The Editorial

The fourth and fifth volume of the Department Magazine ZΩI – ZOI which means 'Life' in Greek, is the melody of the nightingale during the silent and challenging period of the pandemic. The magazine showcases curricular, co-curricular activities, achievements and the talents of the staff and students for the academic years 2020-21 and 2021-22.

With immense joy and gratitude we have successfully completed the academic years, and with greater commitment we are moving forward to the next academic year. Under the protection of the Lord Almighty and through the guiding light of the lamp we will take forward the legacy of the department with cheers and cooperation in every step. The committed and courageous staff and students of the department will continue to spread the joy of life to each and everyone associated with it….

On behalf of the Faculty of Zoology,

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STAFF CORNER

ANIMAL COMMUNICATION

Dr. J .S. Arockiamary, Head and Associate Professor, PG and Research Dept. Of Zoology, Auxilium College (Autonomous), Vellore-6.

Communication refers to any process or behavior that allows organisms to send and receive information. The senses are the link between animals and its environment, and between one another. Animals depend on their senses to locate food, compete for mates and territory, recognize their parents and young ones, bond the group together, and escape from predators. Different animals communicate using wide range of sensory channels, collectively known as signals. The signals may be sound, colour pattern, posture, movement, electrical discharge, touch, release of odorant or sometimes a combination of these. Without communication social living would not be possible.

Visual signals are very effective for animals that are active during day. A colourful dewlap (throat fan) of lizards, *Anolis carolinensis, Anolis cooki* and *Anolis cristatellus* repel other males from their territory and attract females. Chimpanzees communicate a threat by raising their arms, slapping the ground or staring directly at another chimpanzee. The 'grin' on the face of the young chimpanzee actually communicates 'fear and submission'. Change in colour also act as a visual signal. The bright colouration of the poison dart frog acts as a warning signal to predators. 'Display Behaviour' is ritualized behavior that communicates specific information. Many species of birds perform 'dances' to attract mates – a peacock fanning out his big ornamental feathers is used to warn other peacocks or to attract mates.

Acoustic communication is also exceedingly abundant in nature, likely because sound can be adapted to a wide variety of environmental conditions and behavioral situations. The vibration of their wings causes the buzzing of bees and wasps. Grasshoppers chirp by rubbing against hard ridges on the forewings. Cicadas have thin disks of cuticle on their abdomen which can be buckled by muscles, producing clicks that are amplified by air sacs whose own tension can be adjusted to produce the right sound. Dolphins navigate and find their prey by echolocation. Baleen whales can communicate over distance of 80 kilometers or more underwater. 'Alarm calls' to warn colony members about the presence of a specific type of predators are used by many animals. In the case of Vervet

monkeys, *Chlorocebus pygerythrus*, they run into trees for leopard alarms and dive into foliage for eagle alarms. Many birds produce 'birdsong' – vocalizations that are relatively long and melodic. Birds use sounds to communicate warnings, attract mates, and signal other birds to flock together.

Chemical signals travel much more slowly through the environment, since they must diffuse from the point source of production, yet they can be transmitted over long distances and fade slowly. A pheromone (chemical signal) may attract the opposite sex, raise an alarm, mark a food trail or territory, or trigger other more complex behaviours. Pheromones are especially important in social insects like, ants, bees but they are also common in mammals.

Tactile signals in which physical contact occurs between the sender and receiver can only be transmitted over short distance. Tactile signal involve special patterns of touching, generating eddies in a medium, or transmission of vibration through medium. Touching during aggressive encounters may provide information about the body size and strength of opponent. Aquatic male copepods can identify the distinct eddies left by swimming females and track them for mating. Tactile signals are very important in building and maintaining relation among social animals. For example, chimpanzees that groom other individuals are rewarded with greater levels of cooperation and food sharing. For aquatic animals living in murky waters, *electrical signaling* is an ideal mode of communication. Mormyrid fish produce species specific electric pulses used for locating prey via electro-location and also for searching mates. Foraging sharks detect the electrical signals using specialized electroreceptor cells in the head for eavesdropping on the weak bioelectric fields of prey.

Thus communication help animals to find mates, establish dominance, defend territories, coordinate group behavior and care for young ones.

APPLICATIONS OF SPIDER SILK

Dr. A. Mary Agnes, Associate Professor, PG and Research, Dept. of Zoology, Auxilium College (Autonomous), Vellore-6.

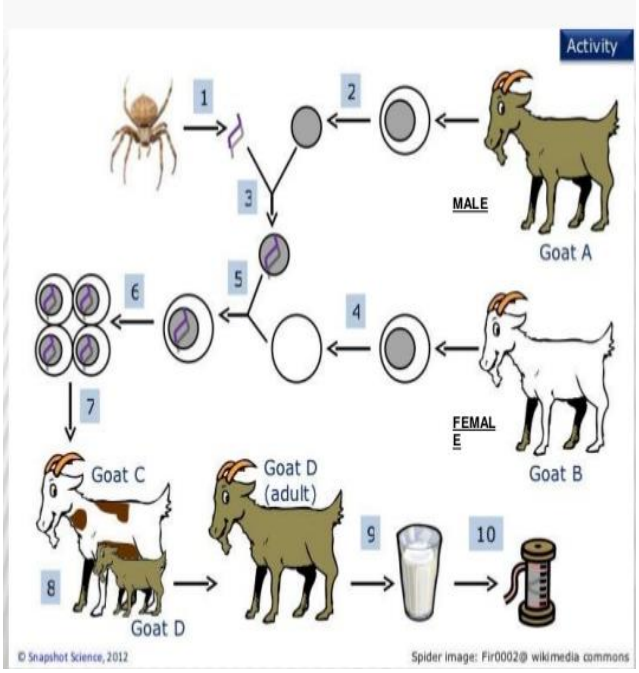
The Silk Age: Spider silk is a natural wonder and it is been used in various fields. New studies are published almost every day exploring applications for silk in regenerative medicine. Research teams around the world are producing new materials using a range of

creative techniques, such as implanting spider DNA into goats and even using yeast to spin silk.

Silk material is now also being used for sutures, scaffolds, grafts and a vast selection of biomedical implants. "Silk could be standard practice for many medical procedures," says Professor Insup Noh, editor of Biomaterials Research journal. "Silk materials have already been approved as a medical raw material, which is a big advantage compared with other emerging polymeric biomaterials." Vollrath's group is now working on bicycle helmets, airplane panels and military uniforms, and studying the spider's ultra-efficient spinning process for use in advanced manufacturing. Spider webs have become a model for pollution sensors, while synthetic spider silk is increasingly popular for clothing.

After 40 years of rapid progress, the zoologist remains convinced he is still just scratching the surface of what his greenhouse guests can deliver. "Spider have been around for millions of years," says Vollrath. "There is so much more to learn from them" .The study used spider silk, but Miles explained that any fiber that is thin enough could be used in the same way. While the spider silk picks up the direction of airflow with great accuracy, that information has to be translated into an electronic signal to be of use.

MASS PRODUCTION OF SPIDER SILK FROM GOAT THROUGH BIOTECHNOLOGY.



Some applications of the spider silk are..

1. Spider Silk protein is found to be stronger than steel, it is not corroded by chemicals and it can with stand high temperatures differences. It has more economical value hence a lot of research is going on to produce spider silk through biotechnological methods.

2. Recent research on the properties of the spider silk has unearthed more fascinating facets that make ideal for its function. The coating material used in rockets is of the spider silk.

3. Fabric/armour: Amazingly, spider silk can be used to make fabric. The image below is of a cape woven and embroidered using the silk of golden orb weavers.

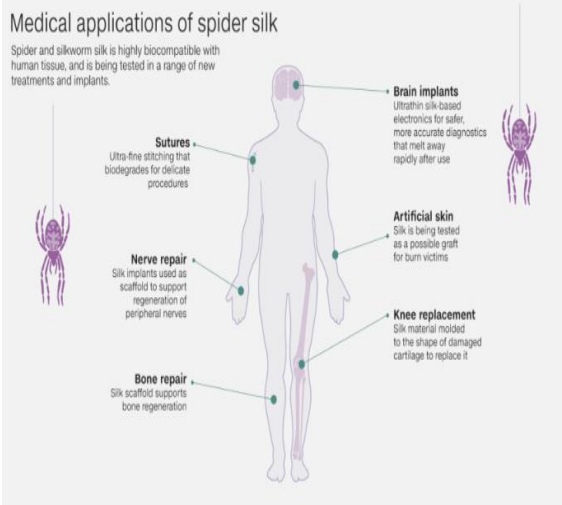
4. US Army's Newest Defense: Genetically-Engineered Spider Silk Body Armor

5. Stronger Than Steel: Spider Silk DNA and the Quest for Better Bulletproof Vests, Sutures, and Parachute Rope.

6. Apart from these uses spider silk is used in medical field. It is used as suture threads, in burn treatments and the medical use is traced to Ayurvedic preparation also.

7. More medical uses for spider silk include sutures, implants, artificial skin and cartilage replacement. Health: A team of researchers from Stockholm are working to develop a genetically-engineered spider silk "bandaid" to heal chronic unhealing wounds. The concept is fascinating and has implications for ways in which you could include spider silk augmentation. Since Ancient Greece, cultures have treated wounds by rubbing them with spider webs, believing this prevented blood loss and infection. Vollrath put this tradition to the test by creating spider silk dressings in a series of animal trials, and found they blended seamlessly within host tissue. "Spider silk is inherently biocompatible so the wound does not reject it," he says. The silk is also biodegradable, meaning the dressing is simply eaten away

as the wound heals." Spider silks also tend not to provoke the human immune system. Some even inhibit bacteria and fungi, making them potentially ideal for surgery and medical device applications.



8. Study of web design had led to engineering marvels which resulted in buildings constructed with minimum raw materials, without much pillars inside to support, extensive use of gravitational force etc. Arachnid Architecture as Human Shelter: TECHNOLOGY, July 27, 2015. MIND & MATTER. A spider-inspired ETFE-and-carbon-fiber shell shapes this year's research pavilion from the University of Stuttgart's Institute for Computational Design and Institute of Building Structures and Structural Design Germany. The bundled strands of carbon fiber to support a translucent ETFE membrane defying gravity. The "diving bell" water spider (*Agyroneda aquatica*) reinforcing an air bubble from the inside—the model biological construction for the research pavilion.

9. Spiders spin unique phonic material. Acoustics: It's logical that spider silk has interesting acoustic properties. A spider web is multi-functional: it traps prey, alerts the spider about the imminent victim, and must be strong enough to hold struggling prey. It's the vibrations that alert the spider. Spiders 'tune' their webs like guitar strings. Exploiting this acoustic quality, an engineering student manufactured a violin made from spider silk and resin. He says the blend of materials makes the acoustic qualities flexible, and they could be applied to other sound equipment.

As well as transmitting sound, scientists have found that spider silk can dampen sound. Certain frequencies do not pass through the microstructure of the silk, and manipulating the tension of the silk changes the frequency blocked. This also means spider silk can act as an insulating material against heat (read the article at the link for an explanation).

10. Spider silk acoustic property help in sound absorbing meta material used in construction of Suspension bridges and earthquake resistant buildings. Sound-proof metamaterial inspired by spider webs

11. Spider Silk Inspires Creation of Liquid Wire, wires without plastic made out of gel. Spider silk could be used to power microphones in hearing aids, cell phones, October 30, 2017, Binghamton University.Spider silk allows scientists to break the laws of physics. Recently scientists in the UK used spider silk to increase the magnification possibilities of microscopes.

12. Spider silk -Mother Nature's bio-superlens: Scientists are discovering that spider silk is a promising material in the area of fibre optics. Traditional materials used for fibre optics are inert, but spider silk is "made up of very long proteins rolled into a helix structure whose bonds are sensitive to a number of chemical substances", which has sparked the imaginations of researchers in the field.

13. Using Spider webs have become a model for pollution sensors. Spider Silk to Detect Molecules: There are a number of qualities of spider silk that could be exploited in different ways, such as the discovery of the hybrid liquid/solid qualities of spider silk, causing it to

behave like a liquid wire. This could have implications for structural engineering, medical technology and other fields that require unique materials.

14. Current fields like Robotics use the spiders as models in constructing robots.

15. Space research; Each mission to the Skylab space station carried a set of student experiments, a tradition that continues today on the International Space Station. Then-high school student Judith Miles from Lexington, Massachusetts proposed sending spiders in a box to the space station, then observing their behaviours to see how they coped with microgravity. The Web Formation in Zero Gravity experiment flew on Skylab 3 in July 1973.

SCHIZOPHRENIA: LOSING TOUCH WITH REALITY

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

Schizophrenia is by far the most common of the psychotic disorders. The word Schizophrenic is derived from the Greek words *schizein* "to split" and *phren* "mind". It is actually a label for a group of psychotic disorders. The symptoms are many and varied but the primary characteristics can be summarized under the following headings:

Delusions: Misinterpretations of normal events and experiences. *Delusion of persecution* is the belief that one is being plotted against, threatened or mistreated. *Delusion of grandeur* – the belief that one is extremely famous, important or powerful. *Delusion of Control* the belief

that other people , evil forces, or even beings from another planet are controlling one's thoughts, actions or feelings.

Hallucinations: They see or hear that aren't really exist. Auditory hallucinations are much more common than visual one.

Verbal Salad: Create words of their own- words that do not exist in their native language such as "littlehood" for childhood. In extreme cases, their words seem to be totally jumbled into what is sometimes termed verbal salad.

Flat affect: They show no emotions. Their faces are like emotionless masks, they stare off into space with a glazed look. Some schizophrenics do show emotions but their reactions are inappropriate like cry after hearing a joke.

Avolition: Total lack of motivation or will. Persons may sit doing nothing hour after hour; if they start to do something, they will often stop in the middle of the activity and wander off.

Alogia: Lack of speech, remain silent withdrawn into their own world.

Catatonia: Individuals show marked disturbances in motor behavior. They remain immobile in fixed, awkward postures for hours at a time.

Autism: Withdrawal from reality is usually accompanied by absorption in an inner fantasy life. The schizophrenic may be so enmeshed in his fantasy world that he is disoriented in time and space; he may not know what day or month it is or where he is.

"Bizarre" Behaviour: The schizophrenic's behavior may include peculiar gestures, movements and repetitive acts that make no sense to the observer but are usually closely related to their fantasy world.

Schizophrenia is caused by genetic factors, brain dysfunction, biochemical factors, psychological factors and certain aspects of family environment.

INDIAN VULTURE ON THE VERGE OF EXTINCTION DUE TO HUMAN ACTIVITY

Ms. Anuradha. M, Assistant Professor, PG and Research Dept. of Zoology. Auxilium College, Vellore-6.

Healthy ecosystems are essential for the well-being of both wildlife and people. One million species of plants and animals are at risk of extinction due to human activities over the years. Extinction is happening faster now than ever before and some species are left in such few numbers that our next generations may not be able to see them if nothing is done for their conservation. One of such endangered species, the extinction of which will affect humans badly in the years to come is the Indian Vulture. The Indian vulture has been listed as Critically Endangered on the IUCN Red List since 2002, as the population severely declined. This is just a step away from extinction unless urgent action is taken for its revival. According to the State of India's Birds 2020 report, Indian Vulture is among the species of birds that have suffered the highest decline in the past 25 years.

Nine species of vulture can be found living in India, but now most are facing a catastrophic decline. Once, these large, ungainly birds were ubiquitous – seen in both cities and countryside, perched on trees, electric poles, cliffs, and housetops. They could usually be found hunched by the roadside, long, naked neck buried deep in the carcass of some unfortunate animal; or circling the sky in great numbers like a huge dark cloud.

There were so many that no one thought to count them. Recently, they have drastically reduced by 95%, and almost completely in certain areas in a short span of two to three years. This is the fastest decline of any bird species ever reported anywhere in the world. Despite this alarming decline, these birds are often ignored in conservation efforts which have caused a serious ecological imbalance.

The cause of this decline has been identified as poaching, habitat destruction, and kidney failure by poisoning caused by the pesticides and veterinary drug diclofenac which the vultures swallow with the flesh of dead animals. Poisoning, especially by poachers, poses the greatest threat. By circling overhead, vultures advertise the location of poaching operations to

rangers. So to eradicate this problem, poachers lace it with poison to kill hundreds of scavenging birds.

Indian Vulture

In the last decade, habitat loss due to massive mining, quarrying, blasting, and logging has affected vulture's nesting and roosting sites thus declining their population. Diclofenac is a common anti-inflammatory drug administered to livestock and is used to treat the symptoms of inflammation, fevers, and pain associated with disease or wounds. The drug is fatal to vultures even in small doses, causing renal failure due to uric acid accumulating in the bird's blood and crystallizing around their internal organs causing visceral gout and death.

Administration of a rodenticide zinc phosphide to cattle to facilitate removal of the hides, and consumption of such carcasses is highly toxic to vultures. Toxic pesticides include dieldrin and endrin (organochlorines), monocrotophos and parathion (organophosphates), and carbofuran as carbamates kill birds in a short time. Bioaccumulation of these pesticides is a potential cause for the massive decline of vultures.

It's evident by the fact that vultures have an enormous capacity for scavenging dead, rotten, putrefied tissues, and can rip off a carcass into pieces of bones in 20 minutes. Their speedy, efficient disposal of bodies does not allow deadly bacteria to develop and spread. Vulture's ability to digest infected, rotting meat without impending any negative effects to its health is a peculiar attribute, but other organisms become carriers of the pathogens as they lack the efficiency of vultures whose metabolism is a true 'dead-end' for pathogens.

The Vulture plays a valuable role in the ecosystem as a scavenger. In their absence carcasses, disposal is now at the mercy of crows, feral dogs, and maggots. Increased feral dog populations all over India are posing many associated disease risks to humans and wildlife; especially diseases like rabies, TB, anthrax, brucellosis, foot-and-mouth, etc are in the hike. Similarly increased crow populations at carcass sites in the vicinity of settlement areas pose a risk of infections to poultry, domesticated birds, avians & humans. Maggots do the scavenging job nowadays, adding to the stink making it difficult for people living nearby. This adds to several complications and collateral risks. The loss of one bird has led to a health crisis. A conservation catastrophe has led to human tragedy.

It's a sobering warning — but if we rethink conservation, such destruction doesn't have to be our future. Reversing the extinction won't be easy, but we can preserve biodiversity and maintain resilient ecosystems. Doing so is critical for supporting human health and prosperity going forward. We should work hard to ensure that these magnificent birds survive long into the future. Measures should be taken to establish more safe zones to protect its breeding sites. We should establish ex-situ or captive breeding to repopulate the wild. Awareness campaigns should be carried out and vigorous monitoring of the diclofenac and other pesticide bans should be imposed. Vultures are universally accepted as ‘natural sanitary workers’, essential for environmental and ecological balance. Therefore, the preservation of the vulture population is non-negotiable.

ROLE OF NATURAL PRODUCTS IN TRADIOTIONAL AND MODERN HEALTH CARE SYSTEM.

Ms. Hannah Elizabeth S, Assistant Professor, PG and Research Dept. of Zoology, Auxilium College, Vellore-6.

Natural products are extracted from tissues of terrestrial plants, marine organisms or micro- organism fermentation broths. A crude extract from any one of these sources typically contains novel, structurally diverse chemical compounds with biological activity and that compound is known as active principle. Natural products have inspired many developments in organic chemistry leading to advances in synthetic methodologies and to the possibility of making analogues of the original lead compound. These lead compounds are useful drugs and used as starting templates in the synthesis of combinatorial libraries.

Over a 100 new products are in clinical development and continue to be the major source of drug discovery. Natural product libraries are good alternative to synthetic libraries. Most of the drugs derived from microorganisms are used in antibacterial therapy. Some microbial metabolites have provided lead compounds like asperlicin, lovastatin, cyclosporine etc., in fields of medicine. Marine microorganisms have biologically potent chemicals like curacin A, eleutherobin, with interesting inflammatory, antiviral and anticancer activity.

Various screening approaches are being developed to improve the natural products use in drug discovery campaigns, and data mining and virtual screening techniques are also being applied to databases of natural products. Most of the drugs like reserpine, digoxin, caffeine, atropine, codeine, morphine are obtained as phytocostituents from natural products. Gum, gum resins, oleoresin, alkaloids, phenolic compounds, flavanoids, glycosides, terpinoids, sapponins and other plant derived secondary metabolites possessing high therapeutic efficacy and to be treated for so many existing ailments and also a vital tool for novel drug delivery systems and gene therapy. Most of the natural products already been occupied in traditional system of medicine and other alternate therapies. Hence the usage of natural products is unavoidable in the modern translational recombinant era of health care system too.

INVITRO ANTI HEPATOCELLULAR CARCINOMA ACTIVITY OF ETHYL ACETATE EXTRACT OF A SIDDHA MEDICINAL PLANT *BREYNIA VITIS-IDAEA* LEAVES.

Ms. Hannah Elizabeth S, Assistant Professor, PG and Research Dept. of Zoology, Auxilium College, Vellore-6.

Siddha system of medicine also known as Siddha vaidya in India, considered as the crown of all the traditional arts of the ancient world owing to its richness and simplicity, practiced by Siddhars. Siddha medicine is in usage of herbs, metals, minerals as well as animals in preparing highly effective medicines, is the oldest medical system in existence. The hallmark of traditional Siddha system is KAYAKARPAM i.e., imparting immunity to diseases. Cancer is the third leading cause of death worldwide preceded by cardiovascular and infectious diseases. It is a genetic term for a group of more than 100 diseases that can affect any part of the body. Management of cancer is still a challenge to modern medicine and allopathic medicine has little to offer for the alleviation of cellular proliferation ailments. Although there are many therapeutic strategies including chemotherapy to treat cancer but high systemic toxicity and drug resistance

limit the successful outcomes in most cases. Liver plays a major role in detoxification. Any injury to it or impairment of its function may lead to many implications on one's health. Management of liver diseases is still a challenge to modern medicine. This plant mentioned as Kayakarpam plants in published as well as unpublished palm leaf literatures.

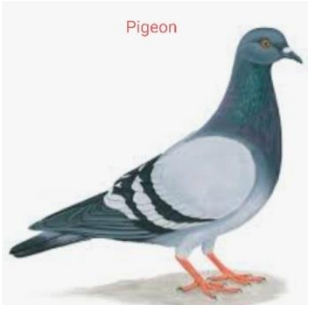
The Pharmacological experiments have been evaluated with special reference to their rejuvenation activity and aimed to evaluate the anti cancer activity of the leaves of *Breynia vitis-idaea* (burm.f) c. fisher. (Euphorbiaceae). One such approach could be a combination of an effective photochemical with chemotherapeutic agents, which when combined would enhance the efficacy while reducing toxicity to normal tissue. Cancer is the abnormal growth of cell in our bodies that can lead to death. Cancer cell usually invade and destroy normal cells.

