



Micromorphological analysis of sediments at the Bronze Age site of Mitrou, central Greece: patterns of floor construction and maintenance



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ABSTRACT

The study of settlement sites is usually based on the analysis of architectural or cultural phases. The sediments that constitute the excavated deposits inside or outside houses are rarely studied. This work presents micromorphological analysis of sediments at the prehistoric site of Mitrou, a small tidal islet in central Greece. Unusually long archaeological sequences have been excavated ranging from the Early Bronze Age to the Early Iron Age (ca. 2400–900 BCE). The occupational deposits in the Early and Middle Bronze Age are characterized by meticulous maintenance practices with multiple replastered floor sequences. These include surfaces made of debris produced inside houses by day-to-day activities. In this way an impressive thick sequence of overlapping worn-out floors and occupational deposits is produced with a characteristic finely layered macroscopic appearance. There is no clear association of a building phase with a single floor level but rather with a thick sequence of floor build-up. This practice ends in the Late Bronze Age, and from then on, floors are not frequently repaired and their construction technique is more standardized. Usually, a relative thin sequence of one or two floors is associated with a new architectural phase. The observed change is broadly correlated with the rise of a prepalatial political elite at Mitrou. The contrasting maintenance techniques also are relevant to discussions about differences between tells and 'flat' settlements. Until the beginning of the Late Bronze Age, Mitrou's indoor surfaces are those of a tell site whereas after that its surfaces resemble those of a 'flat' settlement. In Mitrou it appears that this change is related to a different perception of construction and maintenance of floors that in turn should be traced to the pattern of reconstruction of entire houses. These changes have a social significance that may reflect differences in household processes and use of space.

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1. Introduction

Traditionally, the study of most urban sites and any sites with architectural remains has been based on the analysis of architectural or cultural phases. The sediments (or the so called "earth" or "dirt") that are excavated inside or outside houses rarely are objects of study in themselves. Although everyone would accept that understanding how sediment has accumulated inside a house improves our understanding of the context of archaeological finds, in the overwhelming majority of excavations the earth is thrown onto the backdirt pile without any examination. It may be finely screened for microartifacts and biological markers but rarely is

studied in itself. Moreover, the mere extraction of the sediments from their depositional matrix already precludes any possibility of analysis of their contextual arrangement (Matthews, 1995).

Although several techniques may be used to study archaeological sediments, only micromorphology studies the sediments in their original arrangement and therefore is able to identify the sequence of events in the genesis of occupational deposits (Goldberg, 1980). Indeed, several studies of Near Eastern tell sites have shown that micromorphology can provide the framework for understanding site formation processes in settlement sites and even identify special features related to different maintenance and discard practices as well as other specific activities (Ge et al., 1993; Matthews, 1995; Matthews et al., 1994, 1996, 1997; Shahack-Gross et al., 2005). Micromorphology has also been applied elsewhere in the study of constructed floors and occupational deposits (Macphail and Crowther, 2007; Macphail et al., 2007; Milek, 2005; Milek and French, 2007; Sveinbjarnardóttir et al., 2007; Karkanas

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and Efstratiou, 2009; Matarazzo et al., 2010). In the majority of the cases however, the rarity of preserved constructed floors and their associated occupational debris has prevented assessment of inter- and intra-site variability and identification of changes related to societal or cultural developments.

The Bronze Age and Early Iron Age site of Mitrou in Greece promised to be an ideal site in this respect because it contains a long sequence of settlement strata with thick occupational deposits ranging in date from the Early Helladic IIB to the Late Proto-geometric pottery phases (ca. 2400–900 BCE) – a time span that has witnessed major socio-political and cultural changes. Therefore, this sequence provides a unique opportunity to study changes in the content and structure of occupational deposits through time and relate them to sociocultural developments in the Greek Bronze Age and Early Iron Age.

We will argue in this paper that indoor flooring practices at Mitrou exhibit a broad and pervasive change at the beginning of the Late Bronze Age, in the Late Helladic I pottery phase. We will demonstrate that Mitrou's Early and Middle Bronze Age floors resemble those of tell-sites (settlement mounds), whereas floors dating to the Late Bronze Age and Early Iron Age resemble those of “flat” settlements. This change coincides with the rise of a political elite at Mitrou in the Late Helladic I phase.

2. The site

Mitrou is a small tidal islet in the Bay of Atalante, which is part of the North Euboean Gulf in central Greece (Fig. 1a–b). The islet measures 330 by 180 m and has a surface extension of about 3.6 ha. At low tide it is connected to the mainland, and at high tide it is located only a hundred meters from the mainland coast. Its surface is fairly flat, rising gently to the north to about 12 m above sea level. During the Bronze Age sea level in the area was several meters lower than at present and the site probably was part of the mainland, but still located close to the sea (Lambeck, 1996; Cundy et al., 2000). The rising sea eroded the sides of the islet and produced steep scarps in two areas along its eastern and western shores

(Fig. 1a). The bedrock of the islet consists of Neogene marl and limestone with some outcrops of basic rocks appearing in the deepest part of the northern sea scarp. The bedrock geology of the region consists mainly of a variety of carbonate rocks and serpentinite. Indeed, the present coastal plain and beach contain large amounts of serpentinite gravel and sand.

