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Progressive Furtherance in Entomological Research

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Abstract: *Entomological research has undergone significant transformation, progressing from classical taxonomic studies to a multidisciplinary science intersecting with agriculture, medicine, ecology, and molecular biology. This paper presents a critical synthesis of entomology's historical development, key thematic domains, contemporary challenges, and emerging frontiers. By analyzing literature exclusively prior to 2024, the study traces the evolution of the discipline across five core domains: agricultural entomology, medical and forensic entomology, insect ecology, behavioral entomology, and molecular evolution. Current challenges include pesticide resistance, biodiversity loss, forensic limitations, and genomic data gaps. In response, the paper proposes an integrative framework emphasizing cross-disciplinary collaboration, citizen science, digital infrastructure, and sustainability-linked innovation. The findings highlight entomology's central role in addressing global challenges such as food security, public health, and ecosystem stability. Ultimately, the paper calls for a restructured, data-driven, and inclusive approach to entomological research capable of meeting the complex demands of the 21st century.*

Keywords: Entomological

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