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Title of report

Experiencing Trevelyan's Corn: Using novel methods in bioarchaeology to reveal the effect of relief food on the bodies of the victims of the Great Irish Famine (1845-1852)

Concise overview of the project

The aim of this research is to better understand the impact of the introduction of Indian meal (maize) from the United States into the diets of the poor in Ireland prior to and during the period of the Great Famine (1845-1852). This will be achieved through the analysis of carbon and nitrogen isotopes, a successful chemical technique for reconstructing diet, and the microscopic study of at least 200 rib bones from victims that died in the Kilkenny Union Workhouse between 1847 and 1851. Previous isotope analysis on a subsample of these remains was able to detect a dietary reliance on maize in several individuals. Microscopic patterns in the skeleton that are correlated to changes in diet can provide insight into the health of the individual and how the skeleton reacts to stress and temporary relief while also deepening our understanding about the human experience of the Great Irish Famine.

Main findings

Although we are still waiting for much of the isotopic data to return from the lab, preliminary results from nine skeletons indicate that among the Late Middle Adult age group, some microscopic features of the bone that are related to bone health (osteon size and Haversian canal shape) appear to be correlated to the increase in carbon isotope values, indicating there may be an influence of maize in the diet. The other age groups did not show statistically significant results, but trends suggest there will be more interesting information when the sample size is improved. While the current sample size is too small to make any meaningful conclusions about the role that maize played as a relief food during the Famine, the trends are encouraging for more informative results in the future.

Impacts of the research

The results of this research will impact the community of Kilkenny by contributing to the ongoing effort to commemorate the lives of those who died during the Famine, as demonstrated by the Kilkenny Famine Experience. It will also help historians, and other Famine scholars, to understand the short and long-term effects of maize as a temporary relief effort issued by the British Government on the health of the Irish before and during the Famine. Additionally, bioarchaeologists will better understand how bone reacts to periods of extreme physical stress on a microscopic level and the way it may change in response to dietary diversity. In a broad context, this project, and the future research to follow, aims to better understand the biological consequences of push factors that influence episodes of mass migration, death, and, in those who survive, epigenetic changes that affect the mental and physical development of subsequent generations.

Date the report was published

06-09-2018

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