These cells are born due to imbalance in the body and by correcting the imbalance the cancer may be treated there are different forms of cancer such as skin cancer, lung cancer, breast cancer, larynx cancer, cervical cancer, *etc*. Because of high death rate associated with cancer and because of the serious side effects of chemotherapy and radiation therapy many cancer patients seek alternative or complementary methods of treatment. Phytochemical studies of the plant extracts show the presence of the alkaloids, glycosides; flavonoids and saponins.

AMAZING NATURE

Ms. Vidhya K, Assistant Professor, PG and Research Dept. of Zoology, Department of Zoology, Auxilium College, Vellore-6.

Nature is amazing! In the past 1000 years man used a magnetic compass to find the direction, whereas birds and animals show amazing sense of olfaction to track their route. However, some animals migrate from one place to another regularly covering hundreds or even thousands of kilometres each year. Scientists have been looking for evidence of what else animals may use to navigate. There are scientific investigations proves that animals use the Sun and Moon, Earth's magnetic field, recognition of landmarks to repeat their long



journeys.

Homing pigeons are famous for being able to navigate extremely long distances. Their "homing" is so reliable that they were used in World War I and World War II to deliver messages over enemy lines. How do homing pigeons find their way? Even on cloudy days it can navigate? Do they carry a map and a compass? Pigeons have a small spot on the break that contains magnetite. Magnetite is a magnetized rock, which may act as a tiny GPS unit for the homing pigeon by giving it information about its position relative to Earth's poles. Researchers have also found some specialized cells in birds' eyes that may help them see magnetic fields. So birds can use both the beak magnetite and the eye sensors to travel long distances and to travel back to their home.

Starling bird return to their Nests - 800 kilometres.

Swallow bird return to their Nests - 1,800 kilometres.

Manx shearwater bird (*Puffinus puffinus*) travels 4900 Km.

A compass sense has been demonstrated in birds which enable them to fly in a particular constant direction. The navigational ability of birds has been understood in terms of a presumed sensitivity to both the intensity and the direction of the earth's magnetic field.

The Sun is the point of orientation during the day, and birds are able to compensate for the movement of the Sun throughout the day. Biological clock (Internal Clock) regularizes their migratory behaviour. Birds are able to navigate by two

types of orientation such as Simple, directional is compass orientation and complex, directed to a point which is true navigation or goal orientation. Both types apparently are based on celestial bearings, which provide a navigational "grid". Pecchial Hawk shows an extraordinary flight and an incredible migration. Latest research on this birds navigation capacity leaves everyone at owe. A female Pecchial Hawk was equipped with a satellite tracking system in South Africa. It was surprising that the bird migrated to Finland taking 42 days' time. It covered more than 10,000Km at an incredible average of 230km per day. It's more amazing that the Hawk travelled in a straight line across the entire continent, but even more exciting is that according to the tracker the hawk turned right at the source of the Nile River and then followed the river course to Mediterranean.

Army Research Laboratory, the Office of Naval Research Global and Air Force Office of Scientific Research were the first to demonstrate that a protein in birds' retinas is sensitive to magnetic fields and may be a long-sought sensor for biological navigation. The team discovered a specific light sensitive protein called Cryptochrome 4 in European Robins which is sensitive to magnetic fields. Cryptochrome 4 contains four tryptophan amino acids that are organised in a series generating a so called radical pairs which are magnetically sensitive. In the cells of the retina, the proteins are probably fixed and aligned, increasing their sensitivity to the direction of the magnetic field. Moreover, they are also likely to be associated with other proteins that could amplify the sensory signals. (Courtesy: Carolina Biological and Adventure and U.S. Army Research Laboratory).

GENETIC COUNSELLING AND TESTING FOR BREAST CANCER RISK

Dr. A. Rajalakshmi., Assistant Professor, PG and Research Dept. of Zoology, Auxilium College, Vellore-6.

Genetic counselling and testing: Genetic testing can be done to look for inherited mutations in the *BRCA1* and *BRCA2* genes (or less common genes such as *PTEN*, and *TP53*). This might be an option for some women who have been diagnosed with breast cancer, as well as for certain women with factors that put them at higher risk for breast cancer, such as a strong

family history. While testing can be helpful in some cases, not every woman needs to be tested, and the pros and cons need to be considered carefully.

Considering genetic counselling and testing for breast cancer risk

The breast cancer patient or a family history of breast cancer, talk with the doctor. As a first step, the doctor might use one of several **risk assessment tools** that are now available. These mathematical models use the family history and other factors to help and the doctor a better idea about the risk of having a *BRCA* mutation. But the tools aren't perfect, and each one might give different results, so doctors are still trying to figure out how best to use them. Regardless of whether or not one of these tools is used, the doctor might suggest that the patient could benefit from speaking with a genetic counsellor or other health professional in genetic counselling. The counsellor can also describe genetic testing and explain what the tests might be able to tell, which can help the patient to decide. It's very important to understand what genetic testing can and can't tell you, and to carefully weigh the benefits and risks of genetic testing before these tests are done. Testing can cost a lot, and it might not be covered (or might be covered only partially) by some health insurance plans.

Testing for *BRCA* gene mutations

Some expert groups have developed guidelines for which women (and men) should consider genetic counselling and possibly testing for *BRCA* gene mutations. These guidelines can be complex, and not all doctors agree with them, but in general they include two main groups of people:

Women who have already been diagnosed with breast cancer: Most doctors agree that not all women with breast cancer need genetic counselling and testing. But counselling and testing is more likely to be helpful if:

- You were diagnosed with breast cancer at a younger age (especially if you have triple-negative breast cancer)
- You have been diagnosed with breast cancer a second time (not a recurrence of the first cancer)
- You are of Ashkenazi Jewish descent

- You have a family history of breast cancer, ovarian cancer, pancreatic cancer, or prostate cancer

Testing for other gene mutations linked with breast cancer risk

Mutations in one of the *BRCA* genes account for most inherited breast cancers. But inherited changes in some other genes, including *PALB2*, *CHEK2*, *ATM*, *PTEN* , and *TP53* (linked with Li-Fraumeni syndrome) can also increase breast cancer risk. Testing for changes in these genes is done less often, but it might be considered in some situations.Genetic testing can be done on samples of blood or saliva, or from a swab of the inside of a cheek. The samples are sent to a lab for testing. There are many different possible mutations in the *BRCA* genes. Testing can be done to look for one (or a few) specific mutation(s), or more extensive testing can be done to look for many different *BRCA* mutations. The approach to testing depends on the situation. For example, if someone is being tested because they have a family member with a known *BRCA* mutation, testing might focus only on looking for that specific mutation. In people of Ashkenazi Jewish descent, testing might focus on the specific *BRCA* mutations that are most common in this group of people. But if there's no reason to suspect a specific gene change, testing will likely look for many different mutations.

Getting the results of genetic testing- Before getting genetic testing, it's important to know ahead of time what the results might or might not tell you about your risk. Genetic testing is not perfect. The tests might not provide clear answers for some people. This is why meeting with a genetic counsellor or cancer genetics professional is important, even before being tested.

- **Positive for a mutation that was tested for.** If this is the case, there might be steps to help lower your risk of breast cancer. If you've already been diagnosed with breast cancer, a positive result might affect your breast cancer treatment options.

- **Negative for the mutation(s) tested for.** It can be reassuring to find out that the test didn't find a mutation that increases the risk. But it's important to understand that genetic test results can't always guarantee. For instance, there might be a chance to have a different mutation.

- **Inconclusive.** In some cases, the test might not be able to tell for sure if they have a gene mutation.
- **Positive for a variant of unknown significance (VUS).** This means that the test found a gene change (variant), but it's not clear if this particular change affects the risk.

The results of genetic testing can sometimes be complex or confusing, which is important to go over them with a genetic counsellor or cancer genetics professionals.

NANOTECHNOLOGY IN COSMETICS.

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

Nanotechnology and nanomaterials have pushed across various brooks of science, from electronics to medicine, now found in many cosmetic products including moisturizers, hair care products, make up and sunscreen. There are two main customs for nanotechnology in cosmetics, first and foremost of these is the use of nanoparticles as UV filters, Titanium dioxide and zinc oxide are the main compounds used in these applications. The second use is nanotechnology for delivery, liposomes and niosomes are used in the cosmetic industry as delivery vehicles. Newer structures such as solid lipid nanoparticles and nanostructured lipid carriers have been found to be better performers than liposomes.

In particular, nanostructured lipid carriers have been identified as a potential next generation cosmetic delivery agent that can provide enhanced skin hydration, bioavailability, stability of the agent and controlled occlusion. Encapsulation techniques have been proposed for carrying cosmetic actives. Nanocrystals and nano-emulsion are also being investigated for cosmetic submissions. Patents have been filed for the application of dendrimers in the cosmetics industry.

Guidance documents from the FDA for industry in specific "Safety of Nanomaterials in Cosmetic Products" discusses the FDA's current thinking on the safety assessment of nanomaterials when used in cosmetic products, main key points are

*The legal requirements for cosmetics manufactured by means of nanomaterials are the same as those for any other cosmetics. While cosmetics are not subject to premarket approval, companies and individuals who market cosmetics are legally responsible for the safety of their products and they must be properly labeled.

*To conduct safety assessments for cosmetic products containing nanomaterials, standard safety tests may need to be modified or new methods developed.

Examples of nanotechnology accepted proposals in personal care products:

1. L'Oreal (which ranks No. 6 in nanotechnology patent holders in the U.S.) has used polymer nano-capsules to deliver active ingredients, e.g., retinol or Vitamin A, into the deeper layers of skin. In 1998 the company unveiled Plentitude Revitalift, an anti-wrinkle cream using nanoparticles.

2. Freeze 24/7, a new anti-wrinkle skincare line is planning to incorporate nanotechnology in future products. i.e., La Prairie's product, the Dollars 500 Skin Caviar Intensive Ampoule Treatment, claims to minimize the look of uneven skin pigmentation, lines and wrinkles in six weeks using nanotechnology.

3. Procter & Gamble's Olay brand was designed with nano-emulsion technology in 2005.

Even other companies using nanotech in their skin products as of 2005 include, Mary Kay and Clinique from Lauder; Neutrogena, Johnson & Johnson; Avon; and the Estee Lauder brand. sunscreens are "micronized", making them transparent, less greasy, less smelly and more absorbable into the skin.

One of the major problems is though there are increasing number of cosmetics and personal care products containing nanomaterials in the market, there are no specific regulations regarding their safety assessment. Still investigation need to be carried for nano-cosmetics before commercialization of actual product.

AN OVERVIEW ON THE IMPORTANCE OF MICROBIOME

Ms. Rebecca Vinolia, Assistant Professor, PG and Research Dept. of Zoology, Auxilium College, Vellore-6.

The microbiome of animals has been reported but a comprehensive analysis is lacking. Genetic information on microbial communities is increasing dramatically due to the explosion of shotgun metagenomics. The majority of this information regards the taxonomic composition of different microbiomes, while the functional significance of bacterial diversity and variation remains largely unknown. Recent studies are beginning to bridge the information gap between taxonomy and function in microbiome research, revealing novel bacteria with metabolic traits that were not previously associated with the taxa into which they are classified. For instance, metagenomic analysis of human gut microbiomes has revealed the genomes of uncultured alpha proteobacteria that possess key genes for the anaerobic metabolism of eukaryotic organisms such as Entamoeba.

The discovery of such an important function in alpha proteobacteria is remarkable because these bacteria normally form a minor component of the human gut microbiome, which is dominated by Firmicutes and Bacteroidetes However, alpha and gamma proteobacteria dominate the microbial communities of the including those associated with marine. anaerobic alpha proteobacteria such as Azo spirillum sp, may have an ancient terrestrial origin, given that its close relatives are predominant in composting microbiomes. Terrestrial environments have been first colonized by arthropods, the most ancient representatives of which are millipedes and scorpions. The gut microbiome of scorpions has been recently reported to contain a significant component of proteobacteria, many of which have been previously found in related arthropods such as ticks, as well as in cockroaches. There is no comprehensive survey of the microbiomes of arthropods, which form the largest group of terrestrial animals and are adapted to all environments.

Insects are by far the most diverse and abundant animal clade, in numbers of species globally, in ecological habits, and in biomass The diversification and evolutionary success of insects have depended in part on their myriad relationships with beneficial microorganisms, which are known to upgrade nutrient-poor diets; aid digestion of recalcitrant food components; protect from predators, parasites, and pathogens; contribute to inter and intraspecific

communication; affect efficiency as disease vectors; and govern mating and reproductive systems. As for essentially all animals, microbial communities are particularly prominent in the digestive tract, where they may be key mediators of the varied lifestyles of insect hosts.

The contribution of microorganisms, particularly gut microorganisms, to insect function is highly relevant from several perspectives, linking to medicine, agriculture, and ecology. Some insect species provide useful laboratory models for experimental work on microbial communities and their interactions with hosts, particularly for the understanding of immunity and metabolic interactions. For insect vectors of disease, symbiotic microorganisms can influence vectoring efficiency or developmental time and thus provide targets for potential disease control. Insects are responsible for massive agricultural losses and also for pollination of many food crops, and microorganisms associated with both herbivores and pollinators can affect their impact on crop plants.

Natural and human-impacted ecosystems depend critically on insects and their gut microbial communities as mediators of biogeochemical cycling; for example, insect–microorganism mediation can be critical in the decomposition of plant biomass and carbon cycle and in rates of nitrogen fixation and the nitrogen cycle. Despite good reasons for knowing more about insect gut communities and despite the recent massive increase in studies of microorganisms living in insect guts, broad rules about how these communities are organized are just beginning to emerge.

ENDOWMENT LECTURES

LIST OF ENDOWMENT LECTURE FOR THE ACADEMIC YEAR 2021-2022

S.No	LECTURE DATE	RESOURCE PERSON	LECTURE TOPIC	NAME OF THE LECTURE
1	07.10.2020	Ms. Evangelin.D, Wildlife Biologist, Queen Mary's College, Chennai.	Wildlife Biology	Sr.Helen Fernandez Endowment Lecture UG and PG Zoology Students.
2	21.10.2020	MS. Sujeetha Y. Lecturer Arun College of Nursing,Vellore	Women's Health and Hygiene	Sr.Regina Colombo Endowment Lecture for III B.Sc., Zoology
3	04.11.2020	Dr. Sharon Cynthnia, Assistant Professor, Govt. Medical College, Adukamparai, Vellore.	Public Health and Entomology	Sr. Antoinette Aloysius Endowment Lecture for II B.Sc., Zoology
4	13.11.2020	Dr. Sowmya Assistant Professor in Criminology, Karunya University,Coimbatore.	Fingerprints: A Forensic Tool for Criminal Investigation	Sr.Maria Fino Endowment Lecture for I B.Sc., Zoology
5	06.02.2021	Dr. Kanagavalli, Assistant Professor in Biochemistry, Adhiparasakthi Arts and Science College, Kalavai.	Current trends and future prospects of herbal medicine	Sr. Cleofe Fassa Endowment Lecture for the PG Students.
6	08.02.2021	Ms. Vidhya Senior Clinical Embryologist Garbhagudi IVF Centre Bangalore	In-Vitro Fertilization	Sr. Ethelvina Endowment Lecture for the PG Students.

LIST OF ENDOWMENT LECTURE FOR THE ACADEMIC YEAR 2021-2022

S.No	LECTURE DATE	RESOURCE PERSON	LECTURE TOPIC	NAME OF THE LECTURE
1	07.09.2021	Dr. V. Vijayalakshmi, Assistant Professor, Stanley Medical College, Chennai	Polycystic Ovary Syndrome –Health Awareness	Sr.Helen Fernandez Endowment Lecture UG and PG Zoology Students.
2	09.09.2021	Dr. M. Uma Shankar, Associate Professor, Department of Environmental and Water Resources Engineering, School of Civil Engineering, VIT University, Vellore	Barriers for Open Dumping Yard to Prevent Groundwater Contamination	Sr. Antoinette Aloysius Endowment Lecture for II B.Sc., Zoology
3	10.11.2021	Dr. Glynis Florence Francis MD, ENT Consultant Pondicherry Institute of Medical Sciences	Post COVID symptoms and Black fungus	Sr.Maria Fino Endowment Lecture for I B.Sc., Zoology
4	16.03.2022	Dr. Kunguma Priya Rajkumar, Assistant Professor, Pachaiyappa's College, Chennai	Happy Hormones	Sr.Regina Colombo Endowment Lecture for III B.Sc., Zoology
5	16.03.2022	Dr. Subathra Devi C., Associate Professor Senior, SBST, VIT University, Vellore	Clot Blusters to combat Cardiovascular Diseases	Sr. Cleofe Fassa Endowment Lecture for the PG Students.
6	18.03.2022	Dr. S. Sajitha LULU, Assistant Professor, Department of Biotechnology, VIT University, Vellore	Multi-Omics Big Data in Biological Research	Sr. Ethelvina Endowment Lecture for the PG Students

NATURE IN FOCUS

Ms. Evangelin.D, Wildlife Biologist, Queen Mary's College, Chennai.

The nature is focused in different angle in the form of forest, mountains, rivers, lakes and oceans which provides our needs. The Mother Nature has amazing parental care in animal kingdom. Many of us have observed the hen protecting her chicks under the wings when alarmed similarly there are other interesting animals which have strong parental care. The first on the list in Scorpions, they carry their young ones on their back everywhere they travel. They teach them the statics of hunting the prey. Snakes which are known to scare the army are the best mothers in the world. They protect their nest warming them for months without eating food until the eggs are hatched. Some frog species specially the male act as surrogate mother. The male carries the egg on its back and waits near water body for the safe release of young ones. Birds like Lapwings and Penguins both the male and female take roles in protecting the young ones. Not only parental care but Nature is the best teacher which teaches Brotherhood. Observations in our farms have revealed Chicken taking care of kitties, Cows feeding goats, Cats feeding squirrels and parasite brooding Crow nurturing Cuckoo chicks.

There are interesting treasures in our backyard. Tiny crawlers such as Earthworm, millipede, centipede, brahmini blind snake and garden lizard help in tilling, cleaning and protecting the garden from pest like termites and other tiny bugs and insects. Similar way there is a great army of different cadres protecting the forest. The Elephant is the engineer of forest who makes way but feeding on large tree barks and making pathways for smaller animals, this we call as elephant corridors. The elephant corridors are the most important part in forest where animals migrate from one place to another. Next comes the farmers of the forest, the wild bores act as farmers digging up the soil and keeps the soil fertile. Cleanliness is next to God. Animals like Dung beetle, Hyena and Vultures act as scavengers and keeps the forest clean from carcass and infections, they are the cleaners of forest. Finally the beauticians of forest keep the forest healthy and green by pollination. Insects and birds play a major role in pollination and germination of plants.

From tiny insect to giant mammals like blue whale we all are connected. Our responsibility is protecting the nature without disturbing animals. Simple things to follow is, capture animals

not by hand but with Camera, respect the distance while encountering a wild animal, being gentle to all animals lastly to observe the positivity from animals and spread awareness. Let us all explore this beautiful world.

A BRIEF DISCUSSION ON APPENDICITIS - CAUSES, SIGNS, SYMPTOMS AND TREATMENT

Sujeetha.Y M.Sc. (N), MBA (HM)., RNRM., Nursing Tutor Oscar paramedical Institute, Vellore.

Introduction: Appendicitis is an inflammation of the appendix, a finger-shaped pouch that projects from your colon on the lower right side of your abdomen. Appendicitis causes pain in your lower right abdomen. However, in most people, pain begins around the navel and then moves. As inflammation worsens, appendicitis pain typically increases and eventually becomes severe.

Although anyone can develop appendicitis, most often it occurs in people between the ages of 10 and 30. Standard treatment is surgical removal of the appendix. Acute appendicitis (AA) is the most common surgical disease, and appendectomy is the treatment of choice in the majority of cases. A correct diagnosis is key for decreasing the negative appendectomy rate. The management can become difficult in case of complicated appendicitis.

An inflamed appendix may be removed using a laparoscopic approach with laser. However, the presence of multiple adhesions, retroperitoneal positioning of the appendix, or the likelihood of rupture necessitates an open (traditional) procedure. Studies indicate that laparoscopic appendectomy results in significantly less postoperative pain, earlier resumption of solid foods, a shorter hospital/same day surgery stay, lower wound infection rate, and a faster return to normal activities than open appendectomy. Although many of the interventions included are appropriate for the short-stay client, the traditional appendectomy care provided on a surgical unit, after being diagnosed in the Emergency Department (ED).

Symptoms: Signs and symptoms of appendicitis may include:

- Sudden pain that begins on the right side of the lower abdomen

- Sudden pain that begins around your navel and often shifts to your lower right abdomen
- Pain that worsens if you cough, walk or make other jarring movements
- Nausea and vomiting
- Loss of appetite
- Low-grade fever that may worsen as the illness progresses
- Constipation or diarrhea
- Abdominal bloating
- Flatulence

Causes: A blockage in the lining of the appendix that results in infection is the likely cause of appendicitis. The bacteria multiply rapidly, causing the appendix to become inflamed, swollen and filled with pus. If not treated promptly, the appendix can rupture.

Complications: Appendicitis can cause serious complications, such as:

A ruptured appendix. A rupture spreads infection throughout your abdomen (peritonitis). Possibly life-threatening, this condition requires immediate surgery to remove the appendix and clean your abdominal cavity.

A pocket of pus that forms in the abdomen. If your appendix bursts, you may develop a pocket of infection (abscess). In most cases, a surgeon drains the abscess by placing a tube through your abdominal wall into the abscess. The tube is left in place for about two weeks, and you're given antibiotics to clear the infection. Once the infection is clear, you'll have surgery to remove the appendix. In some cases, the abscess is drained, and the appendix is removed immediately.

Imaging Studies: Tests and procedures used to diagnose appendicitis include:

Physical exam to assess your pain: Apply gentle pressure on the painful area. When the pressure is suddenly released, appendicitis pain will often feel worse, signaling that the adjacent peritoneum is inflamed.

Look for abdominal rigidity and a tendency to stiffen abdominal muscles in response to pressure over the inflamed appendix (guarding).Use a lubricated, gloved finger to examine lower rectum (digital rectal exam). Women of childbearing age may be given a pelvic exam to check for possible gynecological problems that could be causing the pain.

Blood test. To check for a high white blood cell count, which may indicate an infection.

Urine test. Urinalysis to make sure that a urinary tract infection or a kidney stone isn't causing pain.

Imaging tests. An abdominal X-ray, an abdominal ultrasound, computerized tomography (CT) scan or magnetic resonance imaging (MRI) to help confirm appendicitis or find other causes for pain.

