

Iron Age metallurgy in Bulgaria - state of research and perspectives

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The claim that highly specialized metallurgy functioned well during the Iron Age on the territory of Ancient Thrace can often be encountered in the Bulgarian archaeological and historical studies. The review of the publications available to date points to an obvious contrast between hypotheses made and evidence provided. A large part of the studies rely on data contained in antique written sources though the latter offer little specific information, which cannot be used in modern *in situ* investigations.

Two groups of publications can clearly be distinguished. At first glance they have common objectives within the framework of archaeo-metallurgical studies but in practice they discuss different types of finds and structures, make use of different methodologies (as well as problems related to their application), follow different directions and analyze facts at different levels.

The author refers to the first group provisionally as „archaeological“. It involves publications of expert archaeologists whose investigations touch upon (often indirectly) issues concerned with ore mining and metallurgy during the Iron Age. In comparison to the tell and flat sites studies, the archaeo-metallurgical problems remain isolated and insufficiently developed. The situation contrasts to the state of the art in studies relating to the Chalcolithic and the Bronze Age. Unfortunately, the boom in the 1970s and 1980s in studies on pre-historic copper mining was not used in terms of possibilities to gain experience and develop new methods. Very few publications present particular data on remains from ore mining and metallurgical activity. In most cases these are results of *in situ* investigations involving excavations. The most frequently encountered type of publications within the so-called „archaeological“ group relates to attempts to find metallurgical centers based on concentrations of metal artifacts in a given area. The hypothesis usually advanced is that if local art studios/workshops operated in the area then the respective ore and metallurgical centers should have existed which provided the raw materials. The methodological difficulties in the efforts to derive such conclusions are related to a basic problem in the Bulgarian Iron Age archaeo-metallurgy. Mostly end products are available or remains of the

last link of the production chain (art studios, workshops, implements) have been found at the best. This also applies to investigations of some outstanding settlements where structures and finds related to metalworking were found. Pistiros, Sboryanovo and Koprivlen are good examples in this respect. It was in the Pistiros and Koprivlen area that the first real attempts were made (both conventional archaeological and interdisciplinary) to associate the metalworking activity recorded within the settlement area with the possible raw material sources. At this stage these attempts are still isolated cases facing problems of methodological character, which seem to be chronic for the Bulgarian Iron Age archaeo-metallurgy.

The second large group of publications can be provisionally called „geological“. These publications are written by geologists and mining engineers. Unlike the situation with the „archaeological“ groups, the structures of authors' interest are primarily related to the initial links of the metallurgical production chain. The latter involve typical terrain shapes such as ore mining remains, ore processing and metal smelting in the immediate vicinity of the mineral sources as well as related movable finds discovered by chance. These publications are actually records and present primary *in situ* observations. Here there is no terrain intervention and assumptions are mainly made with regard to the dating of the structures discovered. Not a single site of possible Iron Age metallurgy has been studied by archaeological methods.

A comparative mapping of sites discussed in the „archaeological“ and „geological“ groups of publications shows an almost complete discrepancy in respect of the source base.

A general conclusion can be drawn that there is no relationship between the separate links of the metallurgical production chain and there is no data whatsoever on part of these links. Basic problems to be solved are the lack of concreteness and little evidence due to the absence of purposeful terrain intervention, low degree of interdisciplinarity and a limited range of working methods used.

Finally, the author formulates a set of tasks, which should be completed to achieve progress in the Iron Age archaeo-metallurgical research in Bulgaria.