



ZOOLOGY BUZZ

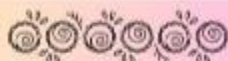
Department of Zoology

St. Bede's College Shimla-2

2023-24

Vol.7

ZOOLOGY HIGHLIGHTS



• Dihydroartemisinin inhibits plasmid transfer in drug-resistant *Escherichia coli* via limiting energy supply



• Abomasum: It is a The fourth or digestive stomach of a ruminant, which leads from the third stomach omasum.



• Anthropology: It is the study of human species in all its aspects including evolution, culture and population dynamics.



• Antiemetic: It is a substance which inhibits vomiting.



• Hysteria: It is a psychological disorder, in which a person has physical complaints when no physical cause can be found.



Inside the newsletter :

- Zoology highlights
- Editor's Note
- Articles and puzzles
- Departmental activities
- Students' achievements
- Teachers' achievements

Noble Prizes

THE NOBEL PRIZE
IN PHYSICS 2023



Pierre Agostini, Ferenc Krausz, Anne L'Huillier

"for experimental methods that generate attosecond pulses of light for the study of electron dynamics in matter"

THE ROYAL SWEDISH ACADEMY OF SCIENCES

• The royal Swedish Academy of Sciences has decided to award the 2023 Nobel prize in physics to Pierre Agostini, Ferenc Krausz, Anne L'Huillier for experimental methods that generates attosecond pulses of light for the studies of electron dynamics in matter.

THE NOBEL PRIZE
IN PHYSIOLOGY OR MEDICINE 2023



Katalin Karikó, Drew Weissman

"for their discoveries concerning nucleoside base modifications that enabled the development of effective mRNA vaccines against COVID-19"

THE ROYAL SWEDISH ACADEMY OF SCIENCES

• The 2023 noble prize in physiology or medicine has been awarded to Katalin Karikó and Drew Weissman for their discoveries concerning nucleoside base modification that enabled the development of effective mRNA vaccines against COVID-19. During the early 1990s, when Katalin was an assistant professor at the university of Pennsylvania, she remained true to her vision of realising mRNA as a therapeutic despite encountering difficulties in project. A new colleague of Karikó at her University was the immunologist Drew Weissman. He was interested in dendritic cells which has important functions in immune surveillance and the activation of vaccine induced immune response.





Editor's Note



Dear [Zoology buzz] readers,

Welcome to another exciting edition of our [2023-24] newsletter! In this issue, we delve into the fascinating world of zoology, exploring the latest discoveries, research breakthroughs, and captivating stories from the animal kingdom.

Our contributors have worked tirelessly to bring you a diverse range of articles, from in-depth studies on [specific animal species] behavior to the exploration of cutting-edge technologies shaping the future of zoological research.

As we navigate the ever-evolving landscape of zoology, we encourage you to immerse yourself in the wonder of the natural world. Whether you're a seasoned zoologist or a curious enthusiast, there's something for everyone in this edition.

Thank you for being part of our vibrant zoology community. Your passion for the subject fuels our dedication to delivering high-quality content that educates and inspires.

Khushboo & Samriti
BSc. 3rd year
Editor-in-Chief, [Zoology Buzz]



Venomous Beauties

- Latin name: *Calliophis bivirgatus*
- Habitat: Forested areas of Southeast Asia
- Size: Up to nearly 6 feet long
- Diet: Primarily other snakes
- Colorful feature: These snakes have beautiful sky-blue underbellies and black upper bodies. They also have bright scarlet heads and tails.
- This strikingly beautiful snake is one of the most memorable on the list. But don't be fooled by its beauty; it's a highly venomous snake that has sometimes caused death in humans. But interestingly enough, its venom works differently than that of most snakes. It blocks sodium channels and causes near-instant paralysis.



Blue Malayan Coral Snake



Rough-Scaled Bush Viper

- Latin name: *Atheris hispida*
- Habitat: Primarily forested areas of Central Africa
- Size: Males are up to 29 inches long, while females are up to 23 inches long
- Diet: Small mammals, frogs, lizards, and sometimes birds
- Colorful feature: These snakes are usually some shade of greenish yellow. As you can see in the picture, these snakes are often a combination of colors.
- These odd-looking snakes are sometimes called hairy bush vipers, as their spiny scales make them look like they're covered in hair. They are highly venomous snakes whose bites have the ability to kill a human. However, the exact toxicity varies considerably based on location, the individual snake, and even the weather

- Latin name: *Boiga dendrophilia*
- Habitat: Typically lowland rainforests of Southeast Asia
- Size: On average, 6-8 feet long
- Diet: Small mammals, birds, and reptiles
- Colorful feature: This beautiful snake's bumblebee-like colors definitely draw the eye; its body is primarily black, but it is ringed with bright yellow bands.
- Though it isn't common in captivity, the gold-ringed cat snake (also called the mangrove snake) is sometimes kept by experienced reptile keepers. It's a venomous snake, but its venom isn't thought to be strong enough to kill a person. This snake isn't an ideal animal to get if you want a handleable snake, as it's somewhat skittish and tends to strike when frightened.



