

## The clay beds in the Velabrum and the earliest tiles in Rome

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Archaeologists in Rome have long faced the problem of reaching deeply-buried levels and working below the watertable of the modern city. Another problem has been that of obtaining a large enough sample of early tiles and architectural terracottas for a meaningful characterization study. For these two reasons, it was not possible to initiate a study of this kind in Rome before. In 1996, there was the opportunity to drill the first series of deep machine cores in the valley between the Capitoline and Palatine hills, one of the least known parts of the archaic city.<sup>1</sup> As a pilot project commissioned by the City of Rome with a view to a new edition of the *Forma Urbis Romae*, the aim of the fieldwork was to throw new light both on the deeply-buried early archaeology and on the nature of the valley that runs from the Forum basin to the Tiber. This new approach proved productive, and two more cycles in 1998 and 2003 led to a wider coverage that brought the number of cores to 24 (fig. 1). In the case of those cores made in the courtyard of the Vigili Urbani (fig. 1 nos. 1-4 and 9-12), one observes a long archaeological sequence between the modern street level and the top of the natural soil at more than 15 m depth. The lowest archaeological levels, which go back to before the Republic, are found below the modern water table, which helps to explain why so little was previously known about this part of the early city.<sup>2</sup>

One of the unexpected results was the discovery in the central part of the valley of thick clay beds well suited for the production of ceramics.<sup>3</sup> There had been no known source of workable clay for making architectural terracottas and roof-tiles within the archaic city on the E bank.<sup>4</sup> One needs a source of some size for the production of tiles, since even an early roof such as the one covering the temple of Mater Matula at Satricum called for some 17 tons of clay.<sup>5</sup> Given the close proximity of the clay beds to the Forum Romanum, and given the literary sources which link the figure of Tarquinius Priscus with the first work on a *cloaca* and with the origins of the Forum itself, as well as claims that the fifth king was the son of Demaratus who is said to have brought *plastica* from Corinth to central Italy, their discovery has wide-ranging implications for our understanding of the archaic city.<sup>6</sup> Were the clay beds in the Velabrum used for making ceramics in the regal period? In other words, can one match the fingerprints of the clays in the Velabrum with those of the tiles and architectural terracottas in Rome that date to the 7th and 6th c. B.C.? Petrographic and chemical characterization of a large number of roof-tiles from 10 sites in Rome allows this question to be answered in the affirmative.

A few words need to be said about the apparent shortage of good clay sources within the area of the archaic city. At the end of the 19th c., R. Lanciani made the general observation that the main source for ceramics and bricks in later Roman times appears to have been near the

1 For a preliminary report on the first cycle of coring, see Ammerman 1998; on the first two cycles, see id. 1999.

2 Cressidi 1984.

3 Ammerman 1998, fig. 2. On the wider physical setting of the whole valley from the E bank of the Tiber to the Argiletum, on the N side of the Forum basin, see Ammerman and Filippi 2004. Note that there exist three names (Velabrum, Forum basin, Argiletum) for different parts of the same valley but none for the valley as a whole. On the Forum basin, see Ammerman 1990. On the Argiletum, see Tortorici 1991.

4 On the shortage of good sources of clay on the E bank for making early ceramics and roof-tiles, see Cifaru 1995, 203-4; 2008, 224-25; Ammerman 1998, 221-22.

5 Kerdelli 1990, 138-39. Recent experimental studies at Corinth by P. Saperstein (2008) and G. Sanders indicate that, given the volumes of clay required in tile-making, one has to work with clays of fair quality since it is too much trouble to become involved in the elaborate preparation of the clay body.

6 On Tarquinius Priscus and the first *cloaca*, Liv. 1.33.6 and Dion. Hal. 3.67.5. On the fifth king and the start of activity in the Forum, see Liv. 1.35.10. On the question of Demaratus in Italy, see, e.g., Blackway 1935; Ampolo 1976-77; Mushi 1987; Zevi 1995; Winter 2005; Kidgway 2006.