ΖΩΙ

(ZOI – LIFE)

Department of Zoology

Auxilium College (Autonomous)

Vellore – 6

Volume – VII

2023- 2024

The Editorial

The Department magazine ZΩI – the pride of the Department of Zoology, encapsulates the creativity, talents and zeal of the faculty and students of the department.

With immense gratitude to the Lord Almighty, PG & Research Department of Zoology brings forth the VII volume of ZΩI – ZOI which means '*Life*' in Greek.

We dedicate this volume for our beloved Principal Dr. (Sr.) Jaya Santhi R. in honour of her Retirement, for her benevolence and relentless support, guidance and encouragement in all our endeavours.

The seventh volume of ZOI records the academic, extracurricular and formative programs of the department for the academic year 2023-2024.

This has been a remarkable year with many new achievements accomplished through our hard work, commitment and fervour for progress. May the Lord guide us in the coming years to do many more noble deeds for the growth of young.

On behalf of the faculty

Dr. J.S. Arockiamary
Associate Professor and Head
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CONTENTS

STAFF CORNER

TAILOR BIRD

"The Little Bird that Stitch Nest"

Dr. Arockiamary J.S., Head and Associate Professor,
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Tailor Birds are a species of Song birds, found in Asia. A little bird, brightly coloured with grey or green upper parts and chestnut colour on the head. The chicks start out dull green all over and change in colour when they reach adulthood. Tailor Birds have a long tail held upright. They are weak flyers, but very active. They will flit between trees and shrubs and hop on the ground to forage for insects. They feed on the fruits, seeds and nectar. Tailor birds camouflage their nests with its surroundings to keep chicks safe from predators. These are shy birds that are usually hidden within vegetation, their loud calls are familiar and give away their presence.

Their Amazing Nest:

The female Tailor Bird chooses a broad and strong supple leaf that can provide good structural support once folded. The leaf should bear the weight of the chicks and should not break with stitching. The nest is usually built low at about one meter above the ground level. Often a leaf in the middle of thick foliage is chosen to avoid the exposure of the nest to the predators. The female wraps the leaf around herself to judge the size. Depending upon the size two or three leaves are used for the nest. The bird with the help of its feet pulls the leaf together and pierces a series of holes along the leaf's edge using her long slender beak that is shaped like a needle. The holes are so tiny the leaf holds its shape and also doesn't turn brown. Then the bird threads plant fibers like cotton, lint and silk from cobweb or cocoon through the holes. The edges of the threads act like rivets holding the leaf edges together. The stitches don't unravel, because of the coarseness of the thread and elasticity of the leaf springing back to grip the thread passing through the holes. A single nest can contain between 150-200 stitches. The nest will have a roof to provide shelter from the monsoon rains and shade from the sun. The roof is formed from one or more pieces of leaves pulled down, also conceals the nest.

Nest building takes place in the morning or late afternoon over the course of 2 to 4 days. Nest is built by the female but materials are brought by the males - a test of fitness for both. The nest is a deep cup that follows the natural look of plant. The upper surface of the leaf faces outwards, camouflaging with the exterior. The nest faces the same direction that the leaves grow, if the plant has natural downward deposition, it stands vertically or if the foliage is horizontal, so does the nest. The nest is skillfully put together that it is almost impossible to tell it apart from the surroundings, without carefully observing the birds. Within the sewn cup lies the real nest. The male collects and fills the cup with fine grass and lines the sides with other soft plant and animal materials which offer insulation.

Breeding season varies between species. 3-5 eggs, pale blue in colour with brown flecks are laid and incubation is for 12 days. Both the parent feed and raise the chicks. These Altricial Passerines usually swallow the faecal sacs, so as to avoid leaving the chicks alone, vulnerable to predators, and they eventually carry and dump some distance away to reduce the risk of disease. As the juveniles grow, they will accompany their parents on short trips and parents

teach them to hunt for food. Chicks eventually fledge in about three weeks and the nest is abandoned which will be reused by another couple after picking apart.

DIVERSITY OF DANCERS - (Types of peacocks)

Dr. Mary Agnes A., Associate Professor,
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Peacock our National Bird, the magnificent and beautiful bird with iridescent feathers where the colours are not caused by pigments but produced by microscopic structures within each feather. These structures bend and reflect light to produce the vibrant colors.

A peacock's tail feathers are mesmerizing because they follow the **Fibonacci sequence**. In the wild, peafowl can live for 15 to 20 years. Peacocks belong to the pheasant family Phasianidae. There are three peacock species in the world, they are the Indian Peacock the Green Peacock, and the Congo Peafowl.

Also known as the blue peacock, the Indian Peacock ***Pavo cristatus***, carries blue and green feathers and thrives in the forests and grasslands of South Asia and the Indian subcontinent. The Green Peacock ***Pavo muticus*** lives in Southeast Asia, particularly in Myanmar, Thailand, Laos, Vietnam, and Indonesia. Besides its green and bronze plumage, it also carries an elegant crest.

Pavo cristatus

Pavo muticus

The Congo Peafowl ***Afropavo congensis*** is the smallest and most secretive of the trio. It lives in the dense rainforests of the Democratic Republic of the Congo in Central Africa.

13 Peacock Subspecies and Variants.

1. Javanese Peafowl (*Pavo muticus muticus*) 	**2. Burmese Peafowl (*Pavo muticus imperator*)** 
3. Spicifer's Peafowl (*Pavo muticus spicifer*) 	**4. Black-shouldered Peafowl** 
5. White Peafowl 	**6. Opal Peafowl** 
7. Pied Peafowl	**8. Silver Pied Peafowl**

9. Cameo Peafowl (*Pavo cristatus*)

10. Burford Bronze Peafowl

11. Purple Peafowl

12. Peach Peafowl

13. Taupe Peafowl

TYPES OF BIRD NESTS

Dr. N. Uma Chandra Meera Lakshmi, Assistant Professor,
PG and Research Dept. of Zoology, Auxilium College (Autonomous), Vellore-6.

"*Home is a shelter from storms all sorts of storms*" – William J. Bennett.

"*Home is where one starts from*". - T.S. Eliot

Birds build nests to provide shelter and protection for their eggs and young ones. Nests help birds to keep their nestling warm, safe from adverse weather. Birds build nests that are inaccessible, hidden or camouflaged to minimize the threat of predators. Nesting behaviour vary depending on the species and environmental needs. The different types of nests are as follows:

Cup nests: Cup- shaped are one of the most common types of nests built by birds. They are constructed by most passerines, some hummingbirds and swifts, kinglets, crests, and other bird species. These nests can be found in a variety of locations including trees, bushes, ledges, and even on the ground. They are typically made of small twigs, grasses, weeds, mud, saliva, and in some cases, even spider silk. The interior of the nest may be lined with fine plant material and hair to provide comfort and insulation for the eggs and young chicks.

Olin Sewall Pettingill subcategorized cup nests as follows:

Supported Cupped nests: Located in the crotches and branches of trees and shrubs, supported mainly from below. Many passerines and humming birds build such nests.

Suspended Cupped nests: Supported from the rims, sides or both and not from below.

Adherent nests: Sides are attached by an adhesive substance (E.g. Mud or Saliva) to a vertical surface.

Platform nests: Flat structures made of layered sticks and branches with dirt and grass. Big birds, like eagles, ospreys, and storks, build platform structures so they can have a 360-degree view of their surroundings. They build on the ground or in elevated areas, such as tall trees, cliffs. Birds typically add new material to the same nest each breeding season, allowing the structure to grow larger each year.

Ground nests: Simple depressions in the ground sometimes sides are extended upward and arched over the top making a domed structure. Several passerines, particularly those that occupy open habitat like grasslands. E.g. White – Crowned Sparrow.

Cavity nests: Holes in trees or chambers in cliffs. E.g. Owl, Trogons, Tits, Chickadees. Woodpeckers can excavate the cavity themselves. The size of the cavity depends on the species.

Burrow nests: Very effective at protecting eggs and young from predators and maintaining an appropriate microclimate for eggs and young. Bank Swallows usually construct their own burrows, some others use the burrows constructed by other species like burrowing owl.

Scrape nests: Shallow depressions in the ground (sometimes with a few stones or leaves added) or in the leaf litter. These nests are typically found in areas with little vegetation or where it is easy to dig into the ground. Shorebirds, Gulls, Terns, Nighthawks use scrape nests. Scrape nests are often exposed and vulnerable to predators, the birds must be vigilant and use distraction displays to lure predators away from the nest.

Floating nest: Constructed on water and anchored to surrounding vegetations. Floating nests are made by birds such as loons, coots, gallinules and grebes. These birds require a safe and secure place to incubate their eggs and raise their chicks, away from predators that could reach them easily on land.

Mound nests: Unusual and distinct type of bird nest. They are essentially large piles of nesting material that are piled up on the ground. The shape of these nests can be either cone or bell-shaped and the materials used depend on the species. Some birds use soil, sticks, leaves and even rocks to construct. Flamingos, Malleefowl, Horned coots construct mound nests.

These different types of nest building techniques show the adaptability of birds to their environment and nesting requirements.

MICROPLASTICS ARE IN OUR BODIES!!! HOW MUCH DO THEY HARM US?

Ms. Anuradha M., Assistant Professor,
PG & Research Dept. of Zoology, Auxilium College (Autonomous), Vellore-6.

Plastics are complex combination of synthetic or semi-synthetic organic materials of a high molecular weight, usually produced from mineral oil through, including additives that give them strength and flexibility. Both plastics and chemical additives are toxic. Plastics are easy to mold into complex shapes and forms, extremely durable, lightweight, corrosion-resistant, thermally and electrically insulating, offer a wide mechanical and multifunctional performance range. Their versatility and cost-effectiveness led to a spectacular exponential increase in annual global plastics production. As for degradation of plastics, various environmental processes occur through complex pathways involving hydrolysis, mechanical abrasion, thermal degradation, photo degradation, and biodegradation. These degradation processes are generally very slow, decreasing the size of plastic particles in the range of 0–103 μm/year, depending on the plastic type and the environmental conditions. The plastic additives or the chemical contaminants that become bound to Micro Nanoplastics (MNPs) in the environment like hydrophobic organic contaminants and heavy metals can have a variety of toxic effects, including potential carcinogenic and epigenotoxic effects. Microplastics (MPs) are ubiquitous anthropogenic contaminants, and their abundance in the entire ecosystem raises the question of how far is the impact of these MPs on the biota, humans, and the environment.

Scientists have been studying microplastics, they are defined as particles measuring less than five millimeters across, for a quarter century. Microplastics are in salt, beer, fresh fruits, vegetables, and drinking water.

The search for potential harm from plastics actually began with animal studies some 40 years ago, when marine biologists studying the diets of seabirds began finding plastic in their stomachs. As more marine wildlife began to be affected by plastics, either by entanglement or ingestion, studies expanded beyond birds to other marine species, as well as to rats and mice.

In the decade since, the numbers and risks to animals have worsened. More than 700 species are affected by plastics. Certain bird populations are already thought to be threatened by widespread exposure to endocrine-disrupting chemicals contained in plastics. Laboratory studies of fish have found plastics can cause harm to reproductive systems and stress the liver.

Animal studies have shown the ubiquity of plastic waste and helped inform research into its potential physiological and toxicological effects in humans. The tiny particles of plastics which were found in various places like oceans, environment is now in human blood.

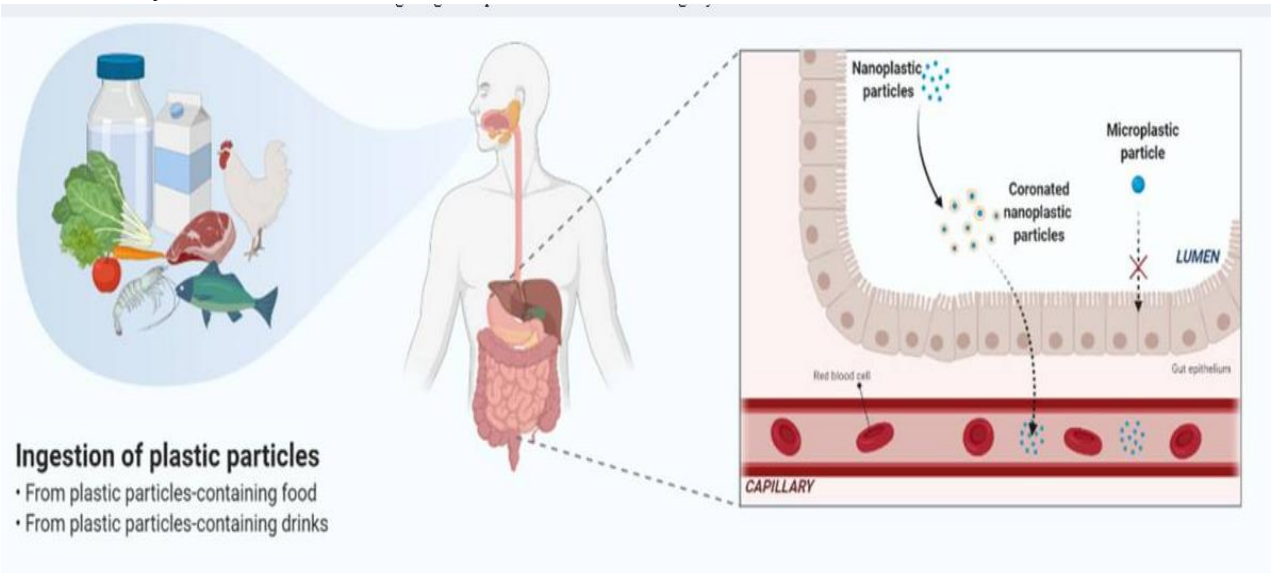
Recent research has identified the presence of MNPs in different parts of the human body. A 2018 study found MNPs in the placentas of unborn babies, lungs, liver, blood and in the feces of people. Half the samples contained PET plastic, which is commonly used in drinks bottles, while a third contained polystyrene, used for packaging food and other products. A quarter of the blood samples contained polyethylene, from which plastic carrier bags are made.

Plastic production is set to double by 2040. The big question is what is happening in our body?". "Are the particles retained in the body? Are they transported to certain organs, such as getting past the blood-brain barrier?" And are these levels sufficiently high to trigger disease?

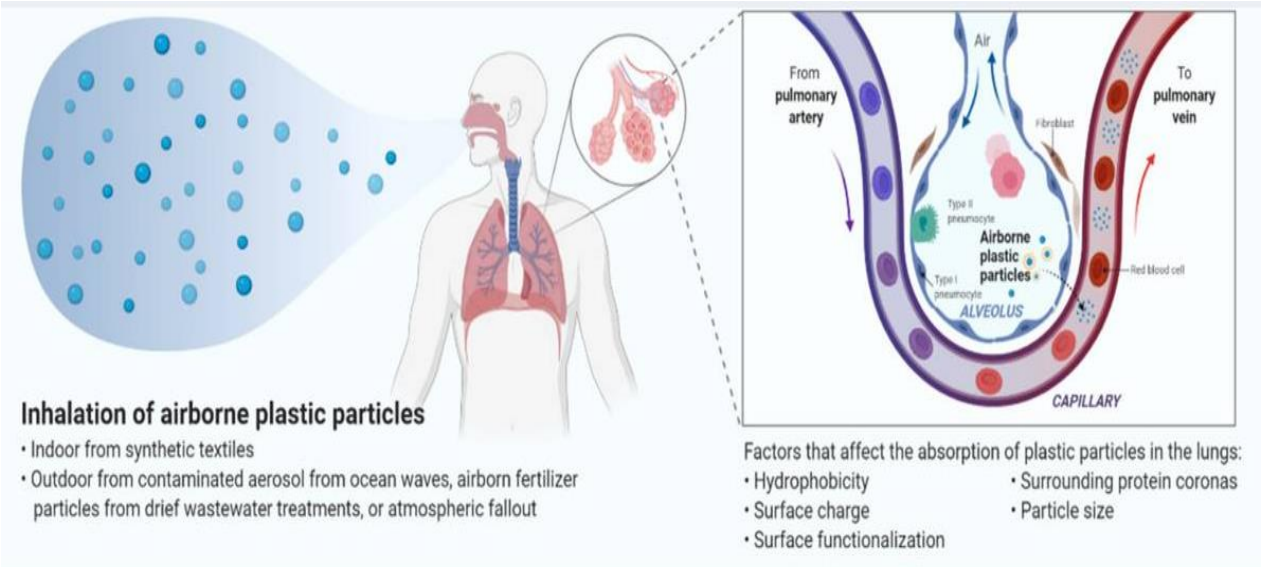
Humans could be exposed to MNPs predominantly through three main routes of entry, that is, ingestion, inhalation and dermal contact.

Oral ingestion is currently the primary route of exposure as recent studies have found a large quantity of MNPs in food sources, drinking water and from the daily use of plastic food contact materials. MNPs in the gastrointestinal tract have been shown to be degraded by microbes and induce changes to the composition of the gut microbiome. The effects of MNP on the mammalian gut microbiome, including changes in microbiome diversity, an increase in potentially pathogenic bacteria, a decrease in commensal gut bacteria, and resulting metabolic dysfunction, resemble common findings in chronic human diseases such as diabetes, obesity, or chronic liver disease. They can also penetrate the cell membranes, surpassing the intestinal barrier, reaching the blood stream, followed by translocation to other organs. Almost all blood from the intestinal tract transfers through the liver prior to further distribution into the body, leading to the possible accumulation of MNPs that penetrate the epithelial barrier in the liver. MNPs are also likely to penetrate the blood-brain barrier, accumulate in the brain and manifest

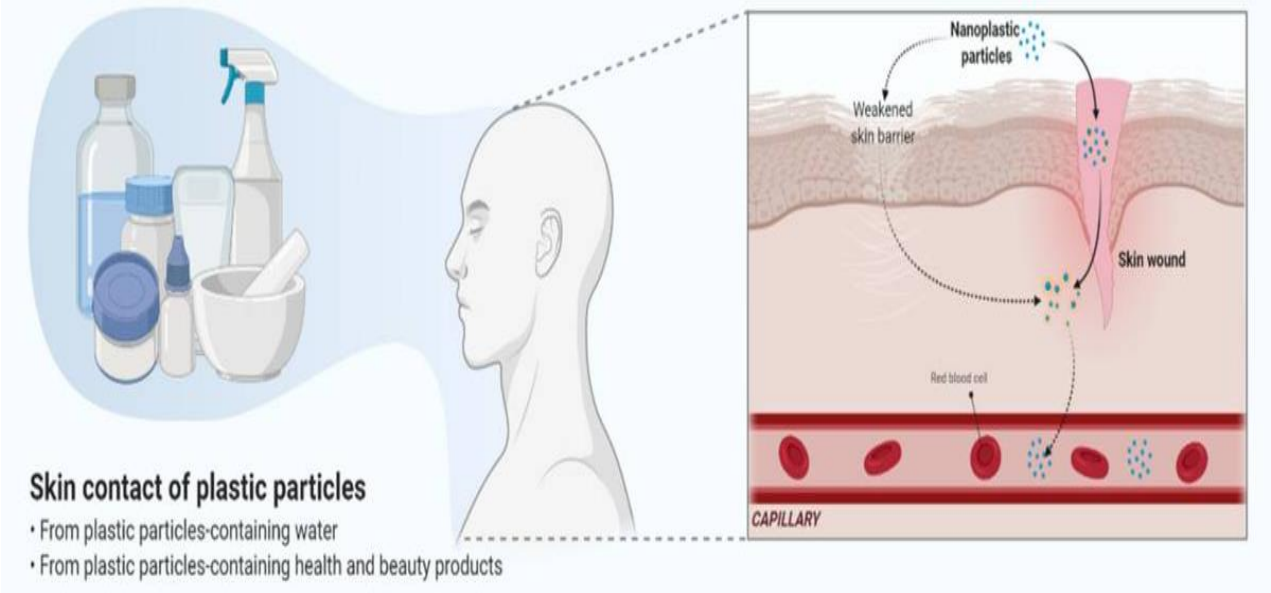
neurotoxicity.



Inhalation of airborne MNPs has been reported in occupationally exposed individuals such as workers in the textile like nylon, polyester, polyolefin, and acrylic industry was related to a higher prevalence of respiratory irritation. Respirable MNPs refer to those that can arrive and deposit in the respiratory zone of the lungs, where the alveoli are situated and gas exchange takes place. Some administered MNPs might be able to cross epithelial barriers of lungs and translocate to secondary organs.



Although dermal exposure is believed to be the least relevant route of entry, there is evidence shown that MNPs could transverse the dermal barrier however; this becomes a lesser concern as more and more countries ban microbeads in personal care products and detergents.



A recent study found that MNPs can latch on to the outer membranes of red blood cells and may limit their ability to transport oxygen. The particles have also been found in the placentas of pregnant women, and they pass rapidly through the lungs into the hearts, brains and other organs of the fetuses.

With respect to gastrointestinal cancer, a multi-endpoint toxicological study demonstrated increased uptake and intracellular accumulation of MNPs in colorectal cancer. The genotoxic mechanism of MNPs is associated with biochemical events crucially involved in carcinogenesis, such as genomic alterations including those that alter gene expression, and potentially affect post-translational modification oxidative stress, membrane damage and DNA fragmentation as well as cytotoxicity. Increased production of reactive oxygen species (ROS) generation is widely known for its crucial role in the growth and proliferation of cancer cells through disturbances in cellular signaling due to their mutagenic activity. They act as substrates for membrane transport activity and as a chemosensitizer of toxic substances and in doing so, might "boost" their carcinogenic effects. Humans are exposed to between tens of thousands and millions of MNPs each year, or several milligrams per day. There is a pressing need to address the MNPs pollution, we need to understand these things that are getting into our body are possibly staying there for years and cause adverse health consequences. Research and development is needed to thoroughly identify and analyze the potential impact of MNPs on the environment, the distribution of waste plastics in the ocean, and chemical composition. In the future, in-depth research on the pollution status and hazards of marine MNPs, as well as the correlation between exposure to MNPs and diseases in humans, should be conducted; and based on these findings; human health should be protected by preventing and managing MNPs.

