ZOOLOGICA

NEWSLETTER 2024

VOLUME III (JANUARY – DECEMBER)

DEPARTMENT OF ZOOLOGY

QUEEN MARY'S COLLEGE

CHENNAI – 600 004

ZOOLOGICA

NEWSLETTER FROM THE DEPARTMENT OF ZOOLOGY QUEEN MARY'S COLLEGE

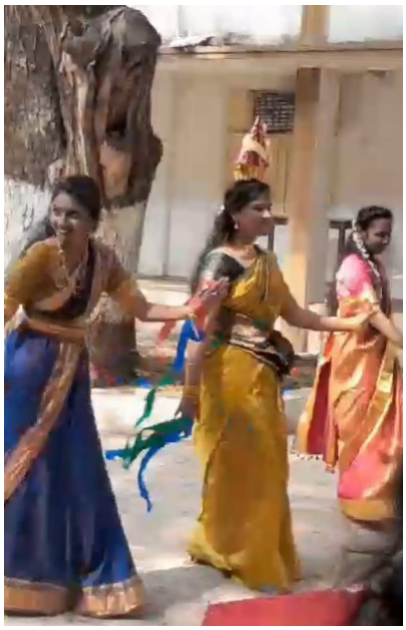
JANUARY 2024, VOLUME - 20

HARVEST HARMONY

EMBRACING PONGAL'S JOYFUL TRADITION

Pongal is a fascinating festival celebrated for showing gratitude to SURIYA BHAGHAVAN for flourshing the earth with best resources. The department of zoology, QMC celebrated this traditional festival in an eco friendly way. A model house was constructed that depicted our rich culture and heritage. Delicious Pongal was cooked in colourful pots. The joyous chorus of 'Pongalo pongal' was made during the overflowing sizzling of pongal. We worshiped the God with a delicious feast, sweets and sugarcanes.

Many traditional dance forms and games such as KARAGATTAM, KUMIATTAM, KOLLATTAM, URIADI, BLIND FOLD, NONDI, PALLANKULI were also conducted. As the echoes of joy lingered in the air, the Pongal celebration in our department becomes a cherished chapter in our collective memories



VISIT OF DR. RAVINDRA CHANDRA JOSHI

Dr. Ravindra Chandra Joshi, Senior Consultant, Philippine Rice Research Institute, Philippines visited our college on 23rd January 2024. He was accompanied by his wife, Ms. Elaine Joshi and mentor Prof Dr MS Venugopal. He interacted with students and staff members of the department. He also met our college Principal Dr. Uma Maheshwari.

REPUBLIC DAY CELEBRATIONS

Our Queen Mary's College has secured first prize in the cultural events of Republic day celebrations organised by the Government of Tamilnadu. Our college has secured first prize for the eighth time which is a great accomplishment and a pride for us. It's unique theme about chera, Chola and Pandiya kings highlighted their performance. D.Dipika Mishra of 2nd year B.Sc Zoology and T.Sathya of 1st year B.Sc Zoology took part in it and received awards and cash prizes from the Honourable Chief Minister of Tamilnadu.

FUN FAUNA ZONE

SPOT THE WORDS 🔎

O	M	A	C	P	L	C	I	R	Z	E	B	R	A
A	T	R	O	R	R	E	L	T	I	E	T	A	E
T	A	E	O	O	E	O	M	L	I	O	N	B	E
O	T	F	A	I	G	R	N	A	A	S	M	V	L
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V	A	A	H	O	V	E	I	E	A	I	E	H	Z
E	B	E	L	E	P	H	A	N	T	A	O	H	O
F	B	H	E	R	B	I	V	O	R	E	N	O	O

CUB
CALF
HABITAT
TIGER
RHINO
CHEETAH
ELEPHANT
ZEBRA
ZOO
BEHAVIOR
CARNIVORE
FOREST
CAMEL
HERBIVORE
LION

GUESS THE BRANCH OF ZOOLOGY

1. 

2. 

3. 

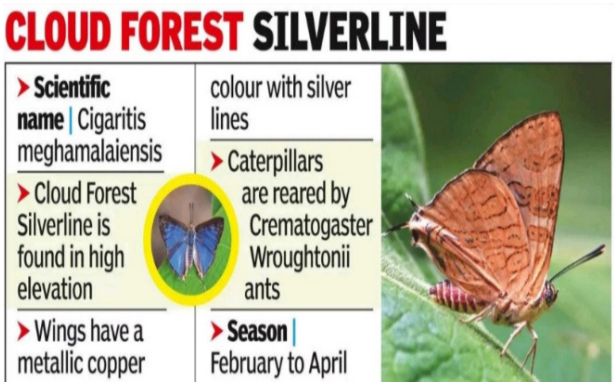
4. 

Answers: 1.Herpetology 2.Ichthyology 3.Entomology 4.Pathology

LET'S WELCOME ANOTHER FLYING GLITTER TO OUR ENVIRONMENT

A new butterfly species, named *Cigaritis meghamalaiensis*, has been found in the Western Ghats after 33 years. It has been identified in the Megamalai division of the Srivilliputhur Megamalai Tiger Reserve in Theni district.The common name for this species is Cloud Forest sliverline. It is an unique species with a metallic copper colour and sliver lines which are not easily replicated.

. It is also suprising to see vicious ants called *Creamatogaster wroughtonii* taking care of the tender caterpillars. This recent discovery increases the number of Cigaritis butterfly species from 7 to 8. After this discovery, the total number of butterflies in the Western ghats has been rised to 337 species including 40 western ghat endemics



DODO : AN HUMAN INDUCED EXTINCTION

Dodo was a large, flightless bird once native to the island of Mauritius in the Indian Ocean. It was bigger than a turkey and weighed about 23 kilograms. It had blue-gray feathers, a large head and beak, and small, useless wings. Dodos nested on the ground, and it is thought that they laid a single egg. Unfortunately, the species was wiped out less than 200 years after its discovery. The birds were discovered by Portuguese sailors around 1507. The birds had no natural Predators, so they were unafraid of humans.

For sailors dodos population was an easy source of fresh meat for their voyages. As humans settled on the island, loss of habitat further threatened the birds. Humans also brought animals, such as pigs and monkeys, which ate the vulnerable eggs and competed with the dodos for food. Over-harvesting of the birds, combined with habitat loss and a losing competition with the newly introduced animals, was too much for the dodos to survive. The last dodo was killed in 1681, and the species was lost forever to extinction

Contributions by :

1. P.Malini (||| B.Sc Zoology)
2. N.Jaya Biswas (||| B.Sc Zoology)
3. A.Komal Yadav (||| B.Sc Zoology)
4. R.Ravanika (||| B.Sc Zoology)
5. P.Anusuya (||| B.Sc Zoology)

ZOOLOGICA

NEWS LETTER FROM THE DEPARTMENT OF ZOOLOGY QUEEN MARY'S COLLEGE FEBRUARY 2024, VOLUME – 21

SPORTS DAY CELEBRATION
VICTORY THROUGH UNITY

The 108th Annual Sports Day is an highly anticipated extravaganza at Queen Mary's College held on 16th February,2024. The Department of Zoology set the stage for a spectacular celebration of athleticism, camaraderie, and spirited competition. The day kicked off with the warm welcoming of the Chief Guest Dr.S.Johnson Premkumar, Principal of YMCA college, Nandanam amidst thunderous applause and heartfelt speeches.

Our zoology department students proudly marched past, adorned with banners echoing the theme of "Unsung Heroes and Salutes to our Soldiers". Each step was resonated with the spirit of sportsmanship and unity. And we secured second prize in the event. Our department students also showcased their talents and passion in a myriad of events including kho kho, athletics, carrom, chess, karate, and aerobics.

POSTER PRESENTATION IN ICRAAZ'24

The department of advanced zoology and biotechnology of Women's Christian college, Chennai had organised an INTERNATIONAL CONFERENCE ON RECENT ADVANCES IN APPLIED ZOOLOGY (ICRAAZ) on 10th and 11th January 2024. Our department research scholar N Ramya shree presented an alluring and captivating scientific poster on "Habitat and diet preferences of seven near threatened avifauna of Muttukadu backwaters" and bagged second prize in the event.

