

All that glitters is... real gold

Katherine Kornei on how a pirate's booty has corrected an olden myth about West African traders

European traders who journeyed along the coast of West Africa during the age of exploration viewed their trading partners with suspicion. We know this from records. There was a long-standing belief that people in that part of Africa were intentionally mixing their gold with lesser metals like silver or copper, or even with bits of glass.

"It's a recurring theme that they're stretching the gold," said Tobias Skowronek, a geochemist who studies archaeology at the University of Bonn in Germany.

But a recent study of artefacts recovered from the wreck of a pirate ship suggests that the West African traders were not passing off adulterated gold. The findings were published in *Heritage Science*.

In the spring of 1717, the *Whydah Gally*, a ship captained by pirate Samuel Bellamy, sank off the coast of Massachusetts, US. Bellamy, known as Black Sam, and his crew had commandeered the ship in the Caribbean and were most likely heading for Maine when they encountered a fierce nor'easter. The *Whydah* broke apart, more than 100 men perished and the bounty aboard — rumoured to include plunder from more than 50 ships — settled on the seafloor and slowly sank under the sand.

Stories of the *Whydah* were a mainstay

of Brandon Clifford's childhood. His father, Barry, had grown up on Cape Cod and was an accomplished underwater explorer. Searching for such a storied wreck proved irresistible for Barry Clifford.

In 1984, the search paid off. Barry's team discovered fragments of gold, and the *Whydah's* distinctive bell was unearthed soon afterward. That experience was formative to Brandon, who is now an underwater archaeologist and executive director of the *Whydah* Pirate Museum in Yarmouth, Massachusetts. Several hundred thousand objects have since been recovered from the *Whydah*, including gold artefacts made by the Akan people of West Africa.

"These gold artefacts are very distinctively 18th-century Akan goldwork," said Christopher DeCorse, an archaeologist at



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Syracuse University, US.

Those artefacts presented an intriguing opportunity to Skowronek, who was familiar with the record of European assertions of contaminated West African gold.

Working with DeCorse and Clifford, Skowronek analysed 27 gold artefacts from the *Whydah* that appeared to be from West

Africa. These included fragments of cast artefacts, some of which featured the delicate threadwork that was characteristic of Akan gold. The largest artefact was no more than half an inch across.

The team fired a beam of electrons at each artefact and measured the X-rays emitted. Every molecular element has a unique X-ray signature, so this technique reveals an object's elemental composition.

The researchers found that the artefacts ranged from 70 per cent to 100 per cent gold

by weight. When an artefact wasn't pure gold, the most common metals present were silver, copper, iron and lead.

While it's true that some objects were far from pure gold, these results don't imply that West African traders were being deceitful, the team concluded. That's because the gold ore that comes from the Ashanti Gold Belt — the purported birthplace, in modern-day Ghana, of these artefacts — also naturally contains a similar range of silver and other metals by weight.

The notion that Europeans were being systematically cheated by West African gold traders therefore appears to be "nonsense", Skowronek said.

Kathleen Bickford Berzock, an anthropologist and chief curator of a gold-focused exhibition at the Block Museum of Art at Northwestern University, US, was not involved in the study. She said the *Whydah* gold was useful for analysing this facet of the European-African gold trade.

These findings are a good example of science informing our understanding of history, said Francesca Casadio, the vice-president of conservation and science at the Art Institute of Chicago, US, who was not involved in the research. "The science adds another element," she said.

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