



PRESS RELEASE (2025/04/11)

A new Denisovan mandible from Taiwan

Ancient protein analysis revealed that the oldest hominin fossil in Taiwan was derived from a male Denisovan

Fukuoka, Japan—An international research team from Japan, Taiwan, and Denmark investigated the ancient protein sequences of Taiwan's oldest hominin fossil and discovered that it was derived from a male Denisovan individual. The discovery of the Denisovan fossil from Taiwan has revealed that they were widely distributed in Asia. The findings were published in the journal *Science*.

A fossil mandible named Penghu 1, is estimated to be from an individual who lived 19,000 to 10,000 years ago. The fossil was discovered in 2015 on the seabed of the Penghu Channel and reported as the first and oldest hominin fossil from Taiwan. Penghu 1 has distinct morphological characters and retains archaic features, but its taxonomic identity was unknown.

Attempts were made to extract ancient DNA from this fossil, but these were unsuccessful. In their new paper, an international research team that involved [Rikai Sawafuji](#), a Lecturer from Kyushu University's [Faculty of Social and Cultural Studies](#), succeeded in sequencing the fossil's bone and tooth proteins to reveal that Penghu 1 was derived from a male Denisovan. These results have significant implications for human evolutionary history in eastern Asia.

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The full release from The Graduate University for Advanced Studies can be found here:
<https://www.soken.ac.jp/en/news/2025/20250411.html>

For more information about this research, see "A male Denisovan mandible from Pleistocene Taiwan," Takumi Tsutaya, Rikai Sawafuji, Alberto J. Taurozzi, Zandra Fagernäs, Ioannis Patramanis, Gaudry Troché, Meaghan Mackie, Takashi Gakuhari, Hiroki Oota, Cheng-Hsiu Tsai, Jesper V. Olsen, Yousuke Kaifu, Chun-Hsiang Chang, Enrico Cappellini, Frido Welker, *Science*, <https://doi.org/10.1126/science.ads3888>

About Kyushu University

Founded in 1911, [Kyushu University](#) is one of Japan's leading research-oriented institutes of higher education, consistently ranking as one of the top ten Japanese universities in the Times Higher Education World University Rankings and the QS World Rankings. The university is one of the seven national universities in Japan, located in Fukuoka, on the island of Kyushu—the most southwestern of Japan's four main islands with a population and land size slightly larger than Belgium. Kyushu U's multiple campuses—home to around 19,000 students and 8000 faculty and staff—are located around Fukuoka City, a coastal metropolis that is frequently ranked among the world's most livable cities and historically known as Japan's gateway to Asia. Through its [VISION 2030](#), Kyushu U will "drive social change with integrative

knowledge.” By fusing the spectrum of knowledge, from the humanities and arts to engineering and medical sciences, Kyushu U will strengthen its research in the key areas of decarbonization, medicine and health, and environment and food, to tackle society’s most pressing issues.



Fig. 1. Photograph of the right side of the mandible of Penghu 1. (Chun-Hsiang Chang)



Fig. 2. A photo of the coast of the Penghu Islands at low tide. One can see how the shallow sea extends out. (Takumi Tsutaya)

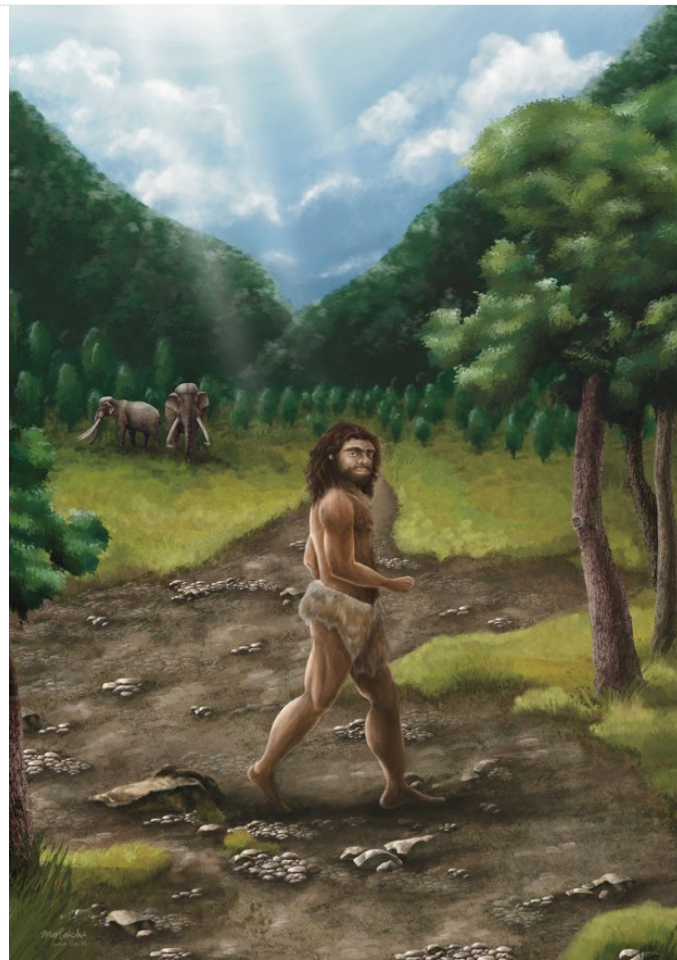


Fig. 3. An image illustration highlighting the findings of this study. A robust male Denisovan individual was walking under the bright sun during the Pleistocene of Taiwan. This illustration was drawn by Cheng-Han Sun. (Cheng-Han Sun)

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