Gold-Ringed Cat Snake

Marek's Disease



Marek's Disease is a highly contagious (spreadable) viral disease of poultry, especially chickens. Marek's Disease is known to cause tumors which can lead to paralysis (among other clinical signs) and death. While there is no treatment, vaccination represents an excellent example of disease control. While Marek's disease is typically considered a disease of young chickens (clinical signs typically appear between 6-30 weeks of age) older chickens are also susceptible.

Unfortunately, the only way to diagnose Marek's Disease is via a necropsy by a veterinarian. That being said if you have a young bird (vaccinated or not) that has paralysis it is likely due to Marek's. While there is no treatment, there are ways to prevent Marek's Disease. The two pillars of a good Marek's Disease prevention program are:

Follow an effective vaccination program. Vaccines must be administered on the day the chicks hatch or in ovo (embryo inside the egg) during egg incubation in order to be most effective. While vaccination is not perfect, if given correctly the vaccine is highly effective at protecting your chickens against disease. Make sure the feedstore or hatchery you purchase your chicks from vaccinate at day of age. Alternatively, you can vaccinate your own birds at day of age. You can easily purchase vaccine at your feedstore or on-line.

Remove all feather dander when introducing new chicks or birds to your coop. Because the feather follicles are known to carry the virus, removing the feather dander is a great way to reduce the amount of virus in the environment and hence reduce the overall amount of virus your chickens might be exposed to. This is typically done in your coop before moving any chicks from your brooder to the coop. Vaccinated birds or not vaccinated birds, this is very important.

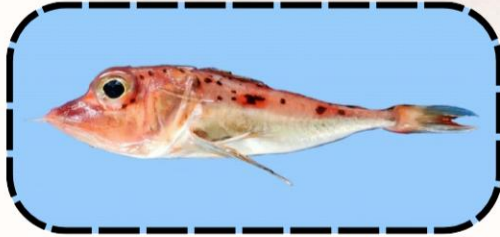
Exploring the waters

The scientists of the Zoological Survey of India (ZSI) have discovered a new species of a vibrant orange coloured deep water marine fish from Digha Mohana in West Bengal.

The new species, commonly known as gurnards or sea-robins, belongs to the family Triglidae. Named *Pterygotrigla intermedica*, it has characters quite similar to species like *Pterygotrigla hemisticta*, said Anil Mohapatra, a senior scientists and in-charge of ZSI's Estuarine Biology Regional Center, Gopalpur in Odisha, who led the discovery of the new species.

It is the fourth species of *Pterygotrigla* genus reported in India so far, he said, and there are a total 178 species of the Triglidae family worldwide.

The species was caught by a local fisher on October 20, 2018, along with other fishes. The researchers collected a total of 24 specimens from the Digha Mohana fishing harbour during their study of by-catch components along the northern part of the east coast of India.



After thorough examinations, the specimens of this fish were found to be very distinct from other gurnad species in various aspects such as snout length, shape of the internuchal space and size of the cleithral spine, Mohapatra observed.

The detailed characteristics of this new fish species were published in *Thalassas*, an international marine science journal on September 20, 2023.

He said they have preserved 23 at the ZSI's Estuarine Biology Regional Center, Gopalpur and one specimen in the Marine Fish Section, Kolkata for further study.

The scientists found a distinct pectoral-fin with black membranes on the inner surface, white posterior margin and three small white spots basally in fin, each ray creamy white on the new species, the author said.

It had a combination of characters like a long opercular spine and a very short cleithral spine; lateral-line, gill rakers on upper limb and 12-13 on lower limb of first gill arch and a large black blotch between the 4th and 6th spines of the first dorsal fin, the scientists wrote.

