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From 2007 to 2011, a joint team of the Université Catholique de Louvain and the Katholieke Universiteit Leuven under the auspices of the Belgian School at Athens have been conducted archaeological field research at Sissi, a Bronze Age settlement on the north coast of Crete (Fig. 1b; Driessen et al. 2009; in press). In 2008, the interdisciplinary project saw the inclusion of a soil micromorphological (i.e. the microscopic study of undisturbed soils) research tier. The objectives of this research are to elucidate use of space, function, occupation surface sequences, architecture, abandonment- and post-depositional processes as well as assessing the added value of integrating soil micro-morphological sampling as standard archaeological practice (Carpentier 2011).

Bronze Age Crete is one of the most elaborately studied fields in archaeology and a great deal of effort has been spent in trying to elucidate the intricacies of Minoan society. The legacy of Evans and the impact of the 'Palace' sites of Knossos, Malia, Phaistos, Zakros and Galatas, as well as smaller elite sites such as Palaikastro, Myrtos Pyrgos, Haghia Triada and others, have been a determining factor, while new data are scant. The excavations at Sissi, a small Minoan settlement in the periphery of Malia could be instrumental in adding vital data about an underrepresented but major stratum of Minoan society. The longevity of the site could even allow the study of society throughout most of the Minoan Bronze Age.

A modified version of this poster was presented at the *Workshop of the Working Group on Archaeological Soil Micromorphology* held in Pisa in May 2011 (Carpentier 2011).

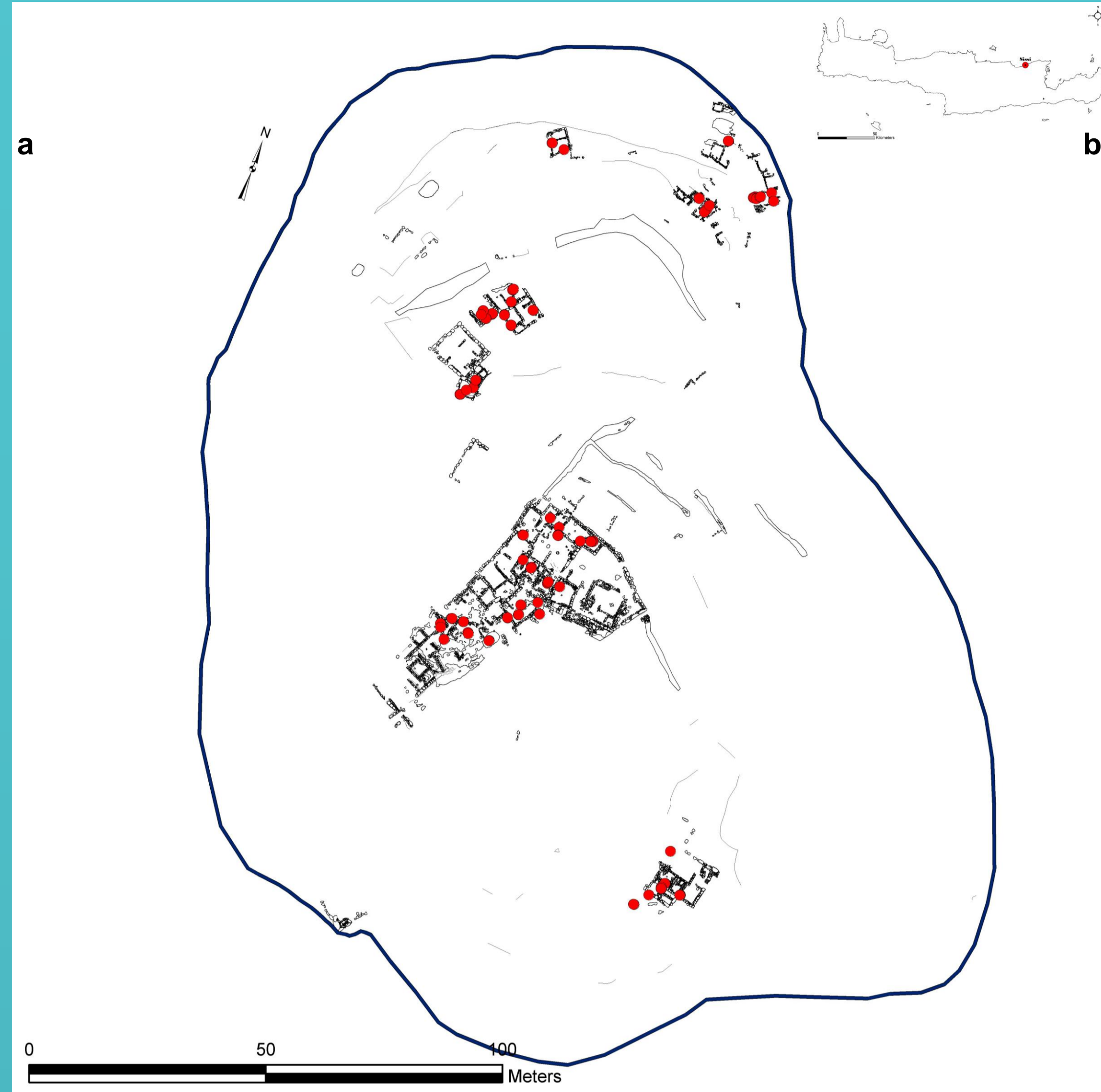
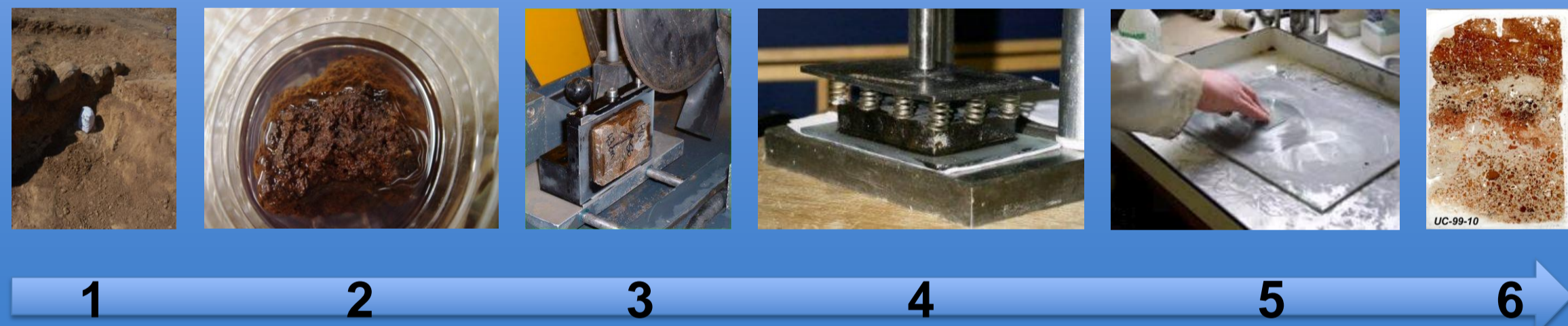