HABITAT AND DIET PREFERENCES OF SEVEN NEAR THREATENED AVIFAUNA OF MUTTUKADU BACKWATERS, TAMIL NADU, INDIA

Ramya Shree N* and Malathi E
Department of Zoology, Queen Mary's College, Chennai-600004.

BACKGROUND OF THE WORK AND INTRODUCTION TO THE STUDY

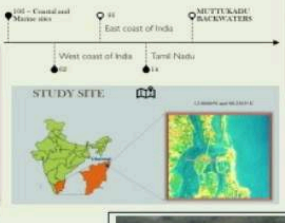
- India has the largest coastal area and it supports a commendable number of both local and migrant birds which are of globally importance.
- Birds are very sensitive to environmental changes hence they act as bioindicators in assessing the health status of the ecosystem and also determine the environmental integrity using their functions and populations.
- It is essential to understand the threats faced by these birds and proper conservation plans can enhance their survival and provide benefits for the threatened species.
- The existence of threatened bird species in the backwaters indicates the health and wealth of this exclusive ecosystem and it will offer better perceptive with reference to conservation measures.
- One persistent challenge is that significant gaps in knowledge about the distribution and ecology of threatened migratory species in the backwaters region still exist.

OBJECTIVE OF THE STUDY

- The main objective of this study is to focus on near threatened **(NT)** bird species, observe its habitat and diet preferences in Muttukadu Backwaters.

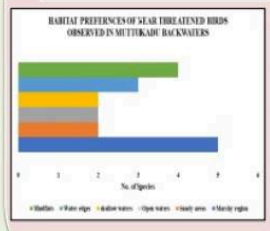
METHODOLOGY

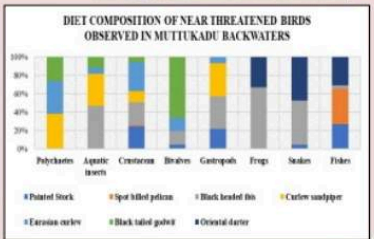
- Studies on birds were conducted from July 2021 to July 2023 covering the pre monsoon, monsoon, post monsoon and summer season by total count method in the Muttukadu Backwaters.
- The criteria of near threatened species was referred from IUCN Red List Categories and Criteria.
- The diet of these species was assessed by observing the feeding behaviour using visual method with the help of binoculars (10x50) and photographed using Nikon D3400 camera with 70-300mm lens.during both low and high tides.
- All statistical analyses were performed using MS Excel 2019.

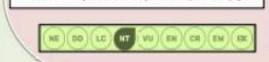


RESULTS AND DISCUSSION

COMMON NAME	SCIENTIFIC NAME	ORDER	FAMILY	STATUS	ECOLOGICAL GROUP
Painted Stork	*Mycteria leucocephala*	Ciconiiformes	Ciconiidae	Common, Resident	Large Water
Oriental darter	*Anhinga melanogaster*	Suliformes	Anhingidae	Rare, Resident	Waterbird
Spot billed pelican	*Pelecanus philippensis*	Pelecaniformes	Pelecanidae	Common, Resident	Waterbird
Black headed ibis	*Threskiornis melanocephalus*	Pelecaniformes	Threskiornithidae	Rare, Migrant	Large Water
Curlew sandpiper	*Calidris ferruginea*	Charadriiformes	Scolopacidae	Rare, Migrant	Small Water
Eurasian curlew	*Numenius arquata*	Charadriiformes	Scolopacidae	Rare, Migrant	Large Water
Black tailed godwit	*Limosa limosa*	Charadriiformes	Scolopacidae	Common, Migrant	Small Water

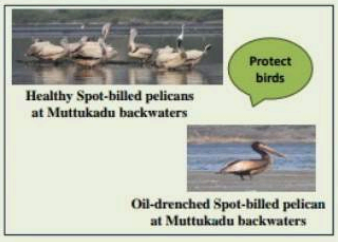






CONCLUSION

- A total of 124 species were observed in this region. Among them, the spotting of seven near threatened species highlights the importance of these backwaters as a significant bird habitat in Chennai.
- The dynamics of near threatened bird species (both resident and migrants) occupying different microhabitats along with the feeding ecology are poorly understood in this region.
- Hence, this study provides data on the distribution of near threatened species in the Muttukadu backwaters and can initiate the efforts for management and protection of this region. Further exploration of these data will give new insights for the conservation of waterbirds.



ACKNOWLEDGEMENT

This research is supported by UGC Senior Research Fellowship in Sciences.

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NT

eBird India

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Research Scholar
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Queen Mary's College

QUIZ CORNER

The quiz is on Majestic hornbills: a symbol of grace and beauty in the wild.

QUESTIONS :

1. Which is the largest species of Hornbill on Earth?
2. Which hornbill is declared as the state bird of Kerala?
3. Which part of the hornbill is large and brightly coloured, making them instantly recognisable?
4. What is the major food source of hornbills?
5. Which is the smallest species of Hornbill?

ANSWERS :

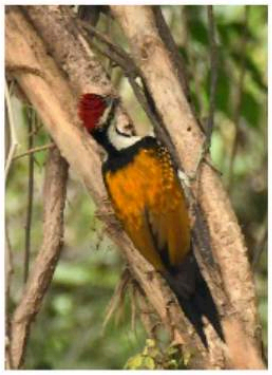
1. Southern Ground Hornbill
2. Great Indian Hornbill
3. Bill
4. Fruits, insects and other animals
5. Red billed Hornbill

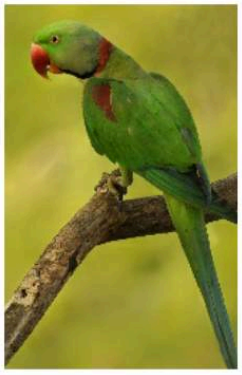
IMAGE COURTESY BY:
Ramya shree N
Ph.D. Zoology

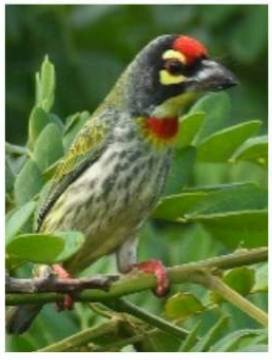
CAMPUS BIRD COUNT 2024

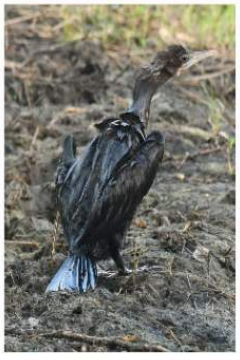
The Campus Bird Count (CBC) is a 4-day event of the Great Backyard Bird Count (GBBC) which documents the avifaunal life every year in the month of February in different campuses across our country. In our college, the CBC was organised by the Department of Zoology on 19th February 2024 at 7A.M. The event was led by Dr. Malathi E, Associate Professor and Head of the Department, Research scholar Ms. Ramya Shree N and an expert birder Mr. Kumaresan Chandrabose (Visiting Faculty of MCC IAS Academy). Our II B.Sc. students participated in the bird count.

A total of 20 bird species were observed and the checklist was uploaded in the eBird database of our college campus through GBBC registration. The most exciting observations of the event includes Alexandrine parakeet, White throated kingfisher, Rose ringed parakeet, Common Myna, Spotted owlet, Coppersmith Barbet, Rufous Treepie, Asian koel, Cattle Egret, Yellow Bittern, White breasted waterhen, Little Cormorant, Indian Pond heron and Little Egret. QMC provides a remarkable habitat for various resident birds. In past years, many migratory bird species like Indian Paradise Flycatcher, Brown shrike and Orange headed thrush were sighted in our college.







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QUEEN MARY'S COLLEGE

MARCH 2024 VOLUME: 24

SYNCHRONISED TERRESTRIAL BIRD CENSUS

The Tamil Nadu Forest Department organised synchronised terrestrial bird census conducted on 2nd and 3rd March 2024. In this survey, Dr. Malathi E, Associate Professor and Head of the Department and Ph.D. Research Scholar Ramya Shree N had participated along with a team of five members under the leadership of the forest department volunteer Mr. Sivaraman (Adyar Division) at Theosophical society, Adyar. Around 70 bird species were recorded during this census. Birds with high direct counts include Red-vented Bulbul, Yellow-billed Babler, Common Myna, Asian Palm Swift, Rock Pigeon, Rose-ringed Parakeet, House Crow, and Black Drongo.

