

Long-distance trade and communication networks in Late Chalcolithic Anatolia

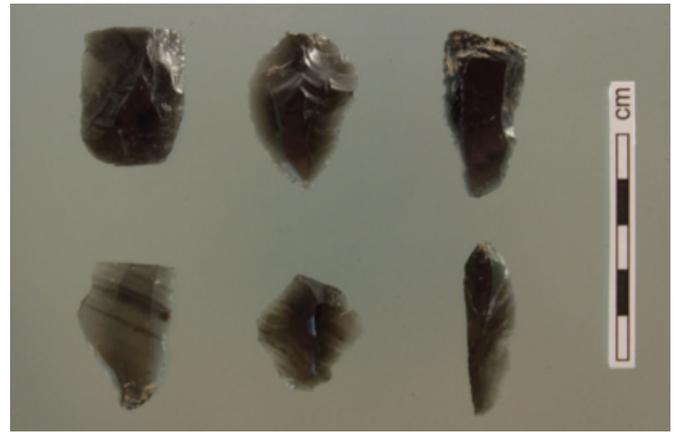
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In contrast to the Neolithic or the Bronze Age, the social realities of the intervening periods are not well known in Anatolian archaeology. Thus, excavations at Çamlıbel Tarlası, a site close to the later Hittite capital Hattuša, were undertaken to shed more light on this neglected time period. Çamlıbel Tarlası is a small hamlet site dating into the mid fourth millennium BC, i.e. into the Late Chalcolithic. The location was used for a relatively short period of time – slightly longer than a century. Such small settlements are not often the focus of scientific investigation in Anatolia, but can produce quite interesting information. As became apparent, many of the activities at Çamlıbel Tarlası were related to the presence of a small copper ore deposit in the vicinity. Plentiful remains of a copper-working cottage industry, including remains of ore, slag, crucibles and finished metal artefacts, were uncovered among the ruins of the prehistoric houses.

Somewhat unexpected were indications of far-reaching contacts. Maritime shells must have travelled inland from the shores of either the Mediterranean or the Black Sea. The production and use of artificial steatite micro beads and the custom of cranial deformation point to influences from the upper Euphrates area. A casting mould for ring-shaped figurines establishes a link to the southern Balkans. The inhabitants of Çamlıbel Tarlası also had great interest in exotic flint which arrived at the site in the shape of long retouched blades. While the source areas for flint objects are somewhat difficult to trace, the situation is much better for obsidian, which is another exotic material used for making tools at the site.

Turkey has many sources of obsidian which were utilised over millennia for the production of stone tools. One of the most significant source areas for Near Eastern obsidian is located some 200km to the south of Çamlıbel Tarlası, in Cappadocia. Smaller deposits, however, have recently been discovered in northern Anatolia as well, in much closer proximity to the site. The chemical composition of each separate flow of obsidian has a potentially unique elemental signature which allows for the source identification of obsidian artefacts through chemical analysis.

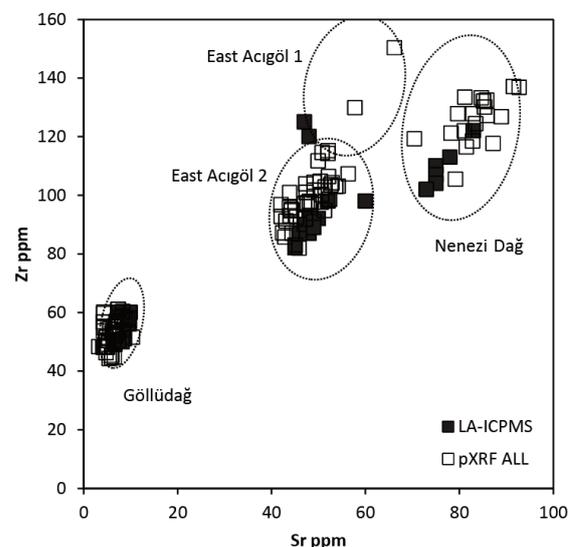
A natural question arises in the context of Late Chalcolithic raw material acquisition strategies: did the residents of Çamlıbel Tarlası acquire local obsidian or did they prefer more exotic obsidian materials for the production of their tools? Recent advancements in portable technologies, such as portable XRF analysers, have allowed us to characterise completely the entire assemblage of obsidian artefacts from the site, which using the traditional laboratory-based method would have been a prohibitively expensive and time consuming undertaking. With the help of a BIAA study grant, a representative sample was taken to the French National



Selection of obsidian artefacts from Çamlıbel Tarlası

Centre for Scientific Research (CNRS) in Orléans to test the accuracy of the portable XRF results by using ICPMS – a robust technology which can measure accurately minute quantities of elements down to the scale of parts-per-billion (ppb) – and to identify the source areas. Comparative results indicate not only a clear correlation, verifying the portable XRF data, but also allow us to define clear groups of obsidian.

Results indicate that the entire obsidian assemblage derives from exotic Cappadocian sources, namely from the well-known obsidian sources at Acıgöl, Göllüdağ and Nenezi Dağ, and not from more local sources in north-central Anatolia. This is significant because Cappadocian obsidian can be found at many contemporary sites as far away as the southern Levant. It is clear that geographical proximity of the sources was not the decisive factor in the choice of obsidian supply. Although comparable data from more contemporaneous sites are needed to understand how exactly fourth millennium BC obsidian exchange worked, this study has demonstrated how Çamlıbel Tarlası participated in overlapping exchange systems, maintaining communication with the wider world.



The Cappadocian sources of Çamlıbel Tarlası obsidian