Oral presentation

Phylogenomics of the pantropical tribe Spermacoceae: resolving taxonomic challenges and phylogenetic relationships using whole plastome data

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The pantropical tribe Spermacoceae comprises approximately 1000 species and belongs to the largest subfamily, Rubioideae, within the Rubiaceae family. The genera within the Spermacoceae tribe have a long history of taxonomic confusion and disagreement due to the utilization of inconsistent and overlapping characters in their generic delimitations. Previous molecular phylogenetic studies have made significant contributions to resolving many taxonomic inconsistencies, primarily focusing on taxa from Asia-Pacific and Australia. However, challenges persist in understanding the phylogenetic relationships and taxonomy of Spermacoceae members from the Americas and Africa. In this study, we employ whole-genome plastid data of Spermacoceae members to address these challenges. Our presentation will primarily focus on two objectives: (1) presenting the first plastome phylogeny of Spermacoceae, primarily representing members from North America, and (2) investigating phylogenetic congruence among genes and phylogenetic signals within genes using Bayesian and other methods. By shedding light on the phylogenetic relationships and resolving taxonomic inconsistencies, our research contributes to a better understanding of the evolutionary history and taxonomy of the Spermacoceae tribe. This work is part of an ongoing effort to construct a global genome-wide phylogeny of the Spermacoceae tribe through the utilization of high-throughput DNA data.