



中央研究院生物多樣性研究中心

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Phylogenetic and Phylogenomic Exploration of Plant Diversity: Biological, Conservation and Cultural Implications



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Time: 2023. 03. 16 Thu. 10:00

Venue: Auditorium, 1st Floor,
Interdisciplinary Research Building
跨領域科技研究大樓1樓演講廳

Host: Sheng-Feng Shen 沈聖峰研究員

~Attendee are suggested to wear mask~
~與會者建議配戴口罩~



Abstract

Terrestrial ecosystems are dominated and shaped by the splendid diversity of vascular plant species, which provide numerous ecosystem services that support all life on earth as well as the development and function of human civilization. Trained as a plant systematist, my research interests are to explore, document, and understand evolutionary processes that have generated the plant diversity, hoping that my academic endeavor can help to conserve and achieve a sustainable use of biodiversity of the planet. Over the years, my research interests gradually evolve into three interrelated themes. First, we study the taxonomy, phylogenetics, and phylogenomics of species-rich groups as these taxa are taxonomically challenging and represent ideal study systems for elucidating evolutionary processes underlying their mega-diversity. Second, we study biogeography and phylogeography of Taiwan's plants, aiming for understanding origins of Taiwan's flora and providing crucial data for the conservation of the local flora. Third, we study plants traditionally used by indigenous populations to address culturally important issues that remain understudied. In this presentation, I will summarize our work on phylogenetic and phylogenomic studies of *Berberis*, *Ormosia*, Berberidaceae, and Gesneriaceae to illustrate how our knowledge of these mega-diverse groups has been advanced. Additionally, I will demonstrate how our population genomic study of 'breadfruit' of Taiwan contribute to current debate on Yami's ancestry and how our study of *Broussonetia* solve the origin of *Kozo*, a hybrid paper mulberry essential to both Japanese and Korean tradition paper making. I will conclude the talk by presenting our ongoing and future works that aim for reintroducing the highly endangered and extinct *Phalaenopsis* orchids back to the wild, integrating phylogenomics and artificial intelligent and deep learning to resolve the complicated hybrid origins of the mega-diverse *Begonia*, and demonstrating that the Pacific paper mulberry tree is likely a tree-crop selected by Austronesian ancestors in Taiwan when they embarked their epic journey that eventually colonized all habitable Oceanic islands.