# Potter's mobility and transfer of technology : western Islamic influences in the production of tin-glazed in Nicosia during the 13th century

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# Potters' mobility and transfer of technology: Nicosia tin-glazed tableware in the 13th century

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## The context of the findings

Several excavation campaigns led by F. Hadjichristofi from 2009 to 2011 at the Archiepiskopi site have revealed, in the southern part of the site, the remains of an *alakatin*, a water raising machine powered by animals, used to draw water from a deep vaulted well. In the northern part, five refuse pits surround the remains of a large ancient building. The pits which vary in depth and are dug in the earth contain almost exclusively pottery. Each pit seems to have been filled in one go as the contents are homogeneous. Four pits were filled in the 13th century and one in the 14th century.

The central area of the Archiepskopi site was not built on during the Middle Ages. The fact that there was a hydraulic system - the *alakatin*, the pond and the canal - indicate that it may have been a garden or orchard area situated on the periphery of the residential district which was excavated between 2002 and 2006 in the neighbouring site of Palaion Demarcheion, to the north. The archaeological exploration of this site has revealed ruins of houses, churches and various buildings as well as the remains of craft activity, wells and cisterns and refuse pits which date from the Frankish and Venetian periods. Furthermore, this excavation has revealed the existence of ceramic production as shown by the presence of numerous tripod stilts and over fired fragments, which are dated, by Y. Violaris, to the 14th and 15th centuries. No kilns have been found on this site that's why we may assume that these production dumps were backfills which had been transported from a neighbouring district to be used for levelling work. In the current state of research, it is impossible to determine the exact location of this workshop but, thanks to the material found in the refuse pits at Archiepiskopi, it is possible to describe its production. Actually, a large part of the pottery brought to light through this excavation is of local origin as shown by the tripod stilts and over fired pottery found in the pits. The earth used is limestone clay which is hard and contains red, white and black inclusions. After firing, her colour varies from beige to orange. The fabric is different from that used in the workshops of Paphos at the same period. There is a detailed description of the production of this workshop in Nicosia in a recently published article. The focus here is on one particular category, tin-glazed ware.

## The tin-glazed pottery of Nicosia

Tin-glazed pottery was found in four pits, their filling can be dated to the late 12th to the 13th century on the basis of imports found there, namely pottery from the Middle East - crusader glazed cooking pots and glazed wares from Beirut workshops and Ayyubid polychrome painted fritwares - and Byzantium - the so-called Aegean Wares. In those four pits tin-glazed ware represents 57% of the glazed pottery, his presence is not anecdotic; alkaline-lead is represented to the tune of 37% and lead-glazed pottery 11%. In the 14th century pit, it has completely disappeared.

Those large bowls, bowls and tin-glazed cups were made from that distinctive limestone clay. Their surface was often lightened by the adding of salt, which has the advantage of producing light backgrounds after firing. The production process of tin-glazed pottery takes place in two stages. The shaped bowls were fired for the first time in order to obtain biscuit-fired pieces. Several such examples with a soapy texture can be found in the pits. They are characterised by the shape of their ring base with an interior disk which is another typical feature of these products. The pieces of tableware were then covered, only on their inner surface – with the exception of places where the liquid had run on the outside – by a watery mixture containing lead oxide, calcined tin and finely ground quartz. The limestone fabric of Nicosia, with a high expansion coefficient and thus highly porous, facilitated the adhesion of the coating. However, the glaze has only been partially preserved on these objects. It has been all the more difficult to identify it as it is of poor quality and barely covers the surface – undoubtedly because of a low percentage of tin in the lead glaze. The Nicosia pieces have an uneven surface, little lustre and are of varying opacity. An over fired glazed piece was found in one of the pits which confirms the local origin of this pottery. Radiating patterns, festoons and interlacing have been sometimes roughly painted in green (copper), brown (manganese) or green and brown on the whitish glaze. In view of the poor state of preservation of these objects it is often difficult to identify the decoration and if some bowls seem not to have any decoration it may be that it is no longer visible today.

The Byzantine Empire and the Muslim Middle East depended on imports from South East Asia and Cornwall in England for their supply of tin ore. It was an expensive commodity. Perhaps for this reason the Nicosia potters replaced the tin-glaze by a colourless or green lead-glaze applied directly onto the limestone paste of huge bowls which had the same shape as their tin-glazed counterparts and which were also decorated in a cursory fashion with festoons and crossed arcs painted in green.

