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# Notice for the PhD Viva Voce Examination

Mr David Debjit Ambett, Registration Number: 2270163, PhD Scholar at the Department of Life Sciences, School of Sciences, CHRIST (Deemed to be University), will defend his PhD thesis at the public viva-voce examination on Wednesday, 18 November 2026, at 11.00 am in Room No. 044, Ground Floor, R & D Block, CHRIST (Deemed to be University), Bengaluru - 560029, Karnataka, India.

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| **Title of the Thesis** | : | **Functional Specifications of Ants and Its Secretions on Ecological Surveillance: A Comprehensive Study in Chikkaballapur Forest, Karnataka, India** |
| **Discipline** | : | **Zoology** |
| **External Examiner - I** | : | **Dr M Jayashankar**<br>Associate Professor<br>Department of Zoology<br>St. Joseph's University<br>36, Lalbagh Main Road<br>Bengaluru - 560027<br>Karnataka |
| **External Examiner - II** | : | **Dr M Madhavi**<br>Professor<br>Department of Zoology<br>Osmania University<br>Hyderabad - 500007<br>Telangana |
| **Supervisor** | : | **Dr Majesh Tomson**<br>Assistant Professor<br>Department of Life Sciences<br>School of Sciences<br>CHRIST (Deemed to be University)<br>Bengaluru – 560029<br>Karnataka |

The members of the Research Advisory Committee of the Scholar, the faculty members of the Department and the School, interested experts, and research scholars of all the branches of research are cordially invited to attend this open viva–voce examination.

**Registrar (Academics)**

**Place:** Bengaluru
**Date:** 05 November 2026

# ABSTRACT

Ants (Hymenoptera: Formicidae) play vital ecological roles as ecosystem engineers, predators, mutualists and bioindicators, yet their diversity and chemical ecology remain poorly documented in the dry forest landscapes of eastern Karnataka. This study investigates year-round ant species diversity and seasonal dynamics in the Chikkaballapur forest ecosystem, alongside the physicochemical properties of soils associated with ant nests. Systematic monthly sampling across distinct microhabitats revealed marked seasonal fluctuations in abundance and community composition, driven primarily by temperature, humidity, and monsoon rainfall. Soil analyses demonstrated that ant-nested sites contained higher organic carbon, nitrogen, phosphorus, and exchangeable cations, highlighting the influence of ant-mediated bioturbation and nutrient enrichment. Field observations further documented key functional interactions between ants and other insects, including mutualism with honeydew-producing Hemiptera, predation on herbivores, and competitive exclusion. To bridge a major knowledge gap in Indian chemical ecology, glandular secretions of dominant ant species, Camponotus compressus and Oecophylla smaragdina, were analyzed to assess the ecological roles of pheromone compounds. Together, this research provides the first integrated assessment of ant diversity, soil modification and chemical interactions in the Chikkaballapur forest, offering essential baseline data for future ecological and biochemical studies.



**Keywords:** Seasonal Diversity, Statistical Analysis, Ant nest, Pheromones, Ant-insect and plant interaction.


**Publications:**

1. **David Debjit Ambett**, Majesh Tomson., et al (2023). Role of Ants as Eusocial Insects in Forensic Entomology: A Review. Uttar Pradesh Journal of Zoology. DOI: 10.56557/UPJOZ/2023/v44i93494.
2. **David Debjit Ambett**, Majesh Tomson. (2024) Seasonal Dynamics Of Ant Communities In Forest Ecosystems: Statistical Analysis And Ecological Insights. Journal of Advanced Zoology. DOI: https://doi.org/10.53555/jaz.v45i2.3920.
3. **David Debjit Ambett**, Majesh Tomson (2025). Role of Dufour's gland and mandibular gland secretion in Ant Colony organisation and defense mechanisms of Camponotus compressus and Oecophylla smaragdina. Journal of Integrated Science and Technology. DOI: https://doi.org/10.62110/sciencein.jist.2025.v13.1081
4. **David Debjit Ambett**, Majesh Tomson (2025) The Function of Camponotus compressus in Enhancing Physiological Efficiency in Coriander Plants: Ants as Natural Soil Engineers. International Journal of Environmental Sciences. DOI: https://doi.org/10.64252/jtft9m68.