I

Neolithic:
Strata IX–VIII, VII–VIB, VIA–V, IV, IIIB, IIIA, IIB, IIA and IC Groups

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INTRODUCTION

Ever since the first test pits of 1900 revealed the presence of a deeply stratified Neolithic settlement underlying the Bronze Age palace (Evans 1901*b*, 1921; Mackenzie 1903; FIG. 1.1), Knossos has occupied a central place in our understanding of the Cretan Neolithic. While the subsequent years have seen the discovery and publication of Neolithic material from many other sites, none have produced a sequence anywhere near as old, long or complete. The unique nature of the Knossos sequence has presented both opportunities and problems for the development of Cretan Neolithic studies. Without Knossos we would have no idea that the earliest settlement on Crete dates back as far as the Aceramic or Initial Neolithic (>7000–6500/6400 BC; Perlès 2001, 64–97), placing Knossos among the oldest farming communities in Europe, nor would we know anything about the nature of human settlement on Crete up to the fourth millennium BC. At the same time, however, the uniqueness of Knossos has engendered a sense of isolation and has restricted our ability to understand its wider context. This sense of isolation also holds true in the broader context of Aegean Neolithic studies. Although unique in the archaeological record of the Aegean in being the only open-air settlement to show continuous occupation from the very beginning to the very end of the Neolithic and into the Bronze Age, Knossos has never been central to our understanding of the Aegean Neolithic and is frequently overlooked. The reasons for this are varied: Knossos is far from central and northern Greece, currently the main centres for the study of the Greek Neolithic, and is relatively under-published. Perhaps more significantly, the traditional subdivision of the Cretan Neolithic into Early, Middle, Late and Final phases, based almost entirely on the Knossos Neolithic sequence, does not match the subdivision of these same phases in the rest of the Aegean (see TABLE 1.1), a fact that has not always been fully appreciated (see also below, p. 21). The traditional Cretan EN phase in fact spans the same period of time as the EN, MN and LN phases on the Greek mainland (i.e. *c.* 6500/6400–4500/4400 BC) and Cretan MN, LN and FN are contemporary with Greek FN (see TABLE 1.1). As a result of these factors it is currently far from clear how the social and material development at Knossos may, or may not, relate to other regions of Crete and the Aegean.

In order to resolve these problems of definition and integration, this chapter will present a complete re-evaluation of the Knossian Neolithic sequence in terms of its historiography, stratigraphy and ceramic phasing. Much of this is based on the results of a recently completed restudy of ceramic and stratigraphical development at Knossos using the well-stratified deposits excavated by J. D. Evans (in 1957–60 and 1969–70) from below the Central and West Courts of the palace (FIGS. 1.1–2 and TABLES 1.1–4; Evans 1964, 1968, 1971, 1973, 1994; Tomkins 2001). The work on ceramics includes a full stylistic restudy and a large-scale programme of microscopic analysis (petrology; Scanning Electron Microscopy: see Tomkins and Day 2001; Tomkins *et al.* 2004), the results of which will be presented in full elsewhere. A wide range of fabrics has been defined by this work (e.g. Tomkins *et al.* 2004, fig. 2.1). In this chapter, however, since the focus is on local ceramic developments, discussion will be confined primarily to those fabrics whose mineralogy, frequency and technology are compatible with a local (<5–7 km) provenance.

Restudy of stratigraphy confirms the validity of the sequence originally presented by J. D. Evans (1964), but with some additional subdivisions. The number of recognisable chronological phases has been increased from six to ten (see TABLES 1.1–2), thus improving the resolution at which change at Knossos can be comprehended. In addition to the five houses from below the Central Court that were originally given names (Houses A–E; Evans 1964), a further six are now recognised (Houses F–L; TABLE 1.3). In common with other chapters in this volume (see also Cadogan *et al.* 1993), the aim has been to present groups of deposits considered representative of the various ceramic phases at Knossos in their stratigraphical sequence (see TABLES 1.1–5 and FIG. 1.2). The Neolithic pottery groups in this chapter have been named after the stratigraphical units in which they occur and as these units appear in a revised version of J. D. Evans's sequence of strata (Strata