RHIZOFILTRATION-A BIO WEAPON AGAINST CONTAMINANTS

Dr. Hannah Elizabeth S., Assistant Professor,
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Rhizofiltration can be defined as the use of plant roots to absorb, concentrate, and precipitate hazardous compounds, particularly heavy metals or radionuclides, from aqueous solutions. Hydroponically cultivated plants rapidly remove heavy metals from water and concentrate

them in the roots and shoots. Rhizofiltration is effective in cases where wetlands can be created and all of the contaminated water is allowed to come in contact with roots. Contaminants should be those that sorb strongly to roots, such as lead, chromium, uranium, and arsenic. Roots of plants are capable of sorbing large quantities of lead and chromium from soil water or from water that is passed through the root zone of densely growing vegetation. Shallow lagoons have been engineered as wetlands and maintained as facultative microbial systems with low dissolved oxygen in the sediment. Groundwater or wastewater is pumped through the system for the removal of contaminants by rhizofiltration. Wetlands have been used with great success in treating metals for many years. Long-term utilization of wetland plants and sulfate-reducing conditions result in an increase in pH and a decrease in toxic metals concentrations for treatment of acid mine drainage. Root systems and sediments in wetlands are facultative which facilitates sorption and precipitation of toxic metals. Harvested plants containing heavy metals can be disposed of or treated to recycle the metal. Today scientists have identified plants demonstrating high biomass production and metal removal capacity for a wide variety of metals. Rhizofiltration has many of the benefits including low cost and minimal environmental disruption. A continuous flow system circulates the contaminated water through specially designed plant containment units. Periodically, older plants are harvested and replaced.

PHYTOHYDRAULICS - A TECHNIQUE TO REMEDIATE CONTAMINATED SOIL

Dr. Hannah Elizabeth S., Assistant Professor,
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Plants significantly affect local hydrology. Phytohydraulics is the ability of vegetation to evapotranspire sources of surface water and groundwater. The vertical migration of water from the surface downward can be limited by the water interception capacity of the aboveground canopy and subsequent evapotranspiration through the root system. If water infiltrating from the surface is able to percolate below the root zone, it can recharge groundwater. However, the rate of recharge depends not only on the rooting depth of the species, but on the soil characteristics as well. The horizontal migration of groundwater can be controlled using deep-rooted species such as prairie plants and trees to intercept ,take up ,and transpire the water. One class of trees that has been widely studied in phytotechnologies is phreatophytes, which are deep-rooted ,high-transpiring, water-loving trees that send their roots into regions of high moisture and that can survive in conditions of temporary saturation .Salicaceae comprises typical phreatophytes e.g poplars and willows. Trees such as *Prosopis* and *Eucalyptus* are typical phreatophytes useful in bioremediation.

HELIOTROPISM (*HELIANTHUS ANNUUS* AND *ANEMONIA VIRIDIS*)

Dr. Vidhya K., Assistant Professor,
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Heliotropism, or solar tracking, is when a plant follows the movement of the sun during the day. “Helio” refers to the sun and “tropism” means a turning or movement of a living organism toward or away from an external stimulus, such as light, heat or gravity.

Helianthus annuus, the sunflower is the best example of a plant that displays this phenomenon. Young sunflower plants follow the sun from east to west during the day and then, reorient themselves during the night to face east in anticipation of the sunrise.

Heliotropism optimizes light interception of young sunflower plants, increasing it by 10% or more. Increased light capture improves plant performance with more leaf area and increased biomass.

Sunflowers perform their daily dance from east to west by the coordinate action of two mechanisms. Light-signaling pathways set a basic rate of growth for the plant, based on available light. The apex of the plant is the most sensitive to light. The circadian or internal clock of the plant is influenced by the direction of light and causes the stem to grow more on one side than the other.

At the final stage of flower development, called Anthesis, sunflowers conclude their solar tracking ways and turn their flower heads eastward. These east-facing sunflowers heat up more quickly in the morning, making them more attractive to pollinating insects, such as honeybees.

Helianthus annuus

Anemonia viridis

Photosynthetic Sea Anemones also orient toward the Sun, Scientists observed wild Snakelock Anemones (*Anemonia viridis*), a green and purple, tentacle species found along the European and Mediterranean coasts that draws energy from sunlight by the photosynthetic algae in its tissues and found that they kept their tentacles aimed at the Sun as it moved through the sky. Laboratory evidences prove the same with a mimicked anemones environment with a moving artificial light, which yielded the same result. Using different wavelengths of light, they learned that the anemones were tracking blue light, the most important wavelength for photosynthesis. Like plants, this angling behaviour could help the animals get more sunlight in dimmer waters. The researchers also noticed that by pointing its tentacles straight out, parallel to the incoming rays, the anemones decreased the area of their bodies exposed to direct light, which could also help individuals in especially sunny spots avoid dangerous overexposure. Other photosynthetic anemones may also have this ability, experts say, but further research is needed to confirm this.

CHALLENGES OF CANCER TREATMENT

Dr. Rajalakshmi A., Assistant Professor,
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Cancer is the deadliest disease in the developed world. The use of modern genomic technologies we are now beginning to understand the enormous complexity of cancer. However there are few success stories as far as the treatment of cancer is concerned. For instance the treatments of leukemia and lymphoma have been established and proved to be satisfactory.

Reasons for the difficulties in cancer treatment are targeting cancer stem cells (CSCs) is difficult- The growing body of evidence suggests that in many cases cancerous cells originate from a single cell with stem cell characteristics. These findings should have a profound effect on the treatment of cancer. Traditional cancer treatment is based on the assumption that all somatic cells possess a similar malignant potential. The lack of specificity in these strategies has made them ineffective to provide long lasting protection against cancer. In contrast the drugs that are more target-specific can cause the regression of the bulk of the tumour but in most cases fails to eliminate the cancer stem cells and results are proved to be devastating as the recurrence of the tumour is commonly observed after the discontinuation of the drug administration.

Drug resistance properties of cancer stem cells make them immune to anticancer drugs, since normal stem cells have to undergo a repeated process of self-renewal and differentiation in the entire life span of an individual, they have developed certain unique mechanisms by which they can protect themselves from harmful xenobiotic agents. Lack of cancer epigenetic profiling and specificity of existing drugs, The traditional approach in cancer research was primarily focused on the identification and determining the general patterns of genetic anomalies that result from the mutational or other chromosomal aberration events. But unfortunately only a handful of genetic mutations associated with cancer have been identified as among patients which by no means explains the enormous genetic deviation that eventually manifests in the malignant phenotype of cancer. Problems associated with cancer diagnosis make it difficult to treat. The non-specific nature of cancer symptoms makes diagnosis difficult; in certain cases the patient remains asymptotic. So these early signs and symptoms of cancer are often neglected by the patient, who provides the opportunity for the cancer to spread without any medical intervention. By the time the patient seeks medical help, it may be out of reach of available clinical treatment. Unavailability of effective biomarkers for cancer diagnosis and prognosis, the unavailability of good biomarkers is another hindrance for cancer treatment. Biomarkers are not only important for diagnostic purposes but can also be of great prognostic value, with the identification of the right biomarker the cancer progression and effect of chemotherapeutic drugs can be evaluated in great detail. But unfortunately the hunt is still on to identify reliable biomarkers for different cancers. Limitations of conventional chemotherapeutic agents, the existing chemotherapeutic drugs are toxic to all cells including cancer and normal cells. So the administrations of these toxic agents kill the rapidly proliferating cancer cells as well as the normal cells which may lead to some serious side effects and may sometimes cause the death of patients. Untargeted radiotherapy suffers from a similar lack of specificity.

Metastasis poses a huge problem in cancer treatments; one of the main reasons for the difficulties associated with cancer treatment is the metastatic nature of cancer. The asymptomatic nature of certain cancers and the lack of diagnosis allow the cancer to spread to different parts of the body from its site of origin without any medical intervention. The first site where the cancer is starts is called the “primary cancer site” whereas the site in which cancer has spread is known as the “secondary or metastatic site”. In order to spread the cancer cells, primary sites have acquired the ability to invade and colonize a distant site and eventually spread into different parts. There are three major methods of cancer metastasis: local spread, through blood circulation and via the lymphatic system. So when cancer metastasizes the treatment should

not only be directed towards the primary cancer but also needs to eliminate the secondary ones. This poses a great problem. Moreover there are certain metastatic events in cancer which are too small to be detected. These are called micrometastases events. For a few cancers, blood tests can detect the marker proteins released by the cancer cells. These markers can indicate the presence of cancer spread which is difficult to identify by normal scanning. But unfortunately most of the cancer specific markers have not yet been identified.

NANOTHERAPEUTICS

Dr. Anu K., Assistant Professor,
PG and Research Dept. of Zoology, Auxilium College (Autonomous), Vellore-6.

Among the greatest challenges facing modern medicine is the problem of administering targeted, potent therapeutics to the desired tissues. Selectively treating the diseased cells, while sparing the healthy ones, would greatly diminish side effects or dosing problems, but it has been only recently that new strategies have emerged that can achieve these effects. One promising strategy is the use of nanotechnology to miniaturize drug delivery systems into so-called nanotherapeutics. The main goal of nanotherapeutics is to develop next generation therapies that have increased safety, biocompatibility, bioavailability, therapeutic action and bio-adherence, and reduced-dosage, clearance and metabolism.

Nanoscale formulations have facilitated advanced engineering of drug pharmacology in order to optimize drug release, absorption, site-directed distribution, metabolism and excretion, and drug residence time. Advances have been strongly mediated by PEGylation of nanotherapeutics and drugs to prolong their circulation time, and delay immune recognition and metabolism. sensor-based drug release, targeting to intracellular compartments, improved modelling and screening of nanotechnology platforms have broad impacts on drug absorption, distribution, metabolism and excretion, and the importance of framework for their regulation.

Nanotherapeutics provide the opportunity to greatly enhance absorption of therapeutics in with impaired uptake of specific soluble transporter drugs, delayed uptake time and reduced absorption of weakly basic drugs. Benefits are afforded because nanotherapeutics are broadly absorbed by multiple soluble transporters and utilize macropinocytosis and clathrin endocytosis to increase drug bioavailability. Nanotherapeutics demonstrates conventional and highly specific distribution and clearance by the liver, potentially bypassing recognized age-related impairments in first pass metabolism, reductions in serum albumin, blood flow and passive clearance pathways. Though it is a boon in therapeutics, broad differences in complement, IgG and protein binding may drastically shift the efficacy and long-term toxicity of nanotherapeutics in patients and it need to be investigated in animal models and relevant metabolic pathways has to be from dark to light for better indulgent of nanotechnology in therapeutics.

THE CRUCIAL ROLE OF *SCYLLA SERRATE* (CRAB) IN ECOSYSTEMS: BEYOND THE SANDY SHORELINES

Dr. Kavitha R., Assistant Professor,
PG and Research Dept. of Zoology, Auxilium College (Autonomous), Vellore-6.

Scylla serrata, commonly known as the mud crab, stands out as a remarkable species with a profound impact on coastal ecosystems. One of its notable roles lies in being an ecosystem engineer, particularly in mangrove and estuarine environments. These crabs exhibit intricate burrowing behavior, creating a network of burrows within the muddy substrate. The significance of this activity extends beyond the immediate habitat of the mud crab. By burrowing, they enhance soil aeration, allowing for improved oxygen diffusion into the ground. The burrows act as conduits for water movement, preventing water logging and aiding in natural filtration processes. This not only benefits the mud crabs themselves but also promotes a healthier environment for mangrove vegetation and various marine organisms. The mud crab's engineering prowess shapes the physical characteristics of coastal ecosystems, influencing the overall health and resilience of these dynamic environments.

Furthermore, the burrows of *Scylla serrata* create microhabitats within the substrate. These microhabitats serve as refuge areas for smaller organisms seeking protection from predators, contributing to increased biodiversity. The intricate burrow systems, combined with the improved soil structure, make the mud crab a key player in sculpting the substrate and fostering a balanced coastal ecosystem.

Scylla serrate

The mud crab's influence extends beyond engineering the substrate; it plays a pivotal role in nutrient cycling and sediment dynamics. As *Scylla serrata* burrows into the sediment, it inadvertently mixes organic matter into the substrate. This mixing process accelerates the decomposition of organic material by providing it with increased surface area and exposure to microbial activity. The result is a release of essential nutrients, such as nitrogen and phosphorus, into the surrounding soil. These nutrients become readily available for mangrove vegetation and other plant species, promoting their growth and contributing to the overall productivity of the ecosystem.

Moreover, the burrowing activities of mud crabs prevent the accumulation of excessive organic matter in the sediment. This helps maintain sediment stability and prevents potential negative impacts on water quality. By regulating sediment composition, *Scylla serrata* contributes to the prevention of anoxic conditions and promotes a balanced environment for various marine organisms. The intricate interplay between mud crabs and the sediments in which they reside showcases their significance in shaping the chemical landscape of coastal ecosystems.

Additionally, *Scylla serrata's* foraging behavior influences sediment structure. By constantly moving and turning over sediments, mud crabs contribute to sediment bioturbation. This dynamic behavior enhances the overall health of the ecosystem by preventing the stagnation of organic matter and facilitating the exchange of nutrients and gases between the sediment and the surrounding environment.

Scylla serrata emerges as a keystone species in coastal habitats, exerting a profound influence on the structure and dynamics of these ecosystems. The feeding habits of mud crabs involve predation on various invertebrates, including mollusks and smaller crustaceans. Through this predation, mud crabs help regulate the populations of these prey species, preventing unchecked growth that could lead to imbalances in the ecosystem.

In essence, *Scylla serrata* is not just a creature found along sandy shorelines; it is a keystone species and an ecosystem engineer that profoundly shapes the physical and chemical characteristics of coastal ecosystems. From engineering the substrate and influencing nutrient cycles to serving as a keystone species, the mud crab's contributions underscore the intricate and delicate balance required for the health and sustainability of coastal habitats. Recognizing and appreciating these roles is essential for effective conservation strategies that safeguard not only the mud crab but the entire ecosystem it influences.

The mud crab, *Scylla serrata*, plays an indispensable and multifaceted role in coastal ecosystems that extends far beyond the sandy shorelines. As an ecosystem engineer, the mud crab shapes the physical characteristics of its habitat by intricately burrowing into the substrate, promoting soil aeration, water filtration, and the creation of microhabitats. This engineering prowess enhances the overall health and resilience of coastal environments, benefitting not only the mud crabs themselves but also the diverse array of organisms that call these ecosystems home.

ENDOWMENT LECTURES

LIST OF ENDOWMENT LECTURES FOR THE ACADEMIC YEAR 2023-2024

S. No	Date	Resource Person	Topic	Name of the Lecture
1	28.07.2023	Dr.Manoranjitham.S, Professor & Head Psychiatric Nursing Department, Deputy Director, College of Nursing, CMC, Vellore.	Mind & Body Connectedness	Sr. Helen Fernandez Endowment Lecture for UG & PG Zoology Students
2	17.08.2023	Dr. A. Vinodhini, Assistant Professor of Zoology, D.K.M College for Women (Autonomous) Vellore.	Endocrine Glands: Anatomy & Physiology	Sr. Regina Colombo Endowment Lecture for the III B.Sc., Zoology Students.
3	11.09.2023	Ms. VIDHYA Senior Clinical Embryologist, IVF Centre, Garbhagudi. Karnataka.	Infertility- Genetic Causes & Management	Sr. Antoinette Aloysius Endowment Lecture for the II B.Sc., Zoology Students.
4	23.11.2023	Mrs. Shandrila Immanuel, Professor & Head, Community Health Nursing Department, College of Nursing, CMC, Vellore.	Helminth Infections	Sr. Maria Fino Endowment Lecture for I B.Sc., Zoology Students.
5	08.12.2023	Arunkumar Palaniappan, Assistant Professor, CBCMT, Vellore Institute of Technology, Vellore.	Engineered Cardiac Tissue – A potential 3D tissue model for drug screening applications & a tool for cardiac tissue regeneration.	Sr. Ethelvina Endowment Lecture for PG Students.
6	04.01.2024	Dr. Joseph Nathanael, Associate Professor Senior, CBCMT, Vellore Institute of Technology, Vellore.	Rapid and Area Specific Laser-Assisted Biomineralization (LAB) Process for Tooth Surface Functionalization.	Sr. Cleofe Fassa Endowment Lecture for PG Students.

MIND BODY CONNECTEDNESS

Dr. Manoranjitham. S
Professor & Head of Psychiatric Nursing, College of Nursing, CMC, Vellore.

Mind-body connectedness refers to the intricate (complex) interplay between our mental and emotional states and our physical well-being. Thoughts, emotions, beliefs and attitudes have a profound impact on our overall health and functioning. The above concept suggests that the mind and body are not two entities but rather interconnected

What is mind? Presumed to arise from the brain. An abstract concept - characterize thoughts, feelings, subjective states, and self-awareness. Physical health and emotional health are intimately intertwined. Mind and Body - Two important aspects of human beings.
Where is Mind? The functional capacity of the brain is mind. Not made of any cell.
States of mind:

- Emotional Mind-is used when decisions are made purely based on feelings
- Intellectual Mind-refers to the facts. It is usually supported by evidence and sometimes scientific knowledge
- Sound mind-is the blend of your emotional and intellectual mind. Refers to times when you make decisions based on both facts and feelings
- Different decisions require different states of mind.

Emotions and Bodily sensations: Bodily sensations are associated with human emotions. Various emotions causing changes in various parts of the body.
Impact of Physical health on Emotional health:

- Some physical illnesses affect the way the brain works.
- Chronic physical illness – inability to relax, heightened levels of tension, lose interest in life, and feel distressed, unhappy and difficult to enjoy life.
- Change in the levels of neurotransmitters – emotional problems.
- Hypothyroid – Depression.
- Disability - hopeless, depressed and sad.
- Fever in a student in hostel will make her feel homesick, lonely and sad.

Positive emotions: Joy, gratitude, and love- linked to improved cardiovascular health, enhanced immune function, and faster recovery from illnesses.
Negative emotions: Stress/ Tension, Release of Hormone, Effects on the immune system, making individuals more susceptible to infections and diseases.
Biochemistry of mind body connectedness:

- Brain is 'the hardware' allows the experiences of thoughts beliefs, attitudes and emotions that are collective called the 'Mind'
- Jenifer Weinberg, Preventive and lifestyle physician
- Brain – body's command centre or the human supercomputer is a remarkable complex organ. Yet it's not a machine operating separately from the body.
- Mind controls the body, and the body houses the mind.

Stress and physical health: Many things that happen in life can disrupt the emotional life leading to strong feelings of sadness, stress and anxiety.

- Immunity by altering blood cell function

- WBC response to infected cells and cancer cells.
- Slow healing and vaccinations are less effective
- Risk of glucose imbalances, respiratory infections and cardiac disorders
- Talk therapy strengthens the cell function and enhances body's ability to fight diseases.

When a person is anxious / upset the body reacts physically:

- High BP or a stomach upset after a stressful event
- Nervous person may feel it in gut, heart rate increases, posture may change from open to close posture to protect self.

The mental state of a person may be changed by changing posture:

- Confident person- feel relaxed, stand tall and proud. Breath and Heart rate under control and the person may feel calm and strong.
- Breath and Heart rate under control, person may feel calm and strong
- Standing tall and proud while facing stress can surprise an individual with the change in the mental state.

Meaning of Stress: A state of mental or emotional strain or tension resulting from adverse or demanding circumstances.

The "Four Quadrant Stress Grid" uses a simple, well-known color-coding system to rate the four main types of stress.

Four types of stress :

- Chronic Eustress
- Acute Eustress
- Acute Distress
- Chronic Distress

Quadrant One: Chronic Eustress:

- It is long lasting, recurrent **good stress**
- To achieve total and permanent health and wellness, should work as hard as possible to stay in this quadrant
- If things happen, in life, that temporarily take the person out of this quadrant, then that is acceptable
- When the person in a state of chronic eustress, our bodies have very high levels of the feel good hormones like Dopamine and Oxytocin.

Quadrant Two: Acute Eustress:

- Acute Eustress or rapid onset, short, intense good stress
- When you get some really fantastic news or getting engaged/married or when something really wonderful happens to you, you experience this kind of stress

- The body is temporarily, intensely and quickly flooded with feel good hormones like Dopamine and Oxytocin
- This type of stress is desirable and it does a body good to experience this type of stress often.

Quadrant Three:

- Acute Distress: Acute Distress: is rapid onset, short, intense bad stress
- This type of stress happens when the person feels shocked, threatened, car accidents or extreme fear and our “fight or flight” stress response system activated.
- Our bodies are flooded with emergency response hormones (adrenaline and cortisol)
- While this type of stress is classified as a bad stress, it is not dangerous because it does not last a long time and the body will wash away these extra hormones when the danger or threat has passed.

Quadrant Four: Chronic Distress:

- Chronic Distress : is long lasting, recurrent bad stress
- Chronic distress is the cause of most peoples' problems. the body is constantly flooded with emergency response hormones (Cortisol and Adrenaline)
- Every effort should be made by the person to get out and stay out of this quadrant
- A person in this quadrant will develop Panic Attacks, Anxiety, Depression, Chronic Fatigue Syndrome, Fibromyalgia and a whole host of other illnesses.

Dealing with the causes of stress:

Find the Cause, the Stressor, avoid or eliminate the cause, reduce the intensity of the cause.

Ways to improve mind body connections:

Practice meditation, Master deep breathing, Stick with healthy eating, Stay hydrated, Make sleep a priority, Spend time in nature, Engage in daily exercise, Keep a journal, Take active breaks from work, Cultivate loving relationships, Limit screen-time, Release toxic emotions, Be mindful of your posture, Be grateful for your senses, Indulge in music, Commit to a creative hobby, Embrace the moment, Enjoy good laughter, Practice gratitude, Practice yoga.

ENDOCRINE GLANDS: ANATOMY AND PHYSIOLOGY

Dr. A. Vinodhini
Assistant Professor of Zoology, D.K.M. College for Women, Vellore.