Kingdom Animalia

R M C M Q T Y G Y J F O F N D U N D Y L P V J S
M Q E M F E E C H I N O D E R M A T A A K A X I
U M P E A Z Y T L E N M U V K Q D S Q J E G X M
R T H B Y D R B K F P L D L B E E Q Q P A K P U
F P A X D Z O P T X B Z U P A H X M T O W G C A
F U L R Y H K P Q S D P W M T E E G M R C X I R
E M O Q R L Q Y O J V S S N N E J C E I E C A O
B O P M B Z O R G R O G I F M L C T A F H C N H
F S O W O Y Z G P K H M O S E J Y E D E B O H P
A U D M T L Q Z I N L T N D T X D N O R M G K O
U N A A S K L W C E I S R R A M L O P A A M S C
R L B B X K L U H T Y N R A R E X P O F C O M A
R J K I P C Z Y S Z I B P R B M G H R D Z M U L
T W E D V J T Z Z K G Q S V A D A O T R E S F P
F F A I R A D I N C X V U E T R D R S U M L O Y
X X F U L H L T L B Q M M Q R M I A A L T J Z L
S Q P P T H M V M B M G C G E H L L G A S R G O
H S X X K R J N I R B N R F V A E H U H B K M P
H D C G G M Q E E A J Q N Q N J N Z T V Q A N Q
J S J Q J R E X M M I I A V I A N A W J K O O E
Q D E S T W S U V S E C Y Z B C A V E P P S Y W
H X Y N A A P W R G B R M V I L I N N N N W U E
T Z A D O P O H P A C S T X H E S E I J A C O C
T C L E X J Q K P D X Y C A Q G Y B C S Z P U R

Invertebrate

Scaphopoda

Ctenophora

Nemertea

Bivalvia

Arthropoda

Porifera

Platyhelminthes

Gastropoda

Mollusk

Polyplacophora

Cnidaria

Annelida

Cephalopoda

Echinodermata



Some nemonics

Glycolysis

Goodness Gracious, Father Franklin Did
Go By Picking Pumpkins (to) Prepare
Pies

Types of WBCs

Please-Polymorphic neutrophils
Let-Lymphocytes
Me-Monocytes
Eat-Eosinophils
Bananas-Basophils

Geological periods

Camels-Cambrian
often-Ordovician
sits-Silurian
down-Devonian
carefully-Carboniferous
perhaps-Permian
their-Triassic
joints-Jurassic
creak-Cretaceous



FUN FACTS



HUMMINGBIRD

Hummingbirds are the only birds that can fly backwards. The name hummingbird comes from the humming noise their wings make as they beat so fast.

PANDA

Pandas don't have particular sleeping spots, they simply fall asleep wherever they happen to be.



POLAR BEAR

Polar bears are not white. Their fur is actually transparent.

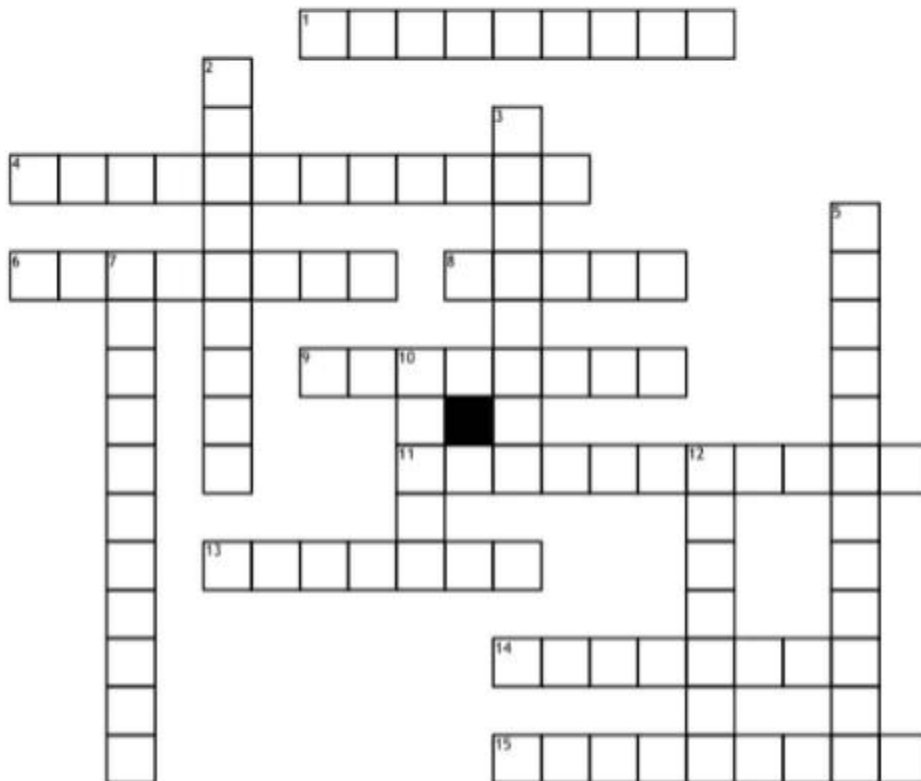
OSTRICH

An Ostrich's eye is bigger than its brain. Ostrich can't fly, but no birds can match their speed on land.