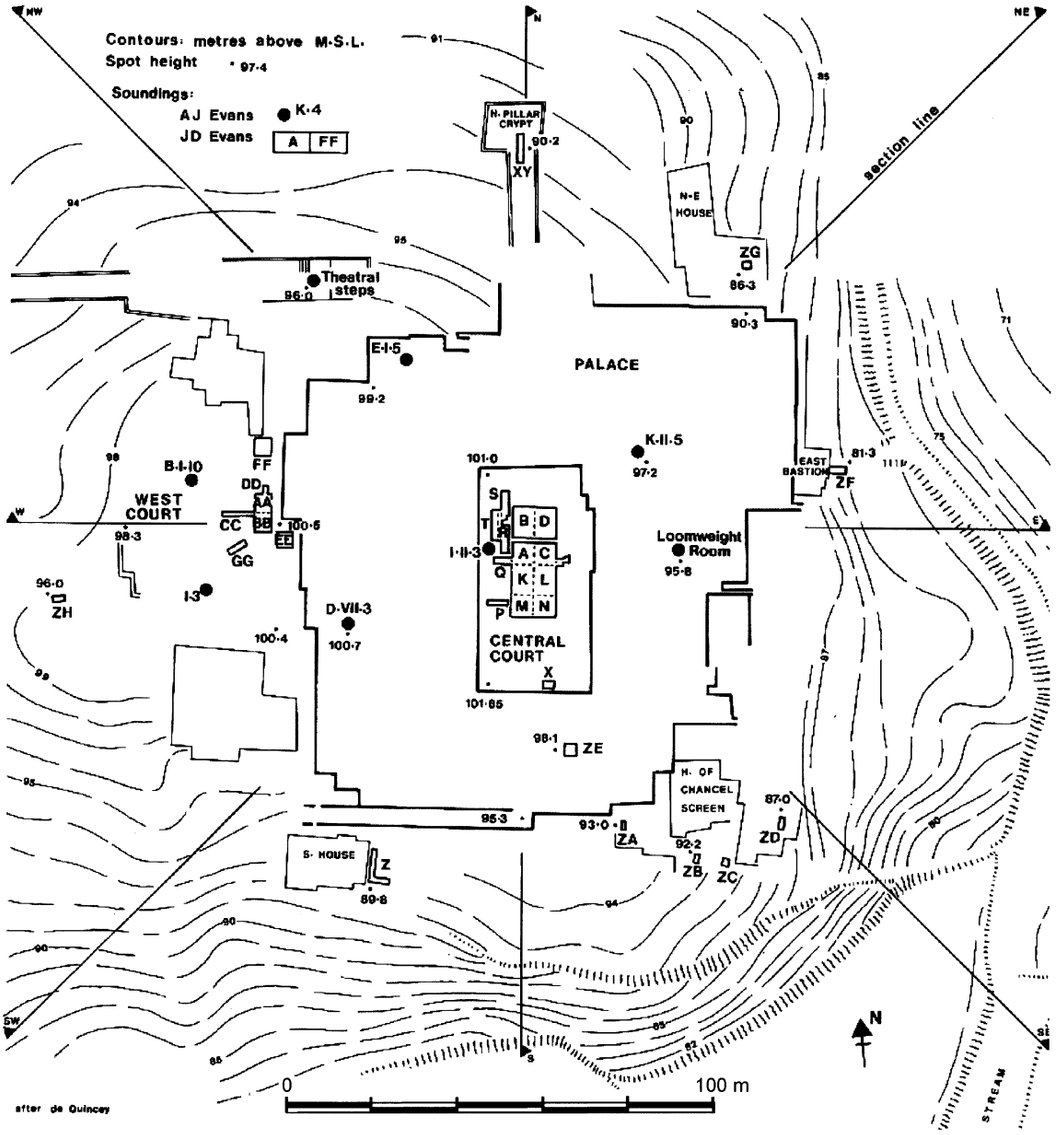


Fig. 1.1. Location of trenches from the 1957–60 and 1969–70 excavations by J. D. Evans and of main Neolithic soundings from A. J. Evans's excavations (after Evans 1994: fig. 1).