These different types of bowls and cups also appear in the excavations at Palaion Demarcheion where they are dated as 12th century which is probably too early a dating. The limestone paste of an orange brownish colour, contains many lime inclusions and the archaeologist recognised a fine layer of thin whitish slip on the surface. It is probably a glaze which has deteriorated as is the case of the Archiepiskopi pieces especially as it is specified that this homogenous group is very badly preserved. The very plain geometrical decorations are painted in green and brown. M.-L. von Wartburg suggests they may be of Middle Eastern origin, without being more specific but the comparisons she makes are not convincing. Pottery with the same shape and appearance was brought to light by the excavations at Saranda Kolones in Paphos. Bowls which sometimes have a disk base are in a dark orange fabric or in a buff fabric with coarse inclusions. According to A.H.S. Megaw who has studied them, the glaze has deteriorated considerably so it is difficult to identify what it is. He can however identify a lead glaze which has been applied directly on to the fabric. Yet, even if the published photograph is of poor quality, a bowl with a white washed surface can be clearly seen. If it isn't a slip it can only be a tin-glaze. This pottery, decorated with erratic brown stripes or with broad-brush manganese segments of the same type as observed on the Nicosia examples, appear in the refuse pits dated probably from the early 13th century. For A.H.S. Megaw, they were imported from the Levant. It has to be noted that, whichever excavation site is considered, the glaze is always in poor condition. The coating of pottery can be severely altered when it is buried. Fragments of pottery which come from excavations often have a powdery surface which is identified as a whitish slip. This deterioration makes identification difficult.

As this tin-glaze and this particular form of base were both unfamiliar to the Byzantine world, my first reaction was to attribute this type of ware to the Middle East as A.H.S. Megaw and M.-L. von Wartburg had done before me. The tin-glaze, the painted green and brown decoration and the disk base are indeed characteristics of a large part of the Abbasid and Fatimid production of Syria. However, if in the period we are focusing on, the 13th century, tin-glaze was still used on Islamic lustre painted Islamic ware and if we can observe, in the pottery of the Crusader period in Beirut, the occasional disk base, there are no similar pieces in the production of Syria or Egypt. So, we should look elsewhere for parallels. They can in fact be found on the Western shores of the Mediterranean.

**Links to the protomaiolica of Sicily**

This tin-glazed ware of Nicosia painted green and brown, has a certain number of morphological features and techniques in common with Gela ware, which is a type of protomaiolica made in Sicily from the beginning of the 13th century. The centres of production which are known are: Caltagirone which is an inland town, founded by the Ligurians in the middle of the 12th century and which overlooks the vast plain behind Gela, refused pieces have been found there; Terranova/Eraclea, a new town founded in 1233 by Frederic II on the ruins of ancient Gela and where the potters from Caltagirone probably settled in the second quarter of the 13th century. The most widespread morphological type found in Gela ware is a bowl with a 17 to 23 cm diameter opening with a very wide ledge rim. There is often an interior disk in the circular base. The Gela ware bowls are made from limestone clay containing numerous quartz inclusions extracted from the geological basin of south-central Sicily; they are covered with a layer of tin glaze on the inside surface only. The observation of the tin glaze of a series of samples shows that the tin is in varying quantities and consequently the degree of opacification is not uniform especially since the grinding was not perfectly done and the oxidation was incomplete. The tin-glaze was applied on a light background because the potters whitened the surface of the bowls with seawater before the first firing thus purposely reducing the proportion of tin oxide in the glaze[1]. The body of the Gela ware pottery is decorated with geometrical designs, foliage scrolls and various types of animals painted in green (copper) in brown (manganese) and in yellow (iron) whereas on the wide ledge rim, plain, joined and crossed arcs unfold and brown painted wreathes are enhanced with coloured green and yellow points.

Specialists agree on the fact that Gela ware, because of its shape and tin glaze clearly differs from the local pottery tradition, namely siculo-maghrebi ware. However, the technique and style of the Sicilian protomaiolica ware owe a great deal to North African pottery, particularly to Tunisian tin glazed pottery painted in cobalt blue and manganese which had a resounding success on the Italian market from the last quarter of the 12th century and in the first quarter of the 13th century.

