

Ancient genomic insights into the early population of the Caribbean

June 4 2020



Canimar Abajo. Credit: Kathrin Nägele

The Caribbean was one of the last regions of the Americas to be settled

by humans. Now, a new study published in the journal *Science* sheds light on how the islands were settled thousands of years ago.

Using ancient DNA, an international team of researchers found evidence of at least three population dispersals that brought people to the region.

"Our results give a glimpse of the early migration history of the Caribbean and connect the region to the rest of the Americas," says Hannes Schroeder, associate professor at the Globe Institute, University of Copenhagen, and one of the senior authors of the study. "The DNA evidence adds to the [archaeological data](#) and enables us to test specific hypotheses as to how the Caribbean was first settled."

More data, more details

The researchers analyzed the genomes of 93 ancient Caribbean islanders who lived between 400 and 3200 years ago using bone fragments excavated from 16 different archaeological sites across the Caribbean.

Due to the region's warm climate, the DNA from the samples is not very well preserved. Using targeted enrichment techniques, the researchers managed to extract genome-wide information from the remains.

"New methods and technology allowed us to increase the number of ancient genomes from the Caribbean by almost two orders of magnitude," says Johannes Krause, director of the Max Planck Institute for the Science of Human History in Jena, Germany, another senior author of the study. "With all that data we are able to paint a very detailed picture of the early migration history of the Caribbean."

The researchers' findings indicate that there have been at least three different population dispersals into the region: two earlier dispersals into the western Caribbean, one of which seems to be linked to earlier

population dispersals in North America, and a third, more recent wave, which originated in South America.



Excavating Canimar Abajo (2018). Credit: Esteban Grau Gonzalez

Connections across the Caribbean Sea

Although it is still not entirely clear how the early settlers reached the islands, there is growing archaeological evidence that, far from being a barrier, the Caribbean Sea served as a kind of 'aquatic highway' that connected the islands with the mainland and each other.

"Big bodies of water are traditionally considered barriers for humans and ancient fisher hunter gatherer communities are usually not perceived as great seafarers. Our results continue to challenge that view, as they suggest there was repeated interaction between the islands and the mainland," says Kathrin Nägele, Ph.D. student at the Max Planck Institute for the Science of Human History in Jena, Germany and one of the lead authors of the study.

Biological and cultural diversity in the ancient Caribbean

"The new data support our previous observations that the early settlers of the Caribbean were biologically and culturally diverse, adding resolution to this ancient period of our history," says Yadira Chinique de Armas, assistant professor in Bioanthropology at the University of Winnipeg and co-director of three large-scale excavations in Cuba.



Mirjana Roksandic excavating Playa del Mango. Credit: Luis Viera Sanfiel

The researchers also found [genetic differences](#) between the [early settlers](#) and the newcomers from South America who, according to archaeological evidence, entered the region around 2800 years ago.

"Although the different groups were present in the Caribbean at the same time, we found surprisingly little evidence of admixture between them," adds Cosimo Posth, group leader at the Max Planck Institute for the Science of Human History and joint first author of the study.

"The results of this study provide yet another layer of data that highlights the complex and multi-nature of pre-Columbian Caribbean societies and their connections to the American mainland prior to the colonial invasion. It's reflected in the archaeology of the region, but it is fascinating to see it supported by the biological data," says Corinne Hofman, professor of archaeology at Leiden University and PI of the ERC Synergy project NEXUS1492. "Genetic data provide a new depth to our findings," agrees Mirjana Roksandic, professor at the University of Winnipeg and the PI on the SSHRC project.

More information: K. Nägele et al., "Genomic insights into the early peopling of the Caribbean," *Science* (2020).

science.sciencemag.org/lookup/.../1126/science.aba8697

Provided by Max Planck Society

Citation: Ancient genomic insights into the early population of the Caribbean (2020, June 4)
retrieved 28 April 2024 from

<https://phys.org/news/2020-06-ancient-genomic-insights-early-population.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.