The ancient site covers the entire islet, and it is in excellent state of preservation (Van de Moortel and Zahou, 2006, 2012: 1131, fig. 2). Systematic excavations by the Mitrou Archaeological Project, carried out each summer from 2004 to 2008, exposed a surface area of 777.52 sq. m., or 2.2% of the islet (Figs. 2 and 3). These were supplemented by geophysical surveys covering the entire islet, and by an archaeological surface survey of almost 25% of the islet. In addition, the stratigraphic sequences of the 45 m long eastern sea scarp as well as part of the western sea scarp of similar length were documented (Tsokas et al., 2012; Van de Moortel and Zahou, 2012: 1131, fig. 2). At the western sea scarp, the lowest level encountered above sea level dates to the Final Neolithic phase, and at the eastern sea scarp it dates to Early Helladic IIB. Excavations revealed stratified sequences with more than 40 occupational phases with indoor floors and exterior surfaces. These showed that the site was occupied without interruption from the Early Helladic IIB into the Late Proto-geometric phase (ca. 2400–900 BCE), i.e., throughout most of the Bronze Age and into the early part of the Early Iron Age. As is common in Bronze Age Greece, all excavated structures at Mitrou had been built with mudbrick walls set on low socles constructed of field stones. Most structures had clay roofs, with the exception of Early Helladic IIB Buildings N and M, which had roofs made of baked roof tiles.

Early Bronze Age architectural remains were uncovered only at the bottom of a 6 × 5 m trench (Trench LX784) at the eastern sea scarp, dug 5 m deep from the modern surface down to sea level (Fig. 2). Parts of two successive buildings, labeled N and M, respectively, were excavated here, and dated to the Early Helladic IIB pottery phase (ca. 2400–2150 BCE). They had substantial walls and ceramic roof tiles. Too little has been excavated to allow for the

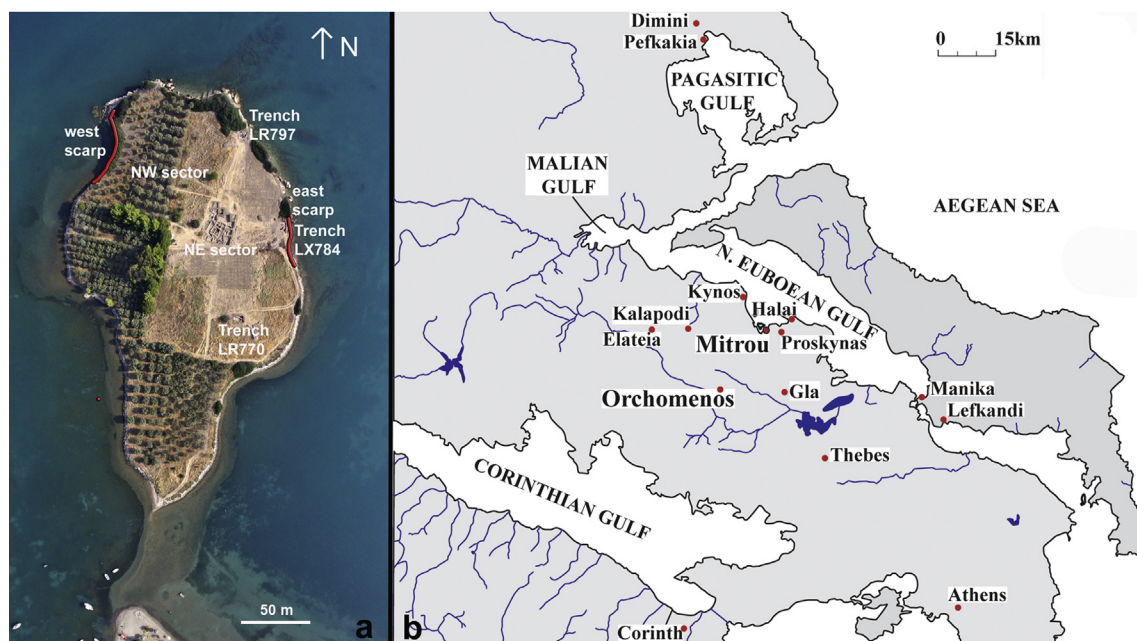


Fig. 1. a) Mitrou islet with location of excavation areas and sea scarps (photo K. Xenikakis and S. Gesafidis); and b) map of Central Greece with the location of Mitrou and some important Bronze Age archaeological sites (drawing B. Lis and T. Ross).

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