IX–IA; TABLES 1.3–4, FIG. 1.2). Each pottery group has been related on the basis of imports, exports, stylistic parallels and, wherever possible, radiocarbon dates to other Neolithic assemblages from elsewhere in Crete and from neighbouring regions beyond the island. These links suggest that the sequence of ceramic phases now recognisable at Knossos and, more significantly, the transitions between those phases, are equivalent to those recognised in mainland Greece, the Aegean islands and the Anatolian–Aegean littoral (TABLE 1.1).

The reassignment of chronological labels to the Knossian ceramic sequence reflects this greater degree of integration. The traditional scheme (e.g. EN I, EN II, MN; Furness 1953; Evans 1964) has been dropped and the labels 'Early', 'Middle', 'Late' and 'Final' reassigned to those phases at Knossos that are the direct equivalent of those same phases on the Greek mainland (see TABLES 1.1–2, 1.5). In the rest of this chapter all references to phases relate to this new scheme. Where it has been necessary to refer to phases in the traditional Cretan scheme, these have been placed between inverted commas (e.g. 'EN I'). The abandonment of a system that has served for more than a century may seem a radical step, but any detrimental effects are outweighed by the benefits provided by the full integration of Knossos and Crete into mainstream Aegean Neolithic studies. Moreover, almost all known Cretan Neolithic sites are or should be dated to FN under the previous system,

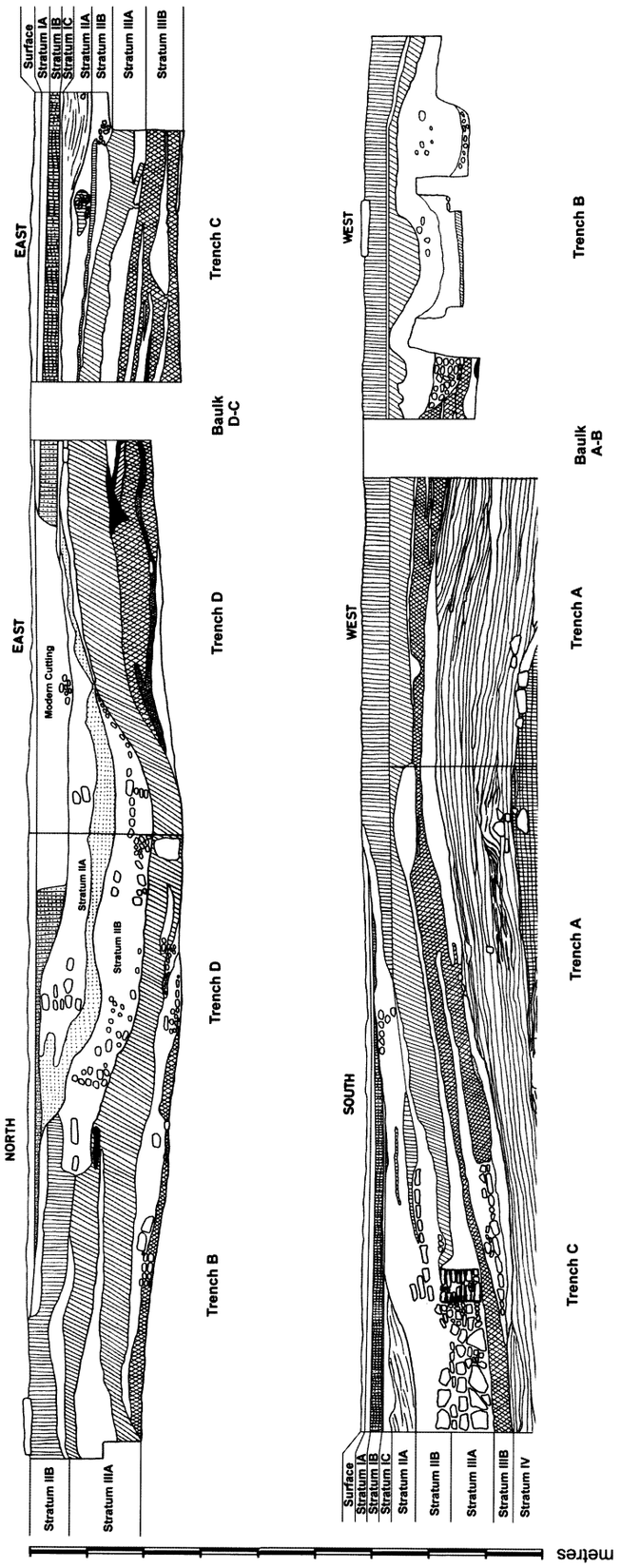


Fig. 1.2. Revised section for Area ABCD, Strata IIIB–IA (after Evans 1964, figs. 4–5).