The endocrine system is made up of glands and the hormones they secrete. Hormones act as chemical messengers that are released into the blood stream to act on an organ in another part of the body. Although hormones reach all parts of the body, only target cells with compatible receptors are equipped to respond. Hormones control or regulate many biological processes and are often produced in exceptionally low amounts within the body. Examples of such processes include:

- Blood sugar control (insulin)
- Differentiation, growth, and function of reproductive organs (testosterone and estrogen)
- Body growth and energy production (growth hormone and thyroid hormone).

Much like a lock and key, many hormones act by binding to receptors that are produced within cells. When a hormone binds to a receptor, the receptor carries out the hormone's instructions, either by altering the cell's existing proteins or turning on genes that will build a new protein. The hormone-receptor complex switches on or switches off specific biological processes in cells, tissues, and organs.

The primary endocrine glands are the pituitary (the master gland), thyroid, parathyroid, islets of Langerhans, adrenals, ovaries in the female and testes in the male.

Hypothalamus - The hypothalamus links our endocrine and nervous systems together. The hypothalamus drives the endocrine system.

Pituitary gland - The pituitary gland receives signals from the hypothalamus. This gland has two lobes, the posterior and anterior lobes. The posterior lobe secretes hormones oxytocin and Anti-diuretic hormone that are made by the hypothalamus. The anterior lobe produces its own hormones viz., Growth hormone, Thyroid stimulating hormone, Adrenocorticotropic Hormone, Prolactin, Follicle Stimulating Hormone, several of which act on other endocrine glands.

Pineal gland – The hormone melatonin has some effect on sleep/awake cycles and other biological events connected to them, such as a lower production of gastric secretions at night.

Thyroid gland - The thyroid gland hormone thyroxine is critical to the healthy development and maturation of vertebrates and regulates metabolism.

Adrenal glands - The adrenal gland is made up of two glands: the cortex and medulla. These glands produce hormones in response to stress and regulate blood pressure, glucose metabolism, and the body's salt and water balance.

Islets of Langerhans - The pancreas is responsible for producing glucagon and insulin. Both hormones help regulate the concentration of glucose (sugar) in the blood.

Gonads - The male reproductive gonads, or testes, and female reproductive gonads, or ovaries, produce steroids that affect growth and development and also regulate reproductive cycles and behaviours.

INFERTILITY – GENETICS, CAUSES AND MANAGEMENT

Ms. Vidyalakshmi A
Embryologist, Garbhagudi Hospitals, Bangalore.

Infertility is inability of a couple to conceive even after one year of healthy married life. Usually, the causes include female factors, male factors, mixed (both men and women), and unexplained.

Infertility causes increasing in men and women

Approximately 15% of the population of reproductive age has problems in achieving pregnancy. This figure is on an upward trend. Several causes contribute to this increase, including advanced maternal age and declining seminal quality.

- *Female Infertility causes*: A woman having problems related to ovulation, Fallopian tube problems, problems with the cervix, uterine abnormalities, and poor endometrial development.It occurs in approximately 30% of the infertile cases.
- *Male Infertility causes*: A man having problems with spermatogenesis, testicle development, infection or obstruction in seminal ducts, and poor seminal parameters.It occurs in approximately 30% of the infertile cases.

- *Combined or mixed Infertility*: The result of combining any of the male and female infertility issues mentioned above. It occurs in approximately 20% of the infertile cases.
- *Unexplained Infertility*: When the cause is unclear despite performing appropriate tests. It occurs in approximately 20% of the infertile cases

Genetic Factors of Infertility: Infertility with an underlying genetic cause, by alteration in the DNA sequence of the couple.

Genetic Male Infertility: Chromosomal anomaly causing sterility in men.

1. Klinefelter's syndrome: These males have an extra X chromosome (47, XXY). As a consequence, spermatogenesis is defective.
2. Y chromosome microdeletion: A small loss of genetic material on the Y chromosome leading to secretory azoospermia.
3. Mutations in Cystic fibrosis gene (CFTR): This defect leads to bilateral absence of the vas deferens hindering sperm transportation.

Genetic Female Infertility: Chromosomal anomaly causing sterility in women.

1. Turner syndrome: It is due to the presence of a single sex chromosome (45, XO) giving rise to Ovarian failure, fertility alteration, and absence of menstruation.
2. Fragile X syndrome: It is a genetic alteration on one of the X chromosomes. This leads to primary ovarian insufficiency, even carriers are affected by infertility.

Infertility Management:

Infertility can be treated with Assisted Reproductive Technology (ART), namely Intrauterine Insemination (IUI) and In-vitro Fertilization (IVF). Pre-implantation genetic test (PGT) is also used widely to screen embryos and fetuses for genetic anomalies.

HELMINTH INFECTIONS

Mrs. Shandrila Immanuel
Professor & Head of Community Health Nursing, College of Nursing, CMC, Vellore.

Introduction: Most individuals with intestinal worm infestation are asymptomatic. One of the leading causes of stomach ache in children/ adult is intestinal infection which is mostly caused by intestinal parasites such as helminths.

Incidence and Prevalence: It is an Endemic disease. Up to one billion people have helminthic infections in the world. 225 million preschool and school age/ College children are estimated to be at risk of infection from helminths. Round worm infections are most common and widely prevalent.

Vulnerable groups are as follows;

- Pre-school
- School going children
- Adolescent girls
- Women for child bearing age

Risk Factors:

- Eating undercooked meat

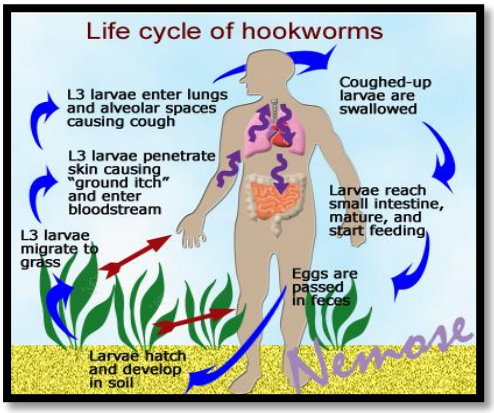
- Poor hand washing
- Contact with and contaminated feces
- Poor sanitation
- Poor hygiene

Types of Helminthes infections are

1. Hook worms
2. Round worms
3. Tape worms
4. Pin worms

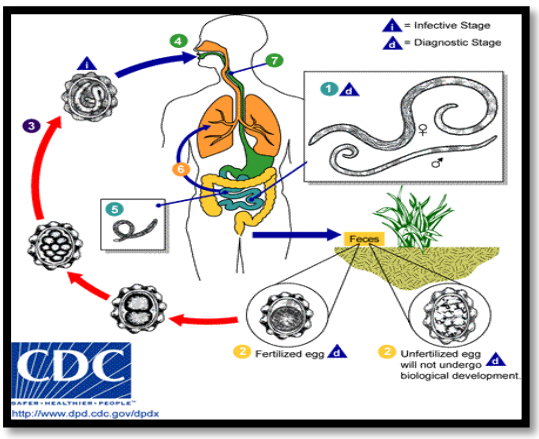
1. Hook Worm Infections: Hook worms are commonly contracted when children or adult walk barefoot on the contaminated soil and later enter intestine.

Life Cycle of Hook Worm [*Ascaris lumbricoides*]

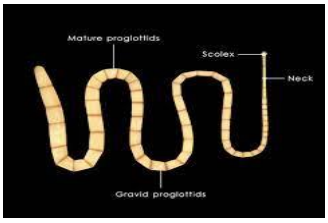


2. Round Worm: Round worms are like a earth worms and can grow up to the size of 30-35cm.

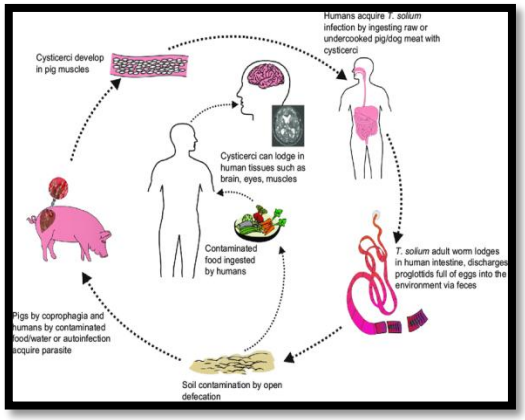
Life Cycle of Round Worm [Ascariasis]



3. Tape Worm: They are flat, ribbon like worms that can grow up to 15-30 ft and live in the intestine.

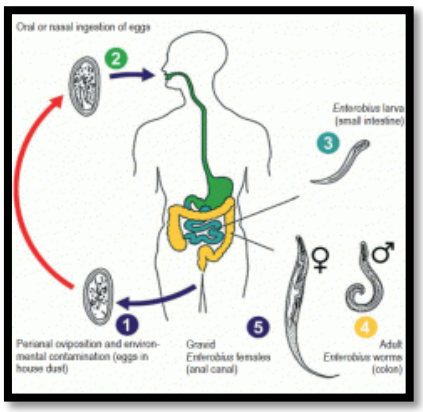


Life Cycle of Tape Worm [*Taenia solium*]



4. Pin Worm – Thread Worm: These worms appear to be fine white and live in intestine and around anus.

Life Cycle of Pin Worm [Enterobiasis]



Signs and Symptoms: The signs and symptoms of helminthiasis depend on a number of factors including:

- Nausea and vomiting
- Abdominal pain
- Loss of appetite
- Weight loss
- Itching around anus
- Diarrhea and passing worms in stools
- Fatigue
- White patches on the face

Treatment: Broad-spectrum benzimidazoles (such as albendazole and mebendazole) are the first line treatment of intestinal roundworm and tapeworm infections. Macrocyclic lactones (such as ivermectin) are effective against adult and migrating larval stages.

Complications: Heavy infections can cause a range of health problems, including

- Anemia
- Malnutrition
- Intestinal obstruction
- Intestinal perforation

Prevention of Helminth Infection: Disrupting the cycle of the worm will prevent infestation and re-infestation. Prevention of infection can largely be achieved by the following measures;

- Do not defecate in the open place. Always use a toilet.
- Wear Footwear.
- Wash vegetables and fruits with clean water
- Keep your nails clean and short.
- Wash your hands with soap, especially before eating and after using the toilet.
- Always drink clean water, Keep food covered.
- Keep your surroundings clean.

Conclusion: Helminthic infections have a terrible impact on child growth and development, and harm pregnant women. Regular treatment and long term preventive interventions are important measures to break the transmission routes. Hence, identifying the status of helminth

infection and practices of prevention and control measures among is very important. Thus, prevention and control measures should be strengthened in the setting.

ENGINEERED CARDIAC TISSUE – A POTENTIAL 3D TISSUE MODEL FOR DRUG SCREENING APPLICATION AND A TOOL FOR CARDIAC TISSUE REGENERATION

Dr. Arunkumar Palaniappan
Assistant Professor, Centre for Biomaterials, Cellular and Molecular Theranostics (CBCMT), Vellore Institute of Technology (VIT), Vellore.

Personalized medicine is the new buzz word in the modern era of biomedical science and technology, where in the treatment strategies or modalities are customized for each individual rather than the population as a whole. Unlike the current technology, personalized medicines take into account the intrinsic variations among the individuals in a population for the treatment purpose. This helps in maximizing the success rate of a treatment as well as lowering the side-effects of the same. One such personalized medicine is delivering patients' own stem cells or other appropriate cell types as a regenerative medicine for the regeneration of diseased or damaged tissues.

In case of myocardial infarction a.k.a. cardiac arrest, it is reported that almost 1 billion heart cells (cardiomyocytes) are lost due to the blockage of blood vessels. Here, the patients' own cells can be used for the regeneration of damaged cardiac tissue. For example, patients' blood cells can be collected, induce stemness and modify them as stem cells called human induced pluripotent stem cells (hiPSCs), which could again be differentiated towards cardiomyocytes. These cells could be used for the regeneration of damaged heart.

Statistical reports suggest that Ischemic heart diseases such as heart attack contribute 61.4% of deaths amongst all cardiovascular diseases. It is estimated that this number is expected to increase rapidly by 2030, increasing the burden of disease in India. While medical interventions to treat heart-attack range from the administration of medication and surgery in the initial stages to organ transplant in patients with terminal heart disease, the paucity of organ donors and possibility of rejection renders this method unviable for patients suffering from cardiovascular diseases.

Researchers across the globe have been extensively working towards the development of engineered cardiac patches, a medical device that can be implanted on the surface of the heart afflicted by disease to regenerate damaged tissue. While there have been significant advancements in this field, there are limited patches commercially available for general use. Additionally, such research is generally more easily available in countries medically advanced than India and importing these devices would incur high taxation and costs making them expensive to the end user.

Recently, our group at Vellore Institute of Technology, Vellore are aiming at developing 3D bio-printed cardiac patches indigenously from products sourced and manufactured locally. The heart is a complex organ and has extremely limited regenerative capability. Once afflicted by disease, it is close to impossible for the heart to return to its original state. Despite the major advancements made internationally, the aim of the research group was to develop an indigenous

cardiac patch that can offer therapeutic benefit to patients suffering with cardiovascular diseases, while remaining economically viable. To achieve this goal, our team is in the process of developing novel plant-derived biomaterials that can be impregnated with hiPSCs derived cardiomyocytes. The next steps will involve 3D bio-printing the structures and determining how well they function within a disease model. Using materials sourced locally, team are also in alignment with the Make in India vision and are confident that the work will contribute towards the advancement of cardiac regeneration therapy. Though the objective of this project is to develop an indigenous cardiac patch, the team's long-term vision is to fabricate a whole functioning heart.

The team works at the Human Organ Manufacturing Engineering Laboratory (HOME Lab), an initiative of the Centre for Biomaterials, Cellular and Molecular Theranostics (CBCMT), VIT which houses two state-of-the-art Cellink BioX Bioprinters. Bioprinting offers versatility and ease in printing complex tissue-mimics with versatile morphologies and geometries. The team's idea is to fabricate a scaffold, which is a meshwork and network of proteins and polysaccharides found within the human body. This network will act as a temporary platform to deliver patients' own cells to the site of damaged tissue. The cells can then initiate the regeneration process, while the scaffold degrades over time restoring the heart's correct functionality. The developed engineered cardiac tissue will also be used as a drug screening platform for the screening of drugs for cardiotoxicities.

RAPID AND AREA SPECIFIC "LASER-ASSISTED BIOMINERALIZATION" (LAB) PROCESS FOR TOOTH SURFACE FUNCTIONALIZATION

Dr. A. Joseph Nathanael
Associate Professor (Sr), Centre for Biomaterials, Cellular and Molecular Theranostics (CBCMT)Vellore Institute of Technology (VIT), Vellore.

Natural resources are critical to the economy, environment, and human well-being. Asthe world continues to experience growing urbanisation and an increasing human impact on the environment, a better knowledge of natural resources and the development of sophisticated engineered materials through the well adapted design from the nature are bothcrucial to meeting environmental and sustainability concerns. Most of the innovations are inspired by nature. The first objective would be to give a broad overview of the innovations influenced by nature and their prospects for environmental sustainability. Second objective was about the actual research topic on "Rapid and Area Specific "Laser-Assisted Biomineralization" (LAB) Process for Tooth Surface Functionalization". Surface functionalization of teeth with fluoride-incorporated apatite layers displays great potential intreatments and prevention of dental disorders. In this study, we used a sintered hydroxyapatite (sHA) substrate as a model material of teeth and established a rapid and area-specific coating technique of fluoride-incorporated apatite layers by using a laser-assisted biomimetic (LAB) process. In this technique, a sHA substrate was irradiated on the surface with a Nd:YAG pulsed UV laser for 30 min in supersaturated calcium phosphate (CaP) solutionswith various fluoride concentrations. The fluoride concentration in the CaP solution was varied to control morphology, crystalline structure, and fluoride content of the resulting layers. Without fluoride in the CaP solution, an octacalcium phosphate (OCP)

layer with a flake-like structure was formed on the laser-irradiated surface of the substrate. The addition of fluoride(1000 mM and 3000 mM) to the CaP solution led to the formation of fluoride-incorporated apatite layers with an enamel-like needle-like nanostructure. The fluoride-incorporated apatite layers adhered firmly to the sHA surface and reduced acid dissolution of the sHA substrate by acting as a protective covering. Additionally, the layers released fluoride ions formore than 24 h, and exhibited antibacterial activity relative to a caries-causing bacterium, namely Streptococcus mutans. Thus, our LAB process can potentially act as a new tool for functionalization of tooth surfaces.

AN ENDEARING STORY OF SARUS CRANES

Dr. E. Malathi
Associate Professor and Head, Department of Zoology,
Queen Mary's College, Chennai-600004

The Sarus crane (*Grus antigone*) is one of the world's tallest extant flying bird and largest cranes of the world. This large nonmigratory crane is found in northern regions of the Indian subcontinent, such as Gujarat, Rajasthan and Punjab, Southeast Asia, and Australia. The body is grey in colour with red head and white neck collar. The height of the crane is about 1.8 m (5 ft 11 in) and this crane is as tall as a man when it is standing. Sarus cranes prefer open landscapes with wetlands and croplands than forested areas. They often use their long bills to probe soil in fields or shallow water where they feed. They consume fish, frogs, seeds, water plants, insects (particularly grasshoppers), and crabs. Sarus cranes are busy during the day and sleep at night.

Sarus cranes establish durable pair connections and defend areas where they engage in territorial and courting displays that involve loud trumpeting, leaping, and dancing-like motions, just like other crane species. They are revered as marital faithfulness symbols in India, where it is said that they mate for life and mourn the death of their partners. It is common in some regions of Gujarat to take a newlywed couple to view a pair of sarus cranes, since they are considered a sign of marital purity.

Sarus cranes are thought of as consecrated, and the birds are customarily safe. They don't fear people in many places. Sarus cranes were highlighted in the epic story Ramayana by Valmiki. In ancient Hindu scriptures, the meat of the sarus was considered to be taboo. The Indian Sarus is not hunted due to religious beliefs attributed to them. Although venerated and protected by Indians, these birds were hunted during the colonial period. When a bird was killed, its

surviving partner would trumpet for several days, and it was believed that the other bird would starve to death.

British zoologist Thomas C. Jerdon, who lived in the 19th century, believed that younger birds were edible while older ones were "worthless for the table." Eggs of the sarus crane are, in any case, utilized in people cures in certain places of India. The Sarus Crane is listed as vulnerable species by IUCN Red List of Threatened species. Threats listed include habitat degradation, hunting and collecting, and environmental pollution, and possibly diseases or competing species. Changes in cropping from flooded rice paddies to dry sugarcane or soya bean, in association with deterioration of the wetland habitat appears to be the most important reason for decline since these remove both nesting habitat and food. An additional limiting factor appears to be reduced tolerance levels in farmers that have led to an increased mortality of eggs and chicks. It was once a strong competitor for the National bird of India. The Sarus crane is the state bird of Uttar Pradesh since 2013. This crane is the inspiration behind the Saras, a 14-seater propeller aircraft built in India.

Sarus cranes are not an exception. It is delightful to observe a pair of sarus crane standing side by side. Sarus crane travels with its mate, forages, rests, sleeps, and flies. Even though when they are in a group, pairs keep to themselves with their young ones. They show conjugal love, mindful, connection, and mourning, similar as human insight. It's undeniably true that sarus pair forever. Their obligation to mates is essential for legend, folklore, old stories, and tunes; Paintings from the Mughal and Rajput eras typically depict flocks or pairs of sarus, rather than a single crane.

FACULTY ACHIVEMENTS

FDP/ORIENTATION/ SHORT TERM COURSES/ REFRESHER COURSE/ WEBINARS/ RESOURCE PERSON- 2023-24

S.No.	Date	Name of the Staff	Tile of the Professional Development Programme	Organized by
1	23.04.2023 to 22.05.2023	Ms. Anuradha M.	Orientation	TLC, Ramanujan College, University of Delhi in collaboration with Army Institute of Education.
2	14.07.2023 & 15.07.2023	Dr. Mary Agnes A., Dr. Uma Chandra N., Ms. Anuradha M. Dr. Vidhya K., Dr. Anu K.	Special Lecture on "National Building Code (Part -11: Approach to Sustainability)"	Nature Science Foundation Coimbatore, Tamil Nadu, India.
3	29.07.2023	Dr. Arockiamary J. S., Dr. Mary Agnes A., Dr. Uma Chandra N., Ms. Anuradha M. Dr. Hannah Elizabeth S. Dr. Vidhya K., Dr. Rajalakshmi A., Dr. Anu K. Dr. Kavitha R.	National Webinar on Green Campus Initiatives towards Sustainable Development	IQAC, Auxilium College (Autonomous) Gandhi Nagar, Vellore-6
4	26.08.2023	Dr. Arockiamary J. S., Dr. Mary Agnes A., Dr. Uma Chandra N., Ms. Anuradha M. Dr. Hannah Elizabeth S. Dr. Vidhya K., Dr. Anu K. Dr. Kavitha R	National Webinar on "Publish and Progress"	IQAC Committee for Research Ethics, Publication and IPR & Library, Auxilium College (Autonomous), Vellore -6.
5.	04.09.2023 to 03.10.2023	Dr. Anu K.	Four Weeks International Online FDP on "Microbiology Laboratory Techniques (Phase I)"	Department of Microbiology, Sacred Heart College (Autonomous), Tirupattur, Tamil Nadu, India in association with Biotechnology Society of Nepal and Laboratory of Chemical & Biological Analysis (LAQB) Western Rio Janeiro State University

				(UEZO), Rio de Janeiro, Brazil.
6.	04.09.2023 to 03.10.2023	Dr. Anu K. Ms. Anuradha M.	Four Weeks International Online Certificate Course on "Microbiology Laboratory Techniques (Phase I)"	Department of Microbiology, Sacred Heart College (Autonomous), Tirupattur, Tamil Nadu, India in association with Biotechnology Society of Nepal and Laboratory of Chemical & Biological Analysis (LAQB) Western Rio Janeiro State University (UEZO), Rio de Janeiro, Brazil.
7.	25.09.2023	Dr. Vidhya K	International Webinar on "Conservation of Insects"	Department of Zoology, D.K.M. College for Women (Autonomous), Vellore.
8.	06.10.2023	Dr. Vidhya K	UGC - Webinar	UGC- HRDC
9.	15.10.2023	Ms. Anuradha M.	One day International E-Conference on Innovation in Life Sciences (IECILS -2023) Presented an online presentation entitled "Molecular Analysis in Chronic Myeloid Leukemia"	The Institution's Innovation Council, Sacred Heart College (Autonomous), Tirupattur, Tirupattur Dist. Tamil Nadu in collaboration with Association of Global Academicians and Research (AGAR), Visakhapatnam, Andhra Pradesh, India.
10	31.10.2023	Dr. Vidhya K	Evaluator-District Level Congress 2023 at 31st National Children's Science Congress 2023	A Programme of NCSTC, Govt. of India, New Delhi, Co-ordinated by TNSF
11.	05.11.2023	Dr. Vidhya K	Evaluator-Zonal Level Congress 2023 at 31st National Children's Science Congress 2023	A Programme of NCSTC, Govt. of India, New Delhi, Co-ordinated by TNSF held at Sri Santha Vidyalaya Matric. Hr. Sec. School,

				Chetpet, T.V. Malai Dist.
12	27.11.2023 & 28.11.2023	Dr. Anu K	Resource Person – Awareness on Waste Management – Liquid Waste Management	Enviro Club - Auxilium College (Autonomous) Vellore -6.
13.	12.12.2023 to 14.12.2023	Dr. Anu K	Three Days National Online Workshop on SPSS in Research	HI Learn Edutech Institute, Bijapur/Vijayapur, Karnataka.
14.	27.12.2023	Dr. Vidhya K	Resource Person	Young Student Scientist Programme organized by TNSF and Auxilium College (Autonomous) Vellore -6
15.	30.12.2023	Dr. N. Uma Chandra Meera Lakshmi	Resource Person	Young Student Scientist Programme organized by TNSF and Auxilium College (Autonomous) Vellore - 6

SCIENCE EXPO-2023

Science Expo-2023

Date : 13.09.2023

Event : Science Expo-2023

Science Expo-2023 was conducted, Dr. (Sr).Jaya Santhi.R, Principal, Inaugurated the Exhibition. Dr. (Sr).Amala Valarmathy. A, Vice Principal (Shift-I), Heads of the Departments, Students and Faculty members of the Department of Zoology were present during the Inauguration. Students from various Departments and Auxilium School visited the exhibition. The models of the following topics were displayed by the students; Digestive System, Plastic Pollution, Circulatory System, Nervous System, Cut Carbon Footprints, Zoological Park, Solar Powered City, Rain Water Harvesting, Sericulture, Sense Organs, Healthy Diet and Food Adulteration, Importance of Forest, Renewable and Non-Renewable Energy, Biogas, Excretory System, Journey of Cancer, Bioluminescence, Inheritance, Poultry Farming, Respiratory System, Global Warming, Green Techno City, Eco Alternative to Plastic & Coral Reefs.


