Oral presentation

The magic scroll of Ampus (Var, France) future "Musée des écritures"

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The magic scroll belongs to the collection of the future "Musée des Ecritures" in Ampus (Var, France). Some engraved characters can be observed on the outside of the roll, indicating that something was written on the surface (figure 1). Unfortunately, due to the corrosion of the metal, it is impossible to unroll it physically without deterioration, destroying the object.

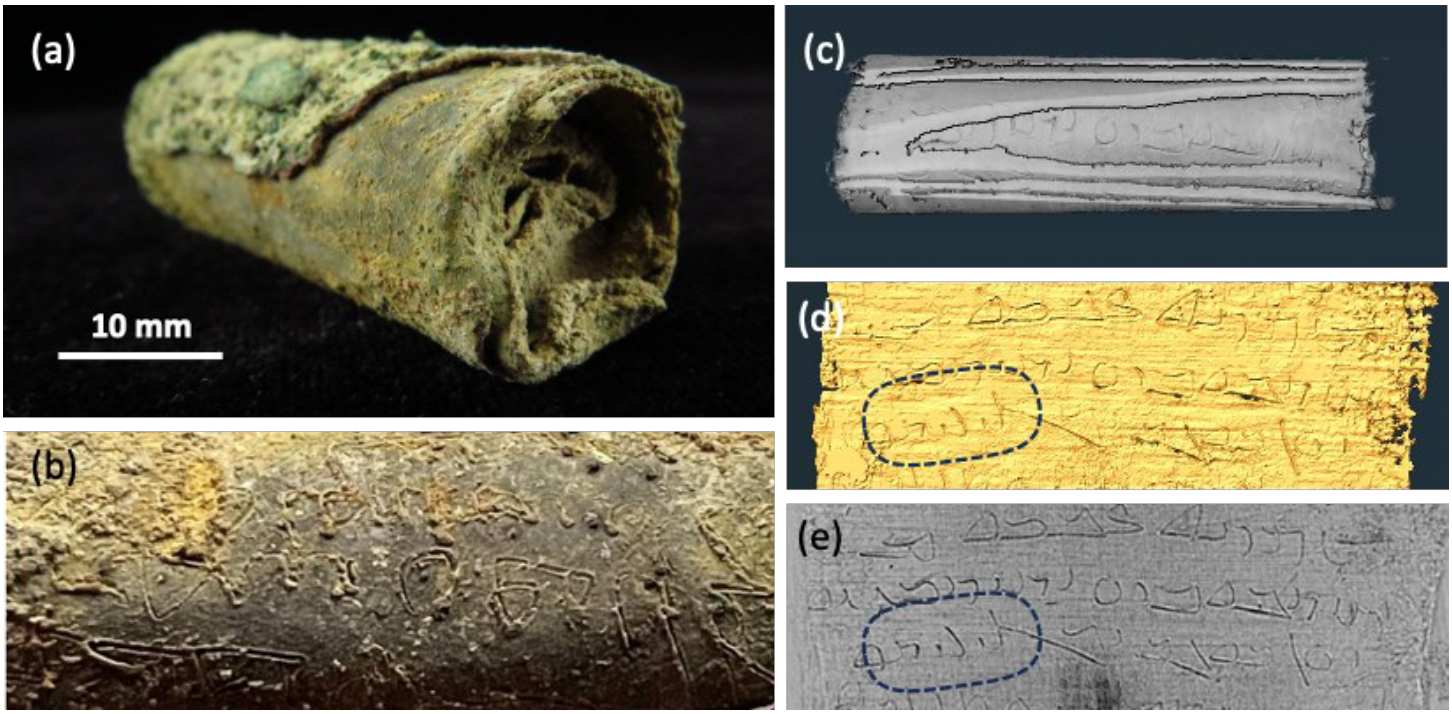

Figure 1: (a) Image of the magic scroll. (b) Close up of characters engraved on the outside surface. (c) Surface rendering of the tomographic reconstruction, virtually sections to reveal inner surface. (d) Surface rendering of the corresponding region of the virtually unwrapped surface. (e) Unwrapped volume digitally treated to extract characters. The dashed lines mark the name of the demon "Lilith".

To determine the origin of the characters scratched onto the roll and to read them non-invasively, a tomographic study has been performed on the PSICHÉ beamline of SOLEIL. Due to the unexpectedly strong absorption of the metal, we were forced to increase the photon energy to the maximum available 120 keV in pink beam mode and adopt a modified acquisition strategy. The attenuation is due to the alloy containing a large proportion of lead, subsequently confirmed by fluorescence measurements performed at the PUMA beamline of SOLEIL.

A tomograph of the full axial length of the scroll (~45mm) was acquired using a helicoidal scanning acquisition. Using the reconstructed volume, the scroll has been virtually unrolled using Python routines, and visualized using Avizo software. The reconstruction shows that both faces of the metal foil are engraved with text. This was possible because of the thickness of the metallic sheet (250 µm).

The engraved text has been identified as Mandean, revealing the origins of the artefact in Mesopotamia, and indicating its age as 3-5th century CE. The transcription and the translation are in progress and will be presented at the meeting.