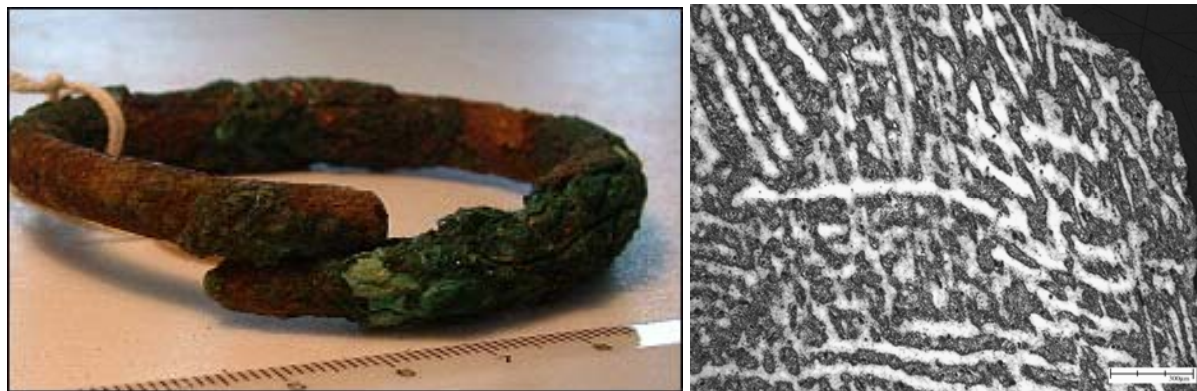


Using Microstructure to Understand Casting Technology: A Case Study from Godin Tepe, Iran



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Excavations at Godin Tepe--a Bronze Age site in the Kangavar Valley of the west-central region of Iran--yielded a metal assemblage of 202 artifacts of which 91 are curated at the Royal Ontario Museum, Toronto, Canada. The assemblage consists of decorative objects (figurines, vessels, bracelets, rings, needles, pins) as well as weapons and tools (chisels, blades, daggers, and projectile points). Metallographic sections revealed that nine of these artifacts were produced by various casting methods. Secondary dendrite arm spacing was measured on polished and etched metallographic sections, and cooling rates were calculated based on these measurements along with the average composition of the metal. Comparison to reference data shows that these cooling rates group into ranges typical of quenched and furnace cooled environments. Composition and microstructure information was obtained for these artifacts with the use of scanning electron microscopy and electron beam microprobe.

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Topics in Museum Conservation

September 25, 2008
10:45 am
Thursday

MCI Theater

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