"The Reconstruction of 7th. c. A.D. Smithy in Central Italy"

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Abstract
Not many 7th c. blacksmith workshops have been properly excavated in Italy up to now. The still ongoing excavations carried out since 2005 at Aiano-Torraccia di Chiusi, near San Gimignano (Siena) in Tuscany by the team of the Université catholique de Louvain, directed by Prof Marco Cavalieri, have brought to light architectural structures belonging to a Roman villa, dated between the 3rd and the end of the 5th/ beginning of the 6th c. AD. Up to now only a small part of the large villa - shown by geodiagnostic surveys to extend over 1 hectare - has been excavated. The excavations and the researches represent a relevant part of the international project "VII REGIO. Elsa Valley during the Roman Age and late Antiquity". The building was abandoned in the 6th c., but in the period between the 6th and the 7th c. AD a group of Lombardic (Langobard) artisans coming from Eastern Europe, settled down in the villa remains and installed various workshops in the rooms of the representative pa...

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The villa is dated to the 3rd -5th c. or beginning of 6th c. AD. The most striking architectural structure is a representative room with 6 exedrae and a mosaic floor, surrounded by a circular passageway (ambulatio) with 6 lobes.

The Lombardic workshops

The workshops were connected one to another and provided with water from a channels system fed by a higher reservoir. They include a ceramic workshop, three rooms in which glass mosaic tesserae were recycled, and a smithy. From the indications gathered from the working remains behind the North/North-East wall, there was also the production of copper-based items and of gold.

The smithy

The workshop excavated in room B can be reconstructed in detail. In the rendering the smithy is covered by a wooden roof open at the sides to allow the escape of smoke and gases from the forges. There are two large pits for water. The central pit is connected to the water system. On the side there is a double tempering pit. At the bottom of the deeper pit objects, such as a sickle and a knife, and a jug of water have been recovered. The shallower pit probably contained a metal vessel filled with oil or brine, used in some cases in double tempering. Around the forges, hammerscale and slag have been found and the clay floor is visible. The very clean sand had been brought from elsewhere and was an important working material. It was used as support for the hot objects and spread on the red-hot iron. The sand melted and formed a silicate layer which protected the metal from oxidation. Between the forges sand was used as support. Only a small amount of working debris will be unearthed. No examples of bellow have been found. The data collected at Aiano-Toraccia give a unique insight in the working of iron of the early Middle Ages.

The smithy debris

A vast amount iron working debris, slag and hammerscale, forge residues and fragments, but also iron objects and fragments have been recovered from the excavated areas. Slag and hammerscale have been sampled and are now under study. The analyses carried out up to now, evidenced different compositions and several types of slag. The smithing activity in the workshop concerned mainly the working on steel, as 70% of the slag analysed is of high carbon content.

Conclusions

Lombardic workshops dated to this period, have never been thoroughly studied before in Italy. The excavation is still ongoing and it looks as if larger amounts of working debris will be unearthed. Apparently the workshop has been in continuous use for a long time. During the last excavation campaign in 2009 a massive stone forge of a totally different type has also been excavated outside of room B in one of the adjacent spaces. Interestingly it does not seem to have been ever used. The data collected at Aiano-Toraccia give a unique insight in the working of iron of the early Middle Ages.

Introduction

The excavations carried out since 2005 at Aiano-Toraccia di Chiusi, near San Gimignano (Siena) in Tuscany by the team of the Université catholique de Louvain, directed by Prof. Marco Cavalieri, have unearthed a large Roman villa, shown by geodetic surveys to extend over 1 hectare. Only a small part has been excavated (2005-2009) as part of the international project "VII Regio. Elsa Valley during the Roman Age and Antiquity".