IMPORTANCE
Food Adulteration


GLOBAL WARMING
EFFECTS OF GLOBAL WARMING
GPS Map Camera
Vellore, Tamil Nadu, India
Auxiliam College Rd, Suthanthira Ponvizha Nagar, Gandhi Nagar, Vellore,
Tamil Nadu 632006, India
Lat 12.957438°
Long 79.148372°
13/09/23 04:22 PM GMT +05:30
Google


GPS Map Camera
Vellore, Tamil Nadu, India
Auxiliam College Rd, Suthanthira Ponvizha Nagar, Gandhi Nagar, Vellore,
Tamil Nadu 632006, India
Lat 12.95742°
Long 79.148294°
13/09/23 03:18 PM GMT +05:30
Google

BIOEXCELLENCE -3

BioexCELLence-3

Date : 31.01.2024

Event : BioexCELLence-3, State Level Intercollegiate Competition,

"Celebrating Diversity in Nature"

Department of Zoology in collaboration with Nature Science Foundation, Coimbatore organized a State Level Intercollegiate Competition "BioexCELLence-3" to celebrate Nature and to provide a platform for the students to express their talents and hidden potentials. Dr. Sr. Jaya Santhi. R, Principal, Inaugurated the Event. Dr. Sr. Jayaceli, Controller of Examination, Dr. Sr.Amala Valarmathy. A, Vice Principal (Shift-I), Rev. Juliana Agnes Victor Vice Principal (Shift II), participants from various Colleges, Head of the Department, Students and Faculty members of the Department of Zoology were present during the Inauguration. There were participants from Thiruvalluvar University, Marudhar Kesari Jain College for Women, Vaniyambadi, Arignar Anna Government Arts College, Cheyyar, Dkm College for Women, Vellore, Voorhees College, Vellore, C.Abdul Hakeem college, Melvisharam, Adhiparasakthi College of Arts and Science, Kalavai, Ethiraj College for Women, Chennai, Meenakshi College for women Chennai, Queen Mary's College Chennai. The following competitions were organized:

- Drawing Competition on the topic 'Climatic change and wildlife'
- Vegetable carving on the topic 'Wild Animals'
- Live Quiz Competition,
- Dance on the topic 'Celebrating Diversity in Nature'
- Video Making on the topic 'Biodiversity'


Gandhi Nagar, Vellore - 632 006, Tamil Nadu, India.


BIOEXCELLENCE-3
State Level Inter collegiate Competition
VEGETABLE CARVING
31.01.2024
Organised by


Auxilium College (Autonomous)
BioexCELLence-3
State Level Intercollegiate Competition


BIOEXCELLENCE-3
State Level Inter collegiate Competition
VEGETABLE CARVING
31.01.2024
Organised by


WELCO
THANK
Rejoice in the Lord

ONLINE COURSES

ONLINE COURSE ODD SEMESTER 2023-2024
I B.Sc., ZOOLOGY

S.No	Name	Register Number	Course Title	Completion Date	Duration	Institution
1	30523U33001	ABIBA S	Cell Designer	13.12.2023	6 Months	IIT Bombay Spoken Tutorial
2	30523U33003	ABINAYA S	Cell Designer	13.12.2023	6 Months	IIT Bombay Spoken Tutorial
3	30523U33004	ALMAS R	Cell Designer	13.12.2023	6 Months	IIT Bombay Spoken Tutorial
4	30523U33005	ANITHA N	Cell Designer	04.01.2024	6 Months	IIT Bombay Spoken Tutorial
5	30523U33006	ANUSHA G	Cell Designer	13.12.2023	6 Months	IIT Bombay Spoken Tutorial
6	30523U33007	ATCHAYA P	Cell Designer	13.12.2023 “	6 Months	IIT Bombay Spoken Tutorial
7	30523U33008	BHARATHI K	Cell Designer	13.12.2023 “	6 Months	IIT Bombay Spoken Tutorial
8	30523U33009	CARMEL MARY M	Cell Designer	04.01.2024	6 Months	IIT Bombay Spoken Tutorial
9	30523U33010	DHIVYASRI B	Cell Designer	13.12.2023	6 Months	IIT Bombay Spoken Tutorial
10	30523U33011	DIVYASRI P	Cell Designer	13.12.2023 “	6 Months	IIT Bombay Spoken Tutorial
11	30523U33012	DIVYATHARSHINI S	Cell Designer	04.01.2024	6 Months	IIT Bombay Spoken Tutorial
12	30523U33014	GAYATHRI S	Cell Designer	04.01.2024	6 Months	IIT Bombay Spoken Tutorial
13	30523U33015	HARINI S	Cell Designer	13.12.2023	6 Months	IIT Bombay Spoken Tutorial
14	30523U33017	HEMALATHA E	Cell Designer	13.12.2023	6 Months	IIT Bombay Spoken Tutorial
15	30523U33018	HUSNA K	Cell Designer	13.12.2023	6 Months	IIT Bombay Spoken Tutorial
16	30523U33019	INDHU S	Cell Designer	13.12.2023	6 Months	IIT Bombay Spoken Tutorial
17	30523U33022	KALPANASHREE N U	Cell Designer	13.12.2023	6 Months	IIT Bombay Spoken Tutorial
18	30523U33025	MIZBA A	Cell Designer	13.12.2023	6 Months	IIT Bombay Spoken Tutorial
19	30523U33026	NANDHINI A	Cell Designer	04.01.2024	6 Months	IIT Bombay Spoken Tutorial
20	30523U33027	NITHIYASRI M	Cell Designer	04.01.2024	6 Months	IIT Bombay Spoken Tutorial
21	30523U33028	NIVETHITHA S	Cell Designer	13.12.2023	6 Months	IIT Bombay Spoken Tutorial
22	30523U33029	POOJA K	Cell Designer	13.12.2023	6 Months	IIT Bombay Spoken Tutorial
23	30523U33031	PRIYADHARSHINI A	Cell Designer	13.12.2023	6 Months	IIT Bombay Spoken Tutorial
24	30523U33033	PRIYANGA A	Cell Designer	13.12.2023	6 Months	IIT Bombay Spoken Tutorial
25	30523U33035	RAMYA M	Cell Designer	13.12.2023	6 Months	IIT Bombay Spoken Tutorial

26	30523U33036	RITHIKA K	Cell Designer	04.01.2024	6 Months	IIT Bombay Spoken Tutorial
27	30523U33037	SANIYA ZAHERA R	Cell Designer	13.12.2023	6 Months	IIT Bombay Spoken Tutorial
28	30523U33038	SANJANA T	Cell Designer	04.01.2024	6 Months	IIT Bombay Spoken Tutorial
29	30523U33039	SHALINI M	Cell Designer	13.12.2023	6 Months	IIT Bombay Spoken Tutorial
30	30523U33042	SWATHI V	Cell Designer	13.12.2023	6 Months	IIT Bombay Spoken Tutorial
31	30523U33043	THERESA G	Cell Designer	13.12.2023	6 Months	IIT Bombay Spoken Tutorial
32	30523U33044	VARSHINI K S	Cell Designer	04.01.2024	6 Months	IIT Bombay Spoken Tutorial
33	30523U33045	VASANTHA PRIYA S	Cell Designer	13.12.2023	6 Months	IIT Bombay Spoken Tutorial
34	30523U33046	YAMINI P	Cell Designer	13.12.2023	6 Months	IIT Bombay Spoken Tutorial
35	30523U33047	YASMEEN BEGUM A	Cell Designer	13.12.2023	6 Months	IIT Bombay Spoken Tutorial
36	30523U33049	KAYALVIZHI G	Cell Designer	13.12.2023	6 Months	IIT Bombay Spoken Tutorial

II B.Sc., ZOOLOGY

S.No	Register Number	Name	Course Title	Completion Date	Duration	Institution
1	30522U33001	AASHIKA.V	Libre Office Suite- Impress 6.3	19.01.2024	6 Months	IIT Bombay Spoken Tutorial
2	30522U33005	ANU PRIYA. R	Libre Office Suite- Impress 6.3	04.01.2024	6 Months	IIT Bombay Spoken Tutorial
3	30522U33006	ARTHI. K	Libre Office Suite- Impress 6.3	19.01.2024	6 Months	IIT Bombay Spoken Tutorial
4	30522U33007	ARUNI. S	Libre Office Suite- Impress 6.3	04.01.2024	6 Months	IIT Bombay Spoken Tutorial
5	30522U33009	ASHWINI.A	Libre Office Suite- Impress 6.3	“04.01.2024	6 Months	IIT Bombay Spoken Tutorial
6	30522U33012	CHANDRIKA. J	Libre Office Suite- Impress 6.3	19.01.2024	6 Months	IIT Bombay Spoken Tutorial
7	30522U33013	DEEPIKA.J	Libre Office Suite- Impress 6.3	04.01.2024	6 Months	IIT Bombay Spoken Tutorial
8	30522U33015	DHARANI.T	Libre Office Suite- Impress 6.3	04.01.2024	6 Months	IIT Bombay Spoken Tutorial
9	30522U33016	GAYATHRI.R	Libre Office Suite- Impress 6.3	04.01.2024	6 Months	IIT Bombay Spoken Tutorial
10	30522U33018	GOPIKA SHANTHINI. G	Libre Office Suite- Impress 6.3	04.01.2024	6 Months	IIT Bombay Spoken Tutorial
11	30522U33019	GUNA.D	Libre Office Suite- Impress 6.3	04.01.2024	6 Months	IIT Bombay Spoken Tutorial
12	30522U33020	JAYASHREE. K	Libre Office Suite- Impress 6.3	19.01.2024	6 Months	IIT Bombay Spoken Tutorial
13	30522U33021	JANSHI RANI.H	Libre Office Suite- Impress 6.3	04.01.2024	6 Months	IIT Bombay Spoken Tutorial
14	30522U33022	KAVIYA SRI. S	Libre Office Suite- Impress 6.3	04.01.2024	6 Months	IIT Bombay Spoken Tutorial
15	30522U33023	KESAVI. K	Libre Office Suite- Impress 6.3	04.01.2024	6 Months	IIT Bombay Spoken Tutorial

16	30522U33024	LITHIKA.R	Libre Office Suite- Impress 6.3	04.01.2024	6 Months	IIT Bombay Spoken Tutorial
17	30522U33026	MANJARI. A	Libre Office Suite- Impress 6.3	04.01.2024	6 Months	IIT Bombay Spoken Tutorial
18	30522U33030	NANDHINI.P	Libre Office Suite- Impress 6.3	19.01.2024	6 Months	IIT Bombay Spoken Tutorial
19	30522U33031	NANDHINI. P	Libre Office Suite- Impress 6.3	19.01.2024	6 Months	IIT Bombay Spoken Tutorial
20	30522U33032	NIKKITHA CHRISTY. J F	Libre Office Suite- Impress 6.3	04.01.2024	6 Months	IIT Bombay Spoken Tutorial
21	30522U33033	NIVEDHA. V	Libre Office Suite- Impress 6.3	04.01.2024	6 Months	IIT Bombay Spoken Tutorial
22	30522U33036	RANJANI. S	Libre Office Suite- Impress 6.3	04.01.2024	6 Months	IIT Bombay Spoken Tutorial
23	30522U33037	RASIKA. J	Libre Office Suite- Impress 6.3	04.01.2024	6 Months	IIT Bombay Spoken Tutorial
24	30522U33038	SHENBAGAVALLI. S	Libre Office Suite- Impress 6.3	04.01.2024	6 Months	IIT Bombay Spoken Tutorial
25	30522U33039	SHERIN. F	Libre Office Suite- Impress 6.3	04.01.2024	6 Months	IIT Bombay Spoken Tutorial
26	30522U33040	SHOBANA. S	Libre Office Suite- Impress 6.3	04.01.2024	6 Months	IIT Bombay Spoken Tutorial
27	30522U33041	SOWMIYA. K	Libre Office Suite- Impress 6.3	04.01.2024	6 Months	IIT Bombay Spoken Tutorial
28	30522U33042	SPENOLA.A	Libre Office Suite- Impress 6.3	04.01.2024	6 Months	IIT Bombay Spoken Tutorial
29	30522U33043	SWATHI. A	Libre Office Suite- Impress 6.3	19.01.2024	6 Months	IIT Bombay Spoken Tutorial
30	30522U33044	THABASSUM. B	Libre Office Suite- Impress 6.3	04.01.2024	6 Months	IIT Bombay Spoken Tutorial
31	30522U33045	VANMATHI.M	Libre Office Suite- Impress 6.3	04.01.2024	6 Months	IIT Bombay Spoken Tutorial
32	30522U33047	VINITHA. M	Libre Office Suite- Impress 6.3	04.01.2024	6 Months	IIT Bombay Spoken Tutorial
33	30522U33050	YUVASREE. S	Libre Office Suite- Impress 6.3	04.01.2024	6 Months	IIT Bombay Spoken Tutorial

III B.Sc., ZOOLOGY

S.No	Register Number	Name	Course Title	Completion Date	Duration	Institution
1	30521U33001	AASHA.B	Preparing for higher education	06.11.2023	4 weeks	ARDEN University
2	30521U33002	ABITHA SREE.R	Prepare to study and live in the UK	15.09.2023	4 weeks	British Council
3	30521U33003	ARUL JERLIN. A	Undersatnding mental health in muslim communities	14.09.2023	4 weeks	CARDIFF University
4	30521U33004	DEEPA SUJA.J	Prepare to study and live in the UK	16.07.2023	4 weeks	British Council
5	30521U33005	DEEPIKA. A	Prepare to study and live in the UK	10.11.2023	4 weeks	British Council

6	30521U33006	DHANALAKSHMI.P	Teaching and Assessing core skills	06.10.2023	4 weeks	British Council
7	30521U33007	DHASWATHI M	Preparing for higher education	25.10.2023	4 weeks	ARDEN University
8	30521U33008	GNANASHRI.G	Preparing for higher education	12.11.2023	4 weeks	ARDEN University
9	30521U33009	GOMATHI.S	Preparing for higher education	03.11.2023	4 weeks	ARDEN University
10	30521U33010	GUNAPRIYA.S	Teaching and Assessing core skills	11.11.2023	4 weeks	British Council
11	30521U33011	HEMA. M.K	Preparing for higher education	04.11.2023	4 weeks	ARDEN University
12	30521U33012	HEMA MALINI.J	Prepare to study and live in the UK	26.10.2023	4 weeks	British Council
13	30521U33013	HEPSIBHA SHARON.S	Prepare to study and live in the UK	11.11.2023	4 weeks	British Council
14	30521U33014	HINA BEGUM	Preparing for higher education	06.11.2023	4 weeks	ARDEN University
15	30521U33015	JANANI.V	Prepare to study and live in the UK	12.11.2023	4 weeks	British Council
16	30521U33016	JENIFER.J	Prepare to study and live in the UK	26.07.2023	4 weeks	British Council
17	30521U33017	JOTHI.V	Preparing for higher education	18.07.2023	4 weeks	ARDEN University
18	30521U33018	JYOTHIKA.M	Preparing for higher education	25.10.2023	4 weeks	ARDEN University
19	30521U33019	KANIMOZHI.D	Preparing for higher education	25.10.2023	4 weeks	ARDEN University
20	30521U33021	LAKSHMI.B	Prepare to study and live in the UK	10.11.2023	4 weeks	British Council
21	30521U33023	LAVANYA.J	Prepare to study and live in the UK	27.07.2023	4 weeks	British Council
22	30521U33024	LAVANYA.K	Teaching and Assessing core skills	16.07.2023	4 weeks	British Council
23	30521U33025	MADHUMITHA.R	Best practice for education	06.10.2023	4 weeks	Australian University
24	30521U33026	MOHANA LAKSHMI.V	Best practice for education	11.11.2023	4 weeks	Australian University
25	30521U33027	MONISHA.V	Prepare to study and live in the UK	09.09.2023	4 weeks	British Council
26	30521U33028	MUMTAJ BEGUM.R	Preparing for higher education	11.11.2023	4 weeks	ARDEN University
27	30521U33029	NANDHINI.K	Prepare to study and live in the UK	27.10.2023	4 weeks	British Council
28	30521U33030	NIKHATH FATHIMA.T	Preparing for higher education	27.07.2023	4 weeks	ARDEN University
29	30521U33031	NIRMALA JOYS.R	Prepare to study and live in the UK	11.11.2023	4 weeks	British Council
30	30521U33032	PARKAVI.K	Prepare to study and live in the UK	17.07.2023	4 weeks	British Council
31	30521U33033	POONGKODI P	Preparing for higher education	20.07.2023	4 weeks	ARDEN University
32	30521U33034	PRITHIKA.R	Prepare to study and live in the UK	26.10.2023	4 weeks	British Council
33	30521U33035	PRIYADHARSHINI.M	Prepare to study and live in the UK	16.07.2023	4 weeks	British Council

34	30521U33036	PRIYADHARSHINI.R	Preparing for higher education	17.08.2023	4 weeks	ARDEN University
35	30521U33037	RACHEL JAYAKUMARI F	Prepare to study and live in the UK	11.11.2023	4 weeks	British Council
36	30521U33038	RADHIKA.D	Preparing for higher education	27.07.2023	4 weeks	ARDEN University
37	30521U33039	RAGAVI.P	Preparing for higher education	10.11.2023	4 weeks	ARDEN University
38	30521U33040	RAMYA.G	Prepare to study and live in the UK	27.10.2023	4 weeks	British Council
39	30521U33041	RESHMA.M	Prepare to study and live in the UK	10.11.2023	4 weeks	British Council
40	30521U33042	SARASWATHI.S	Prepare to study and live in the UK	26.07.2023	4 weeks	British Council
41	30521U33043	SARISHA H	Prepare to study and live in the UK	25.07.2023	4 weeks	British Council
42	30521U33044	SASI KALA B	Prepare to study and live in the UK	26.07.2023	4 weeks	British Council
43	30521U33045	SATHANA.M	Preparing for higher education	31.07.2023	4 weeks	ARDEN University
44	30521U33046	SHILPAA R	Prepare to study and live in the UK	11.11.2023	4 weeks	British Council
45	30521U33048	SUGANTHI. R	Best practice for education	25.07.2023	4 weeks	Australian University
46	30521U33049	VINITHA.P	First aid by American Red Cross	19.03.2023	4 weeks	CURSA
47	30521U33050	YAMUNA SRI.S	Preparing for higher education	24.09.2023	4 weeks	ARDEN University
48	30521U33051	YUKESWARI.D	Prepare to study and live in the UK	12.11.2023	4 weeks	British Council
49	30521U33052	GAYATHRI.S	Preparing for higher education	16.07.2023	4 weeks	ARDEN University

I M.Sc., ZOOLOGY

S.No	Register Number	Name	Course Title	Completion Date	Duration	Institution
1.	30523P23001	BAKYALAKSHMI P	Introduction to Management	19.09.2023	4 weeks	Great learning Academy
2.	30523P23002	BARKAVI P	Data science projects	19.09.2023	5 weeks	Great learning Academy
3.	30523P23003	DHANASHREE C	Data science projects	19.09.2023	4 weeks	Great learning Academy
4.	30523P23004	FAHIMA PARVEEN T	Data science foundation	19.09.2023	4 weeks	Great learning Academy
5.	30523P23005	HARTHI M	Data science projects	19.09.2023	4 weeks	Great learning Academy
6.	30523P23006	JAYA JAYASHIKA B	Ecology	02.10.2023	4 weeks	Mindluster
7.	30523P23007	POOJA K	Data science projects	19.09.2023	4 weeks	Great learning Academy
8.	30523P23008	PREETHI J	Data science projects	19.09.2023	4 weeks	Great learning Academy
9.	30523P23009	RADHIKA M	Data science projects	19.09.2023	4 weeks	Great learning Academy

10.	30523P23010	RAKSHANA A	Data science projects	05.10.2023	5 weeks	Great learning Academy
11.	30523P23011	SINDHU S	Child nutrition and cooking	19.09.2023	4 weeks	COURSERA
12.	30523P23012	SWETHA G	Data science projects	19.09.2023	4 weeks	Great learning Academy
13.	30523P23013	SWETHA G	Data analysis using Excel	19.09.2023	4 weeks	Great learning Academy
14.	30523P23014	VIJAYALAKSHMI S	Introduction to digital marketing	July 2023	4 weeks	Great learning Academy

II M.Sc., ZOOLOGY

S.No	Register Number	Name	Course Title	Completion Date	Duration	Institution
1.	30522P23001	AFROSE FATHIMA N	Introduction to the biology of cancer.	10/10/2023	6 weeks	Johns Hopkins University
2.	30522P23002	ASIFA K	Dairy production and management.	21/08/2023	8 weeks	The Pennsylvania state university.
3.	30522P23003	DHANALAKSHMI M	Introduction to the biology of cancer.	08/09/2023	6 weeks	Johns Hopkins University
4.	30522P23004	HEMALATHA V	Introduction to the biology of cancer.	08/10/2023	6 weeks	Johns Hopkins University
5.	30522P23005	PAVITHRA R	Introduction to the biology of cancer.	12/09/2023	6 weeks	Johns Hopkins University
6.	30522P23006	RAMYA P	Introduction to the biology of cancer.	12/08/2023	6 weeks	Johns Hopkins University
7.	30522P23007	SNEHA S	Introduction to the biology of cancer.	12/09/2023	6 weeks	Johns Hopkins University
8.	30522P23008	SRIDHARSHINI V	Dairy production and management.	21/08/2023	8 weeks	The Pennsylvania state university.
9.	30522P23009	SUJI S A	Cancer biology.	28/08/2023	6 weeks	American Museum of Natural History
10.	30522P23010	VARSHA KUMARI P	Introduction to the biology of cancer.	08/09/2023	6 weeks	Johns Hopkins University

STUDENTS CORNER

THREATS TO BIODIVERSITY

India is the 7th largest country in the world. It occupies only 2.5% of the total world land surface. Now, India is the country which has highest population in the world. India contains much number of varieties of flora and fauna. But with the more population and India contains fewer resources the need for the resources for the people also increases. To overcome these situations many techniques are undertaken. These techniques are beneficial for the people and it is having a wide danger, disaster to the flora and fauna situated in our country. Many techniques that aretaken up by people for their needs and that leads to dangerous to the flora and fauna are:

DEFORESTATION

The process of cutting of trees for the land resources for the benefit of human being is called deforestation. The trees are cut down for various reasons, they are, wood, medicine, land resources, cosmetics, etc., but it causes huge amount of danger and threat to human like animals and God like plants and trees. It causes homeless to the animals and it leads to died and it also causes food starvation. Due to death of animals, their next generation is affected and variety of plants and trees are extinct due to it. This leads to enter of animals in the city but we are blaming them in their own place where human are living.