Treatment: Appendicitis treatment usually involves surgery to remove the inflamed appendix. Before surgery a dose of antibiotics are prescribed to treat infection.

Surgery to remove the appendix (appendectomy): Appendectomy can be performed as open surgery using one abdominal incision about 2 to 4 inches (5 to 10 centimeters) long (laparotomy). Or the surgery can be done through a few small abdominal incisions (laparoscopic surgery). During a laparoscopic appendectomy, the surgeon inserts special surgical tools and a video camera into abdomen to remove appendix.

In general, laparoscopic surgery allows to recover faster and heal with less pain and scarring. It may be better for older adults and people with obesity.

Lifestyle and home remedies: Expect a few weeks of recovery from an appendectomy, or longer if your appendix burst. To help your body heal:

Avoid strenuous activity at first. If appendectomy was done laparoscopically, limit your activity for three to five days. If had an open appendectomy, limit activity for 10 to 14 days. Always ask doctor about limitations on activity and when can resume normal activities after surgery.

Support abdomen when coughing. Place a pillow over abdomen and apply pressure before coughing, laughing or moving to help reduce pain.

Call doctor if pain medications aren't helping. Being in pain puts extra stress on body and slows the healing process. Despite on pain medications, if still in pain call doctor.

Get up and move when ready. Start slowly and increase activity. Start with short walks.

Sleep when tired. As body heals, feel to sleep than usual. Take it easy and rest when need to.

Discuss returning to work or school with doctor. Return to work when felt up to it. Children may be able to return to school less than a week after surgery. They should wait two to four weeks to resume strenuous activity, such as gym classes or sports.

PUBLIC HEALTH AND ENTOMOLOGY

Dr. Sharon Cynthia, Dept. of Community Medicine, GVMCH, Vellore.

Entomology is the branch of Zoology that studies insects. More than one million different species of insects are present in this world. Insects are the most abundant group of life in the world. Entomology is crucial to our understanding of human disease, agriculture, evolution, ecology and biodiversity. In 2017, more than one and a half lakh people in India had dengue and the highest number of cases was in Tamil Nadu. Malaria mainly affects the poor, undeserved and marginalized populations in remote rural areas. Japanese Encephalitis is a zoonotic disease which incidentally affects man. However, 20 to 40% of patients have death

or permanent brain damage. Diseases are spread by vectors. Vector is an arthropod or any living carrier that transports an infectious agent to a susceptible individual. The factors that decide the ability of the vector to transmit disease are Host feeding preferences,

Susceptibility, Infectivity, Survival rate of vectors, Domesticity and Suitable environmental factors.Vector borne diseases are spread by transmission chain like 1. Man and a non-vertebrate host which includes Man-arthropod-man, Man-snail-man, Man. 2. Vertebrate host and a non-vertebrate host, Mammal-arthropod-man, Bird-arthropod-man, Man and 3.Two intermediate hosts like Man-cyclops-fish-man, Man-snail-fish-man and Man-snail-crab-man. In India the major health problems are caused by diseases such as Malaria, Filariasis, Dengue, Chikungunya and Kala-azar. The National Vector Borne Disease Control Programme (NVBDCP) is working towards the control or outbreak of diseases in India.

EFFECTIVE MOSQUITO CONTROL

Two important generalities:

a) Female mosquitoes take blood meal

b) All species require water for development

Other Generalities – difficult to make

a) Ovi position

b) Resting

c) Biting

d) Flight range

PHYSICAL METHODS

- Destruction of a breeding site or
- Physical alteration of a breeding site

CHEMICAL METHODS

Most immediate control method against massive outbreaks / emergencies.

- But should be used judiciously
- Not as a long term control measure
- Should be withdrawn at the earliest.
- Supplementary control methodology

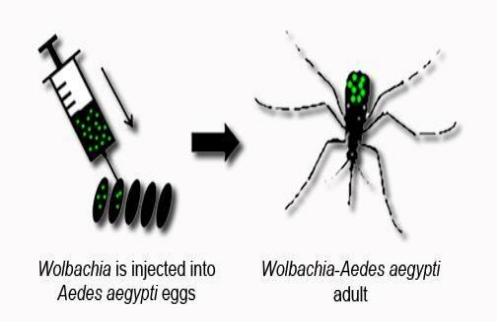
RISKS OF CHEMICAL CONTROL METHODS

- Environmental contamination □□Injury to non- targeted organisms.
- Insecticide resistance. (Periodic change/Susceptibility monitoring)
- Inorganic compounds, botanical insecticides, petroleum products.
- Chemicals were only a supplement to natural control and source reduction

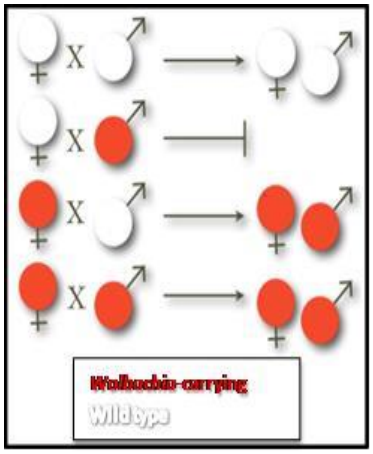
BIOLOGICAL CONTROL

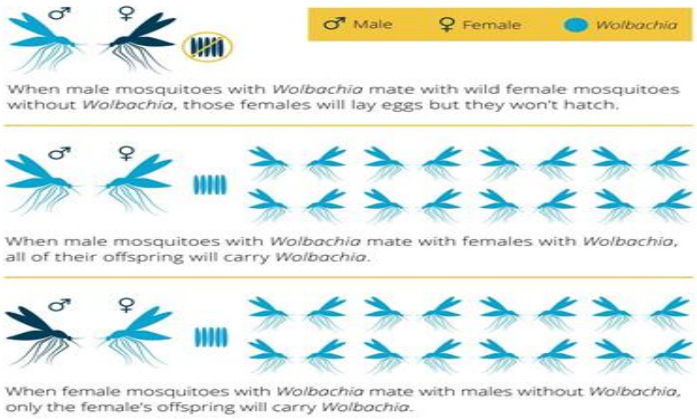
- Mosquito control of immatures.
- Application of endotoxin containing bacterium acting as stomach poisons.
- Larvivorous fish - *Gambusia affinis* & *Poecelia reticulata.*

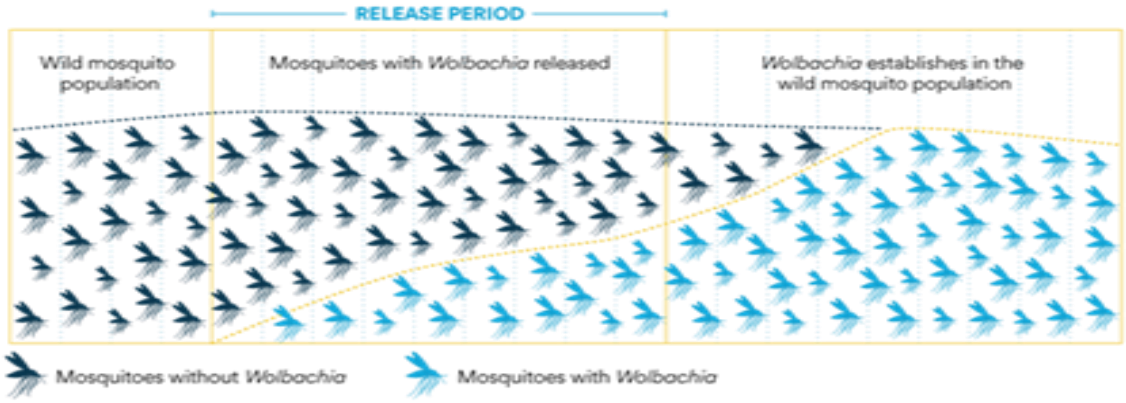
WOLBACHIA – SUPPRESSION STRATEGY:



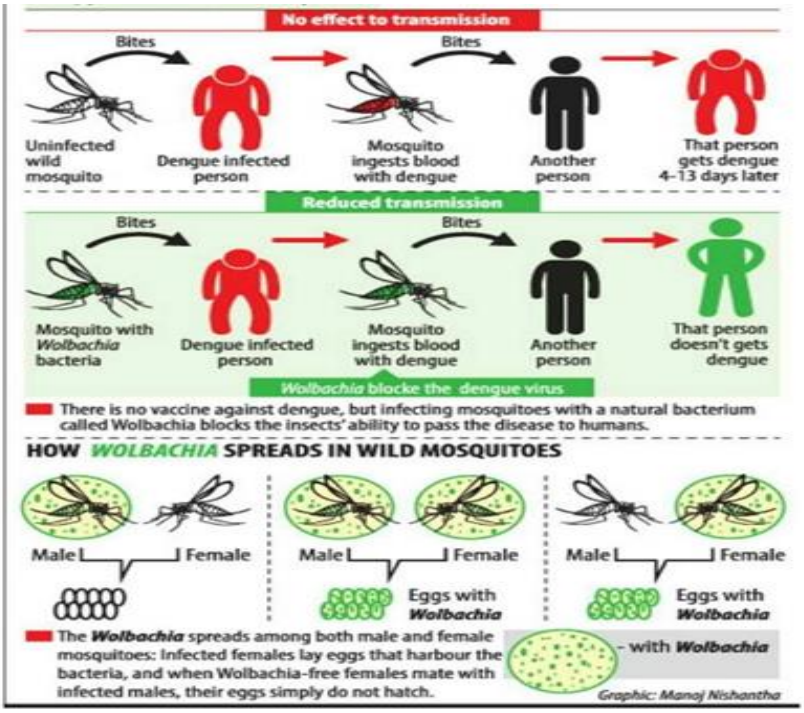
Wolbachia is not found in wild caught mosquitoes. It is introduced via micro injection into the Aedesaegypti eggs. The adults emerge from the Wolbacia, will pass Wolbachia to their offsprings.(Maternal transmission). Male wolbachia carrying Aedes aegypti mate with female Aedes aegypti, the resulting eggs do not hatch.As these are biologically incompatible, resulting in decline of the population. This mosquito suppression strategy is species specific.







DISEASE CONTROL



FINGERPRINT IDENTIFICATION IN CRIMINAL INVESTIGATION

Dr.Sowmya Kumar, Assistant Professor in Criminology, Karunya University, Coimbatore.

INTRODUCTION: Every human being carries with him from his cradle to his grave, certain physical marks which do not change their character, and by which he can always be identified—and that without shade of doubt or question. These marks are his signature, his physiological autograph, so to speak, and this autograph cannot be counterfeited, nor can he disguise it or hide it away, nor can it become illegible by the wear and mutations of time. Fingerprint is one of the physical evidence that are available at the crime scene.

HISTORICAL DEVELOPMENT: For thousands of years, humans have been fascinated by the patterns found on the skin of their fingers. But exactly how long ago humans realized that these patterns could identify individuals is not at all clear. Several ancient cultures used fingerprints as markings (Figure 1).Archaeologists discovered fingerprints pressed into clay tablet contracts dating back to 1792 1750 B.C. in Babylon. In ancient China, it was common practice to use inked fingerprints on all official documents, such as contracts and loans.

The oldest known document showing fingerprints dates from the third century b.c. Chinese historians have found finger and palm prints pressed into clay and wood writing surfaces and surmise that they were used to authenticate official seals and legal documents. In Western culture, the earliest record of the study of the patterns on human hands comes from 1684. Dr. Nehemiah wrote a paper describing the patterns that he saw on human hands under the microscope, including the presence of ridges. Johann Christoph Andreas Mayer followed this work in 1788 by describing that “the arrangement of skin ridges is never duplicated in two persons.” He was probably the first scientist to recognize this fact. In 1823, Jan Evangelist Purkyn described nine distinct fingerprint patterns, including loops, spirals, circles, and double whorls. Sir William Herschel began the collecting of fingerprints in 1856. He noted the patterns were unique to each person and were not altered by age.

Figure 1- *This ancient seal shows the fingerprint of a person who lived hundreds of years ago.*

In 1902, he was credited with solving the first murder using fingerprints. Building on this success, Sir Francis Galton (1822–1911) verified that fingerprints do not change with age. In 1888, Galton, along with Sir E. R. Henry, developed the classification system for fingerprints that is still in use today in the United States and Europe. Beginning in 1896, Sir Edmund

Richard Henry, with the help of two colleagues, created a system that divided fingerprint record into groups based on whether they have an arch, whorl, or loop pattern. Each fingerprint card in the system was imprinted with all 10 fingerprints of a person and marked with individual characteristics called a **ten card**

WHAT ARE FINGERPRINTS? Take a look at the surface of your fingers. Are they smooth and shiny surfaces? No. All fingers, toes, feet, and palms are covered in small ridges. These are raised portions of the skin, arranged in connected units called dermal, or friction, ridges. They help us with our grip on objects that we touch. When these ridges press against things, they leave a mark, an impression called a **fingerprint**.

The imprint of a fingerprint consists of natural secretions of the sweat glands that are present in the friction ridge of the skin (Figure 2). These secretions are a combination of mainly water, oils, and salts. Dirt from everyday activities is also mixed into these secretions. Anytime you touch something, you leave behind traces of these substances in the unique pattern of your dermal ridges.

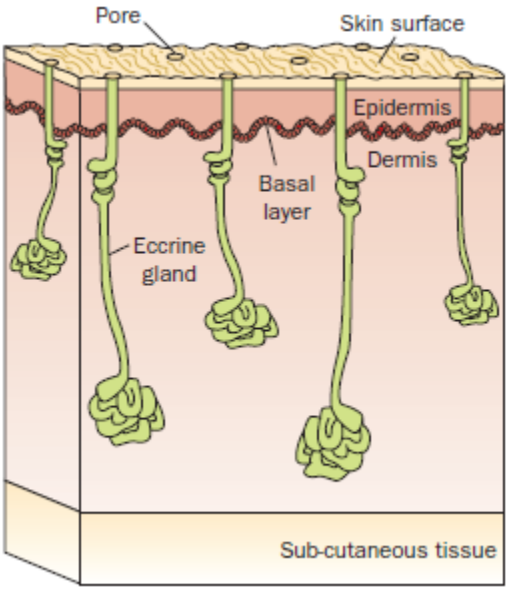


Figure – 2- *Our fingertips are covered with hundreds of microscopic sweat pores, which make our fingers moist and able to grip better.*

FORMATION OF FINGERPRINTS: The individual nature of fingerprints has been known for about 2,000 years, but scientists only recently understood how fingerprints form in the womb. The latest information suggests that the patterns are probably formed at the beginning of the 10th week of pregnancy, when the fetus is about three inches long. Similar prints are formed in many other areas of the body, such as the palms of the hands, the soles of the feet, and the lips. The creation of fingerprints happens in the basal layer, a special layer within the epidermis where new skin cells are produced. In a fetus, this layer grows faster than the epidermis on the outside and the dermis on the inside. Because it grows faster, the layer collapses and folds in different directions, creating intricate shapes between the other layers of skin. The pattern cannot be altered or destroyed permanently by skin injuries, because the outer layer protects it.

FUNDAMENTAL PRINCIPLES OF FINGERPRINT: ***First Principle:*** A fingerprint is an individual characteristic. No two fingerprints have identical ridge characteristics

Second Principle: A fingerprint will remain unchanged during an individual's lifetime

Third principle: fingerprints have general ridge patterns which make it possible to systematically classify

CHARACTERISTICS OF FINGERPRINTS: Fingerprint characteristics are named for their general visual appearance and patterns. These are called **loops, whorls**, and **arches** (Figure 3). About 65 percent of the total population has loops, 30 percent have whorls, and 5 percent have arches. Arches have ridges that enter from one side of the fingerprint and leave from the other side with a rise in the center. Whorls look like a bull's-eye, with two deltas (triangles). Loops enter from either the right or the left and exit from the same side they enter.

Figure – 3- *There are three basic fingerprint patterns occurring at different frequencies in the population.*

Two things a forensic examiner looks for on a fingerprint are the presence of a core and deltas. The **core** is the center of a loop or whorl. A triangular region located near a loop is called a **delta**. Some of the ridge patterns near the delta will rise above and some will fall below this triangular region. Sometimes the center of the delta may appear as a small island. A ridge count is another characteristic used to distinguish one fingerprint from another. To take a ridge count, an imaginary line is drawn from the center of the core to the edge of the delta. In Figure 4, the red line shows the area used in the ridge count from the delta to core area. The basic fingerprint patterns can be further divided. Whorl patterns may be plain whorl (24%), central pocket loop whorl (2%), double loop whorl (4%), or accidental whorl (0.01%). The plain whorl has one or more ridges that make a complete spiral. There are two deltas, and if a line is drawn between them, at least one ridge in the inner pattern is touched or cut by the line. The central pocket loop whorl has one or more ridges that make a complete circle. There are two deltas, and if a line is drawn between them, no ridges in the inner pattern are touched or cut by the line. The double loop whorl has two separate loop formations and two deltas.

The accidental whorl has two or more deltas and is a combination of two of the other patterns (but not a plain arch).

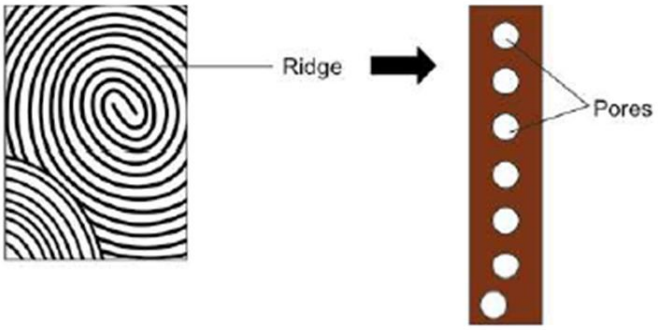
Arches may be divided into plain arches (4%) and tented arches (1%). The plain arch shows ridges entering one side, rising in the center, and flowing out the other side without making an angle. The plain arch has no characteristics of the loop pattern. The tented arch does form an angle, or it may possess some characteristic of the loop pattern, such as a delta. While looking at the basic fingerprint patterns can quickly help eliminate a suspect, in order to positively match a print found at a crime scene to an individual, more information is needed. Every individual, including identical twins, has a unique fingerprint resulting from unique **ridge patterns** called **minutiae** (because the details are so small). Recognizing these details in the differences between ridges, their relative number, and their location on a specific fingerprint is called *fingerprint identification*. There are about 150 individual ridge characteristics on the average full fingerprint. When forensic examiners identify a fingerprint, they are in theory identifying the unique signature of a person, and they can be pretty sure they are characterizing one, and only one, particular individual in the world. To match fingerprints, a minimum number of points of comparison are needed.

Figure – 4 – *Ridge Pattern with minutiae- The red line is called the core area and exists between a delta and the center of a loop or whorl.*

POROSCOPY: Poroscopy means study of pores present on ridges of fingers and hand. It is seen that each millimeter of a ridge contains 9 to 18 pores. These pores are permanent and unchanged during life of a person. These pores vary in size, shape, position, extent and

number over a given length of ridge in each person. This method is particularly useful when only fragment of fingerprint or partial fingerprints are available at the crime scene.

Figure 5 : Poroscopy



TYPES OF FINGERPRINTS AT CRIME SCENE: There are three types of prints found by investigators at a crime scene. **Patent fingerprints,** or visible prints, are left on a smooth surface when blood, ink, or some other liquid comes in contact with the hands and is then transferred to that surface. **Plastic fingerprints** are actual indentation left in some soft material such as clay, putty, or wax. **Latent fingerprints,** or hidden prints, are caused by the transfer of oils and other body secretions onto a surface. They can be made visible by dusting with powders or making the fingerprints in some way more visible by using a chemical reaction.

COLLECTING THE FINGERPRINT FROM CRIME SCENE:

- **Patent fingerprint-** Patent fingerprint are photographed in high resolution
- **Latent Fingerprint-** Latent Fingerprint are collected by dusting method using Fine Powder, Carbon black powder, Magnetic powder, Aluminum powder etc.,
- **Plastic Fingerprint -** Plastic Fingerprint are collected by Casting Method using wax

EXEMPLAR: Exemplar prints, or known prints, collected from a subject, whether for purposes of enrollment in a system or when under arrest for a suspected criminal offense, using ink pad on paper. These method is called rolling method where fingerprints of suspects are taken by rolling each of the 10 fingers in ink and then rolling them onto a ten card that

presents the 10 fingerprints in a standard format. These exemplars are compared with the fingerprints collected from the crime scene to identify the suspect by matching the ridge pattern and minutiae.

CURRENT TRENDS AND FUTURE PROSPECTS OF HERBAL MEDICINE.

Dr. Kanagavalli, Assistant Professor in Biochemistry, Adhiparasakthi Arts and Science College, Kalavai.

Medicinal plants are considered as rich resources of ingredients which can be used in drug development or synthetic drugs. A part from that, these plants play a critical role in the development of human cultures around the whole world.

What are herbal medicines? Herbal medicines, also called Botanical medicines or Phytomedicines, are those medicinal products which are prepared by using mainly herbs or plants, plant parts and plant products with minimal or no industrial processing or chemical manipulations and are used for medical and therapeutic. Herbs include whole plants and plant parts such as leaves, flowers, fruits, seeds, stems, woods, barks, roots, rhizomes or other plant parts, which may be entire, fragmented or powdered. Herbal preparations include comminuted or powdered herbal materials, or their extracts, tinctures, and fatty oils. They are produced by extraction, steam distillation, fractionation, purification, concentration, or other physical or biological processes. They also include preparations made by steeping or heating herbal materials in alcoholic beverages and/or honey, or in other materials.

Why is this revival? Multiple factors maybe responsible for the revival or coming back of the natural herbal drugs. These include: Higher cost of locally manufactured or imported conventional drugs. Cultural factors also played an important role in that revival. Recent progress in the field of Environmental Science, Immunology, Medical Botany and Pharmacognosy have led researchers to appreciate in a new way the precise descriptive capacity, effectiveness and rationality of various herbal medicines.

