

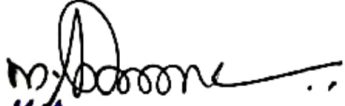
**J.J. College of Arts and Science (Autonomous), Pudukkottai – 622 422**  
**PG AND RESEARCH DEPARTMENT OF BOTANY**

**1. Department of Botany Organized**


**One day National webinar on Trends in green and Sustainable environment**

The Linnaeus Club of Botany, J.J. College of Arts and Science (Autonomous), Pudukkottai, organized a one-day National webinar on **Trends in green and Sustainable environment** on July 2<sup>nd</sup>, 2020. The first session started at 11.00 am. Dr. M. Arumugam, Head of the Department, welcomed the gathering. Dr. A.N. Sundar introduced the chief guest **Dr. Amzad Basha Kolar**, Assistant Professor in Plant Biology and Plant Biotechnology, The New College (Autonomous), Chennai – 14. The chief guest delivered the topic *Organic Farming – A tool for green environment*. He undoubtedly explained the importance, techniques, and advantages of organic farming. At the end of the session, the participants raised clarifications about the topic; he well clarified all the clarifications. The session was over at 11.45 am. Dr. P. Raja delivered the vote of thanks to the chief guest and participants.

The second session started at 12.00 pm. Dr. P. Raja, Assistant Professor, introduced the chief guest of the second session **Dr. M. Arumugam, Head, Department of Botany, J.J. College of Arts and Science (Autonomous) Pudukkottai**. The chief guest presented the title **'Developing Entrepreneurial Skills in Biological Sciences'**. He remarkably explained Entrepreneurial skills, especially in mushroom cultivation, vermicompost production, nursery garden, Azolla, and Spirulina cultivation in small scale and large scale production. At the end of the session, the young participants asked many questions regarding the topic. The second session was over at 1.00 pm. A total of 152 participants actively participate. Finally, Ms. K. Thamarachelvi, Assistant Professor, delivered the vote of thanks to all the delegates and participants.

  
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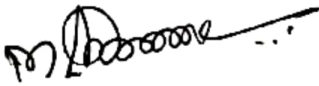
## 2. One Special Lecture on Traditional Medicine and Restoration of Wellness Strategies

The Linnaeus Club of Botany, J.J College of Arts and Science (Autonomous), Pudukkottai, organized a special lecture on Friday, July 02, 2021. Dr. K. Panneer Selvam, Scientist – D, Forest Ecology and Climate Change Division Institute of Forest Genetics and Tree Breeding Forest Campus Coimbatore, delivered the unique address on Traditional Medicine and Restoration of Wellness Strategies.

This lecture provides emergent themes on aboriginal health, culturally oriented interventions, and prevention strategies. He explained the needfulness for entrepreneurship: increased national production, balanced area development, dispersal of economic power, and reinvestment of profit for the welfare of profit generation; development is a function of entrepreneurial awareness.

The overview suggests adopting new strategies for intervention and prevention and learning from historical wrongs to ensure future policies support the restoration of traditional practices, language, and knowledge to develop strategies for this generation's healing and wellness.

During the discussion session, most of the students are participated and cleared their doubts by the resource person. Three students were exposed to their feelings and experience with nice words in the feedback session. A total of 50 studnets have participated. Earlier, the Head of the Department of Botany, Dr. M. Arumugam, welcomed the gathering, and Dr. A.N. Sundar, Asst. Professor proposed the vote of thanks.



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### 3. One Special Lecture on New Strategy of Molecular Breeding in crop Improvement

The Linnaeus Club of Botany, J.J College of Arts and Science (Autonomous), Pudukkottai, organized a special lecture on Wednesday, 7<sup>th</sup> July, 2021. Dr. C. Anuradha, Senior Scientist, National Research Centre for Banana Indian Council for Agriculture Research, Tiruchirapalli, delivered the special address on **New Strategies of Molecular Breeding in crop Improvement.**

In this special lecture she Genomic selection, a fast emerging molecular breeding method for crop improvement, assists in identifying superior genotypes with higher breeding value in segregating breeding populations. Molecular plant breeding and factors that influence the adoption of molecular plant breeding in crop improvement programs. Furthermore, we emphasize how the application of molecular plant breeding is now contributing to discoveries of genes and their functions that open new avenues for introductory plant biology research.

