Potter's tools from the workshop of Sextus Metilius Maximus (Crikvenica, Croatia): an approach tothe reconstruction of production technology

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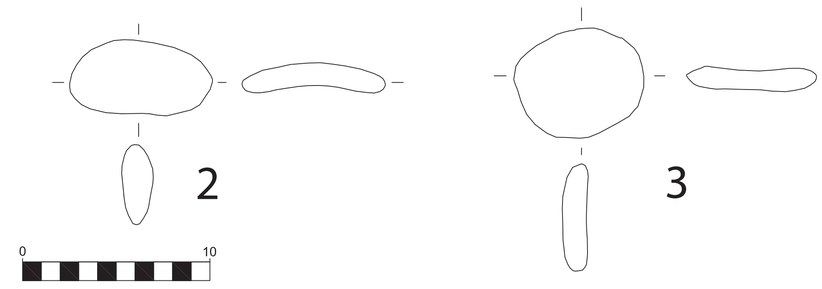
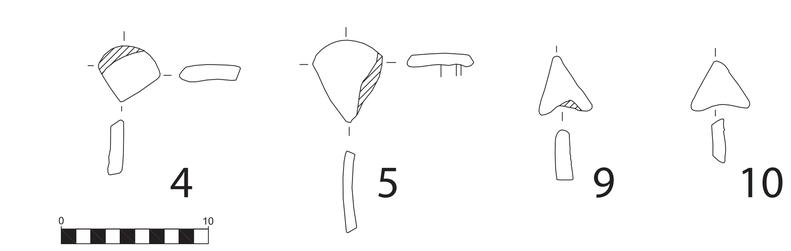
Pl. 1 Bronze potter's rib

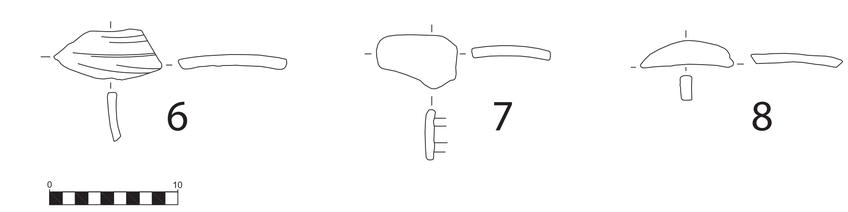
Fig.1 Selection of bronze needles/pins



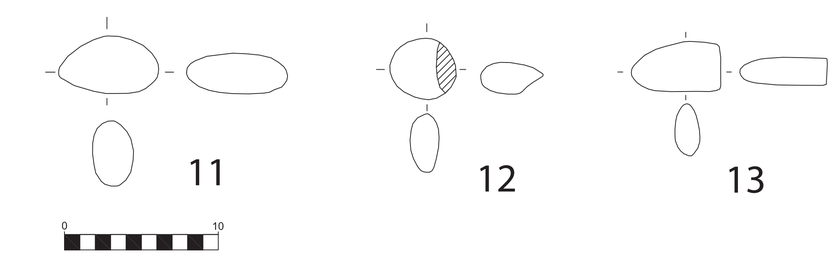
Pl. 2 Concave ceramic potter's ribs/polishers - purpusful production



Pl. 3 Fanshaped or triangular ceramic potter's ribs or kiln spacers



Pl. 4 Ceramic potter's ribs - reuse of vessels' wall fragments



Pl. 5 Convex ceramic potter's ribs/polishers - purpuseful production

Fig. 3 Examples of wooden mold usage (1 - *tubuli*, 2 - *spicae*); Amorphous kiln spacers (3)

Fig. 2 Marking on *tubuli* made by different pointed tools

Sextus Metilius Maxiumus' pottery workshop, dated to the 1st-2nd c. AD, has been identified at the site Igralište at Crikvenica-*Ad Turres*, in the northernmost area of the ancient province *Dalmatia* (North-eastern Adriatic, Croatia). More than 50 tonnes of pottery, amphorae and ceramic building materials' wasters have been recovered on ca. 1800m^2, among which some 90 types of household pottery (Ožanić Roguljić 2012), 13 types of amphorae and a wide array of CBM, including stamped *tegulae* providing the owners name, have been identified. To this, peculiar shapes can be added, such as loom-weights, incense burners and others.

A selection of ceramic potter's tools (**Pl. 2-5, Fig. 4**) has also been isolated from the workshop's waste, and objects which suggest the same function, but made with other materials (bone, metal), from the bulk of the site's small finds (**Pl. 1, Fig. 1, 5, 6**). Functionally, they can be broadly divided in tools for forming/decorating/puncturing (rib's/scrapers, pins and needles) and tool used in the kiln (separators), though the evidence also shows the adaptation of unlikely objects to perform some activities within the workshop (i.e. the bovine ulna with smoothed surface, **Fig. 5**). Potter's tools recovered at Crikvenica show standard features and shapes which can be traced back to contemporary analogies but also to etnographic examples, showing both formal continuity and suitability for the activities of pottery shaping, surface treatment and firing.

Similarities with tools recovered in other ancient pottery workshop, visible in morphology, but also in manufacture and materials, indicate variety of all three features, which is usually interpreted as a lack of standardisation (Murphy, Poblome 2012: 200-202), but also as creativity in the manufacturing or re-adaptation processes. So far no metal or bone object seems to have been manufactured specifically as a potter's tool, rather, all are reused or reshaped from objects intended for other purposes. These are of particular interest, as they seem to have been brought in from a settlement context, and can often be associated with female users (hairpins, needles). Objects such as a bronze sifter uncovered on the site could have provided the row material for tools fabrication. On the contrary, some ceramic tools have been produced purposefully by the potters for their needs (**Pl. 2, 5**) and implement's shaping for a one-time specific task is also evident (**Fig. 3/3**).

This evidence of different techniques of manufacture shows that potters possessed a "tools production know-how". A no connection, both technological and morphological, has been so far been established between Roman and earlier pottery production in the region, this know-how seems to have arrived with the workshop's italic owner who introduced, when establishing production, an array of new technologies, techniques and practices. This is even more evident if we take into consideration the usage of wooden tools, which are usually associated with CBM manufacture, and whose traces can be seen on the materials (**Fig. 3/1, 2**), though the tools themselves are not preserved.

The findspot of most of these objects does not help their interpretation, as they were mostly found within leveling layers. Nevertheless, their shape, craftmenship, analogies and comparisons with some workshop's products give us a glimps in the technology and organisation of production within this provincial early Imperial workshop.

Fig. 5 Bone fragment (bovine ulna) with smoothed surface, used as tool

Fig. 6 Bone hairpin

Fig. 4 Ceramic potter's tools

Bibliography:
Murphy, E. A., J. Poblome 2012, Technical and social considerations of tools from Roman period ceramic workshops at Sagalassos (Southwest Turkey). Not just tools of the trade?, *Journal of Mediterranean Archaeology*, 25(2): 197-217.
Ožanić Roguljić, I. 2012, Pottery from the workshop of Sextus Metilius Maximus (Crikvenica-Igralište/Ad Turres, Northern Dalmatia), *RCRF Acta,* 42: 125-132.

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Institute of Archaeology
Faculty of Letters, University of Lisbon, Portugal
25 September 2 October 2016
30th Congress of
Rei Cretariae Romanae Fautores