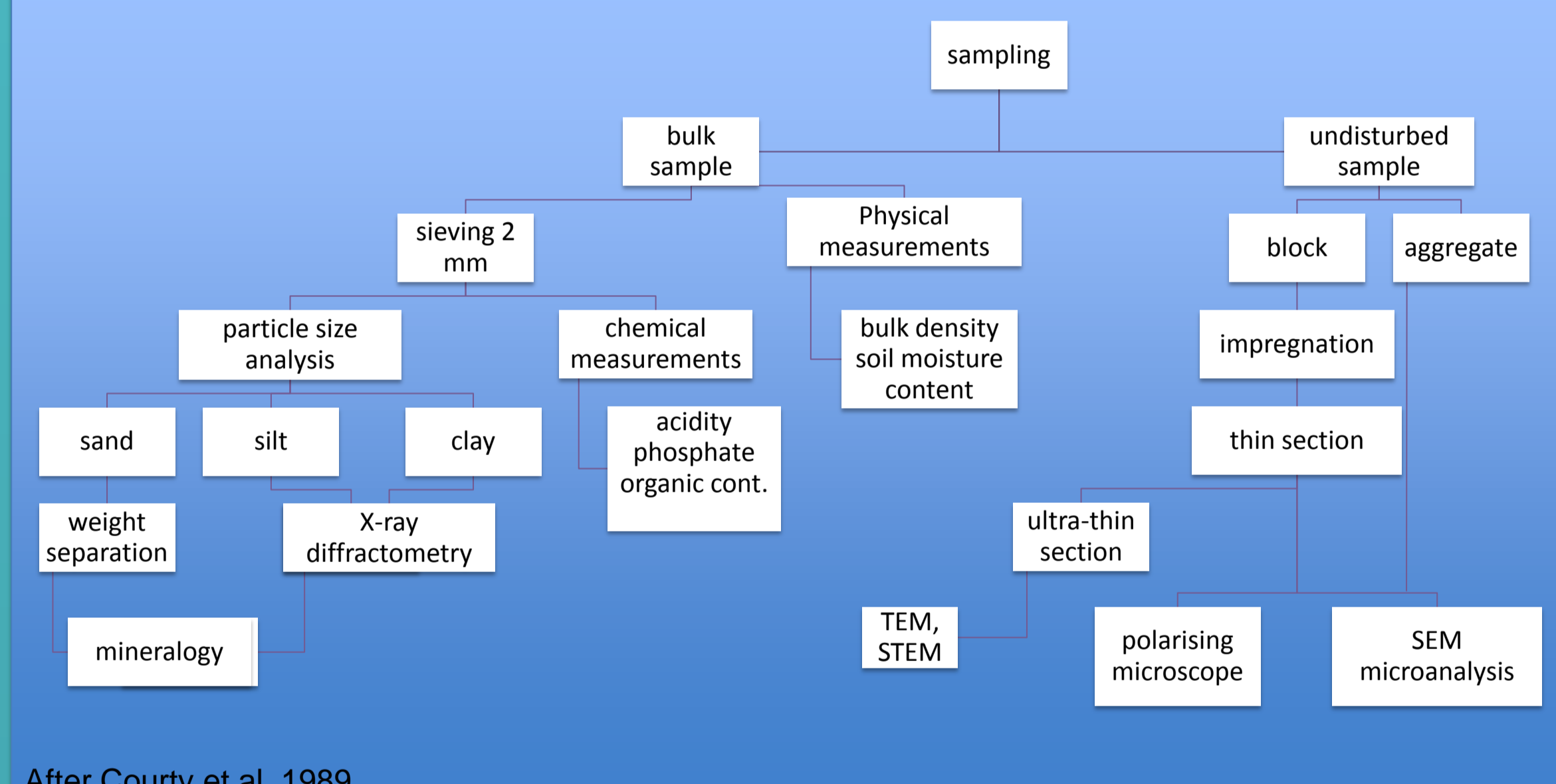
Fig. 1 Micromorphological sample locations at Sissi (courtesy of P. Hacigüzeller)

