

New Pleistocene bird fossils in Taiwan reveal unexpected seabirds in East Asia


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The island of Taiwan, with its diverse microclimates and key position on the East Asian-Australasian Flyway, attracts numerous bird enthusiasts due to its diverse avian fauna. Nevertheless, due to the scarcity of fossil records, there is a significant knowledge gap between modern and ancient avifaunas in Taiwan. Currently, there is only a single described Pleistocene fossil; it is attributed to Phasianidae. To address this gap, this study describes two new bird fossils, a left humerus and a left tibiotarsus, and discusses them in detail herein. The fossils were collected from the Liuchungchi Formation (Early Pleistocene, 1.95–1.35 Ma) in Niubu, Chiayi, southwestern Taiwan, which represents a neritic environment. The fossils are identified as from species of Gaviidae (loons), with the humerus belonging to an undetermined species of *Gavia* and the tibiotarsus to *Gavia stellata*. Loons are seabirds that are primarily distributed in high- and middle latitudes of the Northern Hemisphere. In addition, these birds are extremely rare in modern Taiwan: records are scarce and most are limited to northern and northeastern Taiwan since the 1860s, indicating that the modern *Gavia* birds only occasionally visit Taiwan. All known Pleistocene fossils of species of *Gavia* from the northern West Pacific come from Japan. The Taiwan fossils of *Gavia* provide valuable bird evolutionary and paleobiogeographic information for the subtropical West Pacific and may imply the presence of a distinct avifauna in the region during the Early Pleistocene.

Key words: Aves, *Gavia*, loon, seabird, Early Pleistocene, Taiwan.

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