PLACEMENT 2022-23

Considering the need for providing job opportunities for graduates, the Training and Placement Cell of Queen Mary's College organized an on- campus Placement Drive for the Final Year UG and PG students on 06/04/2023. The whole process was effectively planned and executed by the staff in charge of Placement, in collaboration with the HR of companies. Dr. R. Anuradha of Tamil, Dr. Bhavani Govindarajulu of Zoology, Dr. Thenmozhi of History department coordinated the entire process. Placement activities were conducted throughout the year. Around 36 companies participated in the recruitment drive which was attended by nearly 1500 students. In addition to this, Multi-National Companies related to IT have provided job opportunities for 67 students with a pay package of 4.2 lakh per annum. In addition to the 1395 short listed students, to attend the final round of selection.

NAAN MUDHALVAN CLASSES ON MEDICAL CODING

As a part of Naan Mudhalvan scheme by the Tamil Nadu skill development corporation, classes on medical coding were conducted by TN Apex skill development centre for healthcare for III B.Sc. Zoology students. It was a five-day program held from 12th March. The classes were conducted by Srivatsan sir. The developing trends of medical coding and its scopes were discussed. Medical billing, medical terminologies and various physiological events in the human body were the topics focused in these classes. Srivatsan sir also invited a person from medical coding field to shared her work experiences. It was found informative and useful since certification in medical coding enhances students' employment prospects and opens up opportunities for advancement in various healthcare settings.

COLLEGE DAY 2024

The College Day marks the official winding up of the academic year at QMC on 16th March 2024. This day is utilized to reflect on all major events and activities of the year, as well as to set goals for the upcoming year. College day is one of the most colourful events on campus, and gives an opportunity for the institution to recognise and award students for their exemplary work and dedication in the given academic year. It also includes cultural programs that showcase the talent and calibre of students, faculty and staff. The Chief guest M. Subramanian, Minister of Health and Family welfare graced the occasion and shared his valuable thoughts to students.

CICADAS – THE BEAUTIFUL BUGS

The cicadas are a superfamily, the Cicadoidea, of insects in the order Hemiptera (true bugs). They are in the suborder Auchenorrhyncha,along with smaller jumping bugs such as leafhoppers and froghoppers.

Cicadas have prominent eyes set wide apart, short antennae, and membranous front wings. They have an exceptionally loud song, produced in most species by the rapid buckling and unbuckling of drum-like tymbals. The earliest known fossil Cicadomorpha appeared in the Upper Permian period; extant species occur all around the world in temperate to tropical climates. They typically live in trees, feeding on watery sap from xylem tissue, and laying their eggs in a slit in the bark. Most cicadas are cryptic. The vast majority of species are active during the day as adults, with some calling at dawn or dusk. Only a rare few species are known to be nocturnal. The annual cicadas are species that emerge every year. Though these cicadas' life cycles can vary from 1 to 9 or more years as underground nymphs, their emergence above ground as adults is not synchronized, so some members of each species appear every year.

Cicadas have been featured in literature since the time of Homer's Iliad and as motifs in art from the Chinese Shang dynasty.They have also been used in myth and folklore as symbols of carefree living and immortality. The cicada is also mentioned in Hesiod's Shield (ll.393–394), in which it is said to sing when millet first ripens. Cicadas are eaten by humans in various parts of the world, including China, Myanmar, Malaysia, and central Africa.

CONTRIBUTION BY

RAMYA SHREE N Ph.D. Research Scholar

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QUEEN MARY'S COLLEGE

APRIL 2024 VOLUME: 25

WORLD EARTH DAY – 22nd April 2024

World Earth Day, also known as International Mother Earth Day, is a globally recognised event dedicated to raising awareness and promoting the sustainability of our planet. The themes for each Earth Day vary, focusing on different aspects of environmental protection and sustainability. The theme for Earth Day 2024 is Planet vs. Plastics, a commitment to call for the end of plastics "for the sake of human and planetary health." The theme's proposed goal is to reduce the production of plastics by 60% in 2040 and ultimately build a plastic-free future. The concept of Earth Day can be traced back to the late 1960s, which saw a surge in public debate over environmental issues, with Rachel Carson's influential book Silent Spring (1962) and the Santa Barbara oil spill (1969) raising awareness about environmental destruction. However, it was first accepted in the USA when the UN officially acknowledged it in 1972 after peace activist John McConnell proposed the idea of celebrating a day in honour of the Earth and peace at a 1969 UNESCO conference, where it began as a national teach-in on the environment, led by Senator Gaylord Nelson and activist Denis Hayes.

WORLD PENGUIN DAY – 25th April 2024

World Penguin Day is celebrated every year on April 25. This day is dedicated to spreading the word about these amazing birds, their habitats and the conservation measures needed to keep them safe. The day also aims to promote the special charm of penguins and encourage everyone to work together to ensure their survival for future generations. On this day, organizations, zoos, aquariums and conservation groups around the world organize special events, educational activities and fundraising initiatives to raise awareness about penguins. Penguins are some of the most beautiful, most loved and most impressive creatures in the animal kingdom. World Penguin Day is a celebratory and educational initiative that encourages people to learn more about penguins and their environment, their importance to our ecosystems and the threats they face.

History of World Penguin Day

World Penguin Day takes place during the annual northern migration of Adélie penguins, a species of penguin that is native to Antarctica. Adélie penguins migrate north to have better access to food during the winter months when the sea ice expands and then, during the summer, return to the coastal beaches of Antarctica to build their nests. This annual celebration of penguins was created at McMurdo Station, an American research centre on Ross Island. Researchers noticed that the Adélie penguins began their migration around this day each year, and so they founded World Penguin Day as a way to mark the occasion and raise awareness of these creatures. While the day originated from the Adélie penguin's migration habits, it celebrates all species of penguin and highlights the plight of these water-loving creatures. Of the 17 or so species around today (the total number of species varies depending on how you classify them, but there are at least 17 and possibly as many as 20!), sadly 10 of them have been deemed endangered or vulnerable by the International Union for Conservation of Nature (IUCN) and 3 are considered near threatened.

WESTERN GHATS – UNESCO SITE

Western ghats of India also known as the Sahyadri Mountains is declared as the UNESCO world heritage site and top ten “Hottest Biodiversity Hotspots in the world”. This mountain range is older than the Himalayas and consists total of thirty-nine properties which were designated as world heritage sites in 2012, Twenty in the state of Kerala, ten in Karnataka, five in Tamil Nadu and four in Maharashtra. This mountain range is the dwelling abode to many rare species of flora and fauna.

The five world heritage sites of Tamilnadu Western ghats are as follows Kalakkad Mundanthurai Tiger Reserve, Srivilliputtur Wildlife Sanctuary, Sathyamangalam Wildlife Sanctuary, Chinnar Wildlife Sanctuary and Mukurthi National Park.

The decision will ensure the mountain range gets international support for the conservation of biological diversity, besides containing areas of high geological, cultural, and aesthetic values. Older than the Himalayas, the mountain chain of the Western Ghats influences Indian monsoon weather patterns by intercepting the rain-laden monsoon winds that sweep in from the southwest during late summer. Besides, it is one of the ten hottest biodiversity hotspots in the world as it has over 7,402 species of flowering plants, 1,814 species of non-flowering plants, 139 mammal species, 508 bird species, 179 amphibian species, 6,000 insects species, and 290 freshwater fish species. The Western Ghats are home to at least 325 globally threatened species.

TWO MORE RAMSAR SITES IN TAMILNADU

A Ramsar site is a wetland site designated to be of international importance under the Ramsar Convention, also known as The Convention on Wetlands. It is an international environmental treaty signed on February 2, 1971, in Ramsar, Iran, under the auspices of UNESCO. Two more Ramsar sites, Karaivetti Bird Sanctuary and Longwood Shola Reserve Forest, have been approved by the Union Ministry of Environment, Forest and Climate Change (MOEFCC). With this, the total number of Ramsar sites in the State has increased to 16, the highest in the country.