He described the fixation, embedding, and mounting of plant tissue which permits precise alignment of the cut surface. She denoted that histology microscopy plays an integral part in examining specimens under a specific and required microscope. The resource person emphasized that there are many different forms of microscopy. The specimen is illustrated with a beam light and passes the beam of an electron as in electron in the specimen.

During the discussion session, seven students were asked their doubts and the resource persons also explained and fulfilled the student's doubts. Seventy two students have participated. Overall the special lecture was completed, and two students also presented their feedback and shared experience. Earlier, the Head of the Department of Botany, Dr. M. Arumugam, welcomed the gathering, followed by the guest was horned with memento and Dr. P. Raja, Assistant Professor proposed the vote of thanks.



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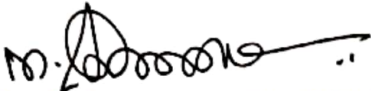
#### 4. One Special Lecture on International Virtual Conference on Drug Discovery and its Patenting

The Linnaeus Club of Botany, J.J College of Arts and Science (Autonomous), Pudukkottai, has organized a special lecture on International Virtual Conference on Drug Discovery and its patenting Friday, July 09, 2021. In this lecture, Dr. Jency Pricilla Sundarajan, Associate professor Department of physics Chemical and Physical Sciences Missouri Southern State University- USA, participated and delivered the special lecture.


In the special lecture, she explained. Patents are essential to these drug companies because they can guarantee profit and make all the time and cost to develop their new drug worthwhile. A patent is an economic catalyst to these pharmaceutical companies who push to research further and beneficial medicines on the premise that they will be able to reap the rewards by way of profits, Profits for patented pharmaceuticals represent a reward that pharmaceutical companies earn through years of research and development and only then will they be able to profit from their work. The patent system allows drug companies to profit from patents by prohibiting other companies from marketing and selling identical prescription drugs. This system seems to be the best way to provide drug companies with the reward of potential profit for the research and development spending necessary to develop new and innovative prescription drugs.

Patents are enforced by the National Patent Offices, World Trade Organization (WTO), and evaluated by the World Intellectual Property Organization (WIPO). These organizations provide patent protection to those seeking the protection by giving judicial enforcement of the intellectual property rights. This means that a company could sue a rival if it felt its patent violated and have official documents at the National Patent Offices to substantiate its claim to a product.

At the end of the session, he gave special tips for the students to succeed in their research careers and become entrepreneurs. A total of 80 students has participated. Earlier, the Head of the Department of Botany, Dr.M.Arumugam, welcomed the gathering and delivered the welcome address, Dr. A. N.Sundar, Asst. The professor had the vote of thanks after the presidential address.

  
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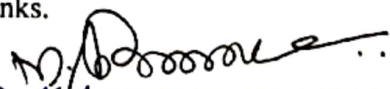
## 5. One Special Lecture on Impact of Stress on Body and Health

The Linnaeus Club of Botany, J.J College of Arts and Science (Autonomous), Pudukkottai, organized a special lecture on **Saturday July 21**. **Dr. B. MeeraMurugesan**, Vice-Principal and Head Department of Biochemistry Soka Ikeda College of Arts and Science for Women Chennai, delivered the special address on **"Impact of Stress on Body and Health."** She has participated and delivered the special lecture.

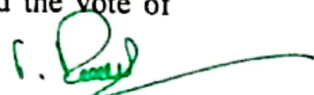
The compensatory responses to these stresses are known as stress responses. Based on the type, timing, and severity of the applied stimulus, stress can exert various bodily actions ranging from alterations in homeostasis to life-threatening effects and death. In many cases, the pathophysiological complications of disease arise from stress and the subjects exposed to stress. Stress can be a triggering or aggravating factor for many diseases and pathological conditions. In this study, we have reviewed some of the significant effects of stress on the primary physiological systems of humans.

