A possible prehistoric stranding site for cetaceans in southernmost Taiwan

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Abstract

The island of Taiwan is located at the convergent zone between the Eurasian and Philippine Sea plates. Despite its young age, an excellent marine stratigraphic record and well-preserved marine fossil record are contributed by the extraordinarily high uplifting rate and sedimentary rate. Fossilized cetacean remains represent the largest and the most common fossil record among the great amount of the Plio-Pleistocene marine fossils from western Taiwan.

In 2022, the excursion to Tougou, Hengchun, led by the National Museum of Natural Science, Taiwan uncovered an in situ preserved gigantic baleen whale fossil yielding over 70% completeness. Based on the size of its ribs and mandibles, the baleen whale is estimated to the length of 15 meters. The morphology of its scapulae indicates the affinity to grey whales (Eschrichtius robustus). Various lines of taphonomic evidence reveal a shallow marine coastal depositionary environment for the rapid burial of the extraordinarily well-preserved baleen fossil.

Recently, an unprecedented number of additional cetacean fossils uncovered from Tougou further suggest a long-term (>260 ka) cetacean stranding site in southernmost Taiwan. Such a common occurrence echoes the frequent cetacean strands around Taiwan and the whaling activities in southernmost Taiwan in the early 19th century. In the future, we aim to investigate the biogeographical history for the cetaceans around southernmost Taiwan through continuous excursions and cross-disciplinary approaches.