The Karaivetti bird sanctuary is located in Ariyalur District, 310 km south of Chennai, covering an area of 453.7 ha. The site serves as the home to more than 500 species of flora and fauna. The sanctuary lies in the Central Asian Flyway and is an important breeding and foraging ground for water bird species. The wetland also helps in irrigation and recharging of the groundwater of the area.

The Longwood Shola Reserve Forest is located in the Nilgiris District, covering an area of 116.007 ha. It serves as the home for more than 700 species of flora and fauna. Out of 177 bird species found in the site, 14 species are endemic to the Western Ghats. The area is rich in herpetofauna diversity, with several species being endemic to the Western Ghats and also considered threatened species by the International Union for Conservation of Nature.

CONTRIBUTION BY

RAMYA SHREE N Ph.D. Research Scholar

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NEWSLETTER FROM THE DEPARTMENT OF ZOOLOGY
QUEEN MARY'S COLLEGE

MAY 2024 VOL I- 26

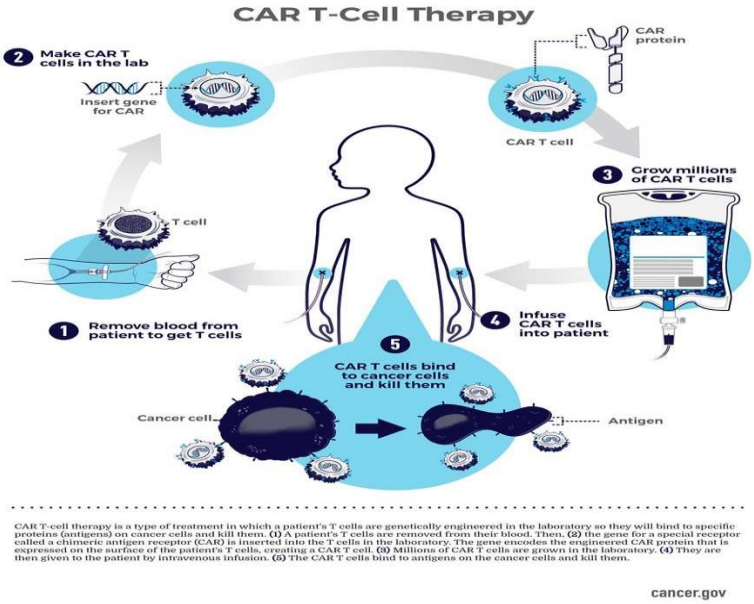
VASUKI INDICUS - THE LONGEST KNOWN SNAKE ON EARTH

Paleontologists have discovered fossil remains of an ancient giant snake species *Vasuki indicus* dating back to 47 million years old from a lignite mine in India's Gujarat state, and used them to model the estimated actual length of the snake to somewhere between 10.9 to 15.2 metres. It is known to be the longest snake that have ever lived on earth. *V. indicus* flourished in forested swamps of the now arid Kutch region. *V. indicus* belonged to the now extinct madtsoiidae snake family from 100 million years ago, a relic of the Late Cretaceous to the Late Pleistocene geological era. It lived across a broad geographical range including Africa, Europe, and India. The reptile is closely related to other large madtsoiid snakes (*Madtsoia pisdurensis*) from the Late Cretaceous of India and the Late Eocene of North Africa (*Gigantophis garstini*). Since this group was dominated by madtsoiids from India and Vasuki was the most primitive ancestor in the family tree, scientists inferred that this group of snakes originated in India.

PROPOSED STRUCTURE OF *VASUKI INDICUS*

CAR T-Cell GENE THERAPY LAUNCHED IN IIT BOMBAY

The President of India, Smt Droupadi Murmu launched India's first home-grown gene therapy for cancer at IIT Bombay on 5th April 2024. Chimeric Antigen Receptor-T cell therapy (CAR-T cell therapy) has demonstrated remarkable success in long-term remission of relapsed or refractory B-cell precursor Acute Lymphoblastic Leukemia (B-ALL). T cells which help in the immune response by direct killing of pathogen infected cells are the backbone of CAR T-cell therapy. Efforts have been initiated to customize CAR T-cell therapies for each individual patient. They are made by collecting T cells from the patient and re-engineering them in the



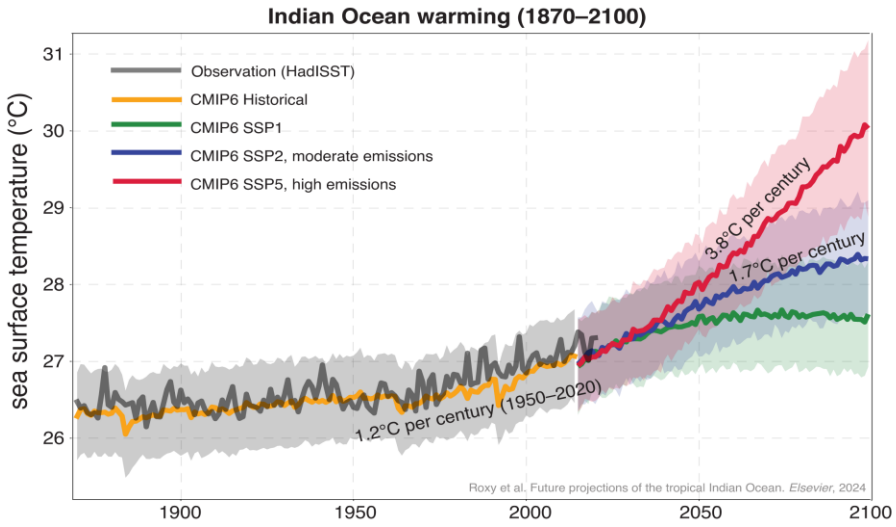
laboratory to produce proteins on their surface called chimeric antigen receptors, or CARs. The CARs recognize and bind to specific proteins, or antigens, on the surface of cancer cells. After, the revamped T cells are "expanded" into the millions in the laboratory, they're then infused back into the patient. The CAR T cells will continue to multiply in the patient's body and, with guidance from their engineered receptor, recognize and kill any cancer cells that harbor the target antigen on their surfaces.

CAR-T-CELL THERAPY LAUNCH BY THE HON'BLE PRESIDENT

Smt. DRAUPADI MURMU

TROPICAL INDIAN OCEAN SURVEY BY IITM, PUNE

A study led by Dr. Roxy Mathew Koll of the Indian Institute of Tropical Meteorology (IITM), Pune, tells us about the evolving climate of the Indian Ocean and its future projections. While, the Indian Ocean warmed at a rate of 1.2°C per century during 1950–2020, climate models predict accelerated warming, at a rate of 1.7°C–3.8°C per century during 2020–2100. The rapid warming in the Indian Ocean is not limited to the surface. The heat content of the Indian Ocean, from surface to 2000 meters deep, is currently increasing at the rate of 4.5 zetta-joules per decade, and is predicted to increase at a rate of 16–22 zetta-joules per decade in the future. Marine heatwaves, periods of extremely high temperatures in the ocean, are expected to increase from 20 days per year to 220–250 days per year. This will push the tropical Indian Ocean into a near-permanent heatwave state. Marine heatwaves cause habitat destruction due to coral bleaching, seagrass destruction, and loss of kelp forests, affecting the fisheries sector adversely. They also lead to rapid intensification of cyclones, where a cyclone could intensify from a depression to a severe category in a few hours. The surface chlorophyll and net primary productivity is predicted to decline, with the strongest decrease of about 8–10% in the western Arabian Sea.