Future prospects of herbal medicine: In the face of the increasing use and fast-growing market of herbal medicines and other herbal healthcare products, in both developing and developed countries of the world, policy-makers, health professionals and the public are increasingly expressing concerns about the safety, efficacy, quality, availability, preservation,

and further development problems of these herbal products. In the present situation, it is apparent that whatever important the concerns and demands of the policy makers, health professionals and public the increasing trend of using herbal medicines. As a result, herbal medicine-based Traditional Medicine (TM) practices remain widespread in developing countries and that of Complementary and Alternative Medicine (CAM) is increasing rapidly in developed countries. This trend of growing and widespread use of herbal medicines is likely to increase even further throughout the world in the coming years with more and more scientific evidence of their quality, efficacy and safety coming from the researchers. However, in order to ensure quality and safety of herbal medicines, their production, sale and use should be officially and legally controlled, as done with allopathic medicines, by established rules and regulations. But, regulations and registration of herbal medicines are not well developed in most countries, and the quality of herbal products sold is not guaranteed. Therefore, herbal medicines should be brought under legal control in all countries where they are used for medical and therapeutic purposes and efforts should be made to raise public awareness about the risks and benefits of using herbal medicines. Proper use of herbal medicinal products of 'assured quality' is sure to produce beneficial therapeutic effects on the users and reduce the risks associated with them. At the same time, it should be noted that, similarly to allopathic drugs, herbs, and herbal products are not free from side-effects. They are also likely to cause adverse effects. Furthermore, use of adulterated herbal ingredients and inappropriate formulation must be stopped as these may result in the production of low-quality and harmful or even dangerous herbal medicines. Therefore, rules and regulations of GMP should be strictly followed in the production of herbal medicines. With this cautionary note, it may be concluded safely that herbal medicines hold good future prospects and they may, one day emerge as good substitutes or better alternatives for synthetic chemicals-based allopathic drugs or may even replace them.

IN VITRO FERTILIZATION (IVF)

Ms. Vidhya. A, Senior Embryologist, Garbhagudi Ivf Centre, Bangalore.

IVF is a method of assisted reproduction in which a man’s sperm and a woman’s eggs are combined outside of the body in a laboratory dish. One or more fertilized eggs or embryos may be transferred into the woman’s uterus, where they may implant in the uterine lining and

develop. Excess embryos may be cryopreserved for future use. Primarily, IVF was used to treat women with blocked, damaged, or absent fallopian tubes. Currently, IVF is used to treat many causes of infertility, such as endometriosis and male factor, or when a couple's infertility is unexplained. The basic steps in an IVF treatment cycle are ovarian stimulation, egg retrieval, fertilization, embryo culture, and embryo transfer.

During ovulation induction, medications or "fertility drugs," are used to stimulate multiple eggs to grow in the ovaries rather than the single egg that normally develops each month. Multiple eggs are stimulated because some eggs will not fertilize or develop normally after fertilization. Usually, 8 to 14 days of stimulation are required. When the follicles are ready, HCG or other medications are given. The HCG swaps the woman's natural LH surge and causes the final stage of egg maturation so the eggs are capable of being fertilized. The eggs are retrieved before ovulation occurs, usually 34 to 36 hours after the HCG injection is given.

The cancellation rates due to low response to the ovulation drugs increase with a woman's age, specifically after age 35. When cycles are cancelled due to a poor response, substitute drug strategies may be helpful to promote a better response in a future attempt. Occasionally, a cycle may be cancelled to reduce the risk of ovarian hyperstimulation syndrome. Treatment with a GnRH agonist or antagonist reduces the possibility of premature LH surges from the pituitary gland, and thereby reduces the risk of premature ovulation. Laparoscopy may then be used to retrieve the eggs using a small telescope placed in the umbilicus. Fertilization may be accomplished by insemination, where motile sperm are placed together with the oocytes and incubated overnight or by intracytoplasmic sperm injection.

By the third day, a normally developing embryo will contain approximately 6 to 10 cells. By the fifth day, a fluid cavity forms in the embryo, and the placenta and fetal tissues begin to separate. An embryo at this stage is called a blastocyst. Embryos may be transferred to the uterus at any time between one and six days after the egg retrieval. If successful development continues in the uterus, the embryo hatches from the surrounding zona pellucida and implants into the lining of the uterus approximately 6 to 10 days after the egg retrieval.

One or more embryos on hold in a drop of culture medium are drawn into a transfer catheter with a syringe on one end. The physician guides the tip of the transfer catheter through the cervix and places the fluid containing the embryos into the uterine cavity. The maximum

number of embryos transferred is based on the patient's age and other individual patient and embryo characteristics.

The choice to seek treatment for infertility is a feasible one due to the assisted reproductive technologies available nowadays. With patience, a positive attitude, and the suitable treatment, most infertile couples will ultimately experience the joys of parenthood.

POLYCYSTIC OVARIAN SYNDROME

Dr. V. Vijayalakshmi M.S. O&G DNB, Assistant Professor, Stanley Medical College, Chennai.

PCOS was described first in 1935 by Stein and Leventhal as "a syndrome manifested by amenorrhea, hirsutism and obesity associated with enlarged polycystic ovaries" It is a heterogeneous disorder characterized by excess androgen production by the ovaries that interferes with the reproductive, endocrine & metabolic functions. PCOS is very common in recent days.

Symptoms of Ovulatory dysfunction:

- Amenorrhoea / Oligomenorrhea -87%
- Irregular uterine bleeding-26%
- Infertility-20%.

Symptoms of excess Androgen are Hirsutism Acne, Alopecia or Baldness.

Symptoms of Insulin resistance are Acanthosis nigricans and Obesity.

Obesity / PCOS / Infertility:

Obesity has substantial effects on manifestations of PCOS. Obesity plays a significant role in determining the severity of clinical manifestations and metabolic disorder. Significant increase in infertility and menstrual irregularities are seen with BMI > 30 kg/m^2. The prevalence of obesity is reaching epidemic proportions in many developed countries, and in particular adolescent women.

Optimal Meal Patterns:

It is generally recommended to spread the calories throughout the day by having 5-6 small meals. This keeps the metabolism humming and reduces cravings for sweets and starches. (Very common among women with PCOS).

- Consume breakfast within 1 hr. of walking
- Snack 2 -3 hr. later
- Eat lunch 2 hr. later
- Another snack 2 – 3 hr. later
- Dinner 2 hr. later
- Lots of leafy green vegetables.
- Focus on whole foods and sources of protein like fish, eggs and chicken breast.
- Spices like turmeric, cinnamon, fenugreek and ginger that are anti-inflammatory and believed to help with insulin resistance. Fruits low in fructose and rich in fiber are best
- Grapefruits, Clementines, Lime, Lemon, Raspberries, Blackberries, Oranges Strawberries, Pineapple Blueberries and honeydew melon.
- Healthy fats foods are avocado, salmon, mackerel, sardines, butter and olive oil (free range or organic if possible).
- Increasing healthy fats in diet is a great way to keep satiated, and can help body absorb vitamins A, D, E, K and help with healthy female hormone levels.
- Try a macronutrient split of around 20 % complex carbs, 40% protein and
- 40% fat but switch it around and get constant feedback from them as to whether it's

working or not.

- Cholesterol should be less than 300 mg daily.

- Use low fat cooking methods: baking, broiling, grilling, boiling, rather than breading, frying.
- Use liquid vegetable oil.

Say No to White pasta, White rice, Anything super-processed (including processed meats) Fruit drinks and smoothies, Whole milk, Excess of Tea Coffee, Sugar.

Exercise and Yoga:

Walking, Workouts, Aerobics, Swimming, Zumba, Cycling and Yoga have severe negative impact on PCOS.

Yoga increases fertility - yoga poses helps to enhance blood supply to the brain which in turn aids to restore hormonal balance.

BARRIERS FOR OPEN DUMPING YARD TO PREVENT GROUNDWATER CONTAMINATION

Dr M. Uma Shankar, Associate Professor, VIT, Vellore.

Subsurface contamination poses a continuing risk to human health and the environment. Liquid contaminants can migrate through the soil matrix and leach into groundwater, while solid and semi-solid pollutants may be transported and dispersed through the subsurface. Global Environment and Technology Foundation (GETF) market assessment, containment technology is "poised for significant, if not enormous growth." Underground containment barriers are an important method of limiting and/or eliminating the movement of contaminants through the subsurface. Subsurface barriers can be used in any number of situations where it is necessary to prevent the migration of contamination Subsurface barriers are able to effectively confine the contaminant for extended time periods and provide a cost effective method of remediation. Slurry walls are the most common type of subsurface wall and are considered baseline barrier technology.Slurry walls have been used for pollution control since 1970, and the technology is accepted and regarded as an effective method of isolating hazardous waste and preventing the migration of pollutants. There are different materials, and combinations of materials, that can be used to construct slurry cutoff walls including soil-bentonite, cement-bentonite, and plastic concrete. The backfill and composite

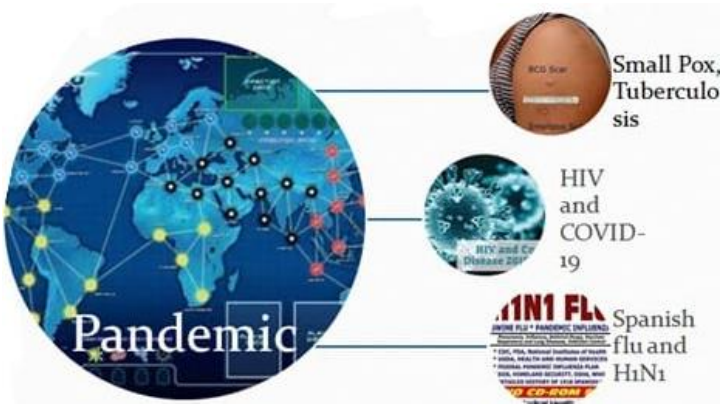
typically contain a mixture of materials such as cement, bentonite, fly ash, ground blasted furnace slag, and clay. Other types of cutoff walls include mix-in-place, grout, and composite walls. This lecture gives overall view of many barriers to prevent groundwater contamination.

POST COVID SYMPTOMS AND BLACK FUNGUS

Dr. Glynis Florence Francis.MD, ENT Consultant, Department of ENT, Head and Neck Surgery, Pondicherry Institute of Medical Sciences.

Background:

- Newly emergent corona virus, SARS-CoV-2
- Respiratory infection, including severe pneumonia
- Respiratory droplets - sneezing, coughing, or talking
- Spreads through touching a surface or object that has the virus on it and then touching own mouth, nose, or possibly eyes
- Some individuals with corona virus may be asymptomatic.



Post Covid complications: Some common signs and symptoms of post covid complications observed after recovery that include: Body pain, Joints pain or headache, Hhyperglycemia, Fatigue, Loss of taste or smell, Shortness of breath, Coughing or Chest pain, New onset

diabetes, Myalgia, brain fog, heart palpitations, Insomnia, anxiety disorder or depression, Fungal infections like mycormycosis, yellow fungus etc.

Black Fungus/Mucormycosis: Mucormycosis, popularly termed “Black fungus” by the media and public, is a disease caused by ubiquitously occurring mold found in decaying vegetation and soil. It leads to necrotic black tissue at the infected sites, hence the name. In the Indian setting, it was more commonly seen in uncontrolled diabetics or people on extensive immunosuppression. We have seen the surge in cases of Mucormycosis during this COVID pandemic. There have been several reasons proposed for this sudden surge in the deadly fungus.

Symptoms: Some of the black fungal symptoms are:

- **Sinus and respiratory:** Sinus, oral cavity and nasal involvement with extension to the eye is the commonest type of presentation.
- **Skin Infections:** Due to cut, scratches or burnt skin, there is an exposure of the inner tissue to the black fungus. It may result in symptoms, such as ulcers, redness, swelling, tenderness, blisters, and blackened skin tissue.
- **Brain Infection:** Disseminated black fungus infection in the brain may result in coma or altered mental status.
- **Ocular infection:** Infection of black fungus in the eyes may result in eye pain, redness, swelling, blurred vision, and blindness. In some cases, there is a need to remove the eyes to prevent the progression of infection.
- **Gastrointestinal Infection:** Black fungus infection in the gastrointestinal tract may result in Nausea and vomiting, abdominal pain, and gastrointestinal bleeding.

Who is affected? People with the following conditions/procedures are at increased risk for developing black fungus disease: Compromised immunity, Uncontrolled diabetes mellitus in ketoacidosis, Organ or bone marrow transplantation, Malignant hematologic disorders, Other forms of metabolic acidosis**,** HIV/AIDS, Surgery, Treatment with corticosteroids, Trauma and burns, Neutropenia, Deferoxamine therapy in patients receiving hemodialysis.

Diagnose: Presumptive diagnosis is based on the patient's history, physical exam, and the patient's risk factors for getting a fungal infection. A definitive diagnosis is difficult. Tests such as CT or MRI may help define the extent of infections or tissue destruction. There are no serological or blood tests that are helpful. Growth of the fungi from a biopsy of infected tissue, accompanied by special tissue stains looking for unique structural components, may identify the fungus and help make the definitive diagnosis. This helps distinguish mucormycosis from other fungal diseases such as candidiasis and histoplasmosis.

Management: Mucormycosis is a serious infection and needs to be treated with prescription antifungal medicine, usually amphotericin B, posaconazole, or isavuconazole.

Prevention: Prevention of COVID-associated mucormycosis needs to focus on addressing the underlying risk factors aiming for better glycemic control in those with diabetes, appropriate use of systemic corticosteroids and prevention of unnecessary use of antibiotic, antifungal and other immunomodulators.

HAPPY HORMONES AND HEALTH

Dr.R. Kunguma Priya, Assistant professor, Department of Zoology Pachaiyappa's College, Chennai.

Our life style and diet provide us a guide to maintain our health. happy hormones are the medication prescribes for a healthy life. Though lot of way are discussed to be happier, there is a less knowledge on how hormone are primarily involved to make a person happy and healthy. There are four primary chemicals that can drive the positive emotions you feel throughout; Dopamine, Oxytocin, Serotonin and Endorphins (D.O.S.E).

Despite the bad press, our body secrets the incredible drug dopamine, it is meant to motivate your body towards a distant goal. However, dopamine of its addictive nature makes us sandwiched to technology habits. Serotonin, hormone of pride, loyalty and social chemical. Serotonin can create a strong positive emotion. serotonin improves our social dynamics.

Endorphins push our bodies beyond their comfort level and also removes the pain part. Oxytocin it's the hugging drug, cuddling hormones helps to build our relationship with trust

and feeling.Happy fed will improve us and help us to excel in our life. Thus happy hormones help us to maintain our emotions raging and to reach the dreaming memory.

CLOT BUSTERS: TO COMBAT CARDIOVASCULAR DISEASES

Subathra Devi.C, Associate Professor, Department of Biotechnology, School of Bio Sciences and Technology, Vellore Institute of Technology, Vellore- 632 014, Tamil Nadu, India. *Correspondence: csubathradevi@vit.ac.in

World's top most ailments are cardio-vascular diseases. The leading cause of death in the world is coronary heart diseases. About 7.1 million deaths were attributed to ischemic heart disease in recent years out of which 80% were in relatively poor countries. According to World Health Organisation (WHO) cardiovascular disease caused over 18 million deaths in the world. Cardio Vascular Disease is progressively increasing from 2002 and leads top ranking disease in world-wide mortality. Main reason of CVD is blood clot formation. Homeostasis keeps balance between clot formation and lysis. However, unbalanced degradation of clot leads to thrombosis. Thrombolytic therapy has become a conventional treatment for acute myocardial infarction (AMI), and new thrombolytic agents are the focus of drug development, but currently clinically prescribed thrombolytic drugs have such problems as delay or failure of initial reperfusion, incomplete reperfusion and re-occlusion of thrombosis. In order to solve these, development of new thrombolytic agents has become a hot topic. The new, genetically engineered 'third generation' thrombolytic agents offer not only the promise of improved clinical outcomes but also the opportunity to determine the relative importance of fibrin specificity, plasma half-life, and resistance to inhibition by plasma inhibitors in thrombolytic therapy. Among which, recombinant streptokinase and tissue plasminogen activator plays a major role. Economically recombinant streptokinase is cheaper than others. However, the optimal thrombolytic strategy has yet to be determined which have the ability of 100% reperfusion and without bleeding and reocculusion complications. Further research will be expected to develop the perfect thrombolytic agents. Natural products have been successfully used for the treatment of various diseases through many centuries. Microbial products continue to represent an important route to the discovery of novel chemicals for the development of therapeutic agents clot-busting enzyme provides a new hope for cancer, stroke and heart patients. Actinokinase from marine actinomycete

possess distinct chemical structures that may form the basis for synthesis of new drugs that could be used to combat CVD. Streptomyces sp., represents high activity toward thrombolytic treatments. Fibrinolytic proteases are important enzymes which contribute significant part of the world enzymae production Natural thrombolytic drugs are increasingly reported as safer, more fascinating and less costly. However the former type of thrombolytic agents that includes tissue type plasminogen activator [t-PA], urokinase and streptokinase, nattokinase and lumbrokinase are popular in clinical practice for the treatment of intravascular thrombosis. Despite their widespread clinical use, they induce hemorrhagic side effects, have short half-life in the body, and are also relatively expensive. Therefore, it is necessary to search for novel thrombolytic agents and there is still scope to search new agents which overcome these drawbacks.

MULTI-OMICS BIGDATA IN BIOLOGY.

Dr. Sajitha Lulu S, Assistant Professor Senior Grade II, Department of Biotechnology, School of Bio Sciences and Technology, VIT University, Vellore – 632014.

"Omics" approaches, including genomics, transcriptomics, proteomics, epigenomics, plays great role in improving our understanding about diseases, and in generating a huge volume of data in diseases. The generation of big data in diseases comes mainly from the high throughput technologies used to study the "omics" sciences. The genomics data includes genome sequence, structures, mutations, repeat contents and evolution. The next-generation sequencing (NGS), or high-throughput sequencing, is a recent technology that allows DNA and RNA sequencing much faster and cheaply than the previously used method. The transcriptomic analyses the totality of RNA transcripts produced by a genome. Since transcription is regulated, the transcriptome can be modulated under specific circumstances, allowing the study of genes differentially expressed in different populations of cells, or under different treatments. These kinds of studies have been largely applied in the field of oncology. Transcriptomic analyses are made by high-throughput methods, like real-time quantitative PCR, microarrays and RNA-Seq (NGS sequencing). Proteomics is the study of a specific proteome, including information on protein structure and function, protein expression profiling, their variations and modifications, aiming to understand cellular processes. The high-throughput proteomics analysis is based on mass spectrometry (MS). The epigenomics

studies the epigenetics modifications of the genetic contents of a cell, known as epigenome. Tumorigenesis is part of the cellular processes regulated by epigenetic modifications. NGS has allowed the development in genome characterization, including the identification of epigenetic modifications. Along with clinical databases, containing the diagnosis, treatments and patient outcomes and clinical trials information, they constitute the big data collections of cancer patients.

The concept of “big data” is relatively new, appeared from the early 2000s. Big data was defined with its three unique features like volume, velocity and variety of information. To complete the definition veracity was added, i.e., reliability of the ac-cumulated data.

The challenge for cancer research is to better explore all data sets, from disease biology and clinical information about patients. One difficulty is to compose a readable file joining all these multiple varieties of data types in a centralized platform to allow interfacing with each other. The volume of existing data is enormous and growing very fast. It is necessary to be able to harness then, asking complex questions to identify new knowledge in existing data. There is a growing need for new types of computing analytics. Actually, there are many databases enabling data sharing to make possible for anyone interested to improve our knowledge of the field, using the data collection. Following are few examples of existing databases to illustrate

The big-data project CancerLinQ, from ASCO, will allow patients and physicians to share information about treatments and outcomes. It creates a continuous cycle of learning that begins and ends with the patient. One of the very important point is that patients are anonymized in databases to protect their identity. Patients and their doctors can contribute and gain from the accumulated information present in the database.

All the data that compose the big-data projects comes from patients and already translates into benefits to them. Solving the big data problem in oncology has multiple facets. We see in the various existing platforms the need for collaboration. One of the main challenges is how fast data can be analyzed when there is so much. How can we make sense of data? While there are a lot of initiatives, there is still room for improvement. Having great ways to collaborate is already a good start. The future is plenty of hopes. Serious works are being done and we shall think on how much we can contribute to one of those initiatives

RESEARCH ACTIVITIES

Auxilium College (Autonomous), Vellore
Department of Zoology-Ph. D Details- 2019-2020

Name of the Research Scholar	Topic	Name of the Supervisor	Date of Viva – Voce	External Examiner
A. Ragmath Bee	Antidiabetic activity of some Indian medicinal plants.	Dr. Sr. Mary Josephine Rani A.	16.10.2020	Dr. A. Jabenesan, Prof. of Zoology, Annamalai Universiy, Anamalai Nagar, Chidambaram.
M. Santhosh Kumar	Biogenic characterization and ecofriendly method for the synthesis of paldium nanoparticles using an aqueous solution of medicinal plants for their anticancer activity human HE-la cell lines.	Dr. Sr. Regina Mary R.	12.11.2020	Dr. Arulsamy Jabenesan, Prof. of Zoology, Annamalai Universiy, Anamalai Nagar, Chidambaram.

