



ABSTRACT SUBMISSION

Understanding the production of bimetallic swords from Northwestern Iran giving new purpose to trafficked artefacts

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Abstract

Bimetallic swords and daggers from Northwestern Iran dated to the Iron Age (ca. 1250-800 BCE) were investigated with X-ray tomography at Cranfield University, and neutron tomography and neutron diffraction at ISIS Neutron and Muon Source. The weapons were seized by law enforcement upon entering the UK and are pending repatriation. As such they align with the principles of the 1970 UNESCO Convention and the 1954 Hague Convention. Having been removed from the illicit market, it was revealed that they had undergone modern modifications. Despite having had their blades replaced, original iron blade remains inside were studied to learn about the bimetallic technology. Combining multiple scientific techniques, it was possible to determine the chaîne opératoire of their production, from the assembly to the quality of the cast. It was established that different types of bronze could be used in the same sword, and that combining bronze and iron was a widespread practice in various weapon styles to achieve different technical and aesthetic results. Iranian weaponry, frequently found in museums but rarely well contextualised, is analysed in this study to gain insight into ancient technology during the transitional period of Iron Age Iran, despite the criminal attempts at falsifying Iranian cultural heritage.

Keywords

archaeometallurgy, bimetallic, Iron Age, weaponry, neutron science

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