Production and exchange of the earliest ceramic vessels in the Aegean: a view from Early Neolithic Knossos, Crete

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Around 6500 BC the first ceramic vessels appeared in the Aegean (Anatolian coast, mainland Greece, Crete). On Crete, the rich stratigraphical sequence of the Neolithic tell-mound at Knossos attests to the introduction of pottery after a long aceramic phase (c. 500 years). In common with most assemblages of this period, pottery production has been understood to be almost entirely local to its findspot, leading to a minimalist view of ceramic exchange (*cf.* Vitelli 1993).

In the case of Knossos this ceramic isolation is compounded by the fact that an Early Neolithic (EN) date has been claimed for only six other sites, most of which are caves (see MAP). Consequently the EN Cretan landscape is considered to be empty of settlements, dominated by an isolated Knossos (*e.g.* Manning 1999: 470).

These hypotheses have been re-examined in doctoral research by Tomkins into the production, circulation and consumption of EN pottery from Knossos. This project has integrated macroscopic study of pottery form, fabric and frequency with a combination of thin-section petrography and scanning electron microscopy. This has provided new data on ceramic technology and provenance, which challenges current assumptions about the role of early ceramics, EN settlement and the archaeological visibility of early sites.

The project has identified a range of fabrics that occur in widely differing numbers. Perhaps unsurprisingly, the greatest proportion is tempered with varieties of crushed limestone at least compatible with a local provenance (FIGURE 1). Other major fabric groups suggest a provenance elsewhere in north-central Crete or perhaps further afield, being tempered with altered volcanic rock (FIGURE 2) or phyllite (FIGURE 3). Most fabrics, however, occur relatively infrequently (<5%); in most cases their provenance remains open, although a few appear to originate off-island (FIGURE 4).

The origin of one of these rare fabrics is clear. Present from the earliest pottery-bearing level at Knossos (Stratum IX; Evans 1964: 144–7), it is dominated by fragments derived from granodiorite, with lesser amounts of phyllite and basaltic rocks (FIGURE 5, FIGURE 7). This distinctive combina-

tion of lithologies is present in later ceramic fabrics, commonly known as 'Mirabello' fabric, produced on the northern edge of the Isthmus of Ierapetra, East Crete. Indeed a close match for the EN fabric from Knossos has been found in pottery dated to the Final Neolithic found within this area of the Isthmus (Kavousi) (Haggis 1995) (FIGURE 6). Thus an origin for this fabric is confirmed around 70 km distant from Knossos.

This fabric forms only a small part of the emerging picture. Nevertheless, its discussion here illustrates the wealth of information revealed when a local provenance for Neolithic ceramics is not assumed and appropriate attention is given to ceramic variability. The full publication of analyses is in preparation, however a number of observations can be made:

- 1 Mineralogical and stylistic evidence suggests that the range of fabrics present at EN Knossos represents the production of ceramic vessels at a number of different settled locations within Crete, mostly in north-central Crete; however the EN 'Mirabello' fabric shows a source quite distant from Knossos.
- 2 The presence of these fabrics at Knossos suggests that the earliest ceramic vessels on Crete were exchanged more frequently and over greater distances than has previously been considered likely. Consequently, the role of ceramics as exchange items may have been underestimated.
- 3 The EN Cretan landscape seems not to have been empty and dominated by an isolated Knossos, but rather may have been populated by a number of as yet undiscovered and interacting settlements.
- 4 This identification of an otherwise hidden

MAP. Crete showing EN sites and the Mirabello Bay.

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FIGURES 1–4. Photomicrographs (crossed polars, horizontal dimension 3 mm) illustrating EN fabrics from Knossos: 1 crushed calcite; 2 altered volcanic rock; 3 phyllite; 4 blueschist.

FIGURES 5 & 6. Photomicrographs of EN fabric from Knossos with 5 inclusions from granodiorite and rare volcanic rock; and 6 similar fabric from the area of Kavousi.

FIGURE 7. Black polished EN sherds from Knossos in 'Mirabello' fabric

prehistoric landscape implies that intensive/extensive surveys have failed to detect early (Aceramic-EN) settlement on Crete. The area of origin for the Mirabello fabric has been subject to a number of surface surveys (e.g. Gournia; Kavousi-Thripti; Vrokastro) which have identified only later (Final) Neolithic ceramic material. Perhaps the earliest prehistoric land surface cur-

rently remains out of reach. This may be because it lies deeply buried, but might also be the result of problems in dating Neolithic pottery collected in surface survey.

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