ZOOLOGY CROSSWORD



Across

1. The fluid matrix that fills the cell.
4. It is the power house of the cell.
6. It is the new term for the word "animalcules"
8. Are made up of saccules that package up thing to be transported around the cell.
9. They are bound by single membrane and small organelles.

11. He is the Father of Microbiology.

13. He is the German zoologist who discovered that animal parts are made of cell.

14. Are larger and fewer in number.

15. It is the part of animal cell that occurs in cytoplasm.

Down

2. It controls what giving in and out of the nucleus

3. It is the site for protein synthesis where the translation of the RNA takes place.

5. Lets certain things into the cell that needs in but keep other things out.

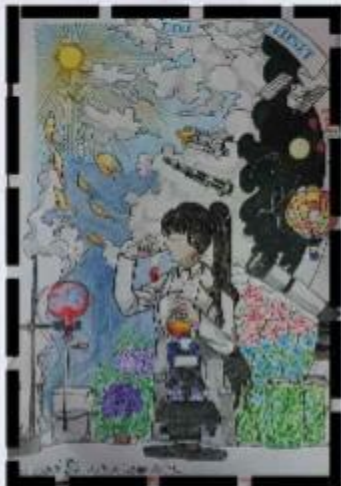
7. Located near the nucleus of the cell.

10. Are short and are in large number per cell.

12. It is the house for most of the cells genetic material.



Crafty Corner



ACTIVITIES



On November 8, 2023, the Zoology Department organized a captivating activity where students were encouraged to explore realms beyond their theoretical knowledge. This engaging event sparked creativity as students delved into imaginative concepts, fostering a deeper appreciation for the wonders of the natural world.



Classroom presentation activities play a significant role in enhancing students' knowledge and boosting their confidence by providing them with opportunities to research, organize their thoughts, and communicate in front of their peers. These activities foster critical thinking, improve public speaking skills, and encourage collaboration among students. Additionally, they offer a platform for students to showcase their creativity and unique perspectives, ultimately enriching the learning experience.



Corporating presentations into peer study cultivates a sense of accountability, as students must thoroughly comprehend the material to effectively convey it to their peers.



The role play on evolution provided a rich and engaging platform for exploring the mechanisms and outcomes of evolutionary change. By immersing themselves in the evolutionary narrative, participants gained insights into the complexity and beauty of life's ongoing journey through time.



In our role play on evolution, we embark on a journey through time, witnessing the emergence of life from its humble beginnings to the diversity we see today. From the primordial soup teeming with single-celled organisms to the majestic dinosaurs roaming ancient landscapes, each stage showcases the relentless force of natural selection sculpting life's intricate tapestry. As we reflect on our own place in this epic saga, we recognize the profound interconnectedness of all living beings, bound together by the shared legacy of evolution's enduring legacy.



**"Evolution is not just a theory; it's a historical fact, as firmly established as the Earth orbiting the Sun."
- Neil deGrasse Tyson**

Participation in National Science Week

Celebration at COE Govt. College Sanjauli



Students of Department of Zoology enthusiastically engaged in a range of activities during National Science Week, themed "Indigenous Technologies for Viksit Bharat," hosted by the Centre of Excellence at Govt. College Sanjauli from February 22 to 28, 2024. Demonstrating their skills, students presented a captivating Science Drama aimed at promoting scientific awareness, garnering praise from the audience and fellow institutions alike. The performance highlighted evolutionary theories and received resounding applause. Additionally, our students excelled in various other events, securing the second position in the Inter College Science Quiz Competition and the third position in the Science Models Demonstration.

An Exploration of Avian Fauna at St. Bede's College

Date: 27 September 2023

To educate and inspire students about the diverse bird species found in college surroundings and their importance in the ecosystem an activity on exploration of avian fauna at St. Bede's College was conducted by acquainting students about the avian fauna through a presentation. The activity aimed to identify and document the bird species present on the college campus, assess their abundance and distribution, and provide insights into the ecological significance of these avian populations. The presentation introduced students to the world of avian fauna, sparked their curiosity, and encouraged them to explore and appreciate the birdlife in their local environment. It emphasized the importance of bird conservation and provides practical tips for birdwatching and helped students recognizing the critical role that biodiversity plays in sustaining life on Earth and the importance of preserving it for future generations. It focussed on endless opportunities for education and research in biodiversity and helped students to learn about ecosystems, species interactions, and the interconnectedness of life on Earth.