RATE OF INDIAN OCEAN WARMING

SNOW LEOPARDS IN INDIA

Snow leopards are medium-sized cats standing about 24 inches at the shoulder and weighing around 30-55kg. Their exquisite, smoky-grey fur is patterned with dark-grey to black rosettes which helps to camouflage them against rocky slopes. The species usually mate between January and March, a time when both sexes mark their territories intensively leaving signs such as scrapes, faeces, urine and scent-spray in prominent locations along their travel routes. Snow leopards live in the mountainous regions of Central and Southern Asia. In India, their geographical range encompasses a large part of the western Himalayas, including the Union Territories of Jammu and Kashmir and Ladakh, Himachal Pradesh, Uttarakhand and Sikkim and Arunachal Pradesh in the eastern Himalayas. In India, the snow leopard is listed under Schedule I of the Wildlife (Protection) Act, 1972, giving it the highest protection status under the country'

PANTHERA UNCIA (SNOW LEOPARD)

ZOOLOGICA

NEWSLETTER FROM THE DEPARTMENT OF ZOOLOGY
QUEEN MARY'S COLLEGE

JUNE 2024 VOL I- 27

PISODONOPHIS KALINGA - NEWLY DISCOVERED EEL SPECIES

The Zoological Survey of India (ZSI) recently made an exciting discovery in the waters of Odisha's Ganjam district. Scientists from ZSI identified a previously unknown species of eel, which has been named as *Pisodonophis kalinga*. *Pisodonophis kalinga* belongs to the family Ophichthidae and the order Anguilliformes. These classifications provide valuable insights into the evolutionary lineage and characteristics of this newly discovered eel species. The species of eel was found in the Palur canal, situated in Odisha's Ganjam district. This area is renowned for its diverse aquatic ecosystems. In particular, the eels were spotted in the Chilika lagoon, which holds the distinction of being Asia's largest brackish water lagoon. The collaborative efforts between ZSI, Berhampur University, and Ravenshaw University played a crucial role in this discovery. The teams worked together to document and study the unique eel species.

PISODONOPHIS KALINGA (held by the team of discoverers)

BLACK TIGER SAFARI TO BE IN SIMLIPAL TIGER RESERVE

The Odisha government has unveiled plans for the establishment of the world's first 'black tiger safari' near the Similipal Tiger Reserve (STR) in Mayurbhanj. This visionary project aims to provide tourists and visitors with a rare glimpse of the melanistic tigers, commonly known as black tigers, spotted at the Similipal National Park. The chosen site,

PANTHERA TIGRIS (BLACK TIGER)

approximately 15 km from the reserve, mirrors the landscape of Similipal, providing a suitable environment for these rare creatures. Melanin tigers, characterized by a captivating dark stripe pattern set against a backdrop of white or golden fur, have become a recent attraction in the Similipal region. This safari would be the only place in the world to witness such a unique species. The safari site, near Baripada and spanning 200 hectares, will be located adjacent to National Highway 18. Out of this area, 100 hectares will be dedicated to the display zone, while the remaining space will be utilized for essential infrastructure, including veterinary care facilities, a rescue center, staff amenities, and visitor services.

SIMILIPAL TIGER RESERVE

TWO NEW SPECIES OF JUMPING SPIDERS DISCOVERED

Two new species of jumping spiders have been discovered by researchers at the Zoological Survey of India. These spiders are similar to other members of the genus Phintella, which typically inhabit under leaves and barks of shrubs and grasses. Their discovery is a major contribution to arachnology, a branch of science that deals with the study of arachnids, which includes spiders, scorpions, and pseudoscorpions. Prior to the discovery of these latest species of

PHINTELLA DHRITIAE

jumping spiders, there were already 12 identified species of Phintella that were acknowledged in India. One of the new species of jumping spiders discovered by the Zoological Survey of India has been named *Phintella dhritiae* in honour of Dr. Dhriti Banerjee, who became the first female director of the ZSI in August 2021. The other species, *Phintella platnicki*, has been named after Dr. Norman Platnick, who made significant contributions to the study of arachnology before his passing. *P.dhritiae* was discovered in the Mookambika Wildlife Sanctuary in Karnataka, while *P.platnicki* was found in the Salem district of Tamil Nadu.

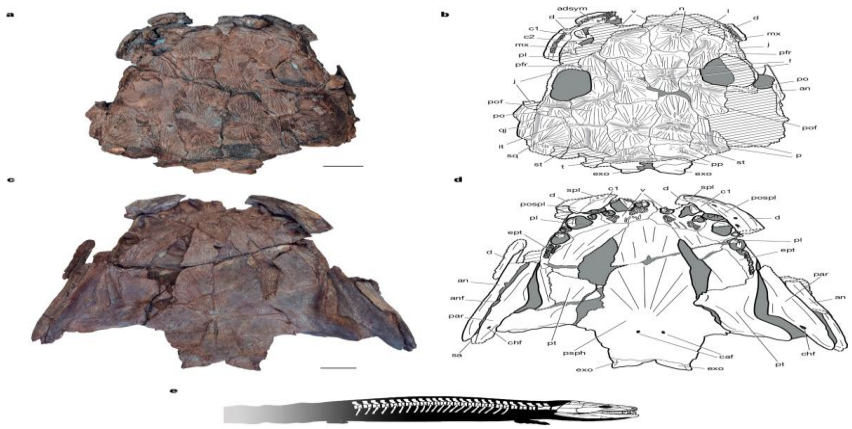
PHINTELLA PLATNICKI

***GAIASIA JENNYAE*- THE GIANT SALAMANDER OF ICE AGE**

Gaiasia jennyae, giant salamander dated to 280 million years ago, is supposed to be the top most predator of ice age. It lived 40 million years before the first dinosaurs, and it was the top predator

PROPOSED STRUCTURE OF *GAIASIA JENNYAE*

in its ecosystem. *Gaiasia jennyae* was considerably larger than a person, and it thrived near the bottom of swamps and lakes or most probably stretches of ice and glaciers. It has a big, flat, toilet seat-shaped head with a large skull, which allows it to open its mouth and suck in prey. It has huge interlocking fangs which enables the whole front of the mouth to act like teeth and engulf prey. The fossil is named for the Gai-as Formation in Namibia where it was found, and for Jenny Clack, a paleontologist who specialized in the evolution of early tetrapods. This species belongs to stem tetrapods which are the four-limbed vertebrates that evolved from lobe-finned fishes and gave rise to amphibians, reptiles, birds, and mammals.



SKULL OF *GAIASIA JENNYAE*

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NEWSLETTER FROM THE DEPARTMENT OF ZOOLOGY

QUEEN MARY'S COLLEGE

JULY 2024 VOLUME III: 28

DISCOVERY OF NEW BIRD FOSSIL REVEALS ROOTS OF AVIAN INTELLIGENCE

An exceptionally well-preserved fossil bird from the Mesozoic Era, around the size of a starling, has been discovered by researchers. The researchers, led by the Natural History Museum of Los Angeles County and the University of Cambridge, were able to digitally rebuild the bird's brain, which they have called *Navaornis hestiae*, thanks to the remarkable three-dimensional preservation of the skull. Before the catastrophic extinction catastrophe that wiped off all non-avian dinosaurs, Navaornis thrived in what is now Brazil around 80 million years ago. Given that its cerebrum was larger than Archaeopteryx's, Navaornis may have possessed more sophisticated cognitive abilities than the first dinosaurs that resembled birds. But the majority of its brain, such as the cerebellum, were underdeveloped, indicating that it had not yet developed the sophisticated flight control systems found in contemporary birds. Navaornis brain structure is intermediate to that of modern birds and Archaeopteryx. Even though Navaornis's head initially looks a lot like that of a little pigeon, a closer look shows that it is actually a member of an ancient bird species known as enantiornithines, or the "opposite birds." Although "opposite birds" split from contemporary birds about 130 million years ago, they probably had sophisticated feathers and could fly just as well as modern birds. While Navaornis is one of the best-preserved bird fossils ever found from the Mesozoic Era, the researchers believe many more finds from the Brazilian site where it was found could offer further insights into bird evolution.

FOSSIL OF *NAVAORNIS HESTIAE* FROM BRAZILIAN DEPOSITS

ZOOLOGICA

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QUEEN MARY'S COLLEGE

AUGUST 2024 VOLUME III: 29

FAUNAL OBSERVATION AT QMC

"Until one has loved an animal, a part of one's soul remains unweakened."

-Antole France

Our college serves as a home for numerous fauna that are not commonly found in the modern world. There are numerous bird and butterfly species recorded in our campus. The students of II PG Zoology, conducted a faunal survey in the month of August at Queen Mary's College. The observations include more than 7 species of butterflies, 3 species of Damselflies, 10 species of birds, carrion crows, Calotes, squirrel, wide varieties of insects, ants, millipedes and bugs.