Soil Micromorphology

1. Undisturbed soil monoliths are collected on site;
2. They are immersed in resin (impregnated in a vacuum) and oven-dried;
3. Parts selected for further study are cut into chips;
4. Chips are mounted onto a glass slide;
5. These are ground mechanically and by hand to a thickness of 30µ;
6. This results in a translucent thin section;



Research Tree



After Courty et al. 1989

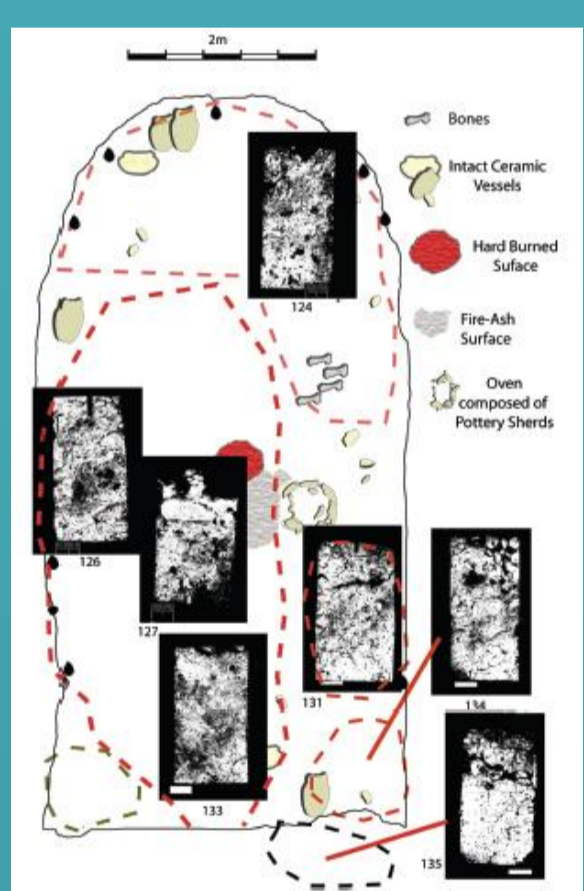


Fig. 2 Functional use of space in Hut 8, Afragola (Matarazzo et al. 2010)