Department of Zoology
FDP/Orientation/ Short term Courses/ Refresher Course 2020-21

S. No.	Name of the Teacher	Title of the Professional development Programme	Organized by	Date	Duration
1.	Ms. Vidhya K.	FDP on Managing online classes and co-creating MOOCs	TLC Ramanujan College, University of Delhi, Sponsored by MHRD PMMMNMTT.	18.5.2020 to 03.6.2020	Two Weeks
2.	Dr. Uma Chandra N., Ms. Anuradha M. Ms. Rebecca Vinolia Dr. Rajalakshmi A., Dr. Anu K.	Bio -nanotechnology – Certificate Course	Association of Indian Biologists, Chennai.	18.05.2020 to 11.06.2020	Four Weeks
3.	Ms. Anuradha M.	Evolution from Offline to Online Teaching	IQAC & FDP Committee Satish Pradhan	30.05.2020 to	Five Days

			Dnyanasadhana College, Thane, in Association with Department of Information Technology, University of Mumbai.	03.06.2020	
4.	Ms. Hannah Elizabeth S. Ms. Anuradha M. Ms. Rebecca Vinolia Dr. Anu K.,	Synergia to Revitalize Reform and Refresh Ourselves Agents to Ensure Quality Education	Auxilium College (Autonomous) in association with VIT- AP	01.06.2020 to 07.06.2020	One Week
5.	Ms. Hannah Elizabeth S. Ms. Anuradha M.	Advanced Materials and their Applications	PG & Research Department of Chemistry, Auxilium College (Autonomous) Vellore -6.	02.06.2020 to 06.06.2020	Five Days
6.	Ms. Hannah Elizabeth S.	Challenges in Restructuring the Innovative Teaching Learning Techniques"	Department of Commerce. Auxilium College (Autonomous), Vellore-6.	02.06.2020 to 08.06.2020	One Week
7.	Ms. Vidhya K.	4-Week Induction/Orientation Programme for "Faculty in universities/ Colleges/Institutes of Higher Education"	TLC Ramanujan College, University of Delhi, Sponsored by MHRD PMMMNMTT.	04.06.2020 to 01.07. 2020	Four Week
8.	Ms. Vidhya K.	National Level FDP	IQAC, K.M.G. College of Arts & Science, Gudiyattam, Vellore- 635803.	8.6.2020 & 9.6.2020	Two days
9.	Dr. Rajalakshmi A., Ms. Anuradha M.,	Seven Days Online Faculty Development Programme Moodle Learning Management System.	PG and Research Department of Chemistry, Auxilium College (Autonomous), Vellore in association with the Spoken Tutorial Project, IIT Bombay.	08-06-2020 to 14-06-2020	One Week
10	Ms. Anuradha M. Dr. Anu K.,	Data Science and its Real Time Applications	Department of Computer Science, in collaboration with Brainswig Edutech Pvt. Ltd, Chennai.	08.06.2020 to 14.06.2020	One Week
11	Ms. Vidhya K.	Ornamental Fish Culture and breeding	Department of Biotechnology School of Bio and Chemical Engineering. Sathyabama Institute of Science and Technology.	15.06.2020 to 19.06.2020	Five Days

12	Dr. Arockiamary J S Dr. Mary Agnes A., Dr. Uma Chandra N., Ms. Anuradha M. Ms. Hannah Elizabeth S. Ms. Vidhya K., Ms. Rebecca Vinolia Dr. Rajalakshmi A., Dr. Anu K.	Evolving Best Teaching and Learning Practices in the Pandemic Era 2020.	The Board of Management Auxilium College (Autonomous), Vellore-6.	15.06.2020 to 21.06.2020	One Week
13	Dr. N. Uma Chandra Ms. Anuradha M.	Online Refresher Course on Science Academics	PG & Research Department of Chemistry & Physics, A.P.A. College of Arts and Culture, Palani.	24.06.2020 to 07.07.2020	Two Week
14	Dr. Mary Agnes A., Dr. Uma Chandra N., Ms. Rebecca Vinolia	Recent trends in Life Sciences	Department of Zoology, St. Jude's College, Thoothoor – 629176.	06.07.2020 to 10.07.2020	Five Days
15	Dr. Uma Chandra N.,	UGC (Paramarsh) Online FDP "ICT in Teaching & Evaluation"	MSP Mandal's Shri Shivaji College, Parbhani (Maharashtra)	13.07.2020 to 18.07.2020	Six Days
16	Ms. Rebecca Vinolia	Four week International Faculty Development Online Certificate Course on "MEDICAL BACTERIOLOGY (Phase II)"	Department of Microbiology, Sacred Heart College (Autonomous), Tirupattur, Tamil Nadu, India in association with Microbiologist Society, India & Laboratory of Chemical and Biological Analysis, Western Rio Janeiro State University, Rio de Janeiro, Brazil.	13.7.2020 to 13.8.2020	Four Week
17	Dr. Uma Chandra N.,	Recasting from Onsite to Online Pedagogy"	IQAC, Ethiraj College for Women (Autonomous), Chennai – 600 008.	20.07.2020 to 24.07.2020.	Five Days
18	Dr. Mary Agnes A.,	A Perspective of Emerging Advances in Life Sciences.	PG & Research Department of Zoology, Ethiraj College for Women, Chennai- 600 008.	27.07.2020 to 29.07.2020	Three Days
19	Dr. Uma Chandra N.,	Five days International e-faculty development Program	PG and Research Department of Commerce, Arignar Anna Government Arts College, Vadachennimalai, Attur.	28.07.2020 to 01.08.2020	Five Days
20	Dr. Mary Agnes A.,	International FDP	IQAC & HR Services, Idhaya Engineering College for Women, Chinnasalem- 606 201.	31.07.2020 to 01.08.2020	Two Days
21	Dr. Uma Chandra N.,	One Week Faculty Development Program "E- Content Development &	Guru Angad Dev Teaching Learning Centre, under PMMMNMTT of	22.08.2020 to 28.08.2020	One Week

		Learning Managing System"	MHRD in collaboration with S.S. Khanna Girl's Degree College, Prayagraj.		
22	Dr. Uma Chandra N.,	Two Week Online Faculty Development Programme on "Learning Advanced E-tools for MOOCs Development & Research"	MHRD, PMMMNMTT Teaching Learning Centre Ramanujan College & University of Delhi and Motilal Nehru College (E)	01.09.2020 to 14.09.2020	Two Week
23	Ms. Vidhya K.	Biomaterials & Bio-Therapeutics	Col. Dr. Jeppiaar Research Park, Centre for Ocean Research & Ministry of Earth Sciences- Earth Science & Technology Cell. Sathyabama Institute of Science and Technology	28.09.2020 to 03.10.2020	Six Days
24	Ms. Vidhya K.	Research Methodology	TLC Ramanujan College, University of Delhi, under the aegis of MHRD PMMMNMTT	01.10.2020 to 15.10.2020	Two Week

Department of Zoology
FDP/Orientation/ Short term Courses/ Refresher Course- 2021-22

S. No.	Name of the Teacher	Title of the Professional development Programme	Organized by	Date	Duration
1.	Ms. Rebecca Vinolia Dr. Anuradha M. Dr. Anu K.	Six- day Faculty Development Programme on Professional and Communicative English	Department of English and Foreign Languages, Bharathiar University, Coimbatore, Tamilnadu.	16.06.2021 to 22.06.2021	06 days
2.	Dr. N. Uma Chandra	Online Two Weeks Interdisciplinary Refresher Course /Faculty Development Programme on "Advanced Research Methodology Tools and Techniques 2.0"	Teaching Learning Centre, Ramanujan College, University of Delhi under the aegis of MHRD, PMMMNMTT	17.06.2021 to 01.07.2021	14 days
3.	Dr. Mary Agnes A., Dr. N. Uma Chandra	Seven Day International Faculty Development Programme on "COVID-19 and GENERAL HEALTH AWARENESS"	Department of Physical Education and IQAC Rajapalayam Rajus' College in association with (PEFI) Tamilnadu Chapter, Recognised by the Ministry of Youth Affairs and Sports.	01.07.2021 to 07.07.2021	07 days

4.	Ms. Anuradha M.,	FDP on "Innovative Approaches in Pedagogy"	Department of Life Sciences & IQAC New Prince Shri Bhavani Arts and Science College.	20.10.2021 to 22.10.2021	03 days
5.	Dr. N. Uma Chandra	One week online certificate course on Digital Teaching Techniques	ICT Academy	25.10.2021 to 29.10.2021	05 days
6.	Dr. Arockiamary J S Dr. Mary Agnes A., Dr. Uma Chandra N., Ms. Anuradha M. Ms. Hannah ElizabethS. Ms. Vidhya K., Ms. Rebecca Vinolia Dr. Rajalakshmi A., Dr. Anu K.,	National Level Intercollegiate Online FDP on Outcome Based Education	IQAC of Auxilium College (Autonomous) Vellore in association with IPSR Solutions Limited.	22.11.2021 to 27.11.2021	06 days
7.	Dr. N. Uma Chandra	In- Service Teacher Training Programme	TamilNadu State Council for Higher Education, Chennai-53 & Thiruvalluvar University, Vellore.	05.05.2022 & 06.05.2022	02 days
8.	Ms. Rebecca Vinolia	Bioinorganic Chemistry	NPTEL –AICTE Funded by the Ministry of HRD, Govt. of India.	Jan.-Feb 2022	4 Weeks
9.	Ms. Vidhya K.	Two- Week Refresher Course in "Zoology"	TLC Ramanujan College, University of Delhi in collaboration with Gargi College, University of Delhi.	25.04.2022 to 09.05.2022	14 days

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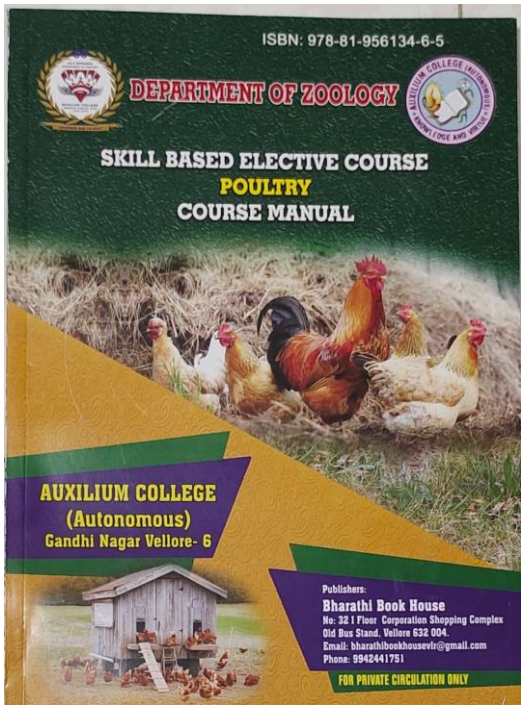

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DEPARTMENT OF ZOOLOGY

AUXILIUM COLLEGE (Autonomous)
Gandhi Nagar, Vellore – 632 006

SKILL BASED ELECTIVE COURSE

POULTRY
COURSE MANUAL

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2022

ONLINE COURSES

Online Course completion Details
Academic Year 2020 – 2021
II M. Sc Zoolog

S.No	NAME	REGISTER NO.	ONLINE COURSE	STARTING DATE	ENDING DATE	DURATION	UNIVERSITY
1.	Angel Helen	30519P23001	1.Essentials of biomolecules,nucleic acid and peptides	22/2/2020	25/05/2020	12 weeks	IIT
			2.Corona Virus	19/05/2020	07/07/2020	7 weeks 3 weeks	e-learning college
			3.Detoxification	05/05/2020	07/05/2020		e-learning college
2.	Anupama Vijay	30519P23002	1.Basic techniques in Microbiology	01/06/2020	30/06/2020	4 weeks	Tirupattur college
			2.Food for thought: the relationship between food, gut and brain	11/05/2020	16/06/2020	5 weeks	Torino University
3.	Berlin Rajakumari.R	30519P23003	1. The Science of Success: What Researchers know that you should know.	04/05/2020	21/06/2020	7 weeks	University of Michigan
			2.Understanding Biological Energy	05/04/2020	02/05/2020	4 weeks	Royal Holloway University of London
4.	Gayathri.R	30519P23004	1.Why do we age? The molecular mechanism of ageing	13/04/2020	22/05/2020	6 weeks	University of Groningen
				04/05/2020	12/06/2020	6 weeks	University of Sheffield
			2. Discover Dentistry	15/06/2020	29/11/2020	12 weeks	University of Mukthagangotri
			3. Food Microbiology				
5.	Gomathi.S	30519P23005	1.Climate Change Solutions	05/04/2020	26/04/2020	4 weeks	University of Exeter
			2.Target antibiotics-Prescribing in Primary Care	02/05/2020	07/06/2020	6 weeks	
			3. Advanced Neurobiology	01/06/2020	27/07/2020	8 weeks	IIT (Bombay) Peking University
6.	Mathura.R	30519P23006	1.The Science of Medicines	14/05/2020	19/06/2020	6 weeks	Monash University
7.	Priyadharshini. G	30519P23007	1.The Science of Medicines	14/05/2020	19/06/2020	6 weeks	Monash University
8.	Renuka.R	30519P23008	1.Cancer in 21st Century	14/05/2020	24/06/2020	6 weeks	University of Glasgow
9.	Rowdri.R	30519P23009	1.Psychology and Mental Health	01/04/2020	06/05/2020	6 weeks	Liver Pool University
10.	Selva Mani.P	30519P23010	1.Advanced Neurobiology	08/06/2020	One week left	8weeks	Peking University
			2.Association of Indian Biologist On Bio-Nano Technology	15/05/2020	11/06/2020	4 weeks	Indian Biologists
11.	Sruthi Priya.G	30519P23011	1.One Health-Connecting Humans,Animals and Environment				University of Brazil

Online Course completion Details- odd semester
Academic Year 2021 – 2022
I M.Sc., Zoology

SI. NO	NAME	REGISTER NO.	ONLINE COURSE	COMPLETION DATE	DURATION	UNIVERSITY
1.	Anjani.V	30521P23001	Agriculture, Economics and nature	15/11/2021	6 weeks	The University of Western Australia
2.	Deepaananthi.M	30521P23002	Gender Inequality	20/10/2021	4 weeks	Kings College, London
3.	Dharani. B	30521P23003	Entrepreneurship from Business idea to action	08/10/2021	4 weeks	Kings College, London
4.	Dhivya. K	30521P23004	Caregiving Skills. Dementia care	24/11/2021	4 weeks	Alison
5.	DivyaPriya. M	30521P23005	English for Health care	30/08/2021	4 weeks	Kings College, London
6.	Gayathiri. M	30521P23006	Basic English - II	01/09/2021	4 weeks	Kings College, London
7.	Kanimozhi. K	30521P23007	Introduction to Biomedical Research	27/11/2021	6 weeks	Alison
8.	Loshika. D.S	30521P23008	Quantitative aptitude basic	20/07/2021	4 weeks	Alison
9.	Loshini. D. S	30521P23009	Python projects	21/07/2021	4 weeks	Great learning Academy
10	Nandhini. N	30521P23010	What is genetic counselling	09/11/2021	6 weeks	Welcome connecting science
11.	Preethi.S	30521P23011	What is genetic counselling	22/11/2021	6 weeks	Welcome connecting science
12.	Sajidabanu. M	30521P23012	Embracing digital Technology	30/08/2021	4 weeks	Kings College, London
13.	Sasvitha. palani	30521P23013	Basic English 1: Elementary	21/11/2021	4 weeks	Kings College, London
14.	Shalini. S	30521P23014	Introduction to Business Management	08/10/2021	4 weeks	Kings College, London
15.	Valarmathi.B	30521P23015	Basic English II Pre intermediate	17/11/2021	4 weeks	Kings College, London
16	Vetriselvi. P	30521P23016	Basic English I Pre intermediate	08/11/2021	4 weeks	Kings College, London

Online Course completion Details-Even semester
Academic Year 2021 – 2022
I M.Sc., Zoology

SI. NO	NAME	REGISTER NO.	ONLINE COURSE	COMPLETION DATE	DURATION	UNIVERSITY
1.	Anjani.V	30521P23001	Introduction to nursing	28/01/2022	4 weeks	Kings College, London
2.	Deepaananthi.M	30521P23002	Zoroasrtrianism	19/11/2021	4 weeks	Kings College, London
3.	Dhanani. B	30521P23003	Ideas for a better world	24/11/2021	4 weeks	British council
4.	Dhivya. K	30521P23004	Food and safety	02/02/2022	4 weeks	Alison
5.	DivyaPriya. M	30521P23005	Agriculture,economics and nature	19/11/2021	6 weeks	University of western Australia
6.	Gayathiri. M	30521P23006	English for healthcare	19/11/2021	4 weeks	Kings College, London
7.	Kanimozhi. K	30521P23007	Basic English	27/11/2021	4 weeks	Kings College, London
8.	Loshika. D.S	30521P23008	Geomechanics	22/02/2022	4 weeks	Alison
9.	Loshini. D. S	30521P23009	Geomechanics	22/02/2022	4 weeks	Alison
10	Nandhini. N	30521P23010	Agriculture,economics and nature	13/02/2022	6 weeks	University of western Australia
11.	Preethi.S	30521P23011	Agriculture,economics and nature	19/11/2021	6 weeks	University of western Australia
12.	Sajidabanu. M	30521P23012	Diploma in human anatomy and physiology	13/03/2022	4 weeks	Alison
13.	Sasvithapalani	30521P23013	Basic English	05/12/2021	4 weeks	Kings College, London
14.	Shalini. S	30521P23014	Food and health	05/01/2022	4 weeks	Coursera
15.	Valarmathi.B	30521P23015	Protecting children during COVID-19	25/02/2022	6 weeks	Kings College, London
16	Vetriselvi. P	30521P23016	Basic English	15/02/2022	4 weeks	Kings College, London

Online Course completion Details
Academic Year 2020 – 2021
I M.Sc., Zoology

SI. NO	NAME	REGISTER NO.	ONLINE COURSE	Completion date	DURATION	UNIVERSITY
1.	Gayathri.A	30520P23001	1.Introduction to nursing 2.Become a pharmacy preceptor 3.Agriculture, Economic and Nature	24/04/2021 26/05/2021 04/06/2021	4 weeks 4 weeks 6 weeks	Future learn Future learn Future learn
2.	Prabhavathi. V T	30520P23002	1.Farm to folk 2.Trust in one food 3. Target antibiotics	04/05/2021 26/04/2021 21/04/2021	4 weeks 4 weeks 6 weeks	Future learn Future learn Future learn

Online Course completion Details-odd semester
Academic Year 2021 – 2022
II M.Sc., Zoology

SI.NO	NAME	REGISTER NO.	ONLINE COURSE	COMPLETION DATE	DURATION	UNIVERSITY
1.	Gayathri.A	30520P23001	1.Coping with change: Social- emotional learning through play	12/03/2021	9 weeks	The lego fundation
			2. Essentials of global health	14/07/2021	10 weeks	Yale university
			3. Health systems strengthening	7/04/2021	8 weeks	The Nossal Institution for
			4. Ecology: Ecosystem dynamics and conservation	24/06/2021	5 weeks	global health and unicef
			5. SARS- COV- 2 and Acute respiratory viral infection	10/06/2021	6 weeks	Coursera
			6. Transgender medicine for general medical providers	23/06/2021	8 weeks	Coursera
			7.Dogs emotion and cognition	24/06/2021	8 weeks	Coursera
			8.Strategic planning for professional service firms in the time of COVID- 19	8/05/2021	4 weeks	The college Uttarakhand open University
			9.Digital forensics	9/08/2021	4 weeks	Auxilium college
			10. HTML	6/12/2021	8 weeks	with IIT Bombay
			11. A Guide to contract law for non- lawyers	8/05/2021	4 weeks	The college of law
			12. Entrepreneurship: From business idea to action	26/05/2021	4 weeks	King's college London
			13. Protecting children during Covid 19 and other infectious disease outbreaks	6/07/2021	6 weeks	The Alliance for child protection in humanitarian action
			14. AIDS; Fear and Hope	23/06/2021	8 weeks	University of Michigan
			15. Bugs 101: insects – human interactions	28/11/2021	13 weeks	Coursera
2.	Prabhavathi. V T	30520P23002	1. Agriculture, Economics and Nture	05/04/21	6 weeks	The University of Western Australia
			2. 2. English for healthcare	19/03/21	4 weeks	King's college London
			3. Introductions to Nursing	28/02/22	4 weeks	King's college London
			4. Mental skills training for sports and health	28/02/22	4 weeks	Manchester Metropolitan
			5. How food made. understanding food and processing technologies	11/02/22	4 weeks	University Eit. food
			6. HTML	06/12/21	8 weeks	Auxilium college and IIT Bombay

Online Course completion Details-Even semester
Academic Year 2021 – 2022

SI.NO	NAME	REGISTER NO.	ONLINE COURSE	COMPLETION DATE	DURATION	UNIVERSITY
1.	Gayathri.A	30520P23001	Psychological First Aid Principles of Engineering CellDesigner	21.03.2022 18.05.2022 11.05.2022	4 weeks 4 weeks 2 months	Johns Hopkins University King's College of London Auxilium college with IIT Bombay
2.	Prabhavathi. V T	30520P23002	Thoracic Oncology CellDesigner	21.03.2022 11.05.2022	4 weeks 2 months	University of Michigan Auxilium college with IIT Bombay

STUDENTS CORNER

AMAZING FACTS ABOUT HUMAN BODY

- Pound for pound, your bones are stronger than steel. A block of bone size of a match box can support up to 18,000 pounds of weight.
- Highest blood flow is seen in kidney. That's because kidneys are natural filtration system of our body.
- Human can produce saliva, which is enough to fill two bathtubs a year.
- More than half of our bones are located in the hands, wrist, feet and ankles
- As well known all human beings have unique finger prints, but humans also have unique tongue prints.
- Goosebumps evolved to make our ancestor's hair to stand up, making them appear more threatening to predators.
- An eyelash lives for about 150 days before it falls out.
- You can't breathe and swallow at the same time.
- While awake, your brain produces enough electricity to power a light bulb.
- A large amount of the dust in our home is actually dead skin. Humans shed about 600,000 particles of skin every hour.
- When listening music our heart beat will sync with the rhythm.
- By the third trimester, a developing baby can recognize their mother's voice from inside the womb.
- Babies can cry in the womb, researchers found expressions of displeasure in ultrasounds starting at just 28 weeks.
- Experiencing heartburn during pregnancy means the baby will be born with hair.
- After 24-74 hours of death the internal organ decompose, the body starts to bloat and the blood- containing foam leaks from the nose and mouth.
- 8-10 days after death the body turns from green to red as the blood decomposes and the organs in the abdomen accumulate gas.
- Soon after the death a person's eyeball flatten due to the loss of blood pressure.
- The first primary colour a baby can see is red.

BY
SANDHIYA R
II B.SC ZOOLOGY

ARCHITEUTHIS (Giant squid)

Architeuthis (Giant squid) is considered as an emblematic species in the marine invertebrate biodiversity as it meets the criteria required of an emblematic species such as attracting public attention, serving as a bio indicator of environmental conditions, representing a specific ecosystem and serving as an indicator of some ecosystem stress.

Based on very old legends, giant squid have become an icon that may serve to attract public interest to the issue of conservation of marine ecosystems and of marine invertebrate biodiversity in particular. Currently about 30 giant squid (Architeuthis) are preserved and exhibited at museums and aquaria around the world and eager visitors to these exhibits increase every year. A recent example of the giant squid attractiveness was the prominence of Architeuthis studies in national and international scientific flora dedicated to analysis of the consequences of the effects of noises provoked by humans in marine environments.

New data are emerging on the disturbances to physiological processes in marine species such as growth, development, metabolism, osmoregulation and acid base balance under elevated temperature. $_{P}CO2$ found that their low oxygen-carrying blood protein rendered them highly vulnerable to effects of global warming and ocean acidification. Indeed, oxygen affinity of cephalopod haemocyanin decreases with decreasing pH and increasing temperature.

Architeuthis is an indicator of ecosystem stress due to anthropogenic greenhouse gas emissions and associated with global ocean warming and acidification. Two stranded giant squid specimens (male and female) were found in December 2004 in Newfoundland waters within two well-separated east coast bays, within a 17 day period , only 3 months after the first seismic survey of Orphan Basin, a deep slope area almost enclosed by shallower shelf and ocean currents.