Memory is one of the essential functional aspects of the CNS, and it is categorized as sensory, short-term, and long-term. Short-term memory is dependent on the function of the frontal and parietal lobes, while long-term memory depends on the role of large areas of the brain. Cognition is another essential feature of brain function. Cognition means reception and perception of perceived stimuli and their interpretation, including learning, decision making, attention, and judgment. Stress has many effects on cognition that depend on its intensity, duration, origin, and magnitude. Like memory, cognition is mainly formed in the hippocampus, amygdala, and temporal lobe.

In addition to adrenal steroids, other hormones are affected during stress. For example, growth hormone secretion will be halted during severe stress. A study showed that long-term administration of CRH into the brain ventricles leads to a cessation in growth hormone release. Stress also causes the release of opioid peptides to be changed, during which the person is exposed to stress. Stress modifies the secretion of hormones that play a critical role in the function of the immune system. **Forty-two students have participated**. At the end of the session, he gave special tips for the students to succeed in their research career and tools of native ethnobotanical plants conservation. Earlier, Head of the Department of Botany Dr. M. Arumugam welcomed the gathering and Asst. Professor Mr. M. Sathish proposed the vote of thanks.

  
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## 6. One Special Lecture on Pteridophytes -An important Vascular Plants

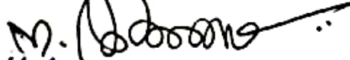
The Linnaeus Club of Botany, J.J College of Arts and Science (Autonomous), Pudukkottai, organized a special lecture on Monday, July 12, 21. Dr. X. Baskaran, Post-Doctoral Research Scientist School of Life Sciences Sun Yat-sen University Guangzhou, China, delivered the special address on 'Pteridophyte: An Importance Vascular Plants.

Pteridophytes show many characteristics of their ancestors. Unlike most other members of the Plant Kingdom, pteridophytes don't reproduce through seeds; they reproduce through spores instead. They do not produce flowers and seeds; hence they are also called Cryptogams. More than 12000 species of pteridophytes are found on Earth. The word 'pteridophytes' comes from the Greek word Pteron, meaning feather, and phyton, meaning plants.

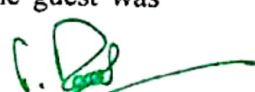
Sporangium arises from a single superficial cell. It divides transversely to form an outer and an inner cell. While the inner cell includes the stalk, the entire sporangium develops from the outer cell. The outer cell divides by three successive periclinal divisions, and in this way, a tetrahedral apical cell is formed. It divides by periclinal division to form the outer jacket and primary sporogenous cells. The jacket cell forms the single-layered sporangial wall while the primary sporogenous cell divides into tapetal initial and sporogenous tissue. Sporogenous tissue separates meiotically to give haploid spores while tapetal initial forms two-layered tapetum.

Pteridophytes shows heteromorphic alternation of generation. The main plant body is sporophytic and forms a dominant phase in the life cycle. The sporophytic plant body develops sporangia, in which sporogenous tissue is formed. Sporogenous tissue divides meiotically to form haploid spores. The majority of the Pteridophytes are homosporous, e.g., Lycopodium, Pteris, etc. Spores on germination produce monoecious gametophytes. Some Pteridophytes are heterosporous and produce two spores: microspores and megaspores. Microspores on germination produce male gametophyte (prothallus), while megaspores produce female gametophyte (prothallus). So, the prothalli are dioecious. Antheridia and archegonia develop on the same prothallus (monoecious) or different prothalli.

During the discussion session, most of the students are participated and cleared their doubts by the resource person. In the feedback session, few students were exposed to their feelings and experience with nice words. Sevetly four students have participated. Earlier, the Head of the Department of Botany, Dr. M. Arumugam, welcomed the gathering, followed by the guest was horned with memento and Dr. P. Raja, Asst. Professor proposed the vote of thanks.

