

Pig study forces rethink of Pacific colonisation

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A pig from the Pacific region. Credit: Professor Paul Sillitoe

A survey of wild and domestic pigs has caused archaeologists to reconsider both the origins of the first Pacific colonists and the migration routes humans travelled to reach the remote Pacific.

Scientists from Durham University and the University of Oxford, studying DNA and tooth shape in modern and ancient pigs, have revealed that, in direct contradiction to longstanding ideas, ancient human colonists may have originated in Vietnam and travelled between numerous islands before first reaching New Guinea, and later landing on Hawaii and French Polynesia.

Using mitochondrial DNA obtained from modern and ancient pigs across East Asia and the Pacific, the researchers demonstrated that a



single genetic heritage is shared by modern Vietnamese wild boar, modern feral pigs on the islands of Sumatra, Java, and New Guinea, ancient Lapita pigs in Near Oceania, and modern and ancient domestic pigs on several Pacific Islands.

The study results, published today in the prestigious academic journal *Proceedings of the National Academy of Sciences USA*, contradict established models of human migration which assert that the ancestors of Pacific islanders originated in Taiwan or Island Southeast Asia, and travelled along routes that pass through the Philippines as they dispersed into the remote Pacific.

The research was funded by funded by the Wellcome Trust, the Leverhulme Trust, the Smithsonian Institution, and the Fyssen Foundation.

Research project director, Dr Keith Dobney, a Wellcome Trust senior research fellow with the Department of Archaeology at Durham University, said: "Many archaeologists have assumed that the combined package of domestic animals and cultural artefacts associated with the first Pacific colonizers originated in the same place and was then transported with people as a single unit.

"Our study shows that this assumption may be too simplistic, and that different elements of the package, including pigs, probably took different routes through Island South East Asia, before being transported into the Pacific.'

Archaeological evidence suggests that early farmers moved from mainland East Asia through Island Southeast Asia and on into Oceania, bringing their domestic plants, animals and specific pottery styles with them. Other sources of evidence, including human genetic and linguistic data, appear to support the traditional model that Pacific colonists first



began their journey in Taiwan.

Dr Greger Larson, lead author of the paper, performed the genetic work while at the University of Oxford. He is now due to join Durham University in August as a Research Councils UK Research Fellow.

He said: "Pigs are good swimmers, but not good enough to reach Hawaii. Given the distances between islands, pigs must have been transported and are thus excellent proxies of human movement. In this case, they have helped us open a new window into the history of human colonization of the Pacific.

"We are confident that this research will inspire geneticists and archaeologists to consider both alternative colonization routes, and more complex, and perhaps more accurate, theories about the nature of human colonization and the animals they carried with them."

The specimens used in these analyses came from the jaw bones or teeth of museum and archaeological specimens and the hair from more recent specimens.

Source: Durham University

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