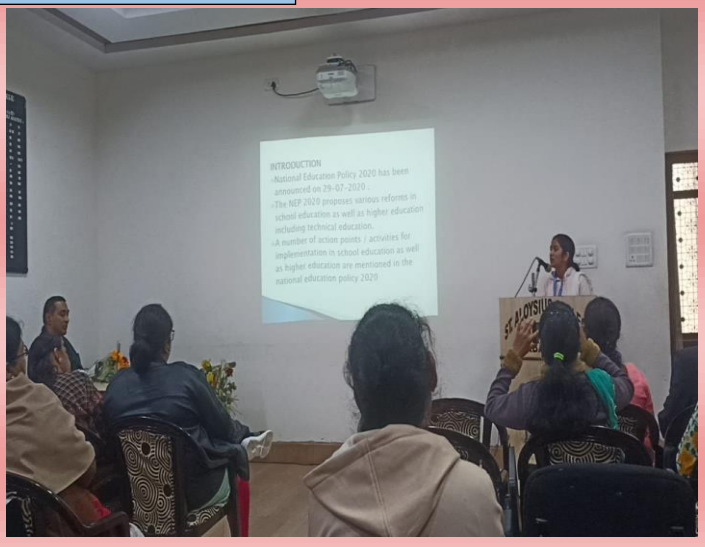
Students Achievement

Kratika Agrawal secured 3rd prize in Poster Competition inNational Workshop at Govt. Model Science College; Jabalpur held on 5th -9th Dec 2022

Hridya.V& Gayathri Kumar (B.Sc III Year) won 1st prize in oral paper presentation in National workshop at Govt. Model Science College, Jabalpur held on 5th -9th Dec 2022



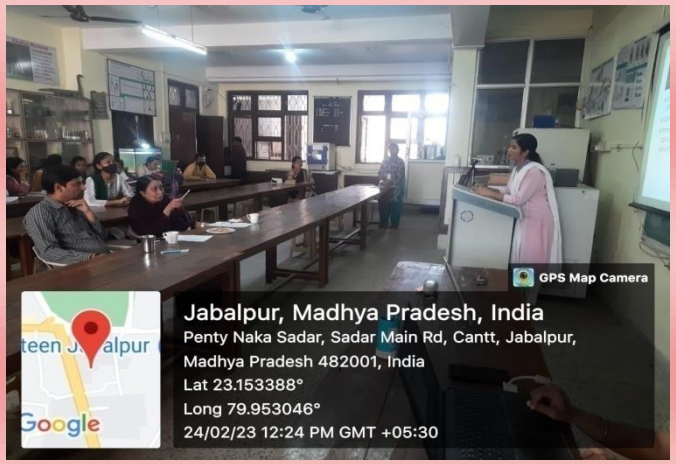
Uzma Koushar & Sheetal (B.Sc III Year) presented poster on the topic " Fungal infection in Shrimps" in National workshop at Govt. Model Science College, Jabalpur held on 5th -9th Dec 2022



Ms. Amita Saxena of M.Sc IV Sem Presented research paper in National Seminar on NEP 2020 : A Powerful Tool to Re-establish Bharatas Vishwa Guru 27th – 28th Jan 2023

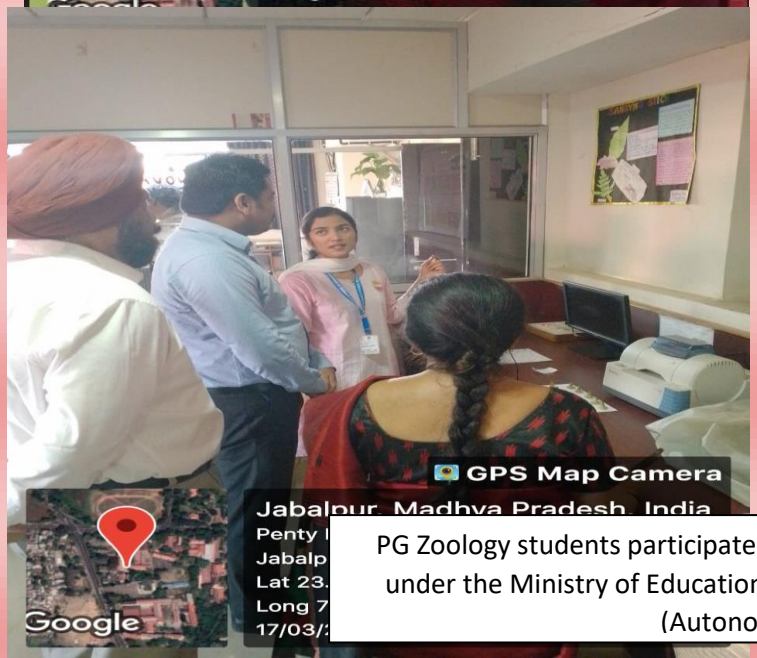
Ms. Pragati Pathak of M.Sc IV Sem Presented research paper in National Seminar on NEP 2020 : A Powerful Tool to Re-establish Bharatas Vishwa Guru 27th – 28th Jan 2023

Ms. Amita Saxena , Namita Mohanlal Verma & Shephali Saxena of M.Sc. IV Sem presented research paper in National Seminar at Mahatma Gandhi Chitrakoot Gramodaya Vishwavidyalaya Chitrakoot, Satna M.P. on 8th– 9th February 2023.



PG Students of Zoology participated and presented Research Paper on 24th Feb 2023 conducted by Research and Development Cell, St. Aloysius College (Autonomous), Jabalpur

Ms. Upadhi Tekam, Amita Saxena & Pragati Pathak of M.Sc IV Sem Presented research paper at International Conference (3rd – 4th March) at St. Aloysius' Institute of Technology, Jabalpur in which Pragati Pathak of M.Sc IV Sem secured 3rd position in oral preseentation (Science field).



PG Zoology students participated and gave the presentation on start-up under the Ministry of Education organised by DIC, St. Aloysius' College (Autonomous), Jabalpur