

ANALYSIS OF ANCIENT DNA OF A MEDIEVAL IVORY CHESS PIECE FROM JAMBES

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Figure 2. Four views of the ivory chess piece from Jambes.

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Archaeological excavation performed in 2017 along the Meuse River in Jambes (Namur, Belgium; Figure 1), brought to light destruction layers of a medieval building interpreted as a habitation, possibly including horse stables on the ground floor. Several remarkable finds, including the ivory chess piece investigated here (Figure 2), underline the aristocratic status of the inhabitants.

This chess piece, identified as a knight, was broken during excavation. A small piece of the inner part of the object was used to perform ancient DNA analyses. This enabled the identification of the raw material as an African elephant, which fits the general pattern of people exploiting preferentially African elephant instead of Asian elephant for ivory craftwork.

Nowadays, two distinct species are recognized: the African forest elephant (*Loxodonta cyclotis*) and the African savanna elephant (*Loxodonta africana*). Based on the data currently available, one of the recovered DNA sequences is found only among modern DNA records from savanna elephant mostly present in the savanna belts immediately south of the Sahara, as well as across eastern and southern Africa (belonging to the 'savanna-wide' subclade; Figure 1). The modern sequences matching our ancient DNA sequence were represented in most specimens originating from Namibia (98%), Kenya (79%) and Tanzania (56%).

Two main routes were used during the Middle Ages to transport ivory from Sub-Saharan Africa to the Mediterranean shore, before reaching Europe (Figure 1):

The Swahili Corridor

From the 10th century AD onward, elephant ivory was abundantly transported by the ancestors of the Swahili along the eastern coast of Africa, before heading to Egypt. Their most accessible ivory sources were located in modern-day Kenya, Zimbabwe, Mozambique and South Africa.

Trans-Saharan routes

At the same time, an alternative trade route brought ivory from another African source. This trans-Saharan commercial route connected the Mediterranean world with sub-Saharan Africa via a network of caravan routes across the Sahara Desert, led by Amazigh merchants.

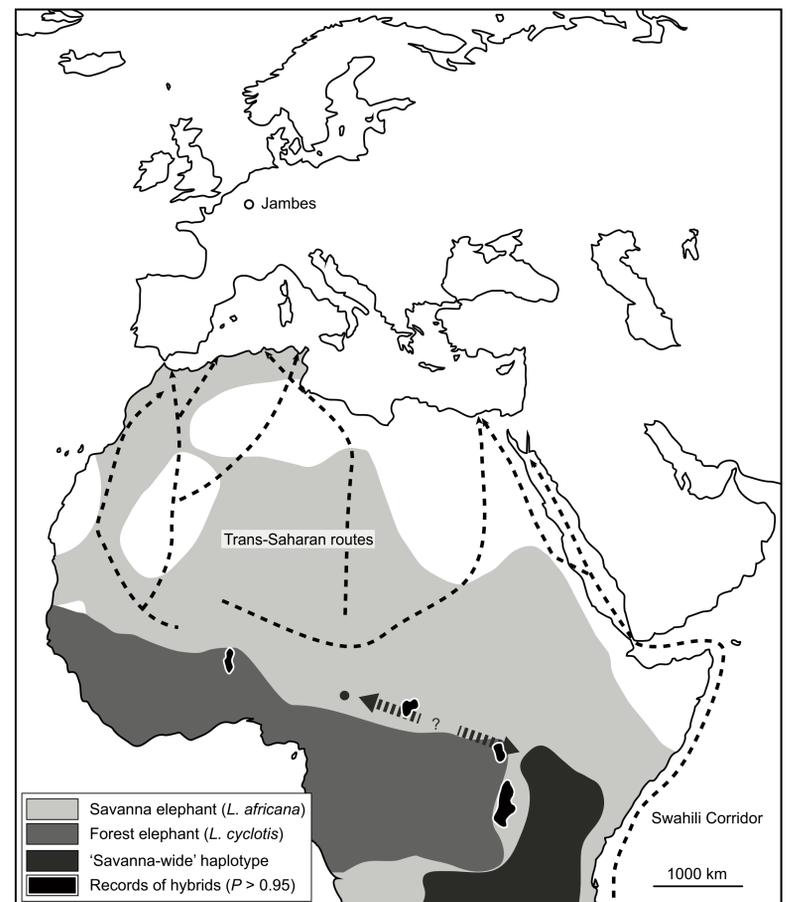


Figure 1. Location of Jambes and illustration of the Swahili Corridor and the Trans-Saharan routes.

Graphic : Q. Goffette © RBINS

In conclusion, the ivory from the Jambes chess piece likely originates from an eastern or southern African country and was therefore probably transported along the African trade route passing through the Swahili Corridor. However, the precise itinerary followed by this ivory from the African shore of the Mediterranean Sea to Jambes remains unknown.

For more information:

GOFFETTE Q., SUAREZ GONZALEZ N., VANMECHELEN R., VERHEYEN E. & SONET G., 2021. Tracking the origin of worked elephant ivory of a medieval chess piece from Belgium through analysis of ancient DNA, *International Journal of Osteoarchaeology*, 1– 11. <https://doi.org/10.1002/oa.3041>

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