DESERTIFICATION

Deforestation leads to desertification. Due to the continuous cutting of trees in the forests will leads to treeless and leads to lack of rainfall and when rainfall comes it leads to soil erosion, this eradicates the fertile soil and trees will not grow and hot weather will come and finally leads to desert. Eg. Sahara Desert. This leads to much danger to the biodiversity. They are animals are lack of food, home, plants are destroyed and due to this reason. Animals are died and moves to another place and this leads to extinction in biodiversity.

URBANIZATION

The coming of houses, buildings, colleges, schools and much other transport is called urbanization. People in rural areas shifted to the cities for the job opportunities. When many number of people are entered the need to extend the land is solution, so many ponds, lakes, Mountains, are destroyed and Chennai is situated 75% in the lake place. So this leads to water scarcity to birds and animals that are depend on lake water. The trees in the mountains are destroyed, the animals are homeless and the next generation is affected and they are died due to starvation.

MINING

The country which has mining will experience earthquake. The digging of the land for the resources such as petrol, coal, gold, iron, aluminum, and metals, for the benefits of the human use is called mining. It is not only danger to animals but also danger to the people in the form of earthquake and tsunami. Mining causes more derelict lands. The main danger in all the technique is homeless, food less, and finally dead. Today, even tigers are become extinct in the world only about 9000 tigers are alive.

INDUSTRIALIZATION

The group of industries are situated, in the same place is called industrialization. It leads to many disasters, for the nature, birds, animals. The waste water from the industries is toxic and is mixed with land water and pollutes water and when it is drunk by animals leads to death. Birds are killed by arresting in the machine during work in Ranipet industrialization is seen and it pollutes most of the pond and birds are force to live in the transform building. The fishes are also died due to pollution of water.

CONCLUSION

When these practices are continues the world will be without soil, without water, without land, without trees, without animals, without birds, and without everything, only without will live without life.

Aasha. B
III B.Sc., Zoology

WATER-A LIFESAVING LIQUID

Water is the key to our existence on this planet and it was involved in nearly all biological, geological, and chemical processes. Only 1% of water is fit to use out of the 71% that is available on Earth. Remaining 70% of water is being polluted with organic and inorganic matters, chemicals and other contaminants by various natural and human activities. A water quality standard is a rule or law comprised of the uses to be made of a water body or segment and the water quality criteria necessary to protect that uses. Due to the pressure of human activity the ground water sources and surface sources are degraded gradually, therefore pure, safe, healthy and odorless drinking water is a matter in deep concern. As water is required for different purposes, the suitability of it must be checked before use. Also, sources of water must be monitored regularly to determine whether they are in sound health or not. Poor condition of water bodies are not only the indictor of environmental degradation, it is also a threat to the ecosystem. Water can be polluted very easily due to its permeability and penetration and make it toxic due to some contaminants. Thus, water quality analysis is essential for using it in any purpose. As stated by the WHO, nearly 80% of health problems in human is because of the poor water quality. Apart from the humans getting affected, the land productivity also gets affected because of the contaminated water. Water quality is not a fixed characteristic of the water. The quality of the water is very dynamic, changing over time as a result of environmental factors, and biological processes. Distribution of these water resources across the vast expanse of the country is also uneven. The increasing demands on water resources by India's burgeoning population and diminishing quality of existing water resources because of pollution and the additional requirements of serving India's spiralling industrial and agricultural growth have led to a situation where the consumption of water is rapidly increasing while the supply of fresh water remains more or less constant.

According to Central Pollution Control Board, 90% of the water supplied in India to the town sand cities are polluted, out of which only 1.6% gets treated. Therefore, water quality management is fundamental for the human welfare.

Afrose Fathima. N
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FICUS CARICA

India has an ancient heritage of traditional medicine. The materia medica provides much information on the folklore practices and traditional aspects of therapeutically important natural products. Indian traditional medicine is based on various systems including Ayurveda, Siddha, Unani, and Homoeopathy. Any part of the plant may contain active components like bark, leaves, flowers, roots, fruits, seeds, etc. The primary products of plants such as carbohydrates, proteins, fats, and oils, and the beneficial medicinal effects of plant materials typically result from the combinations of secondary products such as unusual amino acids, polyamines and phenolic compounds, coumarins, alkaloids, flavonoids, lignins, cyanogenic glycosides, glucosinolates, tannins and betalains present in the plant. In this regard, one such plant is *Ficus carica* one of the oldest medicinal plants recorded in the Indian system of medicine (Family-Moraceae). Fig trees have been raised from seed, even seed extracted from commercial dried fruits. The fruits may be picked from the tree or gathered normally or by mechanical sweepers after they fall to the ground. Harvested fruits are spread out in the shade for a day so that the latex will dry a little. Then they are transported to processing plants in wooden boxes holding 10-15 kg. In India, a fig tree bears 180 to 360 fruits per year. A literature survey indicated that figs (*Ficus carica*) are cultivated 11,000 years ago which predate human use, and they were the earliest cultivated plants. Even the Olympic athletes were given figs as training food and figs were given as laurels to the winners of the first Olympics as a "medal". Figs and fig trees are present throughout the world and the Ficus genus was also very likely one of the earliest and best sources of cultivated medicine as well as of food for people and their domesticated animals.

Commercially, figs are peeled and immersed for 1 minute in boiling limewater or sodium bicarbonate and sold. In warm, humid climates, figs are generally eaten fresh and raw without peeling, and they are often served with cream and sugar. Peeled or unpeeled, the fruits may be cooked in various ways, as in pies, puddings, cakes, bread, or other bakery products, or added to the ice cream mix. Homeowners preserve the whole fruits in sugar syrup or prepare them as jam, marmalade, or paste. Fig paste (with added wheat and corn flour, whey, syrup, oils, and other ingredients) forms the filling for the bakery product. Other modern uses are poultices, eating, ointment, fresh drinks, gargling for tonsils, pickled figs, fumigation, enema, enema, ophthalmic solution etc.

The latex is widely applied on warts, skin ulcers and sores, and taken as a purgative and vermifuge. In Latin America, figs are much employed as folk remedies. A decoction of the fruits is gargled to relieve sore throat; figs boiled in milk are repeatedly packed against swollen gums; the fruits are much used as poultices on tumors and other abnormal growths. The leaf decoction is taken as a remedy for diabetes and calcifications in the kidneys and liver. Fresh and dried figs have long been appreciated for their laxative action.

Asifa. K
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AWARENESS IS THE FIRST STEP

Cancer is a disease in which abnormal cells divide uncontrollably and destroy body tissue. It is a deadly disease which causes about 10 million deaths every year. Cancer is like a parasite which is very harmful. Lung cancer is a type of cancer which is caused by inhaling toxic chemicals. Most people think that lung cancer is caused only by smoking. There is still no evidence that smoking alone causes lung cancer. A Cigarette can release over 5000 different chemicals which not only affect the lung but also parts like mouth, throat, esophagus, stomach, colon, rectum, pancreas, larynx, trachea, bronchus, kidney and urinary bladder and cervix. It literally affects half of the body parts. There is also some research saying that smoking also causes breast cancer but still there is no proper evidence. The toxic chemicals enter inside the body and damage the DNA. DNA is a nucleic acid which controls the growth and behavior of a cell. The damaged DNA cannot be repaired which leads to cancer. Even though lung cancer is not inherited, in some cases 1 % of lung cancer is hereditary. Even if a person is not a smoker, if he/she inhaled the chemicals it will lead to cancer. Not only cigarettes but substances containing tobacco like cigars, pipes, shisha can also cause cancer. Exposing to toxins or radiation can also cause cancer. But lung cancer mainly occurs in smokers. Symptoms for lung cancer are chest pain, wheezing, coughing up blood, feeling very tired etc., Some types of lung cancer can be cured if diagnosed before they spread. But in most cases, we can't save lives. But it's never too late to save lives in the future. And it's never too late to stop...

Nandhini Periyannan
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CARBON FOOTPRINT

Carbon footprint refers to the total amount of greenhouse gases such as carbon dioxide, methane released into the earth's atmosphere, as the result of an individual's actions or by an organisation or by country. A product's carbon footprint includes the emissions for its entire life cycle that run from the production along the supply chain to its final conception and disposal. The calculation of carbon footprint based on whether the focus is on a country ,organisation, product or individual, for example the calculation of carbon footprint product could help consumers decide which product to buy if they want to be climate hover for climate change mitigation activities, the carbon footprint can help to distinguish those economic activities with a high footprint from those with low footprint so the carbon footprint concept allows everyone to make a comparison between the climatic impacts of individuals products companies and countries and priorities to reduce emission of greenhouse gases.

Carbon footprint is usually expressed as carbon dioxide equivalent per unit of comparison, this sums up all the greenhouse gas emission not only carbon dioxide and it looks at emission from economic activities, events, organisation and service in some cases only carbon dioxide emissions are taken into account we should not include methane and nitrous oxide.

A variety of different tools exit for calculating the carbon footprints for individuals, business and other organisations .The commonly used methodologies for calculating organisation

carbon footprints include greenhouse gas protocol. Several organisations such as the US Environment Protection Agency, the Nature Conservancy, and British Petroleum, created carbon calculators on the internet for individuals. Such calculators allow people to compare their estimated carbon footprints with the national and world averages.

So how carbon footprint can be reduced,

Individuals and corporations can take a number of steps to reduce their carbon footprints that contribute to climate mitigation. Carbon footprint can be reduced throw improving energy efficiency and changing lifetime and purchasing habitats, for example using public transportation such as buses and trains reduce individual's carbon footprint when compared with driving and using renewable energy sources, to generate electricity can reduce the carbon footprint by individual and organisation for example electricity generation from wind power produces no direct carbon emissions.

Bakyalakshmi. P
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BIOREMEDIATION

Utilising either naturally existing or purposefully added microorganisms to ingest and degrade environmental toxins in order to clean up a polluted place is known as Bioremediation. George M Robinson, a petroleum engineer, invented modern bioremediation in the 1960s. He conducted studies using microorganisms kept in glass jars with contaminants inside of them. He experimented with adding various bacteria to the jars and found that some of them were effective in decomposing the contaminant. Phytoremediation, bioventing, bioattenuation, bio sparging, composting and landfarming are a few examples of methods connected to bioremediation.

Because it is inexpensive, encourages natural processes, and uses sustainable techniques to address pollution, bioremediation has a wide broad application. Using a variety of plants, including terrestrial, marine and coastal plants, allowed this technique to be used for the rehabilitation of a larger range of ecosystems or their associated areas. The following project is the best example that explains Bioremediation:

Contaminated Groundwater Cleanup: A site in Burlingame, California had groundwater contaminated with free product that required clean up. An unpleasant odour was observed at the monitoring wells. A small quantity of Bio World Enhancement Solutions was introduced directly into the groundwater monitoring wells to make contact with the free product. The project was reevaluated after 2 months. The odour was no longer present and no free product was detected. The site has been signed-off by the San Mateo Country Department of Environmental Health Aency.

Philomina. A. F
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ILLICIUM VERUM

Illicium verum (Star anise) is an evergreen small medium-sized tree from the plant family Illiciaceae, genus *Illicium*. *Illicium verum* has long been used in traditional medicine and the food industry in the actions of preventing cold, and relieving pain. Several bioactive constituents such as sesquiterpenes, phenylpropanoids, lignans, flavonoids, and other compounds have been recognized from *Illicium verum*. The pharmacology studies demonstrated that its active compounds possess a broad range of pharmacological uses, especially in cytotoxic, antioxidant, anti-inflammatory, sedative, and antimicrobial activities. In addition, it is the chief source of anticancer agent called shikimic acid.

The Star anise is a well-known source of carbohydrates, proteins, vitamin A, and ascorbic acid. It contains proteins (2-4g), carbohydrates (65-75g), fats (4-6g) dietary fibers, and sugars. Star anise is a rich source of minerals including sodium, calcium, zinc, magnesium, potassium, iron copper, etc. Almost 359Kcal energy is obtained per 100g of star anise. The aromatic odour of *Illicium verum* is because of the presence of essential oil which is 2.5–3.5% in the fresh fruit and 8–9% in dried material. GC-MS (Gas Chromatography-Mass Spectrometry) is generally used to find out the chemical profile of essential oils.

Illicium verum is the most well-known species. The plant is known by different local names in different regions of the world. Swamp star anise (Illicium parviflorum) is poisonous and hence care should be taken to avoid their admixture with star anise. Star anise has a prime place in the Chinese five-spice powder mix. It is popular in the culinary art of a few Asian countries and possesses high medicinal value. Shikimic acid extracted from star anise has been used in the preparation of vaccines against bird flu and swine flu.

Star anise contains a high level of antioxidants, which can help to protect the body against damage from harmful free radicals. This can help to reduce the risk of chronic diseases such as cancer, heart disease, and diabetes.

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LETTER FROM WILD ANIMALS

You call me a beast,

but from the beginning of time,

only to survive has been the goal

of me and my kind!

I do not come

to where you live,

nor hunt you down,

or steal your kids!

With nature, I seek harmony,

but to you, I love to kill.

But I have never murdered for sport,

as hunters do at will.

In me is instilled a natural force

to be loving to my child,

but human mothers often are not,

so which creature is really wild?

Jothi.V
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PINKY-WHITE LEUCISTIC ALLIGATOR

An abnormal condition called leucistic that causes white pale or patchy coloration of the skin, hair, feathers, scales or cuticles. This condition expressed in Alligator with blue eyes born in Florida is one of only eight in the world. An extremely rare leucistic Alligator is the result of Genetic Condition that leads to the partial loss of skin pigmentation resulting in white or translucent skin. The light-pink alligator has been born at Gatorland, a wildlife park in Orlando, Florida. This newly existing reptile is believed to be one of only eight leucistic alligators in the world. It's rarely survived beyond infancy due to health problems. Due to lack of normal skin pigmentation it is sunburn easily. It cannot survive for a long time in the presence of sunlight because of its abnormal condition. It may be suffered by skin cancer and at higher risk of sun damage. It is rarely seen as adults because of their skin colour they are easily spotted by predators. Leucistic Alligator was born to a mother who did not affect by leucism but carried the genetic mutation for the condition and a leucistic father. It was born with non-leucistic male alligator which is of same size. Leucistic Alligators skin colour may change over time because unlike Albino animals, they still carry the genes for pigmentation.

Gopika Shanthini. G
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MODERN FARMING

Modern vegetable farming ranges from small-scale production for local sale to vast commercial operations utilizing the latest advances in automation and technology. Most vegetables are planted by sowing seeds in the fields where they are to be grown, but occasionally they are germinated in a nursery or green house and transplanted as seedlings to the fields. During the growing season, herbicides, pesticides and fungicides are commonly used to inhibit damage by weeds, insect and diseases, respectively. As urban centres grew, agricultural production became more specialized and commercial farming developed, with farmers producing a sizable surplus of certain crops.

Gunapriya. S
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WILDLIFE

Wildlife is important for beauty, economic, scientific and survival value. It helps to maintain the ecological balance of nature and maintains the food chain. Wildlife refers to the collection of animals and all other living things that live in wild. Wildlife causes a proud feeling among country men but nowadays it is being ruined by the one and only humans. We are cutting forest for logs for an area to live and to make roads. We are not only making the trees to fall but also we make the bird's life and other animals that live on the trees in distress. This deforestation, causes global warming, soil erosion, etc. We also kill the animals for their skin, tusks and other special organs which increases the demand in animals.

Harthi. M
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STUDIES ON ISOLATION, MORPHOLOGICAL AND BIOCHEMICAL CHARACTERIZATION OF MICROORGANISMS FROM GROUND SOIL AND RHIZOSPHERE SOIL

Biodiversity of soil microbes has been regarded as human and vegetation life resource, especially the one connected with biological and environment resources. Soil is a unity of subsistence that includes the varieties of microbes, because microbial community is one of the important components of soil, therefore, the microbial activity and species compositions are generally influenced by the physical characteristic and soil chemical properties, climate and vegetation. The existence of a large microbial community in the soil is supported by an enormous group of organic matters in the earth. Most of these microorganisms are bioactive and survive at the top few inches of the agricultural soils. The microorganisms can live in several habitats along with humans and also in the utmost condition such as inside the rocks of the oceanic crust, cold temperature, hot springs and miles deep in the ocean. The presence of microbes in soil is based on the existence of ambient conditions provided by the types of vegetation, the texture and chemical nature of the soil, nutrients availability, pH, moisture content, climate, and temperature. The physiology of the soil is also determined by all these conditions as it varies across the same place between different seasons. Further, the dumping of the organic wastes from agricultural fields ensures the availability of the high nutrient content in soil for the growth of the microorganisms.

The roots of plant growing in soil provide a unique habitat, the rhizosphere, which is particularly favourable for the development o£ soil microorganisms. It is well established that soil in the immediate vicinity of plant roots contains larger numbers of organisms than soil more distant from the roots. There is evidence also that the rhizosphere microflora differs qualitatively from that in non-rhizosphere soil it is also reported that the bacterial counts from the rhizosphere and nonrhizosphere soils varied with the type and age of the plant and with the type of soil. The rhizosphere has indefinite dimensions depending on the type of the soil and the nature of plant. The plant root stimulates microbial development and the plant in turn is affected by the increased activity of tiny microorganisms in the rhizosphere. The greatest rhizosphere effect is observed on the root surface and in the soil adhering to the roots. In the majority of plants the rhizosphere effect may extend several millimeters beyond the roots. Most of the microorganisms in the rhizosphere live as saprophytes, some live on the root surface whereas others penetrate the roots

The plant in turn may be affected by the increased activity of the microorganisms in the rhizosphere in many ways liberation of plant foods by decomposition of complex organic matter in the soil, by the production of acids in the soil. The influence of plant root on the soil microflora and pronounced increase in the numbers of microorganisms in the rhizosphere of various plants with change of age of the plant roots were reported by many workers.

Hemalatha. V
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DESERT PLANTS

Deserts are extremely dry areas of land with sparse vegetation. It is one of the earth's major type of ecosystem, supporting a community of distinct plants and animals specially adapted to the harsh environment. Desert environment are so dry that they support only extremely rare plants. Tress are usually absent and under normal climatic conditions, shrubs or herbs provide only very incomplete ground cover.

Extreme aridity renders some deserts virtually devoid of plants. However, this barrenness is believed to be due in part to the effects of human disturbance such as heavy grazing of cattle, on an already stressed environment.

Other desert plants survive dry periods through underground organs such as bulbs, tubers or rhizomes. These structures are inactive, requiring and using little water until triggered to grow by rain soaking into the soil.

Hepsibha Sharon. S
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AMIDST THE WOODS

Amidst the woods, a tree stands tall,

Its whispered tales, the leaves enthral.

Roots entrenched in the earth's embrace,

A silent witness to time and space.

Seasons dance in a fleeting array,

Leaves shimmer and quietly sway.

In this forest, a timeless decree,

Nature's masterpiece, forever free.