TABLE 1.1: **The relationship between Cretan, Greek, Anatolian and Syro-Mesopotamian Neolithic / Chalcolithic phases.**

Traditional Cretan Neolithic phases	New Cretan Neolithic phases	Greek / Cycladic Neolithic	West Anatolian / East Aegean Neolithic and Chalcolithic	Syrian Neolithic and Chalcolithic	Approx. dates (calibrated BC)
Aceramic	Initial Neolithic (Stratum X)	Initial Neolithic	Aceramic / Early Neolithic	Final PPNB or PPNC/ Early Neolithic	*c.* 7000 – *c.* 6500/6400
Early Neolithic I	Early Neolithic (Strata IX–VIII)	Early Neolithic Franchthi FCP1	Late Neolithic Hacılar IX–VI Ulucak IV–V Kuruçay 13–11 Ayio Gala	Late Neolithic (Pre-Halaf) ('Transitional' Samarra)	*c.* 6500/6400 – *c.* 5900
	Middle Neolithic (Strata VII–VIB; Stratum P)	Middle Neolithic Franchthi FCP2–3	Early Chalcolithic Hacılar V–I Kuruçay 10–7 Ayio Gala	Early Chalcolithic (Halaf)	*c.* 5900 – *c.* 5300
	Late Neolithic I (Strata VIB–V; Strata N, M, L)	Late Neolithic I Saliagos Franchthi FCP4	Middle Chalcolithic Emporio X–VIII Kum Tepe IA Beşiktepe Kizilbel / Lower Bagbasi	(Late Ubaid)	*c.* 5300 – *c.* 4900
Early Neolithic II	Late Neolithic II (Stratum IV; Strata K, H, G)	Late Neolithic II Saliagos		(Late Ubaid)	*c.* 4900 – *c.* 4500/4400
Middle Neolithic	Final Neolithic IA (Stratum IIIB; Strata F, E, D)	Final Neolithic	? Middle Chalcolithic ?	Late Chalcolithic 1	*c.* 4500/4400 – *c.* 4200
Late Neolithic	Final Neolithic IB (Stratum IIIA; Strata C, B)	Franchthi FCP5	Late Chalcolithic 1 Beycesultan XL–XXXV Kum Tepe IB1	Late Chalcolithic 2	*c.* 4200 – *c.* 3900
	Final Neolithic II (Stratum IIB)		Late Chalcolithic 2 Beycesultan XXXIV–XXIX Kum Tepe IB2 Tigani I	Late Chalcolithic 3	*c.* 3900 – *c.* 3600
Final Neolithic	Final Neolithic III (Stratum IIA)	Kephala	Late Chalcolithic 3 Beycesultan XXVIII–XXV Kuruçay 6 Kum Tepe IB3 Emporio VII Tigani II	Late Chalcolithic 4	*c.* 3600 – *c.* 3300
	Final Neolithic IV (Stratum IC)	Ayia Irini I	Late Chalcolithic 4 Beycesultan XXIV–XX Kum Tepe IB4 Emporio VI Tigani III	Late Chalcolithic 5	*c.* 3300 – *c.* 3000

and these retain their FN label, while gaining a more precise sub-phase number (i.e. FN IA–IV). A total of five FN phases may be recognised at Knossos, and these match the fivefold division of Late Chalcolithic in Syria (Akkermans and Schwartz 2003, fig. 6.3) and the fourfold division of Late Chalcolithic in Anatolia, with which these sub-phases are broadly contemporary (see TABLE 1.1). The only site that is seriously affected by this change is Knossos and measures have been taken to make clear how the new system relates to the old (see TABLE 1.2). Future publications of Neolithic material (e.g. ceramics, chipped stone, ground stone axes, faunal remains) from British School excavations at Knossos will use this new system (e.g. Tomkins, in preparation *a* and *b*).