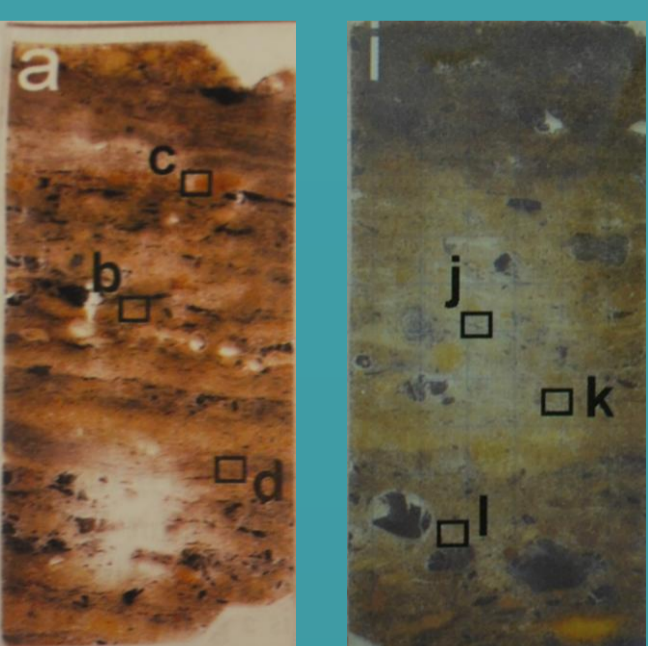


Fig. 3 Daily cultural activity deposits from Neolithic middens in Çatalhöyük (Shillito et al. 2011)

Over the past four years, 60 monoliths have been collected from various contexts in the different zones of Sissi (Fig. 1a). The research questions vary depending on the specific zone and context they come from. For the cemetery, which has yielded ample anthropological and archaeological data pointing to intensive and frequent reuse, the questions are more related to sequences of use, ephemeral architecture and the severe erosion that has afflicted the area, while the questions that arise for the settlement tend to be centered on (changing) function, occupation surface sequences, environmental indicators, periodicity and abandonment although architectural data are of primary importance too. Additionally, the focus will be on the different types of fills, their composition, formation and pedogenesis. The latter data will be used to gain a better understanding on the repeated phases of abandonment the site experienced.

The sampled areas will reveal the extent in which the different parts of the hill have suffered from post-depositional processes and help to assess the representativity of the gathered data and benefit possible future excavation and conservation strategies. Apart from severe erosion in the cemetery which is dominated by bedrock and regularly exposed to seawater, there has been limited ploughing activity and periodic erosion as a result of grazing. Provided the archaeological soil micromorphology analysis yields sufficient relevant data, this research will be of assistance for the currently ongoing reconsideration of Cretan Bronze Age social structure, similar to what has been done for Bronze Age Italy (Fig. 2; Matarazzo et al. 2010) or Neolithic Çatalhöyük (Fig. 3; Shillito et al. 2011). Apart from adding a much needed and essential data stream to the interdisciplinary framework of the project, the study aims to judge and advocate the feasibility of soil micromorphological sample collection as standard practice during archaeological field work in Crete and elsewhere (Carpentier 2011).

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REFERENCES

Carpentier, F. *sin(a)=vision/object or how to break through the "vision barrier"*, paper presented at the 17th Annual Meeting of the European Archaeologists Association, Oslo, 14-18 September 2011.

Carpentier, F. *Archaeological Soil Micromorphology at Sissi, Crete*, poster presented at the Workshop of the Working Group on Archaeological Soil Micromorphology, Pisa, 18-22 May 2011.

Courty, M.-A et al. R. *Soils and Micromorphology in Archaeology*. 1989. Cambridge: Cambridge University Press.

Driessen, J. et al. *Sissi, Crete. Preliminary Report on the 2009-2010 Excavations (Aegis 4)*. In press. Louvain-la-Neuve: Presses universitaires de Louvain.

Driessen, J. et al. *Sissi, Crete. Preliminary Report on the 2007-2008 Excavations (Aegis 1)*. 2009. Louvain-la-Neuve: Presses universitaires de Louvain.

Matarazzo, T., et al. Occupation Surfaces Sealed by the Avellino Eruption of the Vesuvius of the Early Bronze Age of Afragola in Southern Italy: A Micromorphological Analysis, in *Geoarchaeology: An International Journal* 25, No. 4. 2010: 437-66.

Shillito, L.-M. et al. The microstratigraphy of middens: capturing daily routine in rubbish at Neolithic Çatalhöyük, Turkey, in *Antiquity* 85, No. 329. 2011: 1024-38.

Stoops, G. *Guidelines for Analysis and Description of Soil and Regolith Thin Sections*. 2003. Madison: Soil Science Society of America.

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