National Science Day



On February 28, 2024, the Department of Science celebrated National Science Day with immense enthusiasm and fervour, focusing on the theme "Indigenous Technologies for Viksit Bharat." The event commenced with a captivating talk delivered by Dr. Ramesh Chand Thakur from the Department of Chemistry at H.P.U. Dr. Thakur's presentation delved into India's rich history of scientific and technological contributions, spotlighting ancient innovations such as Ayurveda, yoga, and metallurgy. He stressed the importance of leveraging traditional knowledge and indigenous practices to tackle modern-day challenges, particularly in sectors like agriculture, healthcare, and sustainable development. Following the enlightening discussion on indigenous technologies, the event transitioned into a session on career counselling, aiming to inspire and guide young enthusiasts towards rewarding careers in science and technology. The speaker shared valuable insights and advice on educational paths, research opportunities, and industry trends to help attendees make informed career choices.

Subsequently, a vibrant exhibition of science models ensued, showcasing participants' creativity and scientific acumen. A diverse array of models, ranging from simple machines to intricate biological systems, were on display, illustrating principles of physics, chemistry, and biology. The exhibition provided attendees with an immersive experience and an opportunity to appreciate the practical applications of scientific concepts. To cap off the day's festivities, an exhilarating quiz competition was held, challenging participants' comprehension of scientific concepts and discoveries. The quiz not only tested their knowledge but also fostered critical thinking and problem-solving skills. The atmosphere was charged with excitement as participants and audience members cheered for their favourite teams, adding to the overall thrill of the event.

STUDENTS' ACHIEVEMENT

1) KHUSHBOO SHARMA

BSc 3rd-year student, secured the first position in zoology in the BSc 2nd year, first position in the Environment and Ecology quiz organized by the "Botany Department", second position in the Chemistry quiz competition organized by "Saunjauli College", and second position in the National Science Day quiz competition also organized by "Saunjauli College", prize for full attendance and for All rounder student.



2) SAMRITI

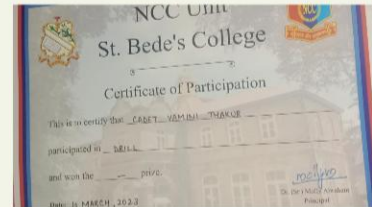
BSc 3rd-year student, secured the second position in "zoology in the BSc 2nd year", first position in the Environment and Ecology quiz organized by the "Botany Department", first position in the poster making competition on ozone day organised by "fine Arts society", First in poster making competition on Matri Bhasha organised by "Fine Arts society", also got prize for full attendance.



STUDENTS' ACHIEVEMENT

3) YAMINI

Student of Bsc 3rd year got certificate for blood donation camp organised by 7HP(1)COY NCC Shimla , Secured Second prize in Inter college group singing in CATC , 224 , Certificate for participating in Combined/Annual Training camp held in Karsog , secured second position in Basketball competition.



4) RIDHIMA

Student of Bsc 2nd year secured First position in zoology in Bsc 1st year , second position in intership singing (duet) competition (INS Chirag).



5) PRANJAL

Student of Bsc 2nd year secured second position in zoology in Bsc 1st year .



6) ADITI

Student of Bsc 2nd year secured second position in poster making competition organised by "Fine Arts Society" , get prize for academic excellence.



Teacher's Achievements

Dr. Shweta Thakur

Workshop Attended

- Attended 5th National Level Workshop on NIRF INDIA RANKINGS 2024 for higher educational institutions held on December 13-14, 2023 organised by Institute for Academic Excellence, Hyderabad.
- Participated in four-day online session on Best Practices and Institutional Distinctiveness organised by All India Association for Christian Higher Education (AIACHE) in association with St. Joseph's College Tiruchirappalli during March 5-7, 2024.
- Participated in two-day National level Workshop for IQAC Coordinators on Strategies to strengthen the Institutional Capacities for Quality, Ranking and Accreditation held on April 4-5, 2024 organised by Institute for Academic Excellence, Hyderabad.

Faculty Development Programme

- Attended five-day Faculty Development Programme on Academic Writing and Research Methodology: Multidisciplinary from December 26-30, 2023 organised by Technoledge Eduresearch Pvt. Ltd, New Delhi.

Dr. Jyotika Brari

- Dr. Jyotika Brari, Project Co-ordinator presented a proposal for Star College Program in the Department of Biotechnology on July 2023 and it was finally selected for the financial support of 69 lakhs by DBT in December 2023 under DBT-Star College Scheme.

Faculty Development Programme

- Attended five-day Faculty Development Programme on Academic Writing and Research Methodology: Multidisciplinary from December 26-30, 2023 organised by Technoledge Eduresearch Pvt. Ltd, New Delhi.

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