TABLE 1.2: **Past and present subdivisions of the Knossos Neolithic–EM I sequence.**

D. Mackenzie (1903)	A. J. Evans (1904; 1921; 1928)	A. Furness (1953)	J. D. Evans (1964; 1971; 1994)	Hood (1990*a*; 1990)	K. Manteli (1993)	New Scheme
			Aceramic (Stratum X)		Aceramic (Stratum X)	Initial Neolithic (Stratum X)
Lower Neolithic	Early Neolithic	Early Neolithic I	Early Neolithic I (Strata IX–V)		Early Neolithic I (Strata IX–V)	Early Neolithic (Strata IX–VIII)
						Middle Neolithic (Strata VII–VIB; Stratum P)
						Late Neolithic I (Strata VIA-V; Strata N, M, L)
Middle Neolithic	Middle Neolithic	Early Neolithic II	Early Neolithic II (Stratum IV)		Early Neolithic II (Stratum IV)	Late Neolithi4c II (Stratum IV; Strata K, H, G)
		Middle Neolithic	Middle Neolithic (Stratum III)		Middle Neolithic (Stratum III)	Final Neolithic IA (Stratum IIIB; Strata F, E, D)
						Final Neolithic IB (Stratum IIIA; Strata C, B)
Upper Neolithic	Late Neolithic	Late Neolithic	Late Neolithic (Strata II–I)		Late Neolithic I (Stratum II)	Final Neolithic II (Stratum IIB)
			Final Neolithic? (Stratum I; West Court Tr. FF)		Late Neolithic II (Stratum I; West Court, Trs. EE & FF)	Final Neolithic III (Stratum IIA; Tr. FF, Lower Pit)
	Latest Late Neolithic (Strata a & b)				Final Neolithic (West Court, upper levels Tr. FF)	Final Neolithic IV (Stratum IC; Stratum a)
Early Minoan	Sub-Neolithic / Early Minoan I Early Minoan I	Early Minoan I	Early Minoan I	Early Minoan IA (Palace Well) Early Minoan IB	Early Minoan I	Early Minoan I (Stratum IB; Tr. FF, Level) (Palace Well)

A HISTORIOGRAPHY OF THE KNOSSOS NEOLITHIC SEQUENCE

The Evans–Mackenzie scheme (1900–56)

The origins of the traditional tripartite subdivision of the Knossian Neolithic sequence may be traced back to Mackenzie's (1903) original definition of a lower, middle and upper Neolithic, which in the following year first appeared as the more familiar Early, Middle and Late Neolithic phases (Evans 1904; Tomkins 2000*b*, 77). For its early excavators Knossos presented a continuously stratified Neolithic–EM sequence, which might serve as the principal guide to dating other Neolithic assemblages on Crete (Mackenzie 1903, 157–64; Evans 1921, 38, 56). Throughout his excavations A. J. Evans continued to explore the Neolithic deposit around the Kephala hill, principally with small, isolated test pits, but also in 1923–4 with the excavation of two successive houses just below the surface of the Central

Court (Mackenzie 1923, 1924; Evans 1928, 1–21; for location see Evans 1994, fig. 7), here termed Houses J (lower house) and K (upper house). In the ceramics from both the upper and lower strata (Strata a and b), Evans claimed to recognise an anticipation of some EM I ceramic features (e.g. the cup with low foot anticipating the EM I pedestalled chalice) and an absence of others (e.g. red-on-buff painted ware) and thus dated Houses J and K to the very end of the Neolithic (TABLE 1.2, FIG. 1.15: 18; Evans 1928, 9–10; see below, pp. 42, 45). Mackenzie (1924), however, was of the opinion that the presence of pattern-burnished pedestalled chalices dated Stratum b and House K to 'Sub-Neolithic' / EM I.

