



中央研究院生物多樣性研究中心

Biodiversity Research Center, Academia Sinica

biodiv@gate.sinica.edu.tw  
02-2789-9621

# Tracing the Dynamics of Molluscan Diversity in the Indo-West Pacific Through Time



Ms. Diana Osipova  
白安娜小姐

Ph.D. Candidate  
博士候選人

1. TIGP Biodiversity Program, Academia Sinica
2. Biodiversity Research Center, Academia Sinica
3. Department of Life Science, National Taiwan Normal University

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**Venue:** Auditorium, 1<sup>st</sup> Floor,

Interdisciplinary Research Building

跨領域科技研究大樓一樓演講廳

**Host:** Dr. Hui-Yu Wang 王慧瑜副研究員



## Abstract

The Indo–Australian Archipelago (IAA) is the world’s largest marine biodiversity hotspot. While many studies focus on the drivers of its exceptional diversity, the pathways and modes of hotspot assembly remain less clear, partly due to insufficient data from several marine groups. Taiwan, situated at the northern margin of the IAA, is an understudied but critical region for evaluating the origin and assembly of this hotspot. Marine mollusks, with their rich fossil record, provide unique insights into long-term ecological and evolutionary processes. This study investigates the Cenozoic molluscan fauna of Taiwan and adjacent regions through an integrative paleontological and biogeographic approach. A comprehensive review of fossil records, supported by new field collections, is used to reconstruct paleobiogeographic patterns, identify faunal provinces and turnover events, and evaluate long-term diversity trends across the Indo–West Pacific. These data will also be used to test the “Hopping Hotspot” hypothesis, which proposes sequential shifts in marine biodiversity centers during the Cenozoic. In addition, this research examines the evolution of bivalve hinge morphology—a key trait in taxonomy and phylogeny. Within the clade Imparidentia, the heterodont hinge origin remains unresolved, however, it is thought to have evolved independently multiple times. To address this, two-dimensional geometric morphometric analyses of fossil and recent specimens will be combined with ancestral state reconstruction to trace evolutionary transitions, identify developmental constraints, and clarify hinge evolution in bivalves.