Nikkitha Christy. J. F
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DOLPHIN

The dolphin smiles back to me

To say that she understands!

A dark intelligent eye looks into my body,

Asking if I want to play

I smile back!

For this moment, I just admire its

Beauty, Intelligence and Grace

From the other side of the water’s surface

This moment will be continued in another dream.

After a few more waves she decends!

Our time to play will continue in another dream!!!

Parkavi. K
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REALITY OF PAST, PRESENT, FUTURE

DEAR PAST,

I Loathe you

For you cause me pain

But I’m attached to you

Forgive me

All the irreplaceable memories

DEAR FUTURE

I'm afraid of you

For you betary me

But I'm hopeful

Please be kind

DEAR PRESENT

I don't trust you

For you're temporary

But I'm counting on you

Stand by me.

Abitha Sree. R
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MORPHOLOGICAL AND BIOCHEMICAL CHARACTERIZATION OF MICROBES FROM AGRICULTURE AND GROUND SOIL

Soil contains varieties of microorganisms including bacteria that can be established in any natural environment. Bacteria are most important and abundant microorganism which is present insurrounding environment. These are very small, unicellular, primitive and non-chlorophyll containing microorganism. Dilution method is one of most important method to isolate the soil bacterium which allows the list of living cells in the soil. Soil bacteria dominate, or participate in, number of earth's biogeochemical cycles, including the carbon, nitrogen, oxygen, phosphorus, and sulfur cycles Some of the specific processes of soil bacteria include carbon fixation, decomposition of organic matter, respiration, nitrogen fixation, nitrogen mineralization, nitrification, denitrification, phosphorus mineralization, and sulfur oxidation and reduction. These processes can directly or indirectly affect the concentrations of atmospheric gases, as well as the availability of nutrients to plants and animals. The soil ecosystem is supported by the several interactions among its physical, chemical and biological components. Microbial communities of soils interact with plant roots and soil constituents of soils at the root-soil interface. Due to abundantly available nutrients on the root surface, the population and activities of microbes in this region is higher than that of the region away from it. Thus nutrient-rich region having high microbial activity surrounding the plant root is called Rhizosphere which is a thin layer of soil immediately surrounding plant roots that is an extremely important and active area for root activity and metabolism.

Soil is the key component of natural ecosystem and as such environmental sustainability depends largely on a sustainable soil ecosystem. Soil productivity is considered as important factor for success of agricultural production rather than soil fertility. It is a vibrant habitat for huge diversity of life forms. Microbial diversity constitutes the most extraordinary reservoir of life in the biosphere. Over millennia microbes have adapted to extremely diverse environment and developed an extensive range of new metabolic pathways or library of catabolic enzymes.

Soilmicroorganisms are essential in the decomposition of soil organic matter, any decrease in the microbial diversity or abundance may adversely affect nutrient absorption from the soil. The elevated levels of heavy metals in soils had significant impacts on the population size and overall activity of the soil microbial communities. The functioning of the soilas a vital system and the support on its biological productivity depends to a higher extent on the soil micro floral activity. That is why in the assessing of anthropogenic soil pollution it is necessary to take into account the changes in the size, composition and activity of the soil microbial community, variation in loss of the normal bands and the appearance of new bands compared with the non-polluted soil.

Ramya. P
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ROTIFER

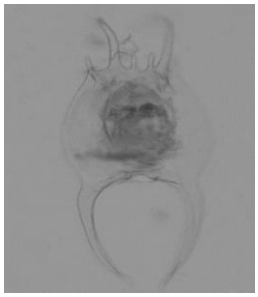
The word rotifer is derived from a Latin word meaning "wheel-bearer", commonly called wheel animals or wheel animalcules, due to the corona around the mouth that in concerted sequential motion resembles a wheel.

They were first described by Rev. John Harris in 1696, and other forms were described by Antonie van Leeuwenhoek in 1703. Most rotifers are around 0.1–0.5 mm (0.0039–0.0197 in) long (although their size can range from 50 μm (0.0020 in) to over 2 mm (0.079 in)). These species are widespread in freshwater habitats around the world, but a few can also be found in saltwater conditions. Some rotifers are free-swimming and planktonic species, whereas others move by inch warming along a substrate and others are sessile and live inside tubes.

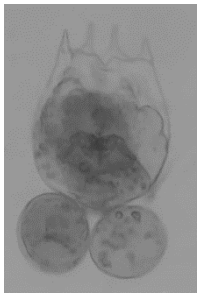
Rotifers have bilateral symmetry and a variety of different shapes. The body of a rotifer is divided into a head, trunk, and foot, and is typically somewhat cylindrical. There is a well-developed cuticle, which may be thick and rigid, giving the animal a box-like shape, or flexible, giving the animal a worm-like shape; such rotifers are respectively called *loricate* and *illoricate*. Rigid cuticles are often composed of multiple plates and may bear spines, ridges, or other ornamentation. Their cuticle is non chitinous and is formed from sclerotized proteins.

Rotifers play a vital role in the zooplankton ecosystem as grazers, suspension feeders, and predators. The physicochemical properties of water have a direct impact on the composition and spread of the rotifer community. They can be found in practically any sort of freshwater body, from vast permanent lakes to small transient bodies. Rotifers are predators that prey on algae, diatoms, ciliates, and bacteria.

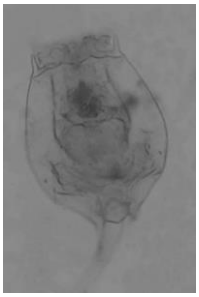
The organization of the rotifer community is determined by many environmental factors, biological aspects such as predation and competition, as well as physicochemical factors such as visibility, water temperature, pH, Turbidity, Electrical Conductivity, Alkalinity, Total Hardness, Calcium, Magnesium, Ammonia, Nitrite, Nitrate, Chloride Fluoride, Sulphate, Phosphate, BOD and COD.



Brachionus falcatus



Brachionus calyciflorus



Brachionus plicatilis

Keratella tropica

Santhi. K
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A PUMPING MACHINE

What is heart?

A pumping machine merely a size of a fist!

When you play with it, it can make your entire life twist,

If it fails, all your efforts to revive go in vain,

Keep it happy, healthy and cheerful!

And see how your life turns colourful.

We all know how important an organ Heart is!

We have to win hearts to rise in life!

Be it your favorite person…

Mending a broken heart is always wise.

Happy is the person whose heart is healthy

Always they will be fit, fine and wealthy.

Suji. S.A
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THREATS TO BIODIVERSITY

Biodiversity means maintaining balance of nature so that no one thing can become too powerful and therefore bad for everyone else. The variety of animals and plants found on the planet. The Tropical ecosystem covers less than 10% Earth's surface and has more than 90% world's species. The current species on Earth is about 10 million-14 million where 1.2 million species are documented and 86% species are not described. In Earth approximately 8.7 million species are terrestrial and 2.2 million are oceanic species. About 2,20,000 (Vascular plants), 0.7-1 million (Marine species), 10-30 million (Insects but only 0.9 is known today), 5-10 million (Bacteria), 1.5-3 million (Fungi) and 1 million (Mites). Scientists, IPBEO Global Assessment Report and Ecosystem Service have reported that growth in human population and overconsumption are the primary factors in decline. Loss of habitat is Growth in commodities for export and habitat destruction due to expansion of agriculture and overexploitation of wildlife. EV Directive 1999/22/EU zoos described as preservation of biodiversity wildlife. Biosphere reserves, National parks, Wildlife Sanctuary, Zoological Park, Botanical Gardens and Forest reserves.

The threats to biodiversity are habitat loss, habitat destruction, habitat fragmentation, overexploitation, population, climate change, invasive species, environmental degradation, deforestation and desertification. Humans are the highest in the classification and having the major part to destroy the nature which affects the biodiversity. If all the species are extinct it is a great threat to the Earth and the biological cycle collapses. There are many unions and commissions working on conservation of biodiversity like UNESCO Global Geo-parks, National Level Laws, IUNC Red List, European Union, Ramsar Conventions (Wetlands), Bonn Conventions (Migratory species) and Global agreements are made to conserve and protect species from extinction.

Conserve the wildlife! Protect from the threats!

Shalini. R
I B.Com 'C' Section

ANTI-DIABETIC POTENTIAL OF MEDICINAL PLANTS

Diabetes mellitus is a widespread condition affecting people globally. Approximately 25% of the world's population is estimated to be affected by this disease, characterised by abnormal carbohydrate metabolism. Despite progress in oral hypoglycaemic agents, the search for new drugs persists due to limitations in existing synthetic options. Herbal drugs with anti-diabetic activity, recognised in traditional medicine, are yet to be formulated as modern medicines. Type 2 diabetes, often associated with obesity, hypertension, and dyslipidemia, requires treatment targeting insulin resistance and stimulation of insulin secretion. Diabetes, a metabolic disorder, results in insufficient insulin production, necessary for converting food into glucose. Type 1 Diabetes causing an inability to release insulin, leads to low rates of glucose uptake. Traditional herbal medicine is utilised in developing countries due to the cost of conventional medicines. Indigenous Indian medicinal plants have shown promise in managing diabetes with low side effects. Plants continue to be a valuable source of drugs, contributing to the development of

various medications. Ethnobotanical information suggests around 800 plants may possess anti-diabetic potential, with several herbs being explored for their benefits.

It is the fact that diabetes can't be cured and it has never been reported that someone had recovered totally from diabetes. The rapidly increasing incidence of diabetes mellitus is becoming a serious threat to mankind health in all parts of the world. Moreover, during the past few years some of the new bioactive drugs isolated from plants showed anti-diabetic activity with more efficacy than oral hypoglycaemic agents used in clinical therapy. The traditional medicine performed a good clinical practice and is showing a bright future in the therapy of diabetes mellitus. The reviews of natural medicines with their mechanism of action and their pharmacological test results. Many studies have confirmed the benefits of medicinal plants with hypo- glycemic effects in the management of diabetes mellitus. The effects of these plants may delay the development of diabetic complications and correct the metabolic abnormalities. WHO has pointed out this prevention of diabetes and its complications is not only a major challenge for the future, but essential if health for all is to attain. Therefore, in recent years, considerable attention has been directed towards identification of plants with Antidiabetic that may be used for human consumption. Further, it emphasises strongly in this regard the optional and rational uses of traditional and natural indigenous medicines.

Sindhuja. G
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FAST FOOD AFFECTED HUMAN HEALTH

Food is important for survival. It provides necessary nutrition for the body of the human being. Fast food, which is available readymade and easy to eat is now a days an important item of food. It is often termed as food away from home. The term Fast food was introduced by Merriam-Webster in 1951. According to Merriam-Webster, fast food is the term given to food that can be prepared and served very quickly. These are specialized products such as hamburgers, pizzas, fried chicken or sand witches. It can be categorized as Junk food. Junk food are classified as food products which are high in salt, sugar, fats and energy (calories) and contain little or no proteins, vitamins or minerals.

SHORT-TERM IMPACTS

- Fast food breaks down quickly, causing a rapid spike in blood sugar because of the refined carbohydrates and added sugar. In turn, this cause people to feel tired. Insulin promotes further hunger within a short time after the meal.
- When consuming high levels of salt could immediately impact the proper functioning of a person's blood vessels. Excess sodium intake also has links to fluid retention.
- Single serving of fast food could increase inflammation throughout the body. Fast food meal high in saturated fat increased airway inflammation in individuals with asthma. This acts as a trigger for asthma attacks.
- Increased stress levels.
- Fatigue and decreased energy levels.
- Difficulty sleeping.

- Feeling down.
- Tooth decay.

LONG-TERM IMPACTS

- Many fast food meals are extremely low in fiber. Low fiber diets with a higher risk of digestive conditions such as constipation and diverticular disease, as well as reductions in healthy gut bacteria.
- The effects of a western diet on a person's immune system. This diet consists of high amounts of sugar, salt, and saturated fat from only a few sources. Its lead to higher inflammation, lower control of infection, higher cancer rates, and a higher risk of allergic and autoinflammatory disease.
- Typical of fast food, and a lower capacity for memory and learning. This sort of diet may also raise the risk of Alzheimer's disease and Parkinson's disease.
- Fast food consumption and an increase rhino conjunctivitis, and eczema.
- The FDA suggests that a diet high in salt often increase a person's blood pressure, making a person more prone to heart attacks, stroke, kidney disease, or heart disease.
- Diet high in trans fats raises the amount of low-density lipoprotein or "bad" cholesterol and lowers the amount of high-density lipoprotein or "good" cholesterol. This means that a person is more likely to develop heart disease.
- Fast food contains a very high number of calories. If a person eats more calories than they burn each day, they gain weight, which may lead to obesity.
- Fast food it causes the cancer disease.

PREVENTION OF FAST-FOOD AFFECTS

- Eat regular meals so you do not get too hungry.
- Drink water first and eliminate sugar sweetened beverages.
- Consume healthy fats and enough protein
- Consume snakes that are nutritious and low in calories.
- Understand your stressors.
- Get plenty of sleep.
- Keep a smile on your face and realize the downside of marketing.
- Chew sugar free mint gum when you get a craving for junk food.
- Drink plenty of water.
- Practice deep breathing or other relaxation techniques.

"Say no to eat junk food, eat healthy food"

Sneha. S
II M.Sc., Zoology

AQUARIUM FISH

There are 650 species of Aquarium fishes
The colourful Fish is "GLOFISH"
The most Colourful fish in the world is "Mandarin fish"
The beautiful fish is "Discus Fish"
The fastest Fish is "Indo-Pacific Sailfish"

The slowest fish is “Dwarf seahorse”
Top 1 big fish in the world is “Whale Shark”
The sweetest Fish is “Tilapia”
The luckiest best Fish is “Flower horn fish”
The playful Fish is “Puffers”
The boneless Fish is “whitefish”
The oily and edible Fish is “Salmon”
The rarest Fish is Devils Hole Pupfish”
The Fish that can’t swim is “Red-Lipped Batfish”
The largest dead Fish is “Southern sunfish”
The smiling Fish is “Snailfish”
The thorn less Fish is “Catfishes”
The Intelligent Fish is “Manta rays”
The Clever Fish is “Oscar”
The Largest brain Fish is “Peters' elephantnose”
The Sleeping Fish is “Zebrafish”
The Cheapest Fish is “Affordable fish”

Sr. Arul Jerlin
III. B.Sc., Zoology

SENSE AND SCIENCE

Sense is not a sense without science

Science is not a Science without Organisms

Organism is not an Organism without Environment

Environment is not an Environment without Nature

Nature is not a Nature without Human

Human is not a Human without Life

Life is not a Life without Science.

Finally’

Science is the Science Forever…

Sr. Arul Jerlin
III B.Sc., Zoology

THREATS TO BIODIVERSITY

"The loss of biodiversity is second to nuclear warfare which threatens human and other lives" - U.S Environmental agency.

Biodiversity refers to the variability among the living organisms from all the sources such as marine, terrestrial, and aquatic ecosystem. It is the connection among all the living species including their habitats and their interaction with the environment. The flow of diversity have had been disturbed as the generations are passing. It is because of construction of roads according to the demand of the urbanization. Many organisms lose their habitat during such constructions. Some of them might be rescued by animal rescuers and some animals may be forced to the level of death. As the human population is growing, many wild lands should be converted into farming or residential places.

Human activities such as hunting, deforestation, urbanization, overconsumption, usage of fossil fuel, are the main reasons for the loss of biodiversity. Hunting of animals for fun or tastier meat breaks the food chain. Some hunt elephant for ivory, crocodile for their skin which is used to make leather goods. Ex: In Philippines people hunt Tuko, on the belief that they can kill cancer cells even though not scientifically proven. Such over hunting may cause danger to species. The term overconsumption means consuming at higher rate than the natural reproduction rate. It results in depletion of resources.

Cars emit carbon gases during their usage. Such gases cause harm to bio organisms. In the world, 28% of the waste is only recycled others are either combusted or disposed through landfills. Not only domestic waste, but also the e-waste, rubber, plastic causes threat to biodiversity. Farmers use insecticides and pesticides to get rid of the insects which cause damage to the crop. But during such process useful species such as honeybee, ladybug and earthworms are also lost. Honeybees are essential for the pollination process not only for flowering plants but also for other crops. People plant lumber trees throughout for the purpose of making papers. Such growth of trees causes damage to other organisms.

Pollution such as air pollution, water pollution and land pollution caused by various human factors cause threat to biodiversity. Proper waste management and efficient utilization of resources available is necessary to avoid loss of biodiversity. People now a days use exotic animals just for their entertainment. It not only results in the misplacement of animals from their natural environment but also encourages people to reach out to their habitat and catch them. There is an increasing rate of greenhouse gases due to excessive usage. Greenhouse gases are increases the heat in the environment, which leads to climatic change and thereby melting of glaciers. People must make sure that they use resources efficiently and prevent loss of biodiversity. People of today generation must make themselves responsible to make healthier environment for younger generation.

Varsha. M
III B. Com

BONDUC NUT

Medicinal plants as latent source of therapeutic aids. It attained a significant role in health care all over the world for both human and animals not only in diseased condition but also as potential material for maintaining proper health. Now a days public are interested in the use of herbal remedies.

Caesalpinia bonducella, belongs to the family Fabaceae. Generally, it is called Fever Nut, Bonduc Nut and Nicker Nut. *Caesalpinia bonducella* claimed to have various medical and therapeutic applications including anti-inflammatory, antibacterial, antiviral, antihelmintic, antipyretic, antidiuretic, antiamoebic and anti-estrogenic properties. They are also useful in cough, asthma, leprosy, skin diseases, dyspepsia, dysentery, hepatopathy, splenopathy, diabetes and intermittent fever.

In modern world, due to modern life style, women are affected with PCOS. According to the World Health Organization (WHO) data approximately 116 million women (3.4%) are affected by PCOS. In India, it affects 3.7% to 22.5% (1.3-7.9 crore) of women. In market there are many drugs like clomiphene, letrozole, metformin, gonadotropins, etc., are available for PCOS, but they often result in chronic effects which is seen unnoticed. Nowadays PCOS patients are attracted towards natural remedies due to the effective therapeutic outcomes with natural drugs and the limitations of allopathic medicines.

Caesalpinia bonducella seeds is effective against several ailments attributed to PCOS. Because it contains all main chemical constituents such as Isoflavones, Steroidal, Saponin, Fatty acids, Hydrocarbons, Amino acids, Phenolics and Phytosterols. Thus, in today's world many people depend on natural remedy for treating PCOS using *Caesalpinia bonducella* seeds.

Sridharshini. V
II MSc., Zoology

THREATS TO BIODIVERSITY

Our wonderful world is filled with much different diversity. Those diversities are the building blocks of the earth. If one block is removed the entire earth will collapse. It sees the harmful actions that are done by humans against the biodiversity.

CUTTING TREES AND SHUTTING FOREST

Deforestation is a cancer cell for the diversity which infects and kills it. The trees have been a great and important part in biodiversity. It is a primary source of diversity, cutting down the trees wills shutdown the forest areas.

PHONE SIGNAL MAKING THE DIVERSITY NULL

The signal and radio signals from the phone that we are using in our regular life are killing many organisms especially the birds. The birds are the biodiversity creator the spread the plant species to different places.

TOURISM IS NOT A FAVORITISM FOR FOREST

Tourism is the thing that is been favorable for everybody but not for the biodiversity. The

tourist spots in the forest and coastal areas were polluted by the man with plastics. Thus, the biodiversity in the tourist spot is been affected and also it become the dirty place not to be visited. The animals and other species are also affected and cause an imbalance in diversity.

MINING IS NOT A FINE THING

Mining improves the nation's economy but not the biodiversity. The mining creates a mess in the living habitats of the species and thus it results in the hazard for the biodiversity. Thus, mining is not a fine and good thing for the bio-diversity.

CHANGING GENE IS TOO MEAN

The Genetically modified plants and other species that are giving the high yield will result in the extinct of the original species because of the absence of attention and failed to store it for future. So, the gene modification is a mean act against the original biodiversity.

RIVER PROJECT IS NOT A CLEAVER PROJECT

Construction of dams and reservoirs is good and useful project but not for the biodiversity. The dams were built in the middle of the river and the water is stored in the forest areas. It not only affects the water diversity but also the forest diversity. Thus, the dam constructing river project affects the biodiversity.

CONCLUSION

In countless ways humans are the treads for the bio-diversity. So, we humans should reduce the effect of humanization on the biodiversity in order to prevent and protect it. The only way the save the biodiversity is in hands of humans.

"*Save diversity because it is like our nativity*"

Vinitha. P
III B.Sc., Zoology

NANOTECHNOLOGY

The term 'Nanotechnology' was coined by Taniguchi in 1974, but its conceptual foundation was established after the famous lecture on 'There's Plenty of Room at the Bottom' by Nobel laureate Richard Feynman on December 29, 1959. Nanotechnology involves fabrication, manipulation, and reduction of materials on a nanoscale range between 1 and 100 nm with high stability, improved strength, biocompatibility, cost-effectiveness, and specific targeting. The nanomaterials are of very small size and the large surface-to-volume ratio of the nanomaterials leads to a significant change in their physical and chemical properties. Recently, nanomaterials have been utilized as carriers by encapsulating/attaching the drug molecules and delivering them into target tissues more specifically, in a controlled manner. The three foremost conditions for the synthesis of nanoparticles are the selection of green or environment-friendly solvent, a good reducing agent, and a harmless material for stabilization. For the synthesis of nanoparticles, extensive synthetic routes have been applied in which physical, chemical, and biosynthetic routes are very common. For the synthesis of metal/metal oxide nanoparticles, plant biodiversity has been broadly considered due to the availability of effective phytochemicals in various plant extracts, especially in leaves such as ketones, aldehydes, flavones, amides, terpenoids,

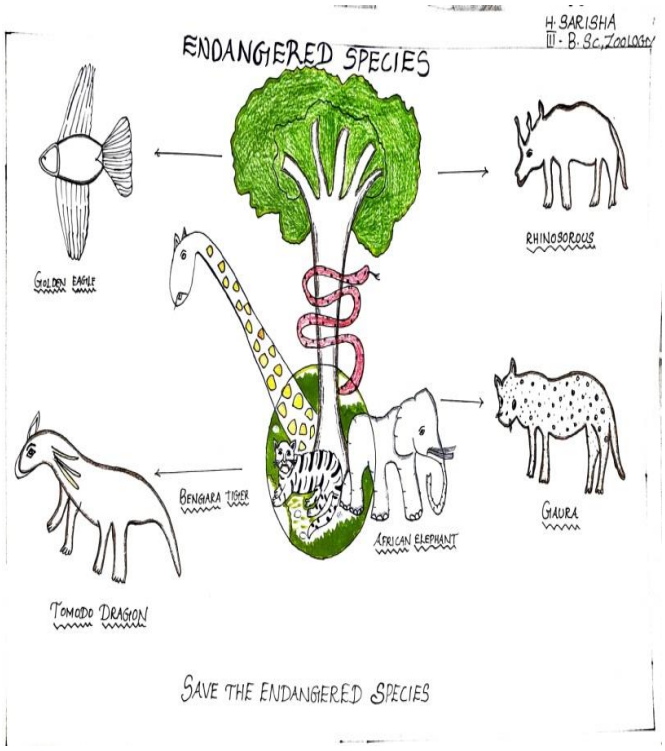
carboxylic acids, phenols, and ascorbic acids. These components are capable of reducing metal salts into metal nanoparticles in the size range 1–100 nm.