The transition from the Neolithic to the EM I period at Knossos was thought to be essentially unproblematic with a continuous stratigraphy disturbed by later Bronze Age activity (Evans 1921, 56). In ceramic terms the beginning of the Bronze Age was thought to be marked by a 'Sub-Neolithic' phase considered transitional to, but part of EM I (Evans 1921, 38, 56–64). EM I was seen as a long period that contained 'elements of an eventual subdivision', presumably along the lines of the contrast drawn between EM I assemblages that were 'Sub-Neolithic' and 'advanced' (Evans 1921, 70). The 'Sub-Neolithic'material that was illustrated from Knossos (Evans 1921, 58, fig. 17, reproducing 1904, fig. 8b, c) comprises two over-reconstructed burnished pedestalled chalices of EM I type from the 'EM I' level in the original West Court section (Evans 1904, 21–5, fig. 7). It is clear from this and other instances that Evans used the term 'Sub-Neolithic' to refer to EM I material whose form or surface treatment seemed to look back to Neolithic types (Evans 1921, 56–62). In time 'Sub-Neolithic' became an umbrella term covering burnished material that seemed stylistically to fall between classic Neolithic and classic EM I, but lacked the stratigraphical associations that might make its date clear (Pendlebury *et al.* 1936, 1938); its modern equivalent is 'FN / EM I', a term favoured especially by archaeological survey reports (Moody 1987). The range of forms that typify the 'Sub-Neolithic' group came to be best defined by a closed deposit excavated at Partira (north-central Crete) in the early 1930s, whose features include pattern burnishing, vertically pierced lugs, cups or bowls with a single vertical handle, long prongs or triangular horns on the rim and the suspension pot or pyxis with lid/cup (Mortzos 1972; Renfrew 1964, pl. E).

Subsequent research at Knossos initially followed the Evans–Mackenzie scheme. Furness conducted a more detailed study of the ceramics and stratigraphy from Arthur Evans's tests and produced the first formal classification of the Neolithic pottery in terms of ware and shape (Furness 1953). She consciously tried to follow the Evans-Mackenzie scheme, relying in the first instance on Mackenzie's criteria of differentiation. Since 'Middle Neolithic' was considered the age of rippled decoration, those levels where rippling predominated were assigned to the 'Middle' period. Prior to this peak in ripple decoration, but stylistically and stratigraphically later than 'Early Neolithic', was a phase where incision predominated over rippling. Furness termed this phase 'Early Neolithic II', although originally it almost certainly formed part of Mackenzie's 'Middle' phase (TABLE 1.2; Winder 1991, 40). Through her more rigorous analysis of the Evans–Mackenzie material Furness was also able to show that none of the early tests offered an unbroken Neolithic–EM I sequence. Nevertheless, in her conclusions she followed the Evans–Mackenzie orthodoxy in noting that continuity in style (e.g. wiped wares, pattern burnish) and technology could be traced (Furness 1953, 95–102).

The Evans–Mackenzie scheme questioned (1957–94)

The arbitrary nature of the stratigraphy of the early tests inevitably blurred the transitions between phases and granted more freedom to interpretation. It is thus unsurprising that problems with the Evans–Mackenzie scheme only surfaced with the start of new stratigraphical excavations at Knossos, directed in 1957 by Sinclair Hood and subsequently (1958–60 and 1969–70) by J. D. Evans (see FIG. 1.1 and TABLES 1.1–2; Evans 1964, 1994; Warren *et al.* 1968. Excavations in the Central Court produced a long and well-stratified sequence of Neolithic occupation, which, save for a previously unsuspected aceramic phase, confirmed 'to a remarkable degree' Furness's original subdivision of the Knossos sequence (Evans 1964, 194; see also TABLE 1.2). In addition, it appeared that the stratigraphical discontinuity at the end of the sequence, first hinted at by Furness, was far more serious than had originally been thought. Contrary to what A. J. Evans had claimed, there appeared to be no stratified deposits in the Central Court (Area ABCD, Strata I–II) that could be linked to those of Phaistos, and it was concluded that this site represented a later Neolithic phase absent from Knossos (Evans 1968, 276). This view was subsequently modified after the 1969–70 excavations when firmer evidence for an overlap was found in the West Court Trench FF (TABLE 1.2; see Evans 1971, 113–14, pls. III–IV). Such material was, however, considered untypical of the Knossos Neolithic sequence as a whole (Evans 1971, 114). A lack of fourth millennium BC dates from the Knossos radiocarbon sequence also seemed to confirm an absence of latest Neolithic deposits.

Also apparently lacking were stratified deposits spanning the latest Neolithic to EM I phases (Evans 1971, 114; Vagnetti and Belli 1978, 157), and this view appeared to find further support with the 1959 discovery of the EM I well in the north-east wing of the later palace, whose contents, dated by the excavator to the beginning of EM I (Hood 1990*a*), showed significant

stylistic and technological discontinuity with what was thought to be the latest Neolithