

The Tebtynis Workshop: A Glimpse at Glassworking in Ptolemaic Times

Cinzia Bettineschi

Department of Cultural Heritage: Archaeology and History of Art, Cinema and Music, University of Padova

cinzia.bettineschi@unipd.it

This short report is intended to offer an overview of the communication ‘Glass inlays between tradition and innovation: a closer look at the Tebtynis workshop’, co-authored by Cinzia Bettineschi, Ivana Angelini, Gianmario Molin and Paola Zanovello. The communication summarised the main results of the first author’s PhD project and was presented at the AIHV 2018 Conference in Istanbul thanks to the generous support of the AHG, who financed the travel expenses.

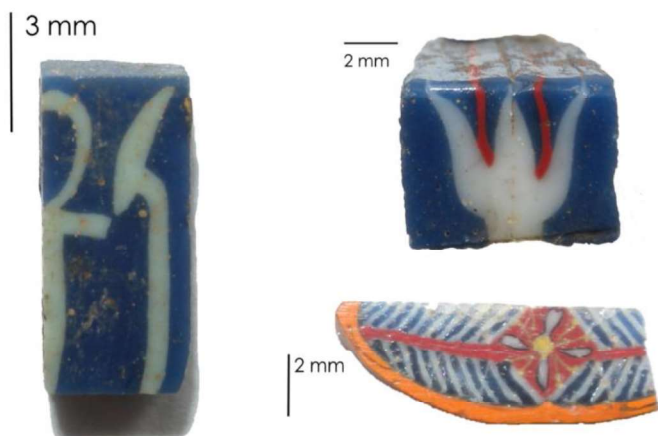
The research focused on the archaeological, technological and archaeometric study of the inlay workshop of Tebtynis (Egypt) and its materials. Tebtynis is an ancient village located in the south of the Fayum oasis. Its lifespan extends from the Middle Kingdom (approx. 18th century BC) to the Arab period (approx. 11th century AD), but the climax is reached during the Graeco-Roman era (Gallazzi 2001). The topography of the site is articulated around the Ptolemaic temple of the crocodile god Soknebtynis and comprises various blocks, such as the well-known *insula dei papiri* (Vogliano 1937). Tebtynis hosted a templar workshop for producing sacred furniture inlaid with glass (see Nenna 2015 and cited bibliography). There are other similar structures in Egypt between the 5th and the 1st century AD, but the one in Tebtynis is the best preserved, as it is the only one with the combined presence of finished and semi-finished products, wastes, tools, the kiln and an intact archaeological stratigraphy, at least when it was first excavated by the Italian

Archaeological Mission in Egypt directed by Carlo Anti in 1931 (Bettineschi, Angelini and Molin in press). Lacking any published data, the location of the structure remained unknown for over 70 years.

Recently, the discovery and study of the archives of Carlo Anti offered the opportunity to localise and contextualise the findings unearthed within the so-called structure 17 in the first courtyard of the temple (Deotto et al. 2017; Bettineschi et al. 2018). The communication at the AIHV first examined the typology and the function of the kiln and the tools and subsequently focused on the finished, semi-finished and waste products related to glassworking, which are now preserved at the Museo Egizio (ME) di Torino, Italy.

The Tebtynis collection at the ME counts more than 800 fragments of vitreous materials, almost entirely in glass. The pieces can be divided according to the technological complexity in monochrome, stratified and complex mosaic glasses (Fig. 1). After a first screening of all the materials in stereoscopic microscopy, 70 objects comprising 144 different glasses were chosen for in-depth archaeometric investigations. In particular, the materials were selected to represent all the typological, functional and chromatic classes discovered in the workshop; they included: colourless, white, blue, green, yellow, yellowish-orange, red and brown glass both transparent and opaque.

Figure 1: A selection of the mosaic glass inlays discovered in Tebtynis preserved at the Museo Egizio, Torino. Left, slice with ankh-was hieroglyphic text (inv. S. 18554/08); top right: lotus flower bar (inv. S. 18554/01); bottom right: slice with a mix of floral and geometric decorations (inv. S. 18554/05). © Cinzia Bettineschi



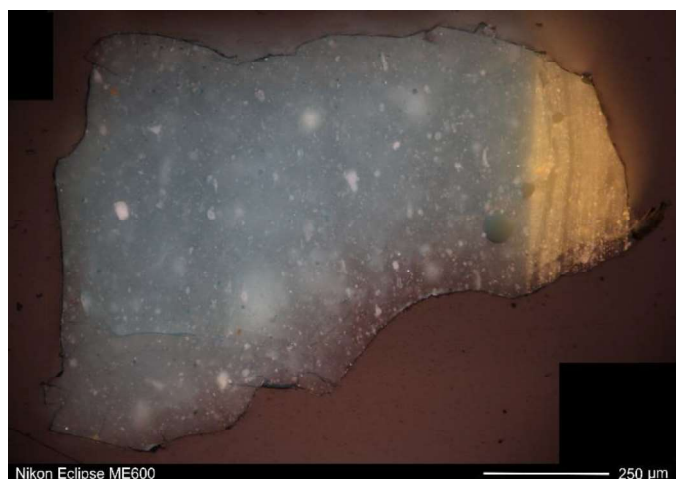


Figure 2: Optical image of sample Ty-S-ARG-403, with layers of opaque yellow and opaque light blue glass. Magnification 200x. © Cinzia Bettineschi

A set of complementary analytical techniques were used to obtain a complete overview of the texture, the mineralogy and the elemental composition of the investigated samples. After a preliminary screening in stereoscopic (SM) and confocal laser scanning microscopy (CLSM), the objects were micro-sampled and the prepared chips were systematically analysed by optical (OM) and electronic microscopy (SEM-EDS), and by electron microprobe (EPMA) for quantitative chemical data (Figs 2–3). When necessary, micro-Raman analysis was also performed for the investigation of the colourants and opacifiers, the newly formed phases and the undissolved relics of the batch material.

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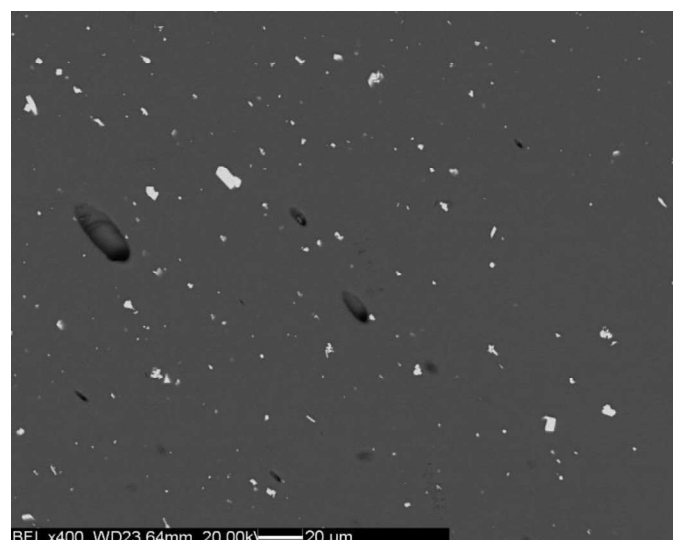


Figure 3: SEM micrograph in backscattered electrons (BSE) of the dark blue sample Ty-M-BAu. The texture is characterised by the presence of finely dispersed, euhedral crystals of Ca-antimoniates acting as opacifiers. © Cinzia Bettineschi

For reasons of space, it is not possible to go into the details of the chemico-mineralogical interpretation in this short report. The complete results will be discussed in dedicated publications, which are now in preparation.

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