Although Architeuthis is rarely encountered, the knowledge base is far more depauparate for the majority of other marine invertebrates. Given this very high level of uncertainty it would be prudent to consider marine invertebrates in general to be vulnerable to natural and anthropogenic change, and to recognize that there is reason for concern for their conservation. Furthermore, while, the population sizes of Architeuthis species remain unknown they have a very broad geographic range of distribution. This is an asset to an indicator species in that a broad geographic range promotes representation of concerns and public awareness across a large geographic area, in the case Architeuthis evidence**.**

BY
J. JAYA JASHIKA
II B.SC ZOOLOGY

DNA

My name is DNA,
And my cousins are RNA,
You find me in most of your cells,
And my absence may give you hell.

My dear friend helicase,
Along with DNA polymerase,

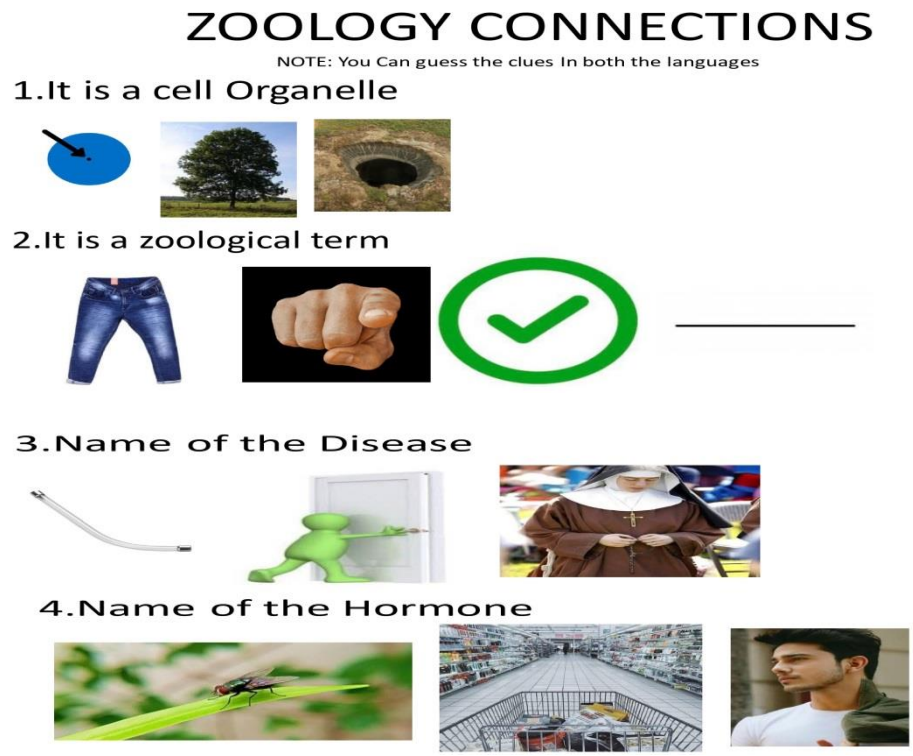
Open up my helix,
And show off their theatrics.

My second cousin tRNA,
Helps my first cousin mRNA,
To undergo translation,
Beginning with aminoacylation.

I am now an expression,
Making a lasting impression,
That you will never forget,
And may come to regret.

This is the story,
Of a tiny,
Double-stranded super coil,
Who if you embroil, can cause you turmoil!

BY
SANDHIYA R
II B.SC ZOOLOGY



5.Name of the organism



6.It is the part of an organ




7.It is a zoological term




8.It is a ecological term



9.Name of the Disease




10.Name of the organ


Answers

1. Centriole	6. Uterine wall
2. Genetic Code	7. Microorganism
3. Tuberculosis	8. Carnivore
4. Estrogen	9. Carcinogen
5. Zooplankton	10. Uterus

BY
E. ABIRAMI,
II B. Sc. ZOOLOGY

MICROBIOME-RULE OVER THE BODY

Humans are considered as the most powerful species on earth. They are the most intelligent and have the power to control everything that exists on earth. But what, if it like, that this super-intelligent human race is controlled by tiny organisms that live within or exists inside the human body. They not only influence the human brain but behaviour too.

Bacteria are everywhere, the air you breathe, the water you drink, food that you eat, on and inside your body, things you use like mobile phones, laptops, tabs, even washed clothes as well as utensils, everywhere, you can think about it. In recent years, the term “microbiome” has sought the attention of researchers and scientists all-round the globe. Microbiome describes the genome of all microorganisms including bacteria, viruses, fungi and archaea in a particular environment, like the microorganisms in our gut environment are known as the gut microbiome. These microbes can be symbiotic or pathogenic, living in and on all vertebrates.

Bacteria in the gut are key to many aspects of human health including metabolism, immune, and neurobehavioural traits which have been supported by evidence from the animal models and human studies.

But how our relationship with these bacteria begins?

It is assumed that humans develop their relationship with bacteria inside the mother's womb. The innumerable bacteria present inside the mother’s womb, cover every single part of our body. Pregnant mothers release some molecules that make their way in the fetal brain and seed their babies with these microbes during childbirth. After birth, special sugars that are present inside the mother’s milk feed and support these bacteria. During the first few years of infant life, both the brain and microbe rapidly develop. These bacteria help in the development of our immune system and develop a healthy community inside our body.

What does this gut microbiota do for us?

There are several categories of bacteria inside our bodies. There are some whom we learn to live, the one which is present in our mouth and can harm our teeth if we do not brush daily. Next is, friendly fellows who live in our gut. The bacterial microbial communities present in the human gut are essential for maintaining the intestinal ecosystem as well as play an important role in gathering energy from foods and producing micronutrients. The gut microbiota performs fermentation of non-digestible substrates like dietary fibres which in turn supports the growth of short-chain fatty acids and gases producing microbes. Several enzymes produced by these gut microbes contribute to the metabolism of bile acid that acts as metabolic regulators and signalling molecules to affect important pathways in the host. In return, we provide food to them and an appropriate environment for growth. Thus, we not only live with them but also depend on this vast army of bacteria to stay alive.

Every human has a distinctive microbiome. In the last few years, understanding of the influence of gut microbiome goes much deeper. The gut microbiome is considered an area of great assurance for a better understanding of human health and related diseases. It is considered that the bacteria that are part of our microbiome encodes millions of genes that can manufacture thousands of metabolites, which has the potential to replace many of the functions in the host which affect the host's phenotype, fitness, as well as health. Whether it's a craving for a specific food, immune system protection, regulation of behaviour or role in several disorders such as depression, autism, dementia, and many others, in all these, our body's bacterial community plays a very important role. Therefore, the microbiome is now considered a virtual organ of the human body.

So, how do these microbiomes communicate with us?

It is interesting to know that microbes can even talk to our brain; they not only interact but affect our nervous system or maybe our mood too. In the gut, several neuroactive compounds are synthesized which have a major impact on mental well-being. Studies have reported the production of DOPAC, a metabolite of the neurotransmitter dopamine in humans is related to the healthier mental quality of life. Dopamine and serotonin have composite roles in the brain and imbalances related to it. About 90% of serotonin which is an important messenger for the immune system, produced in the gut. Scientists believe that the microbiome does this to communicate with the vagus nerve, which connects about 100 million nerve cells from the digestive tract to the base of the brain. The vagus nerve sends these signals from the gut to the brain, where they alter the production of a hormone called oxytocin that promotes social bonds. Some chemicals communicate through the bloodstream with the brain. Since the brain decides what to eat, the microbe is interested in a healthy brain.

Bacteria in the gut have the ability to manage behaviour and mood through altering the neural signals in the vagus nerve, changing taste receptors, producing toxins to make us feel bad, and liberating chemicals to make us feel good. However, the microbes, that live outside the human body, like those present in the soil are not able to synthesize some kind of neurotransmitters. The reason might be that these microorganisms have not co-evolve with humans and therefore, have not learned to gain advantage from invading into the host nervous system.

Although there is a heritable part of gut microbiota, several environmental factors such as related to diet and drugs decide the composition of gut microbiota which in turn can affect our health. Antibiotics entered indirectly in our body through the food chain have various metabolic consequences that vary from person to person. Antibiotics are used for livestock farming in many countries. Several human studies, as well as many rodents' studies, have provided an obesogenic effect of antibiotics in humans in minute doses found in food.

BY
M.ANGEL HELEN
II M.Sc., ZOOLOGY

AMAZING FACTS ABOUT THE HUMAN BODY

- A sneeze can travel about up to **99 miles per hour**.
- Bones are **50 times lighter than steel** but just as **strong.**
- Our nose can remember **50,000 different scents**.
- The weakest of our five senses is our **sense of smell**
- A full human bladder can hold **600 milliliters of liquid**
- A normal person produces **28400 liters of saliva a life.**
- There are **45 miles of nerves** in the human skin.
- We can make **7 soap bars or 75 candles out of the fat** found in the average human body.
- When we were born in the world we had over 300 bones in our body when we were bought up as an adult we have only 206 bones as they all fuse together.
- If the **human eyes** were digital camera it would have **576 megapixels**.
- Over the lifetime the human will **eat 60,000 pounds of food**.
- The gastric acid in the stomach is so powerful that it could **dissolve razor blades in 15 hours**.
- Every person on this planet has an **individual smell that nobody else** on the earth has.
- **Men apparently only use one side** of their brain when listening to someone but **women use both**.

BY
POOJA.K
I B.sc ZOOLOGY

INDIAN PITTA

The Indian pitta (*Pitta brachyura*) is also known as six-o- clock bird. It is a passerine bird native to the Indian subcontinent. It habitat is scrub jungle, deciduous and dense evergreen forest. It lives in the forests of Himalayas, western ghats. Although very colorful , it is usually shy and hidden in the undergrowth where it picks insects o the forest floor. An Indian pitta is a small stubby- tailed bird that is mostly seen on the floor of forests or under dense foraging on insects. It has long and strong legs, a very short tail and stout bill, with a buff coloured crown stripe, black coronal stripes, a thick black eye stripe and white throat and neck . The underparts are green blue tail, the underparts buff, with bright red on the lower belly and vent. The width of the coronal stripe may differ between the sexes. Indian pitas are roost in trees. They feed on insects and small vertebrates. They breed during the south-west

monsoon from june to august with peaks in june in central india, and in july in northern india. The nest is a globular structure with a circular opening on one side built on the ground or on low branches. It is made up of dried leaves and grasses. The clutch is four to five eggs which are very glossy white and spherical with spots and speckles of deep maroon or purple. It has a distinctive loud two- note whistle. It has a habit of calling once or twice generally at dawn and dusk.

BY
GAYATHRI.A
I .M.Sc ZOOLOGY

SLEEPING MOTH

A rare tear-feeding moth discovered in Brazil could help explain the bizarre behavior and whether it harms the birds. The dead of night, ecologist Leandro Moraes gazed upon a moth perched on the neck of a sleeping black-chinned ant bird with its proboscis extended, the dusty-winged creature was gently slurping up the tears of the slumbering bird. Forty-five minutes later, he encountered another moth feasting on the tears of a different bird, A moth was spotted drinking a sleeping bird's tears in the Amazon jungle in Brazil, the first time this behavior was reported in the country and only the third known case worldwide Moths and butterflies have often been observed feeding on the tears of crocodiles, turtles, and mammals. It's thought to be a way of obtaining salt, an essential nutrient that isn't present in nectar and can be hard to find elsewhere.

Birds' tears may be targeted for the same reason. However, the area where the latest case was witnessed is flooded annually by a nearby river and the water soaks up lots of salt from the soil.

BY
GAYATHRI. A
II. M. Sc.,
ZOOLOGY

IMPACT OF PCOS IN WOMEN

Polycystic ovary syndrome, widely known as PCOS, is an endocrine system disorder that affects women in their reproductive years, small fluid filled sacs develop on the ovaries. The cysts are not harmful, but they can lead to an imbalance in hormone level.PCOS affects the quality of life, anxiety and depression are prevalent in patients with PCOS. Weight difficulties have been identified as the most distressing symptoms in adolescent and young women with the disease. Obesity is a common feature of PCOS, other diagnostic features include hyperandrogenism, obesity, hirsutism, cystic acne and hair loss. The main symptoms of PCOS such as infertility and menstrual dysfunction increases psychosocial stress and mood disorders. With treatment most women with PCOS are able to overcome the syndrome and lead a healthy life.

BY
UNAIZA FATHIMA. V. F,
III B.Sc. ZOOLOGY

Lystra lanata

In this article, we are going to see about a species…This is seen only at rain forest..!
So we can say it is a "rainforest insect"

The name of this rainforest insect is "Amazonian wax-tail fulgorid (Lystra lanata).

- This is wax-tailed leaf hopper (fulgoridae).
- These true bugs have a long, waxy, white "tail".
- Lystra lanata are related to cicadas.

It belongs to the order homoptera. When these guys flew they looked like ghosts! There were a number on a tree. This is about 2.5 cm long.

It has a special type of an object "the fragile"

This is wax like plumes are made from the extra carbohydrates found in the plant sap.

The wonderful defense mechanisms!

It seems the tails are made up of wax and are a defense ploy to food predators like birds into going for the tail rather than the head.

Which breaks off when predators attempt to eat them, leaving predators with a mouth full of wax rather than the insect itself…

Interesting thing:

Much like lizard that loses their tail to escape predation, this waxy tail can grow back…

BY
NANDHINI .N
I M.Sc., ZOOLOGY

FACTS

1. Gorilla can catch human colds and other illness.
2. The world's smallest dog was a Yorkshire Terrier, which weighed just four ounces.
3. In Alaska it is illegal to whisper in someone's ear while they are moose hunting.
4. The sentence "The quick brown fox jumps over a lazy dog" uses every letter of the alphabet.
4. During World War 2, Americans tried to train bats to drop bombs.
5. Ants never sleep.Also they don't have lungs.
6. Pear and apple seeds contain arsenic which is deadly to dogs.
7. The human body contains enough fat to make seven bars of soap.
8. Wild dolphins call each other by name.
9. To prevent themselves from drifting apart, sea otters hold hands while they sleep.
10. Octopuses are considered the most intelligent, among vertebrate they have even been observed using tools.
11. Humans are one of the few mammals to not have a penis bone.
12. Birds are actually dinosaur's closest living relatives, not reptiles!
13. Starfish are brainless.
14. There are most muscles in an elephant's trunk than in the entire human body.

BY
M.PAMITHA
II B.Sc ZOOLOGY

POSITIVE ATTITUDE

Positive attitude is not just forcing a smile through gritted teeth in the hopes of feeling better. It's something a lot more profound than that. When we adopt a positive attitude we are using

the power of our mind to hone in on thoughts and ideas that are no longer serving us. The word attitude comes from the Italian word meaning "POSTURE" means its how you carry yourself, something you hold in your whole being, your entire approach to the world. The positivity allows you to be more open and resilient in the face of life day to day challenges. When you come up against an obstacle it will also serve the purpose of guiding you away from worry, rumination or negative thinking. The first step when it comes to adopting a positive attitude is to simply direct your attention towards the good, rather than the bad. Every day is important to ask and answer these questions. What is good in my life? What needs to be done? Positive thinking is powerful thinking. If you want happiness fulfilment, success and inner peace, start thinking you have the power to achieve those things. Focus on the bright side of life and expect positive results. Take risks and live to the fullest. When we are crippled by negativity, it can be hard to be true to ourselves and live the life we always wanted to. Keep the dreams alive. Understand to achieve anything which requires faith and belief in yourself, vision and hardwork, determination and dedication. Remember all things are possible for those who believe. Have faith and love deeply. It's hard to be positive without some degree of faith. Life will constantly send us challenges to test our positivity and to have faith is to be look towards the future with optimum inspite of such difficulties. Optimism is the faith that leads to achievement. Nothing can be done without hope and confidence. Living a life true to yourself is an assertion of your right to be a creative individual and that creates a positive attitude. Ability is what you're capable of doing. Motivation determines what you do. Attitude determines how well you do it. So be positive in what you do and that will eventually leads in a success path.

BY
M.ANGEL HELEN
II M.Sc ZOOLOGY

POST COVID PROBLEMS IN GLOBAL ECONOMY

There are several sources of effects over the global economy. First, markets are more integrated and interlinked, with a Chinese economy that contributes 16 percent to the global gross domestic product. Thus, any shock that affects China now has far greater consequences for the world economy. Second, the supply shocks due to morbidity and mortality, but also the containment efforts that restrict mobility and higher costs of doing business due to restricted supply chains and a tightening of credit will affect economies leading to a reduction of economic growth or an economic recession. Third, the demand will also fall due to higher uncertainty, increased precautionary behaviour, containment efforts, and rising financial costs that reduce the ability to spend.

Finally, there is a significant devaluation of the exchange rate with respect to the US dollar, which will also affect the import dependent countries. Global food markets are not immune to these developments. However, they are likely to be less affected than other sectors that are more exposed to logistical disruptions and weakened demand, such as travel, manufacturing and energy markets (Source: Market Monitor, AMIS, March 2020). But given the complexity of the food value chains and the importance of trade and transportation, these could make them extremely vulnerable. While COVID-19 likely represents a deflationary shock for the global economy, reflected in early moves by the FAO Food Price Index, in the short term the real cost of a healthy diet may rise because of the increase in the cost of

perishable commodities, which would have a particularly adverse impact on lower-income households and raise the price of progress towards the Sustainable Development Goals,.

BY
PRABHAVATHI.V.T
II M.Sc., ZOOLOGY

Pitohui dichrous

DID you know *that* the hooded pitohui bird of New Guinea is the only bird known to contain a toxin? The toxin is not just any old toxin, it is batrachotoxin (alkaloidal steroid toxin) which previously has been found only in the skin of some south "America poison dart frogs".

HOW THIS BIRD WAS DISCOVERED?

The discovery of the poison in the bird was made back in 1989, when ornithologist Jack dumbacher caught one of these birds in a net in New Guinea (Island of Australia). When he inadvertently touched his lips after handling the bird, He noted that his tongue and lips went numb. This spurred a chemical investigation which revealed the presence of batrachotoxin in the birds' feathers.

HOW DID THIS GET POISONED?

Recent investigations suggest that the birds do not synthesize the poison. They get it from their food supply. Specifically, from a species of beetle they dine on. Melyrid beetles seem to be the source of the toxin. There are several species of pitohui, but the most poisonous one being the "Hooded Pitohui". Feeding just a few milligrams of its skin to a mouse will kill it in a few minutes.

HOW TO IDENTIFY THE BIRD?

You can recognize the "Hooded" by its coloration; its plumage is a brilliant red and black. The less poisonous birds are brown colored. May be the intense color serves as a warning to predators to leave the bird alone. If you are wandering through the forests of New guinea, just enjoy its beauty from a distance. Do not attempt to handle it.

BY
PREETHI.S
I M.Sc., ZOOLOGY

Our Heart Stops Beating While We Sneeze..!!
A MYTH TO BE KNOCKED OUT...!!!

We all sneeze. Yes, that's an irrefusable fact. Sneeze is the first defence mechanism of our Respiratory system when any kind of antigen like dust particle, smoke, pollution, perfume droplets, bacteria, molds, dander, etc., gets into our Nasal passage.

Sneeze is a Reflex action, which occurs involuntarily and instantaneous movement in response to a stimulus.

ACHOO...!! GOD BLESS YOU.! Why do we say that. Just because the fact that our heart stops pumping during sneeze ? Do you think our heart really stops until we sneeze? Is it possible for someone to stay alive if heart stops beating, even for a millisecond?? This article could be the answer to clear this MYTH that our heart stops beating during sneeze, out of our minds..!!

WHY- GOD BLESS YOU ?? AFTER SOMEONE SNEEZES..!!

One belief is that it has originated in Rome when Bubonic plague was raging through Europe. One of the symptoms of this disease was Coughing and Sneezing and Pope Gregory

suggested that saying “God bless you" after a person sneezed in hope that this prayer would protect them from the disease and uncertain death.

But sneeze isn’t just a symptom of Bubonic plague, it is something different as discussed at the beginning of the article. It was from that time saying God Bless You started after a sneeze.

OUR HEART DOESN’T STOP DURING SNEEZE. REALLY? THEN WHAT HAPPENS..??

As we feel that we are going to get a sneeze, we inhale deeply which builds up extra pressure in the chest, slows down the blood flow to the Heart, lowers Blood Pressure and raises BPM (Beat Per Minute). Our throat also closes up to maintain the intrathoracic pressure of the abdominal cavity.

When we finally sneeze, all the pressure that was built up in the abdomen releases quickly and instantly. This speeds up blood flowing back in the heart, raises BP and lowers BPM all at once. Vagus nerve whose function is to reduce the heart rate at normal times also gets stimulated by sneeze and immediately it also involves in lowering the heart rate.

The changes in the BPM, heart rate and blood pressure, with their increase and decrease, the heart gets thrown off its rhythm i.e., it changes its beating rhythm for a second but doesn’t stop actually.

Sneeze lasts atleast for 1 to 3 seconds, and if heart stops for this time gap we would die. So, conclusion is only the rhythm of heart is changed during sneeze but the heart beat is not stopped at all.

BY
SAJIDA BANU M
I M.Sc., ZOOLOGY

HOPE

Hold… On…Pain…Ends.

I know her for almost Twenty four years. When she started having a sickness at the age of thirteen that would weakens her health, she hold on with the belief “Pain Ends”.

When she was taken to the ‘Saravana Stores’- Chennai , to work when she was still doing her 11th std studies, because of family situation, she held on with the belief “Pain Ends”.

When everyone of her friends were eating varieties of food during the lunch hour, she was hiding and drinking everyday ‘Porridge’ without desiring for what was missing. She held on with the belief “Pain Ends”.

When she was sent out from her workplace just because she stood for what is right, and was punished to give up her will in standing for truth she held on with the belief that “Pain Ends”.

She still says, “I have Hope; God would surely open His ways”.

She is none other than my younger sister. A silent soul whom I always admire and who is the model for me to always have hope in the hopeless situation.

I am sure that this Hope alone was leading her almost for 10 years to face all that came on her way and still comes on her way.

From the first day of this New Year, only this word lingers in my mind:”HOPE”. And I tell you, the one who rushes through this page at this moment, Hope…Hold on to Hope...

- in the Promises of God
- in the everlasting Providence of God
- in the never ending Love of God. Hope in the ever holding Graces of God……

Hope in God in all the situations however worse it may be. He will surely lead you into a wonderful life.
Even if the situations are same as in the case of my sister, still hold on to Hope…
Your pains would surely end.
There is always life only for the seed which longs to see life even after being broken.
God always searches for 'Hope filled" soul to offer "Joy filled" life.
If you believe joy is not permanent believe also that your pain is not permanent.
Through Miseries God opens up Treasuries.
Hold on to Hope. Till your pain Ends.