  
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## 7. One Special Lecture on Molecular Approaches In crop Improvement


The Linnaeus Club of Botany, J.J College of Arts and Science (Autonomous), Pudukkottai, organized a special lecture on **Tuesday, July 13, 21** **Dr. M. THIPPESWAMY**, Assistant professor Department of Botany Davangere University Karnataka, delivered the special address on **"Molecular Approaches In crop Improvement."**

In this special lecture, he described Plant breeding as a branch of biological science that involves the selection, creation of diversity, and xation of desirable genes in the plant to develop improved cultivars in favor of farmers and consumers. Fundamental objectives of plant breeding for crops have to improve yields, nutritional qualities, resistance to all biotic/abiotic stresses, and other traits of commercial/economic values.

The transgenic crop was popularized in 1996 because of the effective coordination of biotechnology into plant breeding and crop improvement programs. Recently, marker-assisted backcrossing (MABC) has been routinely utilized to introgress one or a few genes (gene pyramiding) into a prominent cultivar. With the help of MABC, introgression of transgenic traits, and reduction of linkage drag, molecular markers were used in genome scans to select those individuals that contained both the transgene and the most significant proportion of favorable alleles from the recurrent parent genome. During the past 40 years, the continued development and application of molecular markers, biotechnology, and genomics has established new tools for creating genetic variability, analysis, and manipulation of gene variation and the development of improved varieties.

He also explained the genetic diversity might be created in breeding populations in two ways, i.e., naturally and artificially. The primary wellspring of gene diversity is wide interspecific crosses, naturally occurring or induced mutations, segregating progeny of a cross, un-adapted exotic, transgenics, or combinations of these sources.

During the discussion session, most of the students are participated and cleared their doubts by the resource person. In the feedback session, few students were exposed to their feelings and experience with nice words. Fifty-four studntsss has participated. Earlier, the Head of the Department of Botany, Dr. M. Arumugam, welcomed the gathering. The guest was horned with memento and Dr. A.N. Sundar, Assistant Professor proposed the vote of thanks.

  
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## 8. One Workshop on Hands-on Training in Herbarium Techniques

The Linnaeus Club of Botany, J.J. College of Arts and Science (Autonomous), Pudukkottai, organized a special workshop on Friday, November 19, 2021, Dr.S.Soosairaj Assistant Professor, Department of Botany, St. Joseph's College (Autonomous), Thiruchirappalli, Workshop hands-on Training in Herbarium Techniques.

A one-day workshop on the preparation of Hands-on Training in Herbarium Techniques was organized by the department of botany. The students showed keen interest in the workshop and have gained hands-on experience in the preparation topics of Herbarium.

Overall, 34 students and faculty members participated from the department. This workshop has a good learning experience for the participants. They had the opportunity to interact with some of the best resource people.

Finally, the certificates were handed out by Dr.S.Soosairaj, Assistant Professor, Department of Botany, St. Joseph's College (Autonomous), Thiruchirappalli, Dr. M. Arumugam, welcomed the gathering, followed by the guest was horned with memento and Mrs. K. Thamarachelvi, Asst. Professor proposed the vote of thanks.

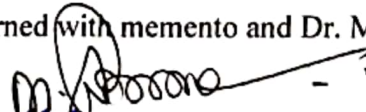
## 9. One Workshop on Preparation of Herbal products


The Linnaeus Club of Botany, J.J. College of Arts and Science (Autonomous), Pudukkottai, organized a special workshop on Thursday, December 01, 2021, Mr. M. Mohamed Arshath Nisar Senior Advisor, R&D Department Syngene International Ltd, Semicon Park, Bangalore, Workshop program on Preparation of Herbal products.

The department of botany organized a one-day workshop on the preparation of herbal products; the students showed keen interest in the workshop and gained hands-on experience in the topics of the practice of herbal products.

Overall, 30 students and faculty members participated from the department. This workshop has a good learning experience for the participants. They had the opportunity to interact with some of the best resource people.

Finally, the certificates were handed out by Mr. M. Mohamed Arshath Nisar, Senior Advisor, R&D Department Syngene International Ltd, Semicon Park, Bangalore, Head of the Department of Botany Dr. M. Arumugam, welcomed the gathering, followed by the guest was horned with memento and Dr. M. Mohamed Hussain, Asst. Professor proposed the vote of thanks.

  
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