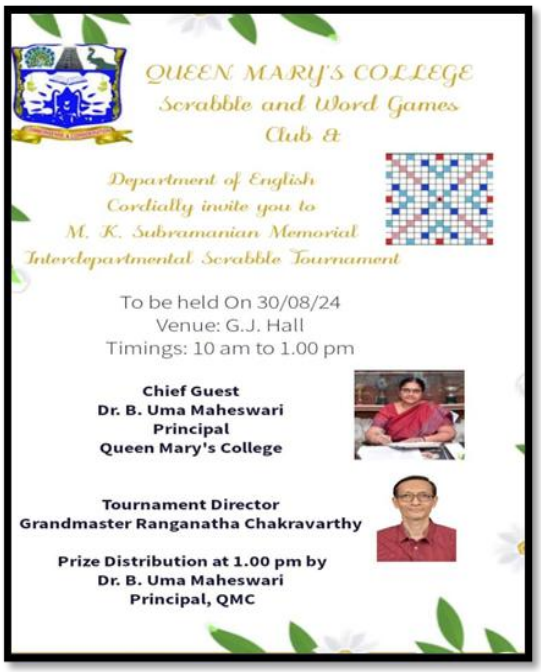



WORKSHOP ON MASTERING THE ART OF SCIENTIFIC WRITING

The Department of Advanced Zoology and Biotechnology, Ramakrishna Mission Vivekananda College (Autonomous), Mylapore, Chennai -04 organized one day state level work shop on Mastering the Art of Scientific writing on 23rd August 2024. The students of II M.Sc. and Ph.D. Zoology participated in this workshop and gained knowledge on essential approaches for enhancing the influence of our research, critical analysis of literature review, what to do & not to do for effective scientific publications, English as a gatekeeper in high impact scientific journals.

INTERDEPARTMENTAL SCRABBLE TOURNAMENT-2024

From the Department of Zoology, students of II M.Sc. and I, II, III B.Sc. were participated in M. K. Subramanian Memorial Interdepartmental Scrabble tournament conducted by Scrabble and World Games Club and the Department of English, Queen Mary's College on 30th August 2024.



CELEBRATING 78th INDEPENDENCE DAY

The 78th Independence Day was celebrated on 15th August 2024 in the campus of Queen Mary's College. The students of II M.Sc. Zoology participated in the group singing event conducted as a part of the celebrations.

Group singing by the II M.Sc. students of Zoology

WILD CALLS'24 – ADAPTUNES

Abisha Merlin from II M.Sc. and Dipika Mishra from III B.Sc. of Department of Zoology were participated in dance competition – "Adaptunes", which was conducted by the Department of Advanced Zoology and Biotechnology, Women's Christian College on 31st August 2024.

Zoology students exhibiting their dance performance in the 'Adaptunes'

HOW RAINFALL IMPACTS SIZE OF SEA TURTLE HATCHLINGS?

Green female sea turtles (*Chelonia mydas*), lay their eggs on the shore, cover the nest with sand, and then return back to the water, leaving the eggs to grow and hatch on their own. Hatchlings return to the ocean after they have hatched. With their fipper like limbs, hatchlings crawl down the sand. Hatchlings instantly swim up to a mile offshore. feeds on jellyfish after arriving in the ocean.

Research shows that both air and sand temperatures crucially impact sea turtle hatchlings. Raising precipitation levels contribute to the nest's humidity levels, which supports the development of healthy eggs. lessens the thermal stress the eggs. Cooler temperatures produce larger, heavier hatchlings with more males, while warmer temperatures temperature accelerate hatching and offer predators protection. However, rising might shorten incubation periods, and erratic rainfall can disrupt growth, potentially affecting survival.

In the Mediterranean, particularly on the beaches of Cyprus and Turkey, the dry season brings very little rain from the North Atlantic. For green turtles in these drier areas, the effects of precipitation become noticeable only after the dry season ends. However, in Florida, precipitation levels stay fairly consistent throughout the nesting season due to local weather patterns, though droughts and heatwaves typically occur in July and October.

CONTRIBUTION BY

RAMYASHREE K

II M.Sc. ZOOLOGY

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NEWSLETTER FROM THE DEPARTMENT OF ZOOLOGY

QUEEN MARY'S COLLEGE

SEPTEMBER 2024 VOL III- 30

IPA NEERATHON

IPA Neerathon is a run for water aimed at promoting awareness about water conservation and fostering community engagement through sports and fitness activities. The event brings together participants from various walks of life to support a common cause while promoting a healthy lifestyle. Students of II M.Sc Zoology participated in the IPA NEERATHON organized Water Awareness on 1st September 2024 at Alcot Memorial Higher Secondary School, Besant nagar, Chennai. They were honoured with medals and certificate.

Students of II M.Sc. honoured with medals and certificate

TEACHER'S DAY CELEBRATION IN DEPARTMENT OF ZOOLOGY

Teachers serve as the building blocks of society, moulding the minds and character of future generations. Their role goes beyond imparting academic knowledge; they shape the values, ethics, and attitudes of their students, and play a significant role in their personal and intellectual development. Teachers' Day was celebrated on September 5, 2024, by the staff and students of the Queen Mary's College. The students of the Zoology department celebrated the day by organising cake cutting ceremony followed by various events to commemorate the day. The day ended with lot of fun and happiness.

Cake cutting organised by the PG students

ONAM CELEBRATIONS

Group photo of taken at the end of Onam celebrations

The Department of Zoology, Queen Mary's college, celebrated Onam festival on 13/09/2024 with much fun and frolic. The staff and students gathered up for the celebration in traditional outfits and participated in various events. The staff encouraged the students to display their artistic talents. The students decorated the department with wide variety of flowers. Beautiful rangoli were drawn outside the department which were decorated with lovely blooms and lamps. The students conducted various events like singing and dancing. There was an aesthetic and enthusiastic display of fine arts and activities by the students. At the end of the celebration a group photo was taken to commemorate the celebration. The day ended with lots of fun and happiness.

WONDERS OF SCUBA DIVING LIZARD

Scuba Diving lizard

The Scuba diving Lizard being the world's smallest scuba diving organism is a species of semi-aquatic lizard producing a special bubble over its nostrils to breathe underwater and avoid predators. This scuba diving lizard has a self-made air supply a bubble of air on its snout extending the water anole's underwater time by more than a minute. This extraordinary behaviour was documented for the first time by Binghamton University ecologist Lindsey Swierk. Diving underwater for long periods of time helps protect the lizards from predators. The lizard is found to be extracting oxygen from these air bubbles. Further work has to be conducted to understand the physiology underlying this unique "bubble-breathing" adaptation.

CONTRIBUTIONS BY

Ph.D. ZOOLOGY

II M.Sc. ZOOLOGY

III B.Sc. ZOOLOGY

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NEWSLETTER FROM THE DEPARTMENT OF ZOOLOGY

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OCTOBER 2024 VOL III- 31

SKIPHOSOURA BAVARICA- AN IMPORTANT ANCESSTOR OF PTEROSAUR EVOLUTION

A team headed by Dr. David Hone, a palaeontologist from Queen Mary University of London, identified the fossil of a new species, which is called as *Skiphosoura bavarica*. Located in southern Germany, *S. bavarica* has a unique, almost whole skeleton that has been preserved in three dimensions, which stands in stark contrast to the frequently flattened fossils of its relatives. The most remarkable characteristic of the new species, which has a wingspan of almost 2 meters, is its short, stiff, sword-like tail, which gave rise to the term "sword tail from Bavaria." For two centuries, scientists classified pterosaurs into two main groups: the later pterodactyloids, which had larger heads, shorter tails, and other adaptations for effective flying, and the early non-pterodactyloids, which were distinguished by short heads, long tails, and particular wing and toe characteristics. The head and neck evolved first in intermediate species, such as the Darwinopterus, which was found in the 2010s. A significant step beyond the Darwinopterus is represented by *S. bavarica*. While its wrist, tail, and foot exhibit transitional traits, its head and neck are similar to those of the more evolved pterodactyloids. The incremental modifications that enabled subsequent pterosaurs to reach enormous sizes are traced by these characteristics.