BY
Sr.TAMILSELVI
II B.Sc ZOOLOGY

THE VELLORE

Vellore is a paradise for me in person. It was really happy to remind myself that it is located at the banks of one of the chief tributaries THE PALAR RIVER. This city was ruled by the prosperous dynasties of South India. As two sides of a coin Vellore has its coldest and hottest climatic conditions. The Sripuram in Vellore is holding the diety of Sri Narayani in the Golden temple. Also Vellore has the healing Ministry of Christ which is the Christian Medical College. Adding on to that the number one private institution for innovation The Vellore Institute of Technology had made the country turn their eyes towards Vellore. There is no such fort on the face of the earth like the one in Vellore. The jungle in the district serve to be the habitat for wildlife, flora and fauna and now it is one of the best tourists spot in Tamil Nadu, Yes the Amrithi Zoological Park. The Jewel of the district Yelagiri is a hill station and has valley, waterfall, variety of fruits, the largest freshwater bodies, park with aquarium, garden and so on. Vellore always has a special space in my heart and mind.

BY
N . OVIYA CHEZHIAN
II B.Sc.ZOOLOGY

WILDLIFE – A PRICELESS TREASURE

Treasure is a feeling to get admired off;
Treasure is an ideal object in people's mind;
Some could not find the treasure of life;
Some could not feel the treasure of life which exists already;

Yes, but the true part of treasure co-exist around us;
The true priceless treasure wanders along with us;
The true priceless treasure accompany with us;
That is the treasure which environment gifted us;

Once we woke up, we could hear the bird's tweet;
That will make our heart and soul to get melt;

The bird's song is a perfect lilt;
That gives the whole day to get fit;

Once we step out we could feel the cool breeze;
That cheers our heart to get freeze;
The breeze of the air will travel overseas;
That will change our mood with ease;

The plants are the precious possession;
And it's our foremost duty to do conservation;
We should preserve the nature without hesitation;
That will make our environment to exist with stabilization;

It's very appealing to see the harmony of animals;
That is surviving along with us;
Wild is the place of fascination;
That is our pride of nation;

Animals are the burning bright;
In the forest of night;
The stunning displays of animals;
Makes the whole forest magnificent;

Beasts roar opens the dawn's new day;
Where the power Gods comes to praise;
They are fastest than their kins;
And mastered the art of reigns;

Wild animals are the real treasure;
That creates to feel more pleasure;
Watch our animals when you are in leisure;
Which makes you to reduce the pressure;

Now it is the time for the revival;
For the wildlife to get it's retrieval;
It's the time of chance for expenditure;
To create wildlife as a priceless treasure;

BY
M. ANGEL HELEN
II M.Sc., ZOOLOGY

CHERISH WILDLIFE

I May have never met you
Nor felt your presence
But I know you are there
Your habitats taken away from you
Where you were once free…

Before human thought you
Should be their pet
You were born to own wild and free,
Known for your fast speeds,
Unique in your own way,
Your eyes of Amber and Spotted fur
It hurts what is happening to you and others
You are special and in hearts of many.
Just know we are fighting for you.

BY
T. SHASHIPRABHA
II B.Sc. MICROBIOLOGY

CHERISH WILDLIFE

Like a nomadic butterfly
Feel every flower and
Become that innocent
Child
Like the travelling birds
Free your heart and let it
Have a joyful cry.
Love, Explore and
Respect the enigmatic
Heart of the wild,
Let these little gifts do
Wonders to our hearts,
Scuttle like a spider,
Hover like a fly,
Soar like a swallow
High up into the sky
Curl up like a hedgehog,
Slither like a snake,
Quack like a duckling
As it swims across the lake.
Creatures all around us
That crawl or around us
Which one is your favourite
And can you tell me why?

BY
Y. KAVITHA
I B.Sc. MATHEMATICS

CHERISH WILDLIFE

*See the seals swimming away

The little foxes happy as a day
The baby birds flying above
The lions resting with their cubs.

*The animals seem all so free
Until the humans will as much as can be
Why all this cruelly cant it shop
What have they done, what is up ?

*Save the wildlife, keep them from harm
For they are gods creatures, only charm
Keep them free, keep them safe
Have some kindness in your place.

BY
E. LATHA
III B.Sc., ZOOLOGY

CHERISH WILDLIFE

Lacks of trees;
Packs of bees;
Sacks of squeeze
Will make you freeze.
What an structure
Opps! Not the fetcher
Here's the clutcher!
Lovable flaws with
United place, holifull
Straws with threadfull peace.
Forests!! home for your rest
The exposure of views
That sews;
Not only nature,
But also ur future...
Compensating of love
Is none other, either relevant clove.
Just explore it,
Orelse deplore tit.
Come on feel ur life
Tats the alligation of wildlife.

BY
VEDHASRI RAJA
II B.A., ENGLISH "C" Sec.

WILDLIFE IS A PRICELESS TREASURE

Nature is not only all that is
Visible to the eye…..
It also includes the

inner picture of the soul
The Wilderness is a place
that every believer has to
experience to be molded
for their divine purpose
The idea of wilderness needs
no defense it only needs defenders
The continued existence of wildlife
and wilderness is important to the
quality of life of humans
Only God could make such beauty
cover crossed his land
A flock of ducklings,
A troop of joeys,
All made from his great hand
A herd of calves; baby giraffes
A school of dolphin pups
A litter of kittens,
A stable of foals,
All signs of God's great love
Our wildlife is our
most precious treasure
Our lives and existence
depend on them let us pledge to protect them.

BY
MARIA MERLIN C.
II M.SC., MATHEMATICS

WILDLIFE IS A PRICELESS TREASURE

My Lord, the creator and protector,
Why have you left thy child alone,
I am endangered now,
What will I do now?
Why have thy taken my family members,
Where will I go now?
Where will I survive now?
How do I live in this monsterous world?
The human beings are too covetous,
They have taken what you gave, and
Even snared the properties of us.
They have Shattered thy beautiful Creation.
You Created animals and humans on the same day,
Though you have given both of us absolute things,
Why are they agitating us?
They have Slaughtered the trees.
They Contrived the Green world to Solvent,
They toted new innovations, but

It has sortied them now.
The world is suffering under unknown pathosis.
Penetrate into the human minds, My Lord
Dibble the thought to save thy creation,
Let them perceive the ecological balance
Evoke the Green World.
Let them savvy, we too are important
We too involve in thy creation,
We too are tangled in food chain,
We too have family...
Let human's shift their minds,
Love thy creation of this world
Imbibe the knowledge of us/wildlife, and
Let them fathom, "Wildlife is a Priceless Treasure".
We treasure our history,
Our ancestral origin, their things
We value them and praise them.
It's our duty to treasure and value wildlife too.

BY
NIVETHA P.
III- B.A English - A

வனவிலங்குகளை நேசிப்போம்

வளமான வனம் வறண்டு விடும்
வலம் வர வனவிலங்குகள் இல்லையெனில்
வரமான வாழ்க்கை வறட்சியுறும்
வழிவழியாய் உயிர்கள் இல்லையெனில்

சுழலும் பூமியில் சுற்றிவரும் உயிர்கள்
சுழன்று விழும் சுவாசம் இல்லையெனில்
சுறுசுறுப்பாய் நீ வெட்டி வீழ்த்தும் உயிர்கள்
சுகமாய் வாழும் நீ சுயநலமாய் இல்லையெனில்

ஆடிப்படையே ஆட்டம் கண்டுவிடும்
நாம் உயிர்களிடத்தில் அன்பாய் இல்லையெனில்
ஆண்டவனே ஆத்தரமடைவதில் வியப்பில்லை
நம் செயல்களில் மாற்றம் இல்லையெனில்

உணர்வோம் உள்ளத்தில்
நாம் இல்லை பிற உயிர்கள் இல்லையெனில்
உருவாக்குவோம் புது உலகத்தை
வேறு யார் செய்வார் அது நீயாக இல்லையெனில்

மனமிருந்தால் தான் மார்க்கமுண்டு

வனமிருந்தால் தான் வாழ்க்கையுண்டு.
வன உயிர்களை நேசிப்போம்
வளமான வாழ்வை சுவாசிப்போம்.

வ. **தமிழ்செல்வி**
மூன்றாம் ஆண்டு விலங்கியல்

விலைமதிப்பற்ற வன உயிரினங்கள்

ஆர்பரிக்கும் அருவி!
சலசலக்கும் நீரோடை!
சிறகடிக்கும் சிட்டு குருவிகள்!
கானம் இசைக்கும் வானம்பாடி!
கூவும் குயில்கள்!
கொஞ்சிபேசும் பச்சை கிளிகள்!
துள்ளி திரியும் புள்ளி மான்கள்!
தோகை விரித்தாடும் மயில்!
தாவித்திரியும் மந்திகள்!

விண்ணை முட்டும் மரங்கள்!
வியப்பூட்டும் உயிரினங்கள்!
என சொல்ல சொல்ல எண்ணிலடங்கா!
அத்துணையும் அற்புத படைப்பு!
அவற்றை காப்பதே உன் பொறுப்பு!
வைக்காதே வாயில் வெடி!
தந்தத்திற்காக கொள்ளாதே களிர்!
தோலுக்கு ஆசைப்பட்டு
தோட்டாவை செலுத்தாதே!
கன்னி வெடி வைத்து
காயங்கள் செய்யாதே!
கண்டெடுத்தால் கம்பி எண்ணுவாய்!
காட்டை அழித்து கழனியாக்காதே!

சுயநலத்திற்காக அல்ல!
சுற்றுச்சூழல் பாதுகாப்பிற்கு!

இவை இயற்கை தந்த வரம்!
அவற்றை காப்பதே அறம்!

மழைக்கு ஆதாரம் மரம்!
மண்ணுக்கு ஆதாரம் மழை!
வனமே வரப்பிரசாதம்!
வளர்ப்போம் மரம்!

கொண்டு செல்ல ஒன்றுமில்லை!
விட்டு செல் அப்படியே!
வருங்கால சந்ததிக்கு!
வாழ்த்தும் உனை!
கட்டாதே அணை!

சற்றேனும் நினை!
வனமே துணை!

வா.சுவேதா
மூன்றாம் ஆண்டு நுண்ணுயிரியல்

"வனவிலங்கு ஓர் இளவரசிப் புதையல்"

பாடும் குயில்கள்இ
ஆடும் மயில்கள்இ
இவை விருதுகள் ஏந்தா
கலை வித்வாண்கள்.
துள்ளி ஓடும் மான்கள்இ
தொங்கி தாவும் குரங்குகள்இ
அழகாய் குதிக்கும் முயல்கள்இ
மிடுகாய் நடக்கும் கரடிகள்இ
திடுக்கிட ஊர்ந்திடும் பாம்புகள்இ
சீறி பாயும் புலிகள் இவைஇ
யாவும் வனதேவதை

ஈன்ற குறும்பு பிள்ளைகள்.
காடென்னும் கோட்டைக்கு
வேந்தன் என வாழும் சிங்கம்
கர்ஜனையால் காட்டை கட்டி
ஆளும் கம்பீர ராஜா.
ஊத்து ஓடைமேல் ஓவியமென
வாத்துடன் கொகக்குகள்.
இப்பசுமை உலகில் அழகாய்
பூத்த வண்ண மலர்கள்.
வன விலங்குகள்.
பொய்கள் சொல்லாதேசம்இ
கண்ணீர் தீண்டா ஆணந்த உலகம்இ
ஊழல் அற்ற வனப்புலகம்இ
வன விலங்குகள் நம் வரம்
மட்டும் அல்லஇவிலை மதிப்பிலாத
புதையலும் கூட
அதை அழியாது
பாதுகாப்பது தனிமனித கடமை
யாரும் பறிக்கமுடியா உரிமை.

ஜா.ஏ அஸ்லிஷா
ஆங்கிலம் "ஆ" பிரிவு

வனவிலங்குகளை நேசிக்கவும்

கானுயிர்கள் காட்டின் நேர்த்தியான வனப்பு
இயற்கைத் தாயின் விலைமதிப்பில்லா பரிசு
வேட்டையாடி உண்பது அவைகளின் பண்பு
அவைகளே இயற்கை சமநிலையின் தராசு
நீரின்றி அமையா உலகு அதுபோல்
வனவிலங்கின்றி அமையாது உணவு சங்கிலி
வனவிலங்குகளை நோக்கி எய்யும் அம்புகள்
ஏராளம், அதன் வாழ்விடத்தை அழித்து
மனிதர்களுக்கு வீடுகள், அதன் பாதைகள்

மறைத்து நாம் பயணிக்க சாலைகள்,
மனிதர்களுக்கு மட்டுமே இவ்வுலகம் சொந்தமில்லையே
வனவிலங்குகளும் பூமித்தாயின் இன்னொரு குழந்தைகளே
என்று உணர்ந்து மிருகக்காட்சி சாலை
சென்று வானவேடிக்கைபோல் மிருகங்கள் பார்த்து
இரசித்து மட்டும் வருவதை விடுத்து,
காப்போம் ; வனவிலங்கு வேட்டைகள் தவிர்ப்போம்;
வனவிலங்குகளை நேசிக்கவும் கற்றுக் கொள்வோம் ;

- ப.பாக்கிய லட்சுமி
- இரண்டாம் ஆண்டு இளங்கலை
விலங்கியல்

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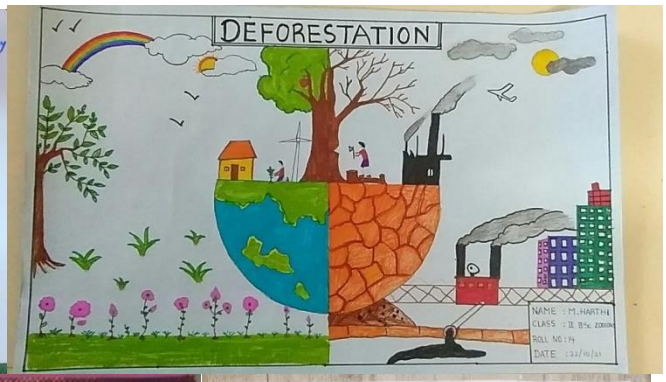
ART GALLERY


D. KAVYA
II Bsc. ZOOLOGY
LION
CAT
RACE HORSE
IMPHALA
HUMAN
WHO RUNS
FAST ?
SQUIRREL
KILLER WHALE
HOUSE MOUSE
HOUSEFLY
KANGAROO
TORTILSE
CHEETAH


DEFORESTATION
NAME : M.HARTHI
CLASS : II B.Sc ZOOLOGY
ROLL NO : 19
DATE : 23/09/21

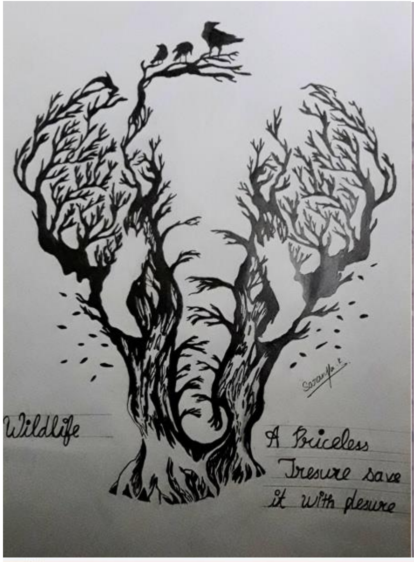

zoology
By
S.R.YUVASHANTHINI
II-B.Sc., ZOOLOGY


TREES FOR LIFE
C.MYTHILI
II B.Sc ZOOLOGY

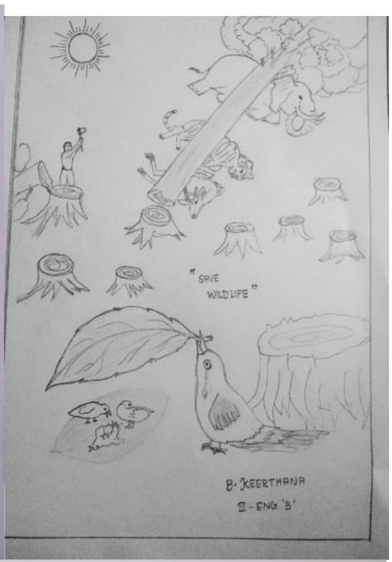

WE THE WILD ARE ALSO HERE So, LIVE &
LET LIVE!!


SAVE WILDLIFE
M.shuradha devi
II M.Sc Mathematics

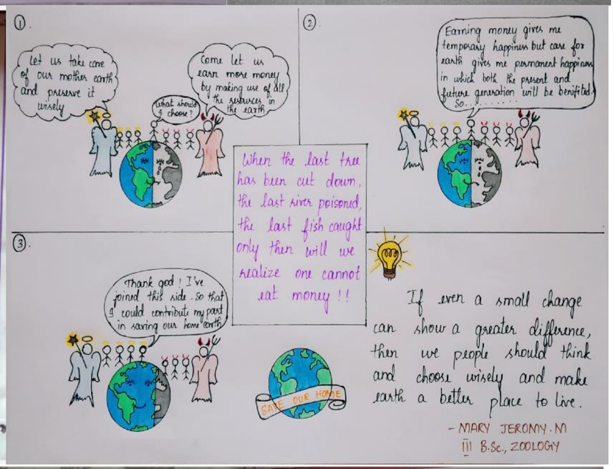

ALL CREATURES ARE DESERVING OF A
LIFE FREE FROM
FEAR AND PAIN
Raise your voice to
Save animals
Don't kill the
Jungle
SAVE
WILDLIFE


Wildlife
A Priceless
Tresure save
it with plesure


SAVE WILDLIFE
Save Forest
Save Wildlife...
S. ANUSUYA
III - ZOOLOGY


"SAVE
WILDLIFE"
B. KEERTHANA
II - ENG 'B'


Don't
DO
Save
WILDLIFE
Deforestation
Afforestation
Hunting
HUNTING PROHIBITED
Pollution
- R. MATHURA
II M.SC Zoology


Let us take care of our mother earth and preserve it wisely
Come let us earn more money by making use of all the resources in the earth
Earning money gives me temporary happiness but care for earth gives me permanent happiness in which both the present and future generation will be benifited. So.......
When the last tree has been cut down, the last river poisoned, the last fish caught only then will we realize one cannot eat money!!
Thank god! I've joined this side. So that I could contribute my part in saving our home earth
If even a small change can show a greater difference, then we people should think and choose wisely and make earth a better place to live.
SAVE OUR HOME
- MARY JERONY. M
III B.Sc, ZOOLOGY


SAVE WILDLIFE
Please save our habitats and let us live
Please humans save us by keeping a little water than by building towers!
I don't want to be extinct save me!!!
Help Ocean clean! Save the whale and other animals!!!
M. MARY JEROMY
III B.Sc ZOOLOGY


Sweta I B.Sc Mathematics


SAVE OUR WILD LIFE
BY
G.SRUTHI PRIYA
II MSc ZOOLOGY

DEPARTMENT ACTIVITIES

ACADEMIC YEAR 2020-2021

MAY	
28.5.2020	Department of Zoology organized National webinar on Neutraceutical and functional foods, its application and health benefits. The Resource Person was Dr. Jagan Mohan, Professor and Head of the Food Product Development, Indian Institute of Food Processing Technology, Ministry of Food Processing Industry, Thanjavur.
JULY	
8.7.2020	College reopened for II, III UG and II PG students.
AUGUST	
4.8.2020	Anusiya S, Mary Jeromy M, Nithyashree R, Nivetha K, Priyadharshini K, Priyadharshini R, Varsha V.S of III B.Sc. Zoology participated in the National webinar on Accessing e-Resources for academic activities. Mr. Kodandarama Chief Librarian, PES Engineering College, Karnataka was the Resource person.
SEPTEMBER	
09.09.2020	College opens for I UG and IPG. Fresher's entered the department with enthusiasm and charisma.
15.09.2020	Inaugural & Orientation programme for I B.Sc., Zoology. Rev. Fr. Arokiyadhas was the chief guest and delivered the inaugural address. Leaders from the Zoology UG Secretary: Priyadharshini.K III UG Representative: Deepaanandhi.M II UG Representative: Kaviya.D I UG Representative: Rakshana.A PG Secretary:Anupama Vijay II PG Representative: Gomathi.S I PG Representative: Gayathiri.A
23.09.2020	Students participated in the awareness program on new education policy organised by AUXILIUM COLLEGE, Katpadi, and Vellore.
30.09.2020	Students participated in the "Laudato si"- on care for our common home (Encyclical of Pope Francis). The resource person of the day was Dr. Rev. Fr. Jhon Brito.
OCTOBER	
02.10.2020	Zoology Association conducted interdepartmental drawing competition on the topic Save wildlife. The winners are; I Place- Saranya K., II B.Sc., Mathematics, Keerthana B., III English "B" Sec, Swetha S I B.Sc., Mathematics. II Place- Swathi S., II B.Sc., Mathematics "C", Anusuya S., III B.Sc., Zoology, Sruthi Priya G. II M.Sc., Zoology, Mary Jeromy., III B.Sc., Zoology. III Place- Sharadha Devi M., II M.Sc.,Mathematics, Mathura II M.Sc., Zoology, Renugambal II M.Sc.,Mathematics.
03.10.2020	Zoology Association conducted interdepartmental Rangoli competition on the topic Peacock. The winners are; I Place- Latha E., II B.Sc., Zoology II Place- Anushiya Preethi V., II B.Sc., Zoology,

