NATIONAL MUSEUM of NATURAL HISTORY
Smithsonian

News

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Analysis Reveals Ancestry, Possible Descendants of Enslaved and Free African Americans

Scientists Analyzed DNA From an African American Burial Ground Located at a Historic Maryland Ironworks

Using a new genetic approach, scientists connected nearly 42,000 people living today to 27 African Americans who were buried near a Maryland ironworks in the late 18th–early 19th centuries. The analysis, conducted by researchers from the Smithsonian's National Museum of Natural History, Harvard University, the Catoctin Furnace Historical Society and 23andMe, appears in a study published today in *Science*.

The work offers new information about the ancestral origins and possible descendants of Africans and African Americans associated with the operation of an early iron forge known as Catoctin Furnace. Of the 27 historical Catoctin individuals included in the study, the research team identified 15 people that the genetic and forensic evidence grouped into five separate families consisting of biological mothers, children and siblings. The analysis also traces genetic mutations associated with conditions such as sickle cell disease back to the Catoctin group, reconnecting both past and present kin.

The highest concentration of closely related possible descendants of the Catoctin group was in Maryland, indicating that some stayed in the region following the furnace's transition away from enslaved labor. The analysis also revealed genetic overlap between the Catoctin group and residents of the southern United States, but these findings mostly represented distant connections reflecting shared ancestry in Sub-Saharan Africa.

Catoctin Furnace was part of a fledgling industrial complex of ironworks in the United States that began operating around the time of the Revolutionary War. At Catoctin, at least 70 workers were required to mine iron ore, keep the furnace burning and fashion goods such as stoves, pots, utensils

and even cannon balls. Furnace operations relied on the labor of enslaved Africans and African Americans until the late 1840s when the furnace owner transitioned to a system of hired workers, most of whom were European immigrants. Iron was produced at Catoctin Furnace until 1903, and the contributions of the enslaved and free African American laborers were forgotten.

The study was conducted by museum biological anthropologists Kari Bruwelheide and Douglas Owsley, David Reich's Harvard University genetics lab, Catoctin Furnace Historical Society historian and archaeologist Elizabeth Comer and geneticists from 23andMe, including the study's first author, Éadaoin Harney. The research team also included historians Henry Louis Gates Jr. of Harvard University as well as Linda Heywood and John Thornton of Boston University, who contributed historical context and aid in the interpretation of the scientific results.

In 2015, Comer, president of the Catoctin Furnace Historical Society, contacted Owsley and Bruwelheide requesting new techniques be used for more accurate and inclusive historical interpretation of the remains from the site. Without known living descendants who could link their ancestry to the African Americans who labored at the furnace, Comer collaborated with the African American Resources Cultural and Heritage Society (AARCH) in Frederick, Maryland, to incorporate local input and feedback on the project.

The genetic record used in the present study originated from individuals buried in a cemetery unearthed during highway construction in the 1970s near Catoctin Furnace some 60 miles north of Washington, D.C. A total of 35 graves were affected, though a portion of the cemetery remains intact. Of the 35 graves excavated, 32 contained human remains. The exhumed remains were placed in the care of the Smithsonian, where they currently reside.

This study was initiated and conducted prior to the Smithsonian's January 2023 temporary restriction on research involving human remains in its care and the May 2023 creation of a human remains task force. The museum recognizes and addresses issues involved in human remains collections and research on its website and is committed to ethical, dignified and respectful treatment of all human remains held in its care.

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