

The remarkable preservation of excrement in the archaeological record and what can be done with it

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There are a surprising number of ways faeces can be preserved in the archaeological record forming a coprolite - I will introduce some of these different methods and discuss the type of biomolecular analyses which I have applied to these samples. Desiccated coprolites, often formed in caves, have been the subject of ancient DNA investigations in the past, but waterlogged coprolites - more commonly found in European contexts - are yet to be thoroughly explored. I have gathered around 40 European coprolites to be investigated. The samples come from early medieval Coppergate (England) and Moynagh Lough (Ireland): both sites with outstanding preservation of organic material due to waterlogging.

By extracting DNA and proteins preserved within these samples alongside more traditional archaeological approaches, I have determined most of these coprolites were deposited by dogs who ate a largely meat-based diet. Furthermore, analysis of preserved bone fragments embedded with the coprolites suggests that dogs were eating butchered cuts of meat which contained large pieces of bones - perhaps bony cuts considered unsuitable for human consumption. There is very little evidence for plant consumption at either site. Some have argued that archaeologists often overlook cess, considering it a mundane find but cess, and specifically coprolites, can offer a wonderful glimpse into everyday life in the past. After all, what is archaeology if not the study of ancient waste?

CV:

Eleanor is currently a PhD student at the University of York and the Natural History Museum, London who specialises in the extraction of degraded DNA and protein from archaeological material. Her work focuses on samples or substrates which have not been favoured for intensive post-excavation analysis due to a lack of context information or a lack of confidence in a method or material. Eleanor has been investigating preserved faeces using genetic methods since her Masters research project. This work has continued during the course of Eleanor's PhD research where additional methods have been applied to these unique bioarchaeological archives.

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