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Front page: motives from Vinča culture ceramics (5,700-4,500 BC).

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IL3

Glass through the Adriatic: an overview

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Keywords: ancient glass, Adriatic glass trade, Levantine and Egyptian glass, trade routes

This contribution is based on the archaeometric dataset currently available for the 3rd-10th cen. AD natron-based glass found in Albania, Adriatic Italy, Serbia and Slovenia. The dataset includes over a thousand samples, mainly dated between the 4th and 7th centuries (beads and *tesserae* are excluded).

The main objective is to observe if, despite the significant gaps in the literature for a large part of these territories, the available data are already sufficient to trace preferential glass trade routes from the Levantine or the Egyptian coasts.

Several uncertainties undoubtedly remain regarding the provenance assignment of some samples, however, it is possible to propose some preliminary quantification.

The prevalence of the Egyptian glass groups is apparent: about 70% of the specimens included in the dataset vs 30% of Levantine-type products. Among the latter, 35% can be dated not later than the 4th century, 55% not later than the 7th and the remaining 10% not later than the 10th.

Among samples assigned to Egyptian groups, only 7% can be dated earlier than the 4th century. On the other hand, most of them (57%) are dated between the 5th and the 7th centuries, while a smaller percentage (28%) cannot be dated later than the 9th century.

So-called "fresh" glass is scarcely represented (only about 10%) by samples dated between the 4th and 7th centuries. The dominant glass groups are the Egyptians in this subset. The average of Cu and Pb calculated for the totality of the examined samples is higher than 1000

ppm, testifying to the wide use of abundant colouring agents.

While bearing in mind that the available data may represent only a tiny percentage of the vitreous material in the investigated area, these results may already inform of some general trends that have affected the Adriatic imports between the Roman, Late Antique and Early Medieval times.

IL4

Metallurgy of the Vinča culture: going beyond the 'earliest' and the 'first'

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Keywords: Vinca culture, metallurgy, slag, networks, Balkans, aesthetics

Metallurgy of the Vinca culture is currently known as the earliest in the world and dated to the beginning of the 5th millennium BC [1]. Besides the earliest documented copper and lead smelting, tin bronze making emerges at 4650 BC alongside the appearance of gold in the Balkans [2, 3]. These finds demonstrate that the technology of metal making in the Balkans evolved in a dynamic that is different from traditional models of the emergence of metallurgy based on the Near Eastern evidence and points at the necessity to revise current hypotheses on the evolution of Eurasian and global metallurgy.

We present a synthesis of all results to date that address the technology, provenance and circulation of the 5th mill BC Balkan metal with the focus on Vinca culture artifacts. Using modern analytical instruments, we reveal the recipes for metal making, the role of aesthetics as well as the patterns of cooperation between metal making communities as indicated by networks analyses [4, 5]. In this light, we suggest a novel model for the evolution of metallurgy in Eurasia and beyond.

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IL5

Latest analyses on Russian Byzantine frescoes from Novgorod

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Keywords: wall painting, Russian-Byzantine, frescoes, pigments, mortars, substrates

In this paper, we present the latest data obtained from the analyses of fragments of Russian-Byzantine wall paintings recovered from the architectural excavations carried out in the church of St. George in the Yuriev Princely Monastery built in 1119 at Veliky Novgorod, one of the oldest cities in Russia and UNESCO World site. In the last 7 years, the archaeologists of the Institute of Archaeology of the Russian Academy of Sciences in Moscow excavated the 12th-century layers and extracted a large number of fragments of frescoes, which are extremely important for the reconstruction of the history of Novgorod and the study of Russian-Byzantine art in general.

The pigments employed for the paintings and the painting techniques, with color layers, substrates, and mortars, have been studied and analyzed in the last two years in the Laboratory of the Institute of Archaeology of the Russian Academy of Sciences. The analytical methods we employed were optical microscopy (OM), X-ray Fluorescence Spectrometry (XRF) and Scanning Electron Microscope with Energy Dispersive Spectrometry (SEM-EDS). OM permits to distinguish between of the superficial painting method, the inclusions in the mortars, the intonaco and intonachino layers and various interesting substrates. XRF was employed to first screening of the fragments and the first pigment identification. The samples were mounted in resins and polished for analysis with SEM-EDS. The analytical data we possess up to now indicate a very classical Byzantine technique with the use of expensive pigments such as lazurite, but also green earth, various types of ochres and mixtures of pigments.

Special care was taken for the identification of the substrates.

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