

## What are the Jordan Lead Books?

The Jordanian Lead Books are a collection of more than twenty lead codices housed at the Department of Antiquities of Jordan (DAJ). These artefacts exhibit the same basic images and texts contained in the original hoard of nearly thirty lead codices in the possession of the Israeli Bedouin Hassan Saeda. Whereas various unverifiable individual claims have been made that the artefacts originate from Egypt, Israel and Saudi Arabia, the only officially known fact is that Jordanian authorities in 2011 collected nearly thirty lead books in northern Jordan, which now constitute the DAJ's collection.

The DAJ's lead books have never been in Mr Saeda's possession. Representative samples of the Bedouin's codices were tested in 2008 by the eminent archaeo-metallurgist Dr. Peter Northover at the Oxford Materials Characterization Services in coordination with the Plasma Spectrometry Team of the Swiss National Materials Laboratory. Dr. Northover concluded that the evidence indicates the codices' lead and corrosion are consistent with antiquity: "The analysis of the two samples taken showed compositions consistent with a range of ancient lead, one recycled, one probably from ingot lead. The corrosion on the surface has built up over a period of time making it clear that the book is not a recent production."<sup>1</sup>

Blogger Steve Caruso implies that the lead books Northover tested are modern, and offers a supposedly supporting quotation from Northover taken from a telephone conversation the two held in 2011: "My own use of the phrase 'not a recent production' implied that the piece I examined in detail had not been made in the last few years, or possibly decades, but I could not rule out a date of, say, a century ago or so."<sup>2</sup>

However, in a 2016 telephone conversation held between Northover and a representative of the Centre for the Study of the Jordanian Lead Books, London, Northover stated that the lead books he examined could be a century old, or medieval, or ancient. The question of dating remains open.

The government of Jordan financed the following tests on their own lead codices stored at the DAJ: The Kroto Research Institute, The University of Sheffield (Dr. Peter Korgul) 2011; Royal Scientific Society, Amman, Jordan (Dr. Rafat Ahmad) 2011; The Center for Micro-Engineered Materials, University of New Mexico 2011. While not proving the artefacts' antiquity, these tests found the codices' lead and corrosion to be consistent with antiquity. A further test by The Getty Conservation Institute (Dr. Marc Walton) 2011 was inconclusive.

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<sup>1</sup> Dr. Peter Northover, *Analysis and Metallography of a Lead Book: Results* (Oxford: Oxford Material Characterisation Services, 2008). Contrary to Internet rumours, Northover means here that some of the lead had been recycled in ancient, not modern, times.

<sup>2</sup> Steve Caruso, "Jordan Codices: More About the Altered Metallurgical Report." 14 September 2011.

<<http://aramaicnt.org/2011/09/14/jordan-codices-more-about-the-altered-metallurgical-report/>> Retrieved 11 June 2016.

In 2012 University of Surrey carried out tests on a DAJ lead book, which detected  $^{210}\text{Po}$ , suggesting a nuclear-age date for the artefact. The results dampened Israeli scholars' enthusiasm for the artefacts. However, in 2016 the Surrey scientists declared their test results inconclusive, suspecting that the radioactivity came only from the surface patina rather than the lead core itself. Further testing is planned, but already the scientists are convinced the artefacts cannot be modern forgeries.

Analyses were conducted at the Atomic Energy Commission, Amman, Jordan 2011-2013, with results consistent with the pre-Getty tests. Additional independent corroborating examinations and analyses have been carried out by metals expert Tim Blades (Gloucestershire Guild of Craftsmen; Time Team, Channel4), and Matthew Hood, BEng, MSc, CEng, FRINA, MAPM, CDipAF, MIET, RCNC, Chartered Engineer, Naval Architect.

Despite some unfounded and misleading Internet rumours, the bulk of the archaeo-metallurgical tests uniformly indicate the Jordan lead codices are consistent with being ancient artefacts.

Only time and further scientific testing will possibly settle the question of the general age of the Jordan lead books.