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**Review Michael W. Morris, 2002: Soil Science and Archaeology.
Three Test Cases from Minoan Crete, Prehistory Monographs 4**
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Citation

Kamermans, H. (2004). Review Michael W. Morris, 2002: Soil Science and Archaeology. Three Test Cases from Minoan Crete, Prehistory Monographs 4. *Geoderma Regional*. Retrieved from <https://hdl.handle.net/1887/16709>

Version: Not Applicable (or Unknown)

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Note: To cite this publication please use the final published version (if applicable).



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Geoderma 121 (2004) 153–156

GEODERMA

www.elsevier.com/locate/geoderma

Book reviews

Soil Science and Archaeology. Three Test Cases from Minoan Crete

by Michael W. Morris, 2002. Prehistory Monographs 4. The Institute for Aegean Prehistory Academic Press, Philadelphia. Hardbound, 141 pp. ISBN 1931534039. \$50

Soil Science and Archaeology describes three case studies of the application of soil science to archaeology on Crete. The investigations were carried out by the Department of Plant and Soil Science of the University of Tennessee—Knoxville in cooperation with the Kavousi Project of the American School of Classical Studies at Athens. The sites studied, Karphi, Chrysokamino, and two sites near Kavousi, Vronda and Kastro, are all located in the eastern part of Crete and date from the Late Minoan IIC and the Subminoan period (1200–1000 BC). The research was carried out as part of a multidisciplinary study modelled on the “North American anthropological approach to prehistory.” The main goals of the pedological studies were to understand the soils and the geomorphology of the landscape, to establish a chronology of landscape development, and to interpret the palaeoenvironmental conditions.

The book consists of four chapters: a general one on the environmental and cultural history of Crete and surroundings, followed by one chapter for each case study. It is beautifully produced with maps and black-and-white photographs.

The studies form an interesting contribution to the discussion of Claudio Vita-Finzi’s model of alluviation in the Mediterranean region. In the late 1960s, Vita-Finzi described in his famous book *The Mediterranean Valleys* two cycles of alluviation, which he attributed to climatic changes, the “Older Fill” and the “Younger Fill.” His ideas were widely supported by archaeologists working in the Mediterranean at that time. The observations by Morris conflict with Vita-

Finzi’s hypothesis. He concludes that a moister climate existed before the Late Minoan occupation and that a drier climate similar to today developed during the Late Minoan period. His results suggest that human behaviour is a major cause for changes in the landscape, and the results are in correspondence with theories by Van Andel and others.

Other topics discussed are the origin of the famous terra rossa soils and the influence on archaeological material of forms of pedoturbation like the swelling and shrinking of vertisols. Are terra rossa soils residual soils formed on limestone or do they have an aeolian origin? There is evidence for aeolian activity until fairly recently. The author even pictures a “Roman dust bowl situation” during the first millennium AD.

The swelling and shrinking properties of vertisols are well-known causes for vertical movement and destruction of archaeological material. This form of pedoturbation has its own name: argilliturbation. In Chrysokamino, two artefact lines at a depth of 30 and 110 cm were observed. Artefact movement through the profile is proffered as an explanation for the development of these lines.

Morris’ study also gives an indication of the past suitability of the soils in the study areas for agriculture. After the observation that in a certain area, the parent material yields soils that are usually low in biological activity due to potentially toxic levels of Al and Mn, Morris mentions, “One may begin to wonder why this landscape at Karphi was utilized for agricultural terracing.”

The book is more than a collection of interesting case studies. For instance, the part of chapter 1 called Pedology and Archaeology is a useful summary of what, in my opinion, all archaeologists should know about the application of soil science to archaeology. The sections on Materials and Methods with a discussion on soil physical and chemical characteristics

is geared towards soil scientists and perhaps difficult to understand for the average archaeologist.

This work is of interest not only to soil scientists and archaeologists working in the Mediterranean region but also to archaeology teachers and students looking for examples of the application of soil science to archaeology.

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