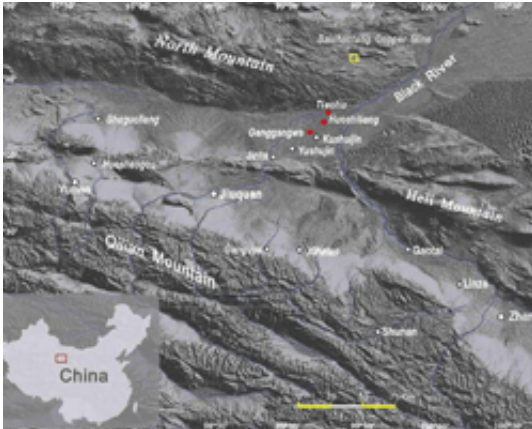


# Dating the Bronze Age

December 2 2009

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Location of study sites, NW China.

ANSTO (Australian Nuclear Science and Technology Organisation) research has shown that an area of desert in north-western China was once a thriving Bronze Age manufacturing and agricultural site. The new findings may help shed light on the origins and development of the earliest applications of Bronze Age technology.

Dating, using ANSTO's precision techniques, was used to identify the age of seeds, slag, copper ore and charcoal at two sites. The findings show the material is up to 3700 years old, but that smelting was still being carried out as recently as 1300 years ago. The research indicates bronze production may have begun as early as 2135 BC and that the modern mine location - Baishantang at Dingxin - was possibly the historical source of copper ore for manufacturing.

ANSTO's Professor John Dodson conducted the research in conjunction with scientists from the State Key Laboratory of Loess and Quaternary Geology in [China](#). A photo of the study site is in the November issue of the journal *Quaternary Research*.

"This research takes us a step closer to discovering the origins and development of bronze manufacturing in China," said Professor Dodson. "Further research will look at whether bronze technology was invented in several places around the world independently, or whether the technology was transferred from a single centre of origin.

"The aim of the study was to determine possible sources of ore and evidence of bronze production through analysis of artefacts (with copper and arsenic content) including analysing samples of slag and copper ore from two archaeological sites known as Ganggangwa and Huoshiliang in northwestern Gansu Province," he said.

The research used lead and strontium isotopic analysis to identify and age ornaments, knives, rings, hemispherical objects and spearheads. The team discovered substantial areas of woody vegetation around the sites which is now dominated by sand dunes.

The [Bronze Age](#) people of the Gansu area were farmers who planted cereals such as wheat and practiced animal husbandry. Horse and sheep bones are common. It is believed they may have abandoned the region when wood was exhausted and desertification took over.

Provided by Australian Nuclear Science and Technology Organisation

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