International Workshop

Identifying black-glazed pottery productions in the central Mediterranean: an interdisciplinary approach Institut für Klassiche Arhäologie, Universität Wien, 10. Jänner 2017

Black-coated ware from Issa: evidence of local crafts or seaborne connectivity?

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The geographic position of the central eastern Adriatic region in the Mediterranean basin



The central eastern Adriatic region (modern Dalmatia, Croatia)





Eastern necropolis on Vlaška Njiva locality

Black-coated ware from tombs of Issa contextual data and statistical representation of shapes



Black-coated ware from tombs of Issa: development of later 4th and 3rd c. BCE drinking cups (skyphos, cantharos, one handler)

DATE	7.5 YR 7/4 (pink), no visible inclusions		10 YR 8/3 (very pale brown), no visible inlcusions			5 YR 7/6 (redish yellow), no visible inclusions
Second half of 4 th c. BCE			ČP			
Last quarter of the 4 th c. BCE		7				
Late 4 th - beginning of the 3 rd c. BCE			it i		•+	
Beginning and first quarter of the 3 rd c. BCE				•		
3 rd c. BCE		·	$\overline{\mathbf{v}}$			

Skyphos A (so-called Attic A type), Morel series 4341, imported and local (?)

A1

A2

A3



Čargo 2005:123

Skyphos B (imitation of Attic B type); Morel series 4313, imported





Fabric: fineware, without visible inclusions.
Munsell 10 YR 8/3 (very pale brown).
Coating: all surfaces.
Special feature: two short dashes incised below the rim, and incised letters on the bottom.
Production center: unknown.
Date of analogies: advanced 4th BCE.
Date of the context: second half of 4th c. BCE (?)

Drinking cups from southern eastern Adriatic-Ionic region?



Fabric: fineware, without visible inclusions.
Munsell 10 YR 8/3 (very pale brown).
Coating: reserved area above the foot and on its upper part.
Date of analogies: 4th BCE.
Date of the context: late 4th-beginning of 3rd c. BCE.



Fabric: fineware, without visible inclusions. Munsell 7,5 YR 7/3 (pink). *Coating:* all surfaces. *Date of analogies:* 3rd c. BCE. *Date of the context:* second half of 3rd c. and first half of 2nd c. BCE. Black-coated ware from tombs of Issa: development of jugs (oinochoe) and juglets



Conceivable provenance







Southern eastern Adriatic/Ionic region



Central eastern Adriatic



Black-coated ware from tombs of Issa: Other represented shapes of the advanced 4th and 3rd c. BCE

	bowls	small bowls and saucers	saltcellars	plates	lekythos gutus ur	bottle nguentarium
7.5 YR 7/4 (pink), no visible incl.						Z
					· S	
10 YR 8/3 (very pale brown), no visible incl.						1
5 YR 7/6 (redish yellow), no visible incl.					E	

Black-coated ware from advanced 4th and 3rd c. BCE tombs of Issa: quality and application of coating

















Čargo 2007:20

Black-coated ware from tombs of Issa: represented shapes of the 2nd and 1st c. BCE (other than juglets)



Fabrics samples under microscope

Fabric 1







- most common (83%)
- pinkish-red matrix
- uncoloured crystals
- white inclusions (carbonate remains?)
- > Clay pellets ?
- Black inlcusions (MAFIC?)

Fabrics samples under microscope







- > pink matrix
- uncoloured crystals (quartz?)
- sporadic black inclusions

Fabric sample under microscope







- red matrix
- fine white inclusions (carbonate remains?)

- 42 samples
- selected to contain local and imported Hellenistic pottery
- provenance suggested by previous stylistical, morphological and contextual investigation
- analysed set encomassed 6 black-coated samples

Analythic methods used:

- •X-ray diffraction (XRD)
- polarisation optical microscopy (OM)
- scanning electron microscopy (SEM)
- •QEMSCAN
- X-ray fluorescence (XRF)





XRD/OM mineral composition of black- coated samples:

Qtz, Cpx, Pl, Kfs Qtz, Cpx, Pl, Kfs, Pig Qtz, Cpx, Pl, Kfs, Hem Qtz, Cpx, Pl, Pig, 10Å-m, Hem Qtz, Cpx, Pl, Kfs, 10Å-m, Hem

Qtz = Quartz; Pl = plagioclase; Cpx = clinopyroxene; Kfs = K-feldspar; 10Å-m = 10Å mica (muscovite, illite); Hem = Hematite; Pig = pigeonite. The principal component biplot (PC1) depicting: the grouping of analysed ceramic potsherds from Eastern necropolis where the provisional chemical groups are marked with g1-g4.



Black- coated samples within group 1 and 2.

Groups 1 and 2

- > stylistic and morphological indications for local productions
- mineralogical and geochemical indications for most probable local production, with very uniform composition of main elements
- Firing temperatures estimated to ~850 to 900 °C
- matrix composition consisting of illite enriched in Fe-Mg clay minerals, and a range of natural inclusions-Terra Rossa as raw material?
- variations in the chemistry between the groups is explained by the impact of volcanic rocks weathering present at western part of the island



SEM imagery of Group 2



SEM imagery of Group 2 pottery showing: a similar microstructure like that of the first group with some additional inclusions present (orthopyroxene, EDS spectrum ■) (a); a characteristic composition of ceramic matrix (EDS spectrum ○) with an indication of 14-Å chlorite/vermiculite (EDS spectrum ③), and clinopyroxene (EDS spectrum ●)

QEMSCAN diffraction spectra of group 1 and 2



VIS 20 / GROUP 1



VIS 14 / GROUP 2

Mineral Name



- Ca-Mg illitic matrix enriched in a variety of mineral inclusions.
- simple paste preparation?

Preliminary conclusions

Black-coated ware from Issa as:

- tools in expressing local cultural identities through mortuary rituals
 -changes in burial customs
 - social use and acculturated meaning of "foreign" objects
 - -local taste
- material evidence of trade and other dynamic cultural interaction
 in line with other known material evidence
- material evidence on new insights about the local ceramic crafts:
 -comparative morphological, contextual as well as statistically limited
 mineralogical and chemical analysis indicate local Issaean production,
 conceivably from late 4th/early 3rd c. BCE onwards
 -contextual study allowed partial reconstruction of repertory and shape development
 -insight on conceivably local production technology
 - (e.g. paste preparation, firing temperatures etc.)

Problems:

- material reflects burial customs, while evidence from the settlement has yet not been studied
- nature of burial customs (e. g. multiple succesive burials) and problems of detailed typo-chonological developments
- sampling was limited due to frequent preservation of whole vessels
- limited comparable publications on eastern Adriatic productions

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Thank you very much for your attention!









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