Plant nanotechnology has recently opened up new pathways for the production of nanoparticles and is an environmentally benign, simple, quick, and stable technique. Using water as a reducing solvent to synthesize nanoparticles has several benefits, including biocompatibility, scalability, and medicinal application. This means that plant-derived nanoparticles may meet the rising demand for nanoparticles with applications in biomedicine and the environment since they are made from easily accessible plant components and are not hazardous.

In summary, Green-synthesized nanoparticles find applications in various fields, including medicine, agriculture, catalysis, and environmental remediation, showcasing the versatility of this approach. The green synthesis of nanoparticles offers a range of advantages, including environmental sustainability, biocompatibility, cost-effectiveness, and controlled properties, making it an attractive and promising method for nanoparticle production.

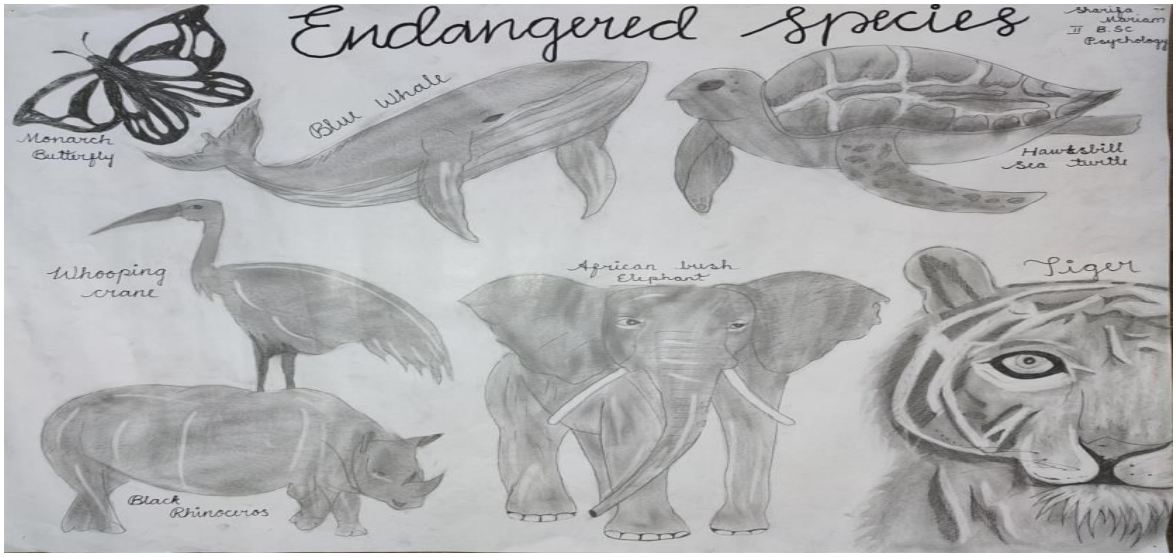
Yasmin. M
Research Scholar
Department of Zoology

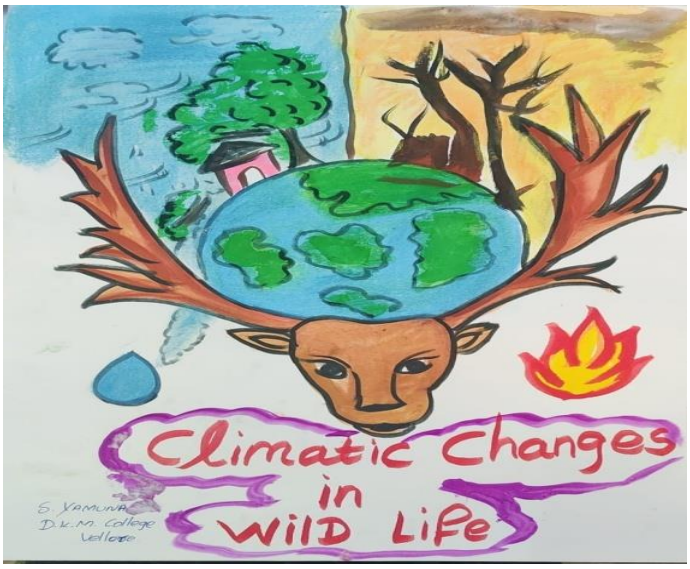

BLUE THROATED MACAW
SAVE BIRDS!
SAVE ANIMALS!
KAYALVIZHI.S
II - B.Sc CHEMISTRY


H. SARISHA
II - B.Sc, Zoology
ENDANGERED SPECIES
GOLDEN EAGLE
RHINOSOROUS
BENGARA TIGER
GAURA
AFRICAN ELEPHANT
TOMODO DRAGON
SAVE THE ENDANGERED SPECIES

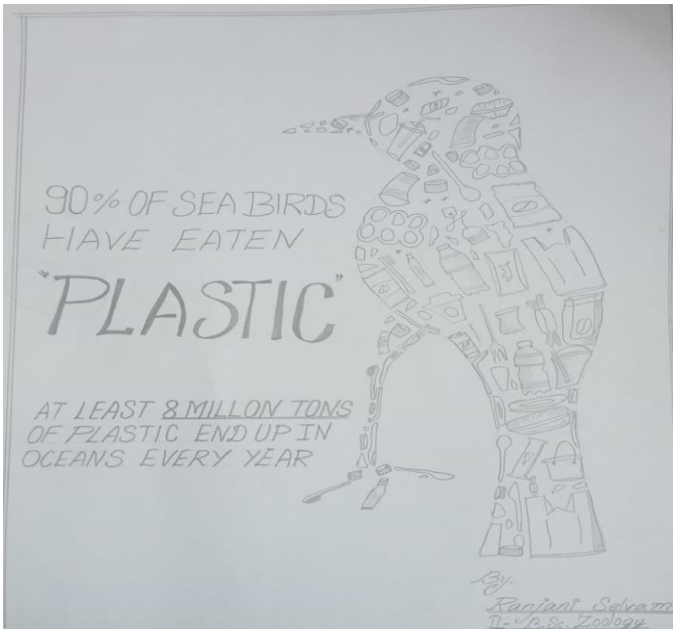

TOP 10 ENDANGERED SPECIES
GIVE OUR JUNGLE BACK
BE THE VOICE FOR VOICELESS
GIVE OUR SEAS PLASTIC FREE
RANJANI.S
II-BSc ZOOLOGY


Climatic Changes in Wildlife
VINITHA P
II B.Sc. ZOOLOGY
AUXILIUM COLLEGE
Autumn
Summer
Spring
Winter

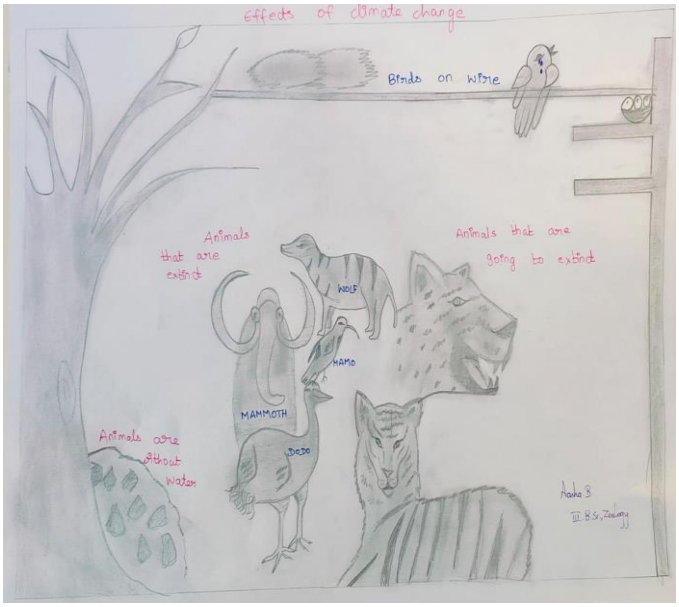

Endangered species
Sarika Mariam
II B.SC
Psychology
Monarch Butterfly
Blue whale
Hawksbill Sea turtle
Whooping crane
African bush Elephant
Tiger
Black Rhinoceros


Climatic Changes
in
WILD LIFE
S. YAMUNA
D.K.M. College
Vellore


S. SHOBANA
II - B.Sc. ZOOLOGY


90% OF SEA BIRDS
HAVE EATEN
"PLASTIC"
AT LEAST 8 MILLON TONS
OF PLASTIC END UP IN
OCEANS EVERY YEAR
By
Ranjani Selvam
II - B.Sc. Zoology


K. JAISHREE
II - B.Sc., ZOOLOGY


Effects of climate change
Birds on wire
Animals that are extinct
Animals that are going to extinct
WOLF
HARD
MAMMOTH
DODO
Animals are without water
Naike S
II B.Sc. Zoology


By:
VANDHINI. P
II B.Sc. Zoology

DEPARTMENT ACTIVITIES

ACADEMIC YEAR 2023 -2024

JUNE 2023	
19.06.2023	College Reopens for II UG, III UG and II PG
19.06.2023	Orientation Program II, III B.Sc., Zoology and II M.Sc., Zoology students participated in the orientation program. Pastor. Tamil Selvan and Fr. Daniel were the resource persons.
20.06.2023	Inauguration of the New Academic Year 2023-2024.
21.06.2023	9th International Yoga Day Celebration.
21.06.2023 to 25.06.2023	Student Induction Program for all I UG Students.
24.06.2023	International Webinar Circles of Salesian Research n.1 Aasha B, Sr. Arul Jerlin A, Jothi V, Abithasree S, Monisha V of III B.Sc., Zoology participated in the webinar on 'Accomplishment of Female adolescents' in the Youth Centres of Ljubljana through positive youth development – Case study. The resource person was Dr. Barbara Poredos, FMA, Italy.
23.06.2023	Department Welcome for I B.Sc., Zoology Fresher's. Senior students of the Department and the Faculty members welcomed and shared their wishes. Prayer Service, followed by cultural activities by students and an interactive session was successfully organised.
24.06.2023	YUVA UTSAV – India (District level) youth competition. F. Rachel and G. Ramya of III UG participated in NCC piloting to invite the chief guest Mr. Kathir Anandh, M.P, Vellore held at Auxilium college.
26.06.2023	Department Welcome for I M.Sc., Zoology freshers Senior students of the Department and the Faculty members welcome and shared their wishes. Prayer Service, Introduction of the Staff by students and a Game session was successfully organised.
26.06.2023	Rally against Drug Abuse by NSS.
27.06.2023	Orientation on Skill Development. Students of III B.Sc., Zoology participated in the Skill Development Program organized by Career Guidance and Placement Cell, Auxilium College. Mr. N.Vijaya kumar, Ms. S.Arthi, UNXT Program were the resource persons.
JULY 2023	
01.07.2023	Lead Auditor: Dr. K. Anu and Mrs. M. Anuradha, Assistant Professors, Department of Zoology conducted Green Campus Audit/Energy Audit along with NSF, Coimbatore, at Karpaga Vinayaga College of Engineering and Technology, Chengalpattu, Tamil Nadu.
05.07.2023 To 14.07.2023	TRG launch camp: V. Mohanalakshmi, III B.Sc., Zoology participated in the NCC Firing Camp which was held at Dhanalakshmi college, Chennai.
14.07.2023	INVESTITURE CEREMONY: Inauguration of college union took place in the college auditorium. Dr. Vikram Mathew, MD, Director, CMCH, Vellore was the Chief Guest. Leaders of Department of Zoology are listed below: Sridharshini V - Secretary, II M.Sc., Zoology

	Monisha V - Secretary, III B.Sc., Zoology Pavithra R - Class representative, II M.Sc., Zoology Dhanashree C - Class representative, I M.Sc., Zoology Jothi V - Class representative, III B.Sc., Zoology Ranjani S - Class representative, II B.Sc., Zoology Janani S - Class representative, I B.Sc., Zoology Abitha Sri. R - Secretary, Environment club Vinitha. P - Secretary, Tamil Nadu Science Forum Suji S A - PG hostel leader
14.07.2023	Drug abuse and Trafficking : Prithika R, Rachel F, Ramya G, Hema M K., from III B.Sc., Zoology participated in this program which was organized by NCC held at Kangeyanellur Government Boys Hr. Sec. School, Katpadi
14.07.2023 & 15.07.2023	STAFF PARTICIPATION IN LEAD AUDITOR LECTURE: Dr. Mary Agnes A., Dr. Uma Chandra N., Ms. Anuradha M. Dr. Vidhya K. Dr. Anu K., participated in the Special Lecture on "National Building Code (Part -11: Approach to Sustainability)" organized by Nature Science Foundation Coimbatore, Tamil Nadu, India.
16.07.2023 to 25.07.2023	TRG IGC CAMP: V. Mohanalakshmi from III B.Sc., Zoology participated in this firing camp which was conducted by NCC at Dhanalakshmi college Chennai.
19.07.2023	INTRAMURALS - Football Competition: Vinitha P, Yamunasri S, Gayathri S, Sr. Arul Jerlin A, Radhika D, Aasha B, Abithasri R from III B.Sc., Zoology and M. Carmel Mary, I B.Sc., Zoology participated and won II place.
19.07.2023	Short Story Writing Contest: Yazhini M.T.V., I B.Sc., Zoology secured the I place in the Short Story Writing Contest organized by Department of English, Auxilium College.
20.07.2023	INTRAMURALS - Hockey competition: Vinitha P, Gayathri S, Yamunasri S, Radhika D, Sr. Arul Jerlin A, K. Lavanya, Monisha V, Dhanalakshmi P., from III B.Sc. Zoology and M. Carmel Mary, I B.Sc., Zoology participated and won II place.
21.07.2023	INTRAMURALS - Badminton and Shuttle competition : K. Lavanya, Aasha B., from III UG Zoology participated in this sport which was held in Auxilium College ground conducted by the Sports Department.
23.07.2023	INTRAMURALS - Shotput and Discus throw Vinitha P, Gayathri S., from III UG zoology participated in the sport Discus throw and Vinitha P, F. Rachel Participated in Shotput.
24.07.2023	INTRAMURALS - Kabaddi sport competition : Vinitha P, Gayathri S, Yamunasri S, Sr. Arul Jerlin A, Hema M K, Abithasri R, Aasha B, Dhanalakshmi P, Monisha V, Radhika D, K. Lavanya of III B.Sc., Zoology participated in the event.
28.07.2023	Zoology Association Inauguration & Sr. Helen Fernandez Endowment Lecture. PG and Research Department of Zoology inaugurated the Zoology Association and organized Sr. Helen Fernandez Endowment Lecture. Dr. Manoranjitham.S Professor and Head, Psychiatric Nursing, CMC Vellore was the resource person and delivered a lecture on the topic "Mind and body connectedness"

29.07.2023	Staff Participation - National Webinar on Green Campus Initiatives towards Sustainable Development Dr. Mary Agnes A., Associate Professor, IQAC Coordinator organized the National Webinar and Dr. Arockiamary J. S., Dr. Uma Chandra N., Ms. Anuradha M. Dr. Hannah Elizabeth S. Dr. Vidhya K., Dr. Rajalakshmi A., Dr. Anu K. Dr. Kavitha participated in the webinar.
AUGUST 2023	
02.08.2023	Inauguration of Enviro Club: Enviro Club members from Department of Zoology participated in the inauguration program. The resource person was Dr. M. Uma Shankar, HOD, Department of Civil Engineering, VIT, Vellore delivered a lecture on the topic "Water Management"
05.08.2023 to 12.08.2023	I CA Examination
15.08.2023	Independence Day Celebration
17.08.2023	Webinar ASQC members participated in the Webinar on the topic "Moving away from inanimate or virtual relationship towards animate or personal relationship" delivered by the Resource person Dr. Amutha Arockia Mary, Assistant Professor, Auxilium College (Autonomous), Vellore.
18.8.2023	Poem Writing Competition : Nandhini P and Thabassum B from II B.Sc., Zoology participated in the competition on the topic "Freedom" organised by English Literary Association at our College.
17.08.2023	Sr. Regina Colombo Endowment Lecture: Sr. Regina Colombo Endowment Lecture was organized by the Department of Zoology for III B.Sc., Zoology students. The Resource Person was Dr. A. Vinodhini, Assistant Professor, DKM College for Women, Dept of Zoology, Vellore and delivered a lecture on the topic "Endocrine Glands".
18.08.2023	Tamilnadu Science Forum Inauguration - Zero Shadow Day: P. Vinitha, III B.Sc., Zoology, Student Secretary, TNSF participated in the inauguration and Zero Shadow Day activity.
18.8.2023	Dr. Mary Agnes A., Associate Professor & IQAC coordinator, organized and delivered a lecture on "NAAC Criteria and SOP" for the faculty of the college.
18.8.2023	Faculty – Orientation Program : Dr. Arockiamary J. S., Dr. Uma Chandra N., Ms. Anuradha M., Dr. Hannah Elizabeth S., Dr. Vidhya K., Dr. Rajalakshmi A., Dr. Anu K., Dr. Kavitha participated in the Orientation Program on the topic "NAAC Criteria and SOP"
21.8.2023	Muthamizh Vizha - Dance Competition: M. K. Hema, J. Deepasuja from III B.Sc., Zoology, Sherin F and Gayathri R from II B.Sc., Zoology and Gayathri, Priyanka from I B.Sc., Zoology participated in the dance competition and won first prize.
21.08.2023	Innovative Project: Dr. Anu.K and Ms. Anuradha M., Assistant Professors of Zoology, conducted an "Awareness Program on Higher Education and Career options in Life Science" as a part of our Innovative project for higher secondary students at Don Bosco Higher Secondary School, Gandhi Nagar, Vellore. Through this

	program 30 students were benefited by gaining knowledge about the various courses available in and around Vellore district.
22.8.2023	Muthamizh vizha - Drama competition: Students from III, II and I B.Sc., Zoology participated.
24.8.2023	Sports day – Relay: Nandhini P and Nivedha V, II B.Sc., Zoology participated in this competition
25.08.2023	68th Annual Sports Meet : Mr. Muthusamy I.P.S, Vellore District, Ms. Neoline John N.I.S were the Chief Guest. Students from Dept of Zoology participated in March Past, Events and received prizes.
26.08.2023	National Webinar on "Publish and Progress was Organized by IQAC, Committee for Research Ethics, Publication and IPR & Library". Dr. Mary Agnes A., Associate Professor, IQAC Coordinator was the organizer of the webinar.
26.08.2023	National Webinar on "Publish and Progress Organized by IQAC, Committee for Research Ethics, Publication and IPR & Library". Dr. Arockiamary J. S., Dr. Uma Chandra N., Ms. Anuradha M. Dr. Hannah Elizabeth S. Dr. Vidhya K., Dr. Rajalakshmi A., Dr. Anu K. Dr. Kavitha participated in the webinar.
28.08.2023	Dr. Vidhya K, Assistant Professor served as the Resource Person for the National Science Congress (NCSC) – Guide Teacher's Training Programme held Sri Venkateshwara Higher Secondary School, Vellore.
28.08.2023 to 01.09.2023	SOFT SKILL TRAININD PROGRAM ORGANIZED BY CAREER GUIDANCE AND PLACEMENT CELL: III B.Sc., Zoology Students participated in the 5 days Training organized by Career Guidance and Placement Cell. The Resource Persons were Mr. E. Paul, Mr. Aravind, Mr. Thivakaran, Ms. Lakshmi, Ms. Joyce Esther from PAGO ACHEIVERS in the College Campus.
September 2023	
02.09.2023	MUTHAMIZH VIZHA: Muthamizh Vizha was celebrated. Mr. Yugabharathi, Poet, was the chief guest. Deepasuja. J, Hema.M. K, III B.Sc., Zoology and R. Gayathri, F. Sherin, II B.Sc., Zoology participated in Dance Competition.
05.09.2023	TEACHERS DAY PROGRAMME: Teacher's day Programme was celebrated. G. Gnanashri, D. Radhika, R. Abithasree of III B.Sc., Zoology welcome the Teachers and students performed Department wise cultural events and wished the Teachers. Management wished and honoured the Teachers with memento.
05.09.2023	Orientation Programme for I Year UG Students on Examination Process by Sr. Arockiya Jeyaceli, COE. I B.Sc., Zoology Students attended the Orientation on Examination Process along with the Tutor Dr. Hannah Elizabeth S.
08.09.2023	Inauguration of Eco Club Student Chapter in Association with Nature Science Foundation, Coimbatore: This Event was conducted by the Eco club Student chapter in association with Nature science foundation. The Resource person was Mr. D. Dinesh Kumar B.E., M.E., Sustainability Consultant Inspire Engineering Consultant, Vellore. III B.Sc., Zoology Students participated in the programme.
11.09.2023	Sr. Antoinette Aloysius Endowment Lecture:

	PG and Research Department of Zoology organised Sr. Antoinette Aloysius Endowment Lecture for II B.Sc., Zoology Students. The resource person was Ms. Vidhyalakshmi. A., Embryologist, Garbhagudi Hospital, Bangalore and delivered a lecture on the topic "Infertility - Genetic causes and Management"
13.09.2023	Zoology Association - Science Expo 2023: Dr. (Sr). Jaya Santhi. R, Principal, Dr. (Sr). Amala Valarmathy A, Vice Principal (Shift-I), Dr. Arockiamary J.S, Head of the Department of Zoology inaugurated the Exhibition. HODs, Professors and Students from various Departments of Auxilium College, Students from Auxilium Hr. Sec. School visited the exhibition. The working model/exhibits of 24 teams were evaluated and the following Teams won prizes: I Place: Team 21: Model on Global Warming II Place: Team 14: Model on Biogas II Place: Team 1: Model on Digestive System III Place: Team 9: Model on Sericulture III Place: Team 4: Model on Nervous System
15.09.2023	Parents Teacher's Meeting
19.09.2023	Slogan Competition: Vinitha.P, Gayathri.S, Yamunasri.S, Nikhath Fathima.T, B. Aasha, Suganthi.R, Hina Begum.S, Sr.Arul Jerlin from III B.Sc., Zoology participated in the Slogan Competition conducted by Enviro club. Sr. Arul Jerlin won I Prize, Gayathri. S won II Prize, Vinitha. P Nikhath Fathima. T and won III Prize
21.09.2023	Ward Meeting
23.09.2023- 30.09.2023	II CA EXAMINATION
October 2023	
03.10.2023 to 07.10.2023	ZOOLOGY ASSOCIATION - Wildlife Week Celebration: The Zoology Association organized the below mentioned Interdepartmental Competition: Drawing Competition on the topic "Endangered Species" and the winners were; I Place: Sharifa Mariam, II B.Sc., Psychology II Place: Ranjani.S. II B.Sc., Zoology III Place: Sahrish Sanandi, I B.Sc., Psychology Essay Writing Competition on the topic "Threats to Biodiversity" and the winners were; I Place: Asha.B. III B.Sc., Zoology II Place: Varsha.M, III B.Com., III Place: Vinitha.P, III B.Sc., Zoology III Place: Shalini.R, I B.Com., Slogan writing Competition on the topic "Conserve Wildlife" and the winners were; I Place: Vinitha.P, III B.Sc., Zoology II Place: Swathi.T, I B.Com., III Place: Yamuna Sri S. III B.Sc., Zoology

	English Speech Competition on the topic “Importance of Wildlife in Human Life”. The winners were; I Place: Nivethitha.S, I B.Sc., Zoology II Place: Dharshini.V, III B.A., History III Place: Reshma.T, I B.com Tamil Speech Competition on the topic மனித வாழ்வில் வனவிலங்குகளின் முக்கியத்துவம் and the winners were; I Place: Nandhini.A, I B.Sc., Chemistry II Place: Arthi.B, I B.Com. III Place: Vasantha Priya.S, I B.Sc., Zoology
11.10.2023	International Eco Club Inaugration: International Eco Club Student Chapter Inauguration in association with Nature Science Foundation, Coimbatore. The resource person was Dr. D. Vinoth Kumar (Joint Director, NSF) Ms. T. Joys Ememmal (Programme Officer, NSF), Ms. E. Sivarajani (Programme Officer, NSF). Aasha B, Deepasuja J, Hema M K, Madhumitha R, Radhika D from III B.Sc., Zoology performed a dance based on the theme Nature. “Nikhath Fathima T, Aasha B, Vinitha P., received Best Student award”.
13.10.2023	Enviro Club (shift I) Webinar: Enviro Club (shift I) organized a Webinar on “Preserve Nature”. The Resource Person was Dr. Caroline Joe Rosario J. Associate Professor and Head of the Department, Nirmala College for Women, Coimbatore. All II B.Sc., Zoology Students, Members of Enviro Club Abitha Sree R., Aasha B., Sr. Arul Jerlin A, Vinitha P. and Monisha V. from III B.Sc., Zoology participated.
16.10.2023	NSS - Voter's Enrolment Drive: NSS Volunteers from II B.Sc. Zoology participated in the Voter's Enrolment Drive organized by NSS Unit in collaboration with District Administration, Vellore District in College Auditorium.
19.10.2023	Workshop on PROFILE BUILDING – NAAN MUDHALVAN SCHEME. II and III B.Sc., Zoology Students participated in the workshop on Profile Building organized by Naan Mudhalvan Scheme. Students learnt to create Profile in LinkedIn and the other facilities.
20.10.2023	Ward Meeting
21.10.2023	Study holidays begin for students.
21.10.2023	Dr. Vidhya K, Assistant Professor of Zoology, acted as the Evaluator for the 31st National Children’s Science Congress, Vellore District organized by TNSF, Vellore District supported by NCSTC and DBT, New Delhi hosted by TNSF Branch and NSS Unit, Auxilium College.
28.10.2023	ODD SEMESTER EXMINATION BEGINS.
NOVEMBER 2023	
31.10.23 to 10.11.23	Odd Semester Examination
05.11.23	Dr. Uma Chandra N. and Dr. Vidhya K. Assistant Professors of Zoology acted as Evaluator for the Science Projects organized by National Children’s Science Congress 2023 Zonal Congress held at Chetpet, Thiruvanamalai.
14.11.2023	Children's Day Awareness rally: Lakshmi B from III B.Sc., Zoology participated in the awareness rally on the occasion of children's day based on the theme “Walk for Children” organized

	by the Department of Social Security, Vellore District. The rally was inaugurated by Vellore District Collector Thiru. P. Kumaravel Pandiyan I.A.S.
15.11.23	J. Hemamalini, III B.Sc., Zoology – II Prize – Photography Competition J. Hemamalini, III B.Sc., Zoology won II Prize in the Photography Competition on the occasion of World Peacock Day conducted by Indian Biodiversity Conservation Society, U.P
15.11.2023	Dr. Vidhya K, Assistant Professor of Zoology, participated in the National Webinar on "The Indian Peacocks – its significance" on the occasion of World Peacock Day organised by the Indian Biodiversity Conservation Society, Jhansi, Uttar pradesh, India.
16.11.23	EVEN SEMESTER BEGINS
18.11.23	IBM SKILL BUILD PROGRAM: organized by Career Guidance and Placement Cell. Students from II M. Sc., Zoology and III B.Sc., Zoology attended the program. The resource person was Sr. Mary Josephine Isabella FMA, ARUWYE Director, Fr. Joseph Leo SURABI Director, Mr. Vijuson, Associate Director and Trainer.
21.11.2023	EXTENSION ACTIVITY III B.Sc., Zoology III B.Sc., Zoology Students went to the Govt. Panchayat School, Kangeyanellur for an Extension Activity along with Dr. Vidhya K and Dr. Kavitha R. The program started with Prayer followed by Group Song, Skit on "Health Practices for Healthy Living". The beneficiaries were taught with a hands-on session on hand washing, Exercise through dance.
22.11.2023	Blood Donation Camp: Prithika. R and Vinitha. P from III B.Sc., Zoology donated blood in the camp organised by Kanali Women's Cell & VIDES club in collaboration with CMCH, Vellore.
24.11.2023	*Le Sevon:* PG and Research Department of Zoology inaugurated its Innovation and Incubation Unit - Le Sevon, a Training Program on Soap Making from Fruit Peels and used Cooking Oil. 12 Students from III B.Sc., Zoology joined the Le Sevon. The first stage of soap making was demonstrated by the Trainer Mr. Dominic and every participant prepared the set-up for the process of soap making.
24.11.2023	Visit of Mother Provincial : Sr. Margaret Devadoss, Mother Provincial, Chennai Province visited the College and met the Students, in which the II B.Sc., Zoology students participated.
24.11.2023	Inauguration of Auxilium Innovation and Incubation Centre (AIIC). Sr. Margaret Devadoss, Mother Provincial, Chennai Province inaugurated AIIC. PG and Research Department of Zoology presented its Innovation and Incubation Unit products the La Coche, a Training Program on Crochet works and Le Sevon, a Training Program on Soap Making from Fruit Peels and used Cooking Oil. Dr. Vidhya K, AIIC Co-ordinator presented about AIIC, Zoology Unit accompanied by Dr. Kavitha R, Assistant Professor.
27.11.2023 & 28.11.2023	Awareness Program on Waste Management: II and III B.Sc., Zoology Students participated in the Awareness Programme on waste Management, organized by the Enviro Club. The Chief Guest was Mr. Ebenener Joshua, General Manager, Willy's Enterprises, Vellore. The Resource Persons were from Auxilium College, Vellore Dr. Scholastica Mary

	Vithiya.B, Associate Professor, Department of Chemistry, Ms. Revathy T, Assistant Professor, Department of Chemistry and Dr. Anu. K, Assistant Professor, Department of Zoology.
28.11.2023	IDVP Scholarship Distribution and Visit to AIIC Dr. Kuzhanthai Francis, IVDP, Dharmapuri distributed the scholarship to students and then visited the AIIC units. Dr. Vidhya K, AIIC Co-ordinator presented about AIIC, Zoology Unit accompanied by Dr. Kavitha R, Assistant Professor.
30.11.2023	EXTENSION ACTIVITY II B.Sc., Zoology II B.Sc. Zoology Students along with their Tutors Dr. N. Uma Chandra and Dr. K. Anu went for an Extension Activity to the Govt Panchayat School, Kangeyanellur. Students had an interaction session with the school students about good habits, healthy and unhealthy food in groups followed by skit.
December 2023	
01.12.23	Molecular Lab Visit to CSCR, Bagayam. I and II M.Sc., Zoology Students went for a Molecular Lab Visit to CSCR, Bagayam organized by Christian Medical College CSCR Campus.
02.12.2023	AIIC Zoology Unit – Inauguration of La Coche Department of Zoology inaugurated the AIIC Zoology Unit La Coche. It's a training program on Crochet Works.
02.12.2023	International Eco Club Students' Chapter - Online Quiz Competition: Nikhath Fathima T., Vinitha P. from III B.Sc., Zoology participated and Vinitha P. won the 2nd Prize.
06.12.2023	NO DRIVE DAY
06.12.2023	EXTENSION ACTIVITY – I B.Sc., Zoology: I B.Sc., Zoology Students went to the Govt. Panchayat School, Kangeyanellur for an Extension Activity along with Dr. Hannah Elizabeth and Ms. Anuradha. The beneficiaries were taught on Health and Hygiene.
07.12.2023	Auxilium International Eco Club Student Chapter - Soil Painting Competition: Aasha.B and Gayathri.S from III B.Sc., Zoology participated. Gayathri.S won the 1st place and Aasha.B won the 2nd place. S. Ranjani, J. Deepika, P. Nandhini from II B.Sc., Zoology participated.
08.12.23	Sr. Ethelvina Endowment Lecture: Sr. Ethelvina Endowment Lecture was organized by Department of Zoology for the II M.Sc., Zoology students. Dr. Arunkumar P., Assistant Professor, Centre for Biomaterials, VIT and delivered a lecture on the topic "Engineered cardiac tissue."
11.12.2023 to 15.12.2023	Library Week Celebration
13.12.2023	B.Sc., Zoology – Library Tour
19.12.23	Guest Lecture for I B.Sc., Zoology: Counseling and Guidance was given by Mrs. Uma Maheswari, Officer, Central Prison, Vellore to the I B.Sc., Zoology Students.
19.12.23	*Le Sevon* - Dish Wash Preparation: AIIC Zoology Unit Le Sevon organized the preparation of its second product "Dish Wash". The participants involved in making of the product.
19.12.23	National Seminar on Human Rights and Humanity: – Dept. of History

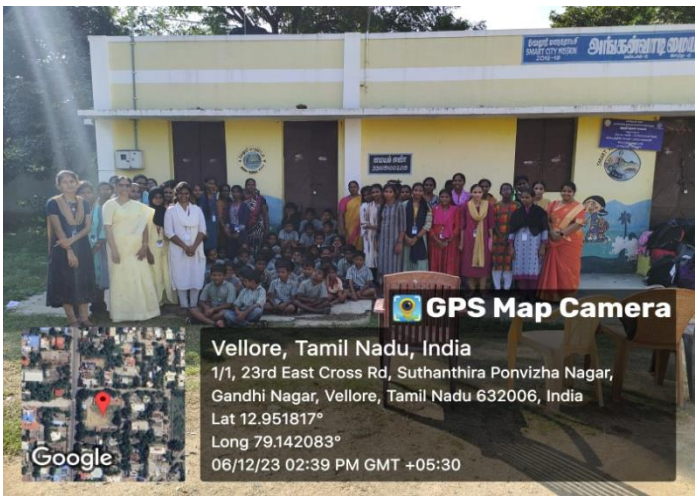
	I M.Sc., Zoology Students participated in the one-day National Seminar on Human Rights and humanity organized by Department of History. The Resource Person was Dr. Rajaratnam Santhanam (Advocate).
20.12.2023	Auxilium International Eco Club Student Chapter - Poster Presentation Competition Vinitha.P., Gayathri.S., Yamuna Sri. S and Aasha B., from III B.Sc., Zoology participated.
20.12.2023	FEMPRENEUR Mini Mart 2023: Three Teams from III B.Sc., Zoology participated in the Mini Mart. Sale of Herbal Beauty powder, Food Stall and Mehendi work was done.
21.12.2023	Department Meeting
21.12.2023	Flood Relief – Department of Zoology Students of M.Sc., Zoology sponsored one sack of rice and B.Sc., Zoology Students sponsored 20 big sleeping Mats.
21.12.2023	Auxilium International Eco Club Student Chapter - Model Making Competition Aasha B. from III B.Sc., Zoology participated.
22.12.23	Christmas Celebration
23.12.2023	Visit to Chennai for distribution of Flood Relief Products: Monisha V., Association Secretary of B.Sc., Zoology went along with the Team of Sisters and Students to distribute the flood relief products for the Chennai Flood Victims.
27.12.2023	Dr. Vidhya K, Assistant Professor of Zoology, has been the Resource Person and delivered Lecture 1 on the topic "Ecosystem for Healthy Living" and Lecture 2 on the topic "Fig Tree and Biodiversity" in the YSSP Camp for School Students, hosted by Auxilium College (Autonomous), Vellore in collaboration with TNSF, Vellore District.
30.12.2023	Dr. Uma Chandra N, Assistant Professor of Zoology, has been the Resource Person and delivered Lecture 1 on the topic "Mimicry" and Lecture 2 on the topic "Amazing Animals" in the YSSP Camp for School Students, hosted by Auxilium College (Autonomous), Vellore in collaboration with TNSF, Vellore District.
January 2024	
03.01.2024	New Year Prayer Service by Department of Zoology: Department of Zoology animated the New Year Prayer Service 2024. The Program started with welcome speech followed by classical dance, prayer and ended with a joyful western dance by UG and PG students of Zoology.
04.01.2024	Sr. Cleofe Fassa Endowment Lecture Sr. Cleofe Fassa Endowment Lecture was organized for I M.Sc., Zoology Students. Dr. A. Joseph Nathanael, Associate Professor Senior, CBCMT, VIT University, Vellore was the Resource Person and delivered a lecture on the topic "Rapid & Area specific Laser Assisted Biomineralization (LAB) process for Tooth surface Functionalization".
06.01.2024 to 11.01.2024	I CA
12.01.2024	Pongal Celebration

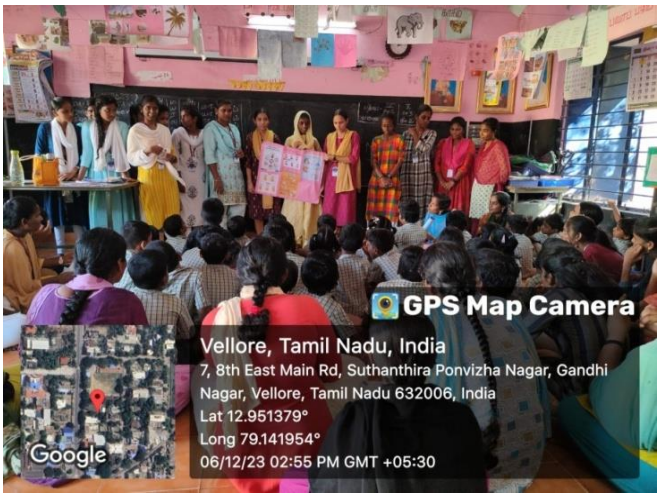
	Saraswathi. S, Abithasree. R, Hina Begum. S, Gunapriya. S, Jothi. V, Monisha.V Gnanashri. G of III B.Sc., Zoology participated in the Pongal Cooking Competition and Aasha. B from III B.Sc., Zoology participated in kolam Competition. Prepared Pongal was served and shared with Staff and students.
19.01.2024 to 31.01.2024	Dr. Vidhya K, Participation in the NEP-Orientation & Sensitization Training Programme organized by UGC- Malaviya Mission Teacher Training Centre, SGTB Khalsa College, University of Delhi.
22.01.2024	School Students Visit Zoology Museum: As on the circular from CEO of Vellore, around 200 students visited the College. Students visited the Department of Zoology Laboratories, Zoology Museum and Art Gallery.
22.01.2024	AIIC Zoology Unit: *Le Sevon* – Beauty Soap preparation AIIC Zoology Unit organized the Beauty Soap preparation, Students participants involved in making of the Soap.
23.01.2024	BioexCELLence – 3 - Quiz Competition (Preliminary Round) & Life Sciences Quiz was organized by Department of Zoology.
25.01.2024	National Voters Day: NSS Volunteer- Ms. Suganthi, III B.Sc., Zoology received the 2nd prize in the Singing Competition organized to mark the National Voters Day from the Vellore District Collector.
29.01.2024	Department Meeting
31.01.2024	BioexCELLence - 3 State Level Inter Collegiate Competition organized by Department of Zoology Dr. (Sr). Jaya Santhi R, Principal, Dr. Sr. A. Arockia Jeyaceli, COE, Dr. (Sr). Amala Valarmathy. A, Vice Principal (Shift-I), Dr. Sr. Juliana Agnes Victor, Vice Principal (Shift II) and Dr. J.S. Arockiamary, Head of the Department inaugurated the Program by lighting the kuthuvillakku. Faculty members and Students of the Department of Zoology along with the participants from Thiruvalluvar University, Marudhar Kesari Jain College for women, Vaniyambadi, Arignar Anna Government Arts College, Cheyyar, DKM College For Women, Vellore, Voorhees College Vellore, C Abdul Hakeem college, Melvisharam, Adhiparasakthi College of Arts and Science Kalavai, Ethiraj College for Women Chennai, Meenakshi college for women, Chennai, Queen Mary's College, Chennai made the program a grand success. The following competitions were conducted and the winners of each event are given below: Drawing Competition, Topic: Climatic change and wildlife, Judge: Dr.Sugantha Kumari.V, Asst. Prof. of Chemistry, ACK Winners: I Place: Yamuna.S, DKM College for Women II Place: Aasha.B III B.Sc. Zoology, Auxilium College, Vellore. III Place: Vinitha.P III B.Sc. Zoology, Auxilium College, Vellore. Vegetable carving: Topic: "Wild Animals" Judge: Dr.Isabella Rosaline.S, Assoc. Prof. of Botany, ACK Winners: I Place: Monisha.V III B.Sc. Zoology II Place: Suganya.V, AAA Government Arts College Cheyyar III Place: Shalini.C.S, Marudhar Kesari Jain College, Vaniyambadi Quiz Competition: Live Quiz Judge: Dr.Hannah Elizabeth, Asst. Prof. of Zoology, ACK Dr.Vidhya.K, Asst. Prof. of Zoology, ACK

	Winners: I Place: Suji.SA.. Asifa.K, II M.Sc. Zoology, Auxilium College. II Place: Haripriya.B, Tamil Selvan, I M.Sc., Zoology, Thiruvalluvar University, Serkadu. III Place: Yogapriyadharshini.R & Sindhu.S, I M.Sc., Biotechnology, Marudhar Kesari Jain College, Vaniyambadi Group Dance: Celebrating Diversity in Nature Judge: Dr. Hilda Princy Annie, Asst. Prof. of English, ACK. Winners: I Place: Hema.M.K, Deepasuja.J, Ramya.G, Aaha.B, Rachel Jayakumari.F. from III B.Sc., Zoology, Auxilium College. II Place: Nikkitha Christy .J.F, Deepika.J, Gayathri.R, Ranjani.S, Shenbagavalli.S, Nandhini P from II B.Sc. Zoology, Auxilium College. III Place: Nandhini.S, Keerthika.K, Savitha.k, Mahalakshmi.S, Sridevi.M from II B.Sc., Biotec, Marudhar Kesari Jain College for women Vaniyambadi Video Making Topic: Biodiversity Judge: Dr.Radhika, Asst. Prof. of Communication Media, ACK Winners: I Place: S. Varshini, II M.Sc., Zoology, Queen Mary's College Chennai II Place: Sulochana. L, III B.Sc., Zoology, Ethiraj College, Chennai III Place: Sneha.S, II M.Sc., Zoology, Auxilium College.
31.01.2024	DQAC Member from Zoology attended the Meeting organized by IQAC
31.01.2024	ASQC Members from Zoology attended the Meeting organized by IQAC
01.02.2024	Department of Zoology organized a Cancer Awareness Program: Mrs. Amala Lucas, Professor & HOD, Haematology Nursing Department along with her team delivered a presentation on Cancer Awareness. All UG and PG Students participated and were benefitted.
02.02.2024	Gratitude Day: Department of Zoology presented a 'Felicitation Song' in expression of gratitude to Sister Secretary and all the Sisters.
05.02.2024	Guest Lecture for Students organized by IQAC, Auxilium College. Guest Lecture for Students on the topic "Empower Students for Excellence: Navigating the NAAC Accreditation Journey Together" was organized by IQAC, Auxilium College. Mr. B. Fuzail Ahmed, Asst. Professor, Dept. of Business Administration, Islamiah College, Vaniyambadi.
08.02.2024	I UG students visited the 'Science festival-2024' organized by Thiruvalluvar University, Serkadu, Vellore.

ENDOWMENT LECTURES

EXTENSION ACTIVITY





ASSOCIATION ACTIVITY