	III Place- Sonaa M., III B.Sc., Microbiology, Sruthi Priya G. II M.Sc., Zoology.
05.10.2020	Zoology Association conducted interdepartmental Essay competition on the topic The Future of Wildlife is in our Hands. The winners are; I Place- Sharmila D., I B.Sc., Chemistry, II Place- Sowmya. N II B.Sc.,Mathematics, Sr. Tamil Selvi T., II B.Sc., Zoology III Place- Gayathri. R II M.Sc., Zoology, Fathima Ramsha S., II B.Sc., Chemistry.
06.10.2020	Zoology Association conducted interdepartmental English Poem competition on the topic Wildlife is a Priceless Treasure. The winners are; I Place- Nivetha. P II B.A., English II Place- Angel Helen M., II M.Sc., Zoology III Place- Maria Merlin C., II M.Sc., Maths.
06.10.2020	Zoology Association conducted interdepartmental Tamil Poem competition on the topic Wildlife is a Priceless Treasure. The winners are; I Place- Swetha. V III B.Sc., Microbiology II Place- Aslisha J.A B.A. English "A" Sec III Place- Sharmila. D I B.Sc., Chemistry.
07.10.2020	Zoology Association conducted interdepartmental PPT on the topic Endangered Species. The winners are; I Place- Priyadharshini K III B.Sc., Zoology II Place- Selva Mani P. II M.Sc., Zoology, Sr. Tamil Selvi. T, II B.Sc., Zoology III Place- Sharmila. D I B.Sc., Chemistry.
08.10.2020	Zoology Association conducted interdepartmental Video Making on the topic "How to Protect Wildlife". The winners are; I Place- Sr. Tamil Selvi. T, II B.Sc., Zoology II Place- Sharmila. D I B.Sc., Chemistry III Place- Asifa.K II B.Sc., Zoology.
07.10.2020	Inauguration of Zoology Association. A Resource Lecture was organised for the UG & PG students on the topic "Wildlife Biology" via Google meet. Ms. Evangeline, Research Scholar in Wildlife, Queen Marys College, and Chennai was the resource Person. Students were benefitted.
16.10.2020	Online viva voce of A. Ragamathbee, Ph. D Research Scholar, Dept. of Zoology, Auxilium college, Student of Sr. Dr. Josephine Rani Former Head & Principal of Auxilium college, Vellore defended her thesis on the topic "Anti diabetic activity of some Indian medicinal plants" through Google meet. Dr. Arulsamy Jebanesan, Professor, Annamalai University, Chidambaram was the external examiner and awarded the doctorate degree.
16.10.2020	S. J. Neya Catherine, II B.Sc., Zoology participated in the **தாத்தா பாட்டி பட்டிமன்றம்** by the Department of Tamil, Auxilium college (Autonomous).
22.10.2020	Enviro Club members of Zoology department participated in the resource talk on the topic "Eco-friendly Practices for Sustainability-Indoor Gardening" delivered by Dr. Sr. M. Arul Sheeba Rani, Assistant Professor of Botany, Nirmala College for Women, Coimbatore.
21.10.2020	Sr. Regina Colombo Endowment Lecture was organised for III B. Sc., Zoology

	students via Google meet. Ms. Sujeetha Y, Lecturer, Arun College of Nursing, Vellore was the resource person and delivered a lecture on "Women's Health And Hygiene"
29.10.2020	A National webinar was organised by the Zoology Association, PG & Research Department of Zoology, Auxilium College, Vellore on the theme "Sustainable living- The way forward for Earth's sake" via google meet. Dr. Sultan Ahmed Ismail, Director, Eco science Research Foundation, Chennai, was the resource person.
NOVEMBER	
04.11.2020	Sr. Antoinette Aloysius endowment lecture was organised for II B.Sc., Zoology students. Dr.Sharon Cynthia, MBBS, M.D., Assistant Professor, Govt. Medical College, Adukamparai, Vellore was the resource person and delivered a lecture on the topic "Entomology and Public Health". Students were benefitted.
04.11.2020	NSS volunteers - Lokeshwari D, Pooja S, Yojitha Jose G, Yuvashanthini S R, of II B.Sc Zoology and III B.Sc., Zoology Students participated in the webinar on "Status of Women in Contemporary society:challenges and threats" organized by NSS unit of our college.
07.11.2020	Neya Catherine S J, Ranjeni M, Valarmathi K of II B.Sc., Zoology participated in E Quizz on Pharmaceutical Chemistry organised by Chellammal Women's College, Chennai.
10.11.2020	YRC members participated in the District level webinar on "The role of Women in Society". The resource person was Ms. D. Sherin Asha, Social Activits, Velicham Educational Trust
12.11.2020	Online viva voce of M. Santhosh Kumar, Ph. D Research Scholar, Dept. of Zoology, Auxilium college, Student of Sr. Dr. Regina Mary, Former Principal of Auxilium college, Vellore defended his thesis on the topic "Biogenic characterization and eco-friendly method for the synthesis of Palladium Nano particles (Pd NPs) using an aqueous solution of medicinal plants for their Anticancer activity against human HeLa Cell lines" through Google meet. Dr. Arulsamy Jebanesan, Professor, Annamalai University, Chidambaram was the external examiner and awarded the doctorate degree.
13.11.2020	Sr. Maria Fino endowment lecture was organised for I B.Sc., Zoology students. Dr. Sowmya, Assistant Professor in Criminology, Karunya University, Coimbatore was the resource person and delivered a lecture on the topic "Fingerprints : A Forensic Tool for criminal Investigation". Students were benefitted.

ACADENIC YEAR 2021-2022

AUGUST	
09.08.2021	College reopened for II, III UG and II PG students.
23.08.2021	I PG and IUG Fresher's welcome & start of Academic year
	OCTOBER
02.10.2021	Zoology Association conducted interdepartmental Slogan competition on the topic Save wildlife. The winners are; Place-I Sr. Tamil Selvi T., III B.Sc., Zoology

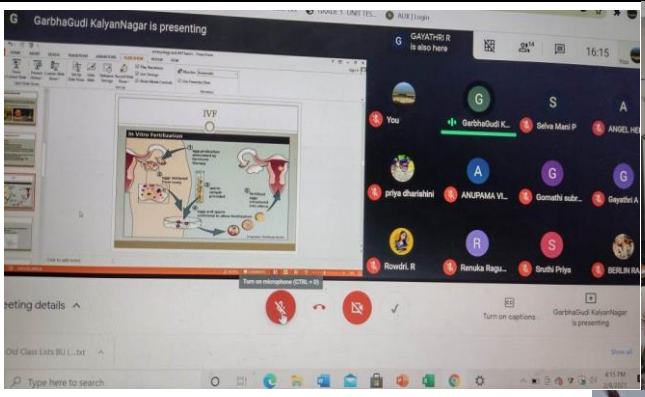
	Place-II Saranya L III B.A., English "C" Sec Place-II Abirami E. III B.Sc., Zoology Place-III Mumtaj Begum I B.Sc., Zoology Place-III Saraswathi S., I B.Sc., Zoology
03.10.2021	Zoology Association conducted interdepartmental Essay competition on the topic Forest and Livelihoods: Sustaining People and Earth. The winners are; Place-I Sr. Tamil Selvi T. III B.Sc., Zoology Place-II Abirami E. III B.Sc., Zoology Place-II Jothi V, I B.Sc., Zoology Place-III Sandhiya R., II B.Sc., Zoology
04.10.2021	Zoology Association conducted interdepartmental Speech competition on the topic **"வனவிலங்குகளின்பாதுகாப்பில்மாணவர்களின்பங்கு"**. The winners are; Place-I Sr. Tamil Selvi T., III B.Sc., Zoology Place-II Yamunasri S., I B.Sc., Zoology Place-III Divya S., II B.Sc., Zoology
04.10.2021	Zoology Association conducted interdepartmental Speech competition on the topic The role of students in the conservation of wildlife. The winners are; Place-I Sr. Tamil Selvi T., III B.Sc., Zoology Place-II Yamunasri S., I B.Sc., Zoology Place-III Sharmila D., II B.Sc., Chemistry
05.10.2021	Zoology Association conducted interdepartmental Tamil Poem competition on the topic **வனவிலங்குகளைநேசிக்கவும்**. The winners are; Place-I Sr. Tamil Selvi T. III B.Sc., Zoology Place-II Leela S., I B.Sc., Mathematics Place-III Bakyalakshmi P. II B.Sc., Zoology.
05.10.2021	Zoology Association conducted interdepartmental English Poem competition on the topic Cherish Wildlife. The winners are; Place-I Shashiprabha T. II B.Sc., Microbiology Place-II Latha. E. III B.Sc., Zoology Place-III Kavitha .Y- I B.Sc., Mathematics Place-III Vedhashri R. II B.A., English 'C' Sec.
06.10.2021	Zoology Association conducted interdepartmental Video Making competition on the topic Sustain All Life on Earth. The winners are; Place-I Sr. Tamil Selvi T., III B.Sc., Zoology Place-II Sharmila D., II B.Sc., Chemistry Place-III Meenakshi III B.Sc., Zoology
07.10.2021	Zoology Association conducted interdepartmental PPT on the topic Threatened Species. The winners are; Place-I Sharmila D., II B.Sc., Chemistry Place-II Sr. Tamil Selvi T., III B.Sc., Zoology Place-II Dhanasree C. II B.Sc., Zoology Place-III Sajida Banu M. I M.Sc., Zoology
07.10.2021	Virtual Tour to Gir Santuary, London Zoo,

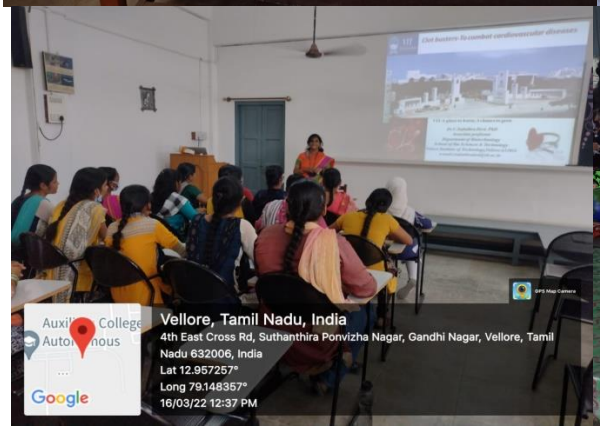
	Vandalur Zoo for all UG and PG students of Department of Zoology.
08.10.2021	Zoology Association conducted interdepartmental Model presentation on the topic Biodiversity. The winners are; Place-I Gomathi III B.Sc., Zoology Place-II Pavalamalar III B.A., English "C" Sec. Place-III Saranya L III B.A., English "C" Sec Place-III Yamunasri S I B.Sc., Zoology
11.10.2021	Investiture Ceremony. Leaders from the Zoology Association Secretary PG – Gayathri A UG Secretary – Arlin Monika I UG Representative -Hema M K. II UG Representative -Vijayalakshmi S III UG Representative – Suji S.A. I PG Representative – Sajida Banu M II PG Representative – Prabhavathi V T.
10.10.2021	YRC of Auxilium College organised International webinar. Ms. Brindhadige, Founder and Mentor, Global Concerns, India was the guest speaker and delivered a lecture on Power of volunteerism and strengthening Women Leadership. All YRC members participated in the international webinar.
11.10.2021 & 12.10.2021	LeadershipTraining for all Leaders and ASQC members. Ms.MuthamilKalaiselvi, Rev.Fr.Vincent, Rev.Fr. JohnChristy were the resource speakers.
16.10.2021	NCC of Auxilium College organized a webinar on the topic Tribute to national Flag and its dimension. Lt. Col. Chinnapan NCC Officer was the speaker. II B.Sc Zoology students participated.
26.10.2021	Zoology Association organized Resource Talk for all ASQC members on the topic "Nature in focus". Ms. Evangeline, Research Scholar, Queen Marys College, Chennai was the resource person.
NOVEMBER	
10.11. 2021	Sr. Maria Fino Endowment Lecture was organized for I B.Sc., Zoology. Dr. Glynis Florence Francis was the resource person and delivered a lecture on Symptoms of Black Fungus.
11.11.2021	II B.Sc. Zoology students participated in the inauguration of Library week.
14.11.2021	II B.Sc. Zoology students participated in the Quiz conducted as a part of Library week celebration.
16.11.2021	II B.Sc., Zoology students participated in the orientation program on Utilization of Library.
17.11.2021	II M.Sc. Zoology participated in Quiz conducted by Library
20.11.2021	All PG Students and UG participated in Webinar on How to Ace your job interview was organised by ELF English organization, Ms. Chandra Viswanathan was the resource person.
24.11.2021	Library Week Celebration. I and III B.Sc., Zoology students participated in the orientation program for utilization of Library

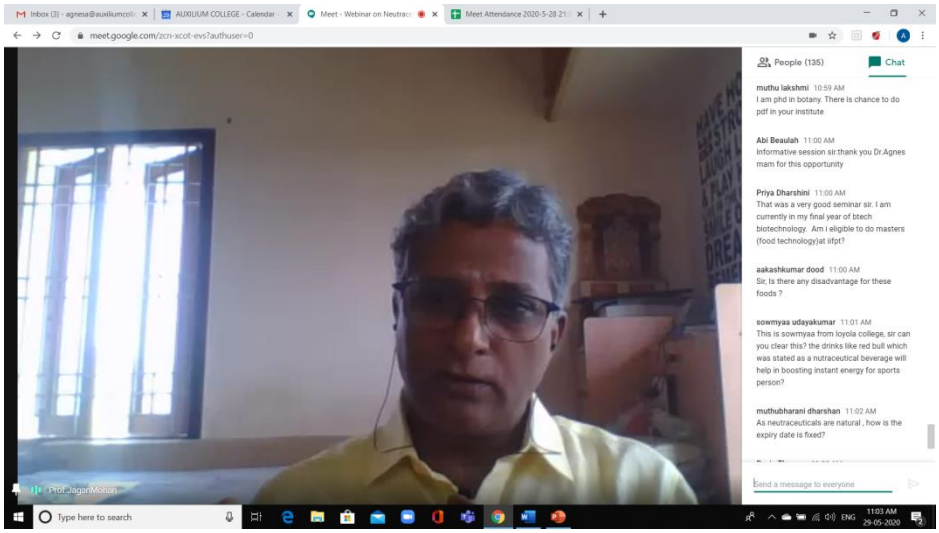
28.11.2021	NSS organised a resource talk on the topic Teenage Girls and Women. All NSS Volunteers participated and were benefitted.
DECEMBER	
05.12.2021	YRC: Diaster Resilient India 2030 – World Soil Day. YRC members participated in the Diaster Resilient India 2030 – World Soil Day program.
06.12.2021	Pannatu Karutharangam - Thamizhiyalaayvugalorganised By Research and Innovative Committee and Department of Tamil. II and III B.Sc Zoology students participated. Munaivar. Karthigasuponnaiyaa and Ms.VimalaAnnathurai were the resource persons.
08.12.2021	Gratitude Day - Department of Zoology presented Festus Dance.
9.12.21	Placement cell of Auxilium College organized Orientation Programme, Prabhavathi V T, II M.Sc., Zoology participated.
10.12.2021	I B.Sc Zoology students participated in the webinar on "Preparation for Examinations in the Post COVID era" organized by Examination Committee, Auxilium College. Dr. J.M. Arul Kamaraj, Assistant Professor of Social Work, Loyola College, Chennai was the resource.
20.12.2021	Orientation Program
20.12.2021 & 21.12.21	Entreprenaur'sProgrmme E. Abirami, S. Gomathi, E. Latha, Rajeni K, Bhavani, Rathidevi, Menisha, Jasmine, LispanaRajakumari, Bhuvaneswari of III B.Sc Zoology participated in the Entreprenaur'sProgrmme conducted by Auxilium College. Mr. Vijayaganesh and Dr.Sundharrajan were the resource persons.
22.12.2021	IllamThediKalvi– Orientation program for Volunteers. Harthi, Hephzibah, Infanta, Mythili, Oviya, Pooja, Priya M, Preethi Usha, Radhika, Rakshana, Sandhiya, Shahina bee, Swetha Gunasekaran, Vedhaakshya, Vijayalakshmi of II B.Sc Zoology participated as volunteers.
JANUARY	
12.01.2022 & 13.01.2022	National Youth Fest organized by NSS of Auxilium College. All NSS volunteers of Zoology Department participated. Dr. Samuel Chelliah, Regional Director, NSS was the person.
20.01.2022	Article in Book :Mumtaj Begam and F. Rachel, I B.Sc Zoology co-authored in the anthology "INNER YOU" (Written Peom) Compiled by Somesh Thakur & Mansi Rath.ISBN: 9789393390318, JEC Publication
25.01.2022	IQAC and Research Publication Committee of Auxilium College in collaboration in Tamil Nadu State Council for Science and Technology, Patent Information Centre, Govt. of India organized a webinar on Intellectual Property Rights for all Staff and Students. Sri Lakshmi Narayan A, Examiner of Patents and Design, IP office, Chennai, was the resource person.
FEBRUARY	
02.02.2022	A. Gayathri of II M.Sc. Zoology participated in the webinar on Wonderful Wings and wetlands organized by RajapalayamRajus College. Mr.Chaturvedshed, Research and Co-Founder, HRBSF, Bengaluru was the resource person.
21.2.2022	II and III B.Sc. Zoology students participated in the National Seminar cum

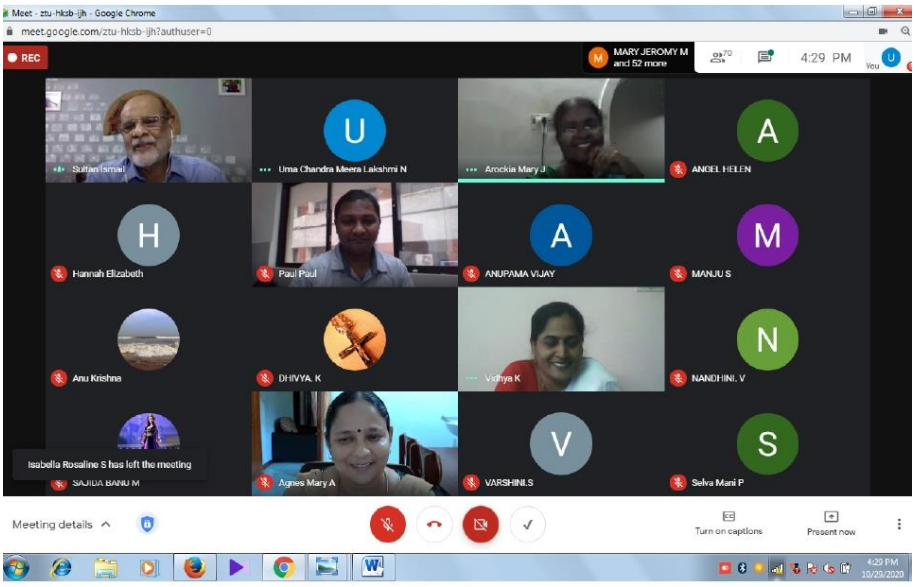
	Workshop on First Aid organized by CH.S.D.St. Theresa's College for Women. Dr. Indra and Dr. Sr. Marietta were the resource persons.
MARCH	
03.03.2022	Resource Talk On "Report Wildlife Crime" I B. Sc Zoology students participated in the talk on Report wildlife Crime organized by TN Forest Department as a part of Azadi ka Amrut Mahaksav.
03.03.2022	Tamil patriotic songCompetition:Anushiya Preethi, Menisha, Neya Catherine, Jasmine Tirenisha, Sr Tamil Selvi of III B.Sc Zoology participated and won I Prize.
05.03.2022	YRC Seminar, NSS Volunteers and YRC students of I, II, III B.Sc Zoology participated in the seminar on Ukraine-Crisis: Understanding Causes and humanitarian concerns.
05.03.2022	Rally for the Peace of Ukarineinside the campus. NSS Volunteers of III B.Sc Zoology - students Ramya,kavya.D,Yuvashanthini,Oviya,Pamitha,Rathidevi,Jasmine,Menisha,LispanaRajakumari,Sandhiya,Saranya,Sindhu,Kiruthika,Pooja, Indhumathi, Bhavani,Neya Catherine, Archana,Lokeshwari participated.
10.03.2022	YRC study camp: YRC members of I, II and III B.Sc., Zoology participated in the study camp.
16.03.2022	Sr Regina ColomboEndowment Lecture was organized for III B.Sc., Zoology students. Dr. KungumanriyaRajkumar, Assistant professor, Pachaiyappas College, Chennai was the resource person and delivered lecture on Happy Hormones.
16.03.2022	Sr CleofeFassa Endowment Lecture was organized for I M.Sc., Zoology students. Dr. C. Subathra Devi, Associate Professor, Department of Biotechnology, School of Biosciences and Technology, VIT, Vellore was the resource person and delivered lecture on Clot Busters – To Combat Cardiovascular Diseases.
17.03.2022	Hindi Patriotic Singing Competition was conducted. Anushiya Preethi, Jasmine Tirenisha, Sr.TamilSelvi and Oviya of III B.Sc., Zoology participated in the Hindi patriotic singing competition and won II prize.
18.03.2022	Sr Ethelvina Endowment Lecture was organized for II M.Sc Zoology students. Dr. Sajitha Lulu, Assistant Professor, Department of Biotechnology, School of Biosciences and Technology, VIT, Vellore was the resource person and delivered lecture on Multiomics - Big Data in Biological Science.
18.03.2022	Life Skill For Young People Career guidance and placement cell organized the above program for II UG students. Dr. Fatima and Mr. Ramesh VJ were the resource persons.
23.03.2022	Young Innovation day: Arlin Monica, Sowmya, III B.Sc., Zoology and Mythili, Radhika, Jayajashika, Yuvarani from II B.Sc., Zoology participated in Innovative Initiatives projects.
24.03.2022	Zoology Association organized Life Science Quiz and the winners are I Prize – S.Shalini – I M.Sc., Zoology II Prize – P. Bharkavi, II B.Sc., Zoology III Prize - Sajida Banu M, I M.Sc., Zoology III Prize - Abirami E, III B.Sc., Zoology

25.03.2022 & 28.03.2022	Students Forum was organized. Department. Secretary, Class representatives IQAC members attended.
25.03.2022	Lecture Talk on the eve of National global money week was organized By NCC. Mr.S.N.Jayabalan was the resource person headed by SUO. Gajalakshmi and cadets. Ramya.G, Rachel Jaya Kumari.F, Prithika.R, J.Lavanya of I B.Sc Zoology participated.
APRIL	
13.04.2022	Sports Day
08.04.2022 To 14.04.2022	NSS Camp – NSS Volunteers of III B.Sc., Zoology participated in the NSS Camp held at KV Kuppam.






meet.google.com/zcn-xcot-evs?authuser=0
People (135)
Chat
muthu lakshmi 10:59 AM
I am phd in botany. There is chance to do pdf in your institute
Abi Beaulah 11:00 AM
Informative session sir.thank you Dr.Agnes mam for this opportunity
Priya Dharshini 11:00 AM
That was a very good seminar sir. I am currently in my final year of btech biotechnology. Am i eligible to do masters (food technology)at iifpt?
aakashkumar dood 11:00 AM
Sir, Is there any disadvantage for these foods ?
sowmyaa udayakumar 11:01 AM
This is sowmyaa from loyola college, sir can you clear this? the drinks like red bull which was stated as a nutraceutical beverage will help in boosting instant energy for sports person?
muthubharani dharshan 11:02 AM
As neutraceuticals are natural , how is the expiry date is fixed?
Send a message to everyone
Type here to search
11:03 AM
29-05-2020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REC
MARY JEROMY M and 52 more
4:29 PM
Sultan Ismail
Uma Chandra Meera Lakshmi N
Arockia Mary J
ANGEL HELEN
Hannah Elizabeth
Paul Paul
ANUPAMA VIJAY
MANJU S
Anu Krishna
DHIVYA. K
Vidhya K
NANDHINI. V
Isabella Rosaline S has left the meeting
SAJIDA BANU M
Agnes Mary A
VARSHINI.S
Selva Mani P
Meeting details
Turn on captions
Present now
4:29 PM
10/29/2020