

'Chicken and chips' theory of Pacific migration

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A new study of DNA from ancient and modern chickens has shed light on the controversy about the extent of pre-historic Polynesian contact with the Americas.

The study questions recent claims that chickens were first introduced into South America by Polynesians, before the arrival of Spanish chickens in the 15th century following Christopher Columbus.

It is published this week in the *Proceedings of the National Academy of Sciences USA* (July 28) by an international research group, including scientists from the University of Adelaide's Australian Centre for Ancient DNA (ACAD).

ACAD Director Professor Alan Cooper says there has been considerable debate about the existence and degree of contact between Polynesians and South Americans, with the presence of the sweet potato throughout the Pacific often used as evidence of early trading contacts.

"Similarly, Polynesians are known to have spread chickens across the Pacific at least as far as Easter Island, but were not thought to have introduced them to South America," he says.

A recent study claimed to have found the first direct evidence of a genetic link between ancient Polynesian and apparently pre-Columbian chickens from archaeological sites in Chile, supporting the idea that there was extensive contact between Polynesia and South America and

that chicken and 'chips' had been traded in opposite directions.

The current work challenges this conclusion however, by generating DNA data from 41 native Chilean chicken specimens, and comparing these with over 1000 modern domestic chickens from around the world, and the previously published DNA from Polynesian and Chilean chicken bones.

"The results showed that the ancient Polynesian and Chilean chickens possessed a genetic sequence that is the most common in the world today, the so-called 'KFC' gene" Professor Cooper says.

"This sequence would undoubtedly have been common in the early Spanish chickens, and therefore provides no evidence of Polynesian contact. So while we can say the KFC chicken was popular amongst early Polynesian voyagers, we certainly can't use it as evidence for trade with South America".

The researchers did find a highly unusual DNA sequence in the ancient Easter Island chickens, which originate from Indonesia or the Philippines, but this apparently did not get passed on to South America. "This is important because Easter Island is commonly thought of as a major jumping off point for Polynesian contact with South America," says team member and ACAD PhD student Nicolas Rawlence.

According to project leader Dr Jaime Gongora from Sydney University, many people in South America like to believe they are descendants of Polynesians.

"This study does not disprove this idea, but we have found no evidence to support pre-historic contact."

Source: University of Adelaide

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