The protomaiolica of Gela was mainly marketed in eastern Sicily. In the western part of the island it is less apparent and is rarely to be found in the Italian peninsula where it appears sporadically in Calabria, Campania, Liguria and Tuscany – in Pisa, Gela ware *bacini* are inserted into the walls of

the church of Santa Cecilia which enables us to assert that these bowls were already being made in the period between 1220 and 1230. It also crops up in Provence. Gela ware is rarely found in the eastern Mediterranean sites and in Cyprus only one bowl has been recognised in Famagusta whereas a fragment of pottery was found in the excavation of Archiespiskopi. It has been established that Gela ware as well as the protomaiolica ware of Apulia were goods intended for the Franks of Morea and the Holy Land and probably travelled along with the Crusaders between Sicily and Apulia on the one hand and between the Levant and the Latin kingdom of Jerusalem on the other.

The tin-glazed production of Nicosia has certain shapes in common with Gela ware, such as the hemispherical bowl with a wide ledge rim which is often separated from the body by a ridge and the ring base with a canted groove on the underside. As for the protomaiolica ware the surface is whitened with seawater and the weak tin glaze is only applied on the inner surfaces of objects. The decoration is painted in the same shade but more rudimentary in its design and the way it is painted. We should conclude that this tin glaze production developed on the island thanks to the arrival from the outside of artisans who already mastered this particular skill.

**Where did the Nicosia potters come from?**

We can assume that the introduction of tin glaze to Cyprus, at the beginning of the 13th century, occurred under the influence of Arab potters from Sicily, who had either been obliged to move or chose to do so. At the time of the Norman Conquest, 250 000 Muslims lived in Sicily, they made up more than half of the population. Their number was reduced by 90% over one and a half centuries. From 1223, Frederic II forced a large part of the Muslim population of western Sicily, who were impossible to control, to migrate. Twenty thousand Saracen rebels were transferred to Lucera in Apulia.

This population movement was not without consequences for the production of pottery in the Western Mediterranean. The making of tin-glaze ware, with a disk base, flourished in Lucera from the second quarter of the 13th century, following the establishment of the Sicilian colony. In Marseille, excavation of workshops in the Sainte-Barbe district has provided proof of the arrival from abroad, probably Sicily, of potters who mastered the technique of tin glazing. Limestone fabric bowls, tin glazed and decorated with painted green and brown designs, with a similar profile, a ring base with an internal disk, were made locally. L.Vallauri has shown that there is a great technical, morphological and stylistic proximity between this ware made in Marseille and the protomaiolica of Sicily. This tableware, which was tin glazed, a technique which was unknown in Provence at this time, made in the Gela ware tradition from the first half of the 13th century as well as the appearance in Marseille of the kiln with clay rods, confirms the adoption, in Christian lands, of production methods of Islamic tradition. In the same way, a production of limestone fabric, ting-glazed pottery painted in green and/or brown was isolated in Barcelona in Catalonia. Described as *pisa arcaica*, otherwise known as archaic faience, these bowls were made locally in the first half of the 13th century as shown workshop vestiges. The technique of tin glazing was unknown in Barcelona before that date. According to the specialists who have studied this pottery, the commercial ties established between Catalonia, North Africa and Sicily, as well as close relations with Naples, make it possible to believe that the potters came from southern Italy or Sicily.

The technical, morphological and, to a lesser degree, decorative characteristics of one of the first Cypriot products in the 13th century, enable us to believe that the Arab potters who made them in Nicosia came from south central Sicily at the beginning of the 13th century. The mobility of potters, whether enforced or spontaneous — these skilled workers were able to take advantage of a voyage towards the Holy Land on the occasion of the sixth Crusade led by Frederic II in 1228 - was a primary factor of cross-cultural transfers and the diffusion of technology. They had mastered the technique of tin glazing, adapted their skills to local demand in Nicosia and undoubtedly to the means at their disposal. Evidently, it was not easy to obtain tin as shown by the low opacification of the glaze used for the Nicosia bowls and the lack of glaze on their outer surface[3]. The variations in appearance between the Gela ware and the Nicosia bowls, particularly concerning the decorative repertoire, convey a deterioration of quality which goes hand in hand with the change in repertoires and the loss of models. The artisans cannot be clearly identified and there are still grey areas concerning the ways the technology was transferred and the adoption of this new production technique in Nicosia. However, these findings bear witness yet again to the cultural mix which existed in Cyprus in the Middle Ages and is demonstrated by the making of everyday objects.