An illustrated representation of *Skiphosoura bavarica in flight*

DISCOVERY OF MYSTERY MOLLUSC AFTER 25 YEARS

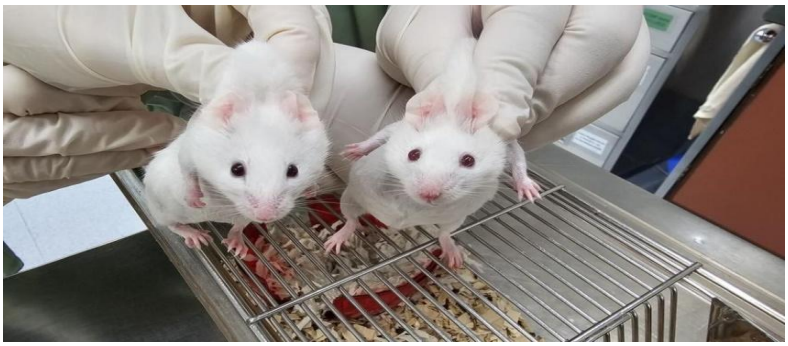
Scientists discovered a strange, luminescent mollusc swimming 8,576 feet below the Pacific Ocean's surface in February 2000. The "midnight zone" off the coast of central California is so deep that sunlight never reaches there, and they were exploring it with a remotely operated underwater vehicle. Since the bioluminescent creature didn't resemble any marine mollusc, they had ever seen, named it as "mystery mollusc." Over twenty years later, scientists claim to have found the elusive species. *Bathydevius caudactylus* is the name given to this new species of sea slug. *B. caudactylus* has a transparent, gelatinous body and an ethereal appearance. It features a small, cylindrical foot that protrudes from its center, a fringed tail with nine to sixteen finger-like appendages, and a huge, bell-shaped hood on top of its head. Its transparent body displays its orangish-brown digestive gland and red stomach. Similar to how a Venus flytrap catches insects, the animals use their hoods to catch prey, mostly shrimp. They either bend their body up and down or float on the current to get through the water. For the most part, *B. caudactylus* just uses its translucent body to hide from predators. However, it may use bioluminescence to frighten predators if needed. Although scientists have never seen the species mate, *B. caudactylus* contains both male and female sex organs, another adaption to its deep-sea habitat.

Bathydevius caudactylus, the deepsea mystery mollusc

CREATION OF CHIMERIC MOUSE FROM CHOANOFLAGELLATE DERIVED STEM CELLS

Researchers were able to produce stem cells by transferring SOX gene from single-celled lifeforms, the choanoflagellates into mouse cells. These reprogrammed cells were put into a growing mouse embryo to confirm their effectiveness. Black fur patches and dark eyes, which were morphological characteristics of both the donor embryo and the lab-induced stem cells, were expressed by the resulting chimeric mouse, demonstrating that these ancient genes were essential in ensuring that stem cells were compatible with the animal's growth. Researchers from The University of Hong Kong and Dr. Alex de Mendoza of Queen Mary University of London worked together to produce the stem cells using a gene present in choanoflagellates, a single-celled

organism linked to animals. The genes Sox and POU, which drive pluripotency—the cellular ability to develop into any cell type—in mammalian stem cells, are found in the genomes of choanoflagellates, the closest living relatives of animals. This surprising finding casts doubt on the long-held notion that these genes developed only in mammals. Dr. de Mendoza stated, "We're witnessing an extraordinary continuity of function across nearly a billion years of evolution by successfully creating a mouse using molecular tools derived from our single-celled relatives." "The study implies that key genes involved in stem cell formation might have originated far earlier than the stem cells themselves, perhaps helping pave the way for the multicellular life we see today."



Chimeric mouse on the left with dark eyes and patches of black fur

NAVARATHRI CELEBRATIONS

Kolu display in the department

Group Dance by the students

The department of Zoology, Queen Mary's College celebrated Navarathri on 10/10/2024 with much happiness and harmony. The students exhibited a beautiful Kolu display decorated with various dolls of animals and birds along with shrine of Gods and Goddesses. The five landmarks of Tamil culture Kurinji, Mullai, Marutham, Neithal and Palai were portrayed as models along with the display of evolution of man. The Principal graced the occasion. Staff from other departments enthusiastically visited the Kolu display. The students offered their prayers to God

through group singing and dancing. After the Pooja, the staff and students offered prasadam to the visitors. There was sale of flowering pots and butterfly host plants organised by the department to encourage the visitors to take part in the go green initiative. The Navarathri celebrations ended blissfully with the complete blessings of the almighty.

Sale of flower pots in the department

CONTRIBUTIONS BY

II M.Sc. ZOOLOGY

Ph.D. ZOOLOGY

ZOOLOGICA

NEWSLETTER FROM THE DEPARTMENT OF ZOOLOGY

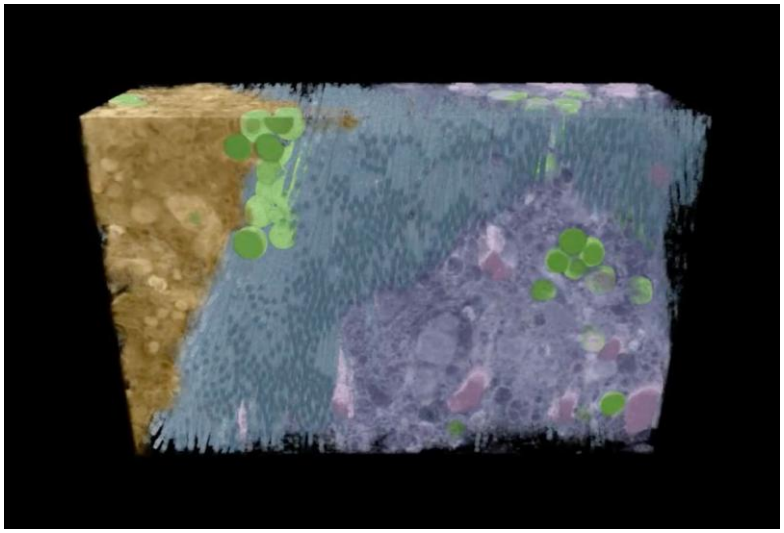
QUEEN MARY'S COLLEGE

NOVEMBER 2024 VOLUME III: 32

HOW DO MUSSELS STICK TO SLIPPERY SURFACES?

Intertidal mussels live life on the edge, subjected to the constant crashing of waves threatening to rip them off their precarious perches. To stay secure on the rocky shore, mussels manufacture dozens of protein-based fibres called byssal threads, which attach to the substrate via tiny discs known as byssal plaques. While humans struggle to make effective underwater glues, mussels produce super strong, waterproof bio adhesives that cure while immersed in seawater. The strength of the adhesive, and of the byssus itself, relies in part on 3,4-dihydroxyphenylalanine (DOPA). DOPA forms coordination bonds with certain metal ions, like iron and vanadium. This type of bond is strong, but it re-forms easily when broken, creating a material that is self-healing at the molecular level.

The mussel secretes DOPA-containing plaque proteins and metal storage particles containing iron or vanadium ions into microchannels in the mussel foot. Then cilia mix the proteins and ions together within the low-pH environment of the microchannel. As the mixture is secreted, the seawater environment triggers bonding between the DOPA and the metal ions, turning the glue from a liquid to a solid.



A three-dimensional reconstruction of a focused ion beam scanning electron microscopy dataset depicts adhesive secretory vesicles (green), which are an important component of the underwater glue.

SANDERLING: LITTLE STORY OF A SHOREBIRD

The Sanderling is a small, plump, energetic wading bird. It has a short and straight black bill and medium length black legs. It's pale grey on top and white underneath, and has a black mark on its shoulder where the folded wing meets the body. When people think of a "sandpiper," they are almost always picturing a Sanderling at the beach. This plump, pale shorebird (its species name *alba* means white) can be seen chasing the surf along almost every sandy beach in the world. Noted bird illustrator and author David Allen Sibley compares Sanderlings to windup toys because of the mechanical-looking way these birds scurry to and fro after advancing and retreating waves.

Sanderlings are part of the shorebird family Scolopacidae. Unlike other members of its family, the Sanderling lacks a hind toe, a modification that helps this bird run across sandy surfaces. The ability to run quickly and efficiently on sand is especially important to this species, which forages along the ocean's edge. During migration and in winter, Sanderlings

patrol the coastline's edge, advancing and retreating with the surf as they probe the sand for small crustaceans, marine worms, and other invertebrates. During breeding season, Sanderlings turn to abundant Arctic insect swarms for food, occasionally supplemented by seeds, buds, and plant shoots. The Sanderling is perhaps the most widespread shorebird in the world, found on every continent except Antarctica.

WHY ARE SOME BEETLES SHINY?

People have long been fascinated by the many members of the animal kingdom that are bright and shiny in this way. Iridescence is a visual property in which the perceived color of an object changes based on the angle it's seen from, while glossiness—also called specularity—refers to its shine. Put another way, while iridescent surfaces reflect different wavelengths of light depending on the viewing angle, a glossy surface reflects all wavelengths at once, creating a mirror-like effect. The combination of these properties gives the Buprestidae family of jewel beetles, among other animals, their characteristic metallic sheen.

The iridescent shine of many beetles is produced structurally. Instead of having specialized pigments that absorb some wavelengths of light and reflect others, which can be metabolically expensive, it's the physical features of these insects' cuticles that trap and redirect some wavelengths. These can take the form of recurring structures that diffract light, or so-called photonic crystals, for example. Such features can produce extraordinarily vivid colors—such as the famous blue of the morpho butterflies—or, as in the case of these beetles, give objects glossy surfaces. The purpose of these visual effects is less clear but iridescence can help camouflage from predators such as birds that rely on sight to find food.

RIDDLES ABOUT ANIMALS

1. I’m black and white, I eat bamboo all day, I live in China, where I stay. Who am I?

   Answer: Panda

2. I’m not a horse, but I run a course, I jump hurdles with great force. Who am I?

   Answer: Rabbit

3. I’m small but fierce, with a tail that stings, you’ll find me in the desert, under hot springs. Who am I?

   Answer: Scorpion

4. I buzz around, causing quite a fright, I bite and sting, often at night. Who am I?

   Answer: Mosquito

5. I’m black and white, with a funny walk, I waddle around and love to squawk. Who am I?

   Answer: Penguin

6. I’m known for my quills that I raise in defense, though I’m small, I give foes quite the suspense. Who am I?

   Answer: Hedgehog

7. I’m covered in stripes, both black and white, I’m a horse-like creature, not quite. Who am I?

   Answer: Zebra

8. I’m small and fuzzy, collect honey with a buzz, I live in a hive with a warm, sweet fuzz. Who am I?

   Answer: Bee

9. I’m a solitary hunter, silent and fast, my roar is mighty, my legacy vast. Who am I?

   Answer: Leopard

10. I dwell in caves, hang upside down, I use echolocation to get around. Who am I?

    Answer: Bat

CONTRIBUTION BY

RAMYA SHREE N (Ph.D. Zoology)

ZOOLOGICA

NEWSLETTER FROM THE DEPARTMENT OF ZOOLOGY

QUEEN MARY'S COLLEGE

DECEMBER 2024 VOLUME III: 33

HOW DO SNAKES FLY?

For animals that live in the treetops, gliding is an energy-efficient strategy for making a quick getaway from potential predators or obtaining a tasty treat from the neighbouring tree. It is perhaps unsurprising then that gliding has independently evolved in many vertebrate groups. Most of these animals like flying squirrels, sugar gliders, and *Draco* lizards—have developed large, wing-like folds of skin between their fore and hindlimbs to create lift and prevent them from simply plummeting to the ground.

Paradise tree snake or paradise flying snake (*Chrysopelea paradisi*) is a species of colubrid snake found in Southeast Asia. It can, like all species of its genus *Chrysopelea*, glide by stretching the body into a flattened strip using its ribs. It is mostly found in moist forests and can cover a horizontal distance of 10 meters or more in a glide from the top of a tree. Slow motion photography shows an undulation of the snake's body in flight while the head remains relatively stable, suggesting controlled flight. They are mildly venomous with rear fangs and also can constrict their prey, which consists of mostly lizards and bats.

The paradise tree snake, of course, has no limbs to which such a membrane might be attached, and its noodle-shaped body does not seem ideal for generating

lift or stability— yet somehow it is able to glide for several meters. during gliding, the snake's body shape transforms: normally vaguely circular in cross-section, the snake splays its ribs open, forming a triangle with a wide, slightly concave bottom. The snake's gliding ability is contributed by surprisingly high amounts of lift when tilted at a 35-degree angle. Changing body shapes and coordinated wiggling provide lift and stability for gravity-defying reptiles.

BUTTERFLY SURVEY AT PACHAIMALAI

A recent study by the Forest Department in the lush, green and serene Pachamalai Hills under the Tiruchi Forest Division has recorded a higher count of butterfly species and a healthy butterfly population. A total of 126 butterfly species were recorded during the two-day study that was carried out by The Nature and Butterfly Society in coordination with the Forest Department team of the Thuraiyur range. The assessment of butterfly species was done on December 14 and 15 during which certain rare species were recorded. The places of exploration included Sengattupatti extension reserve forest, Solamathi reserve forest, Kaliyamman Kovil Thittu reserve forest, Kannimarsolai reserve forest, Melur reserve forest, Top Sengattupatti and Mangalam falls.

The survey was coordinated by The Nature and Butterfly Society (TNBS) Coimbatore along with the Tamil Nadu Forest Department. The participants in the butterfly survey were from Coimbatore, Erode, Salem, Madurai, Chennai. Our Ph.D. Research Scholar Ms. Ramya Shree N from Department of Zoology participated in this survey.

DISCOVERING NEW HORIZONS: A SOPHOMORE'S INTERNSHIP AT KYOTO UNIVERSITY, JAPAN

Our II B.Sc. Zoology student, Harshini. T got an opportunity to undertake an internship at Kyoto University, Japan, from 12th to 23rd December 2024, under the guidance of Dr. Ganesh Pandian Namasivayam at the Institute for Integrated Cell-Material Sciences (ICMS), as a part of the Naan Mudhalvan Initiative. This internship focussed on healthy aging by exploring genetic switches to activate beneficial genes for combating diseases like diabetes, cancer, and neurodegenerative disorders. During the internship, she was introduced to cutting-edge techniques such as nanoparticle synthesis, nanosequencing, cell culture, and Transmission Electron Microscopy (TEM) which deepened her understanding of how research translates into real world applications. This internship has strengthened her profile and taught her the importance of discipline, innovation, continuous learning and values ingrained in Japanese culture. She was appreciated by our Honourable Deputy-Chief Minister, Mr. Udhayanidhi Stalin after the successful completion of the internship. She is grateful to the Naan Mudhalvan team, our college and Dr. Ganesh Pandian for this invaluable learning experience.

NEW MORAY EEL DISCOVERED IN CENTRAL INDO-PACIFIC RIVER MOUTHS, NAMED AFTER GOD OF THE UNDERWORLD

A new species of black, slender moray eel has been found across the Central Indo-Pacific, including within the cave of the Puerto Princesa Subterranean River. This new moray eel, *Uropterygius hades* is named after the underworld god Hades for its distinctive habitat, unique behaviours, and its deep dark colouration. This eel, with its highly reduced eye size, is considered an ideal example for studying the evolutionary processes that allow eels to adapt to cave environments. When kept in an aquatic tank, the Hades' snake moray exhibits tail-first burrowing behaviour, which is rarely seen in moray eels. Additionally, it is highly sensitive to light, consistently attempting to hide when exposed to it. Its small eyes are thought to be an adaptation to low-light environments and its reduced number of head sensory pores is believed to help avoid clogging by the substrate. This evidence suggests that this species might be an excellent burrower, relying primarily on chemoreception rather than vision to detect prey or avoid predators.

Image of *Uropterygius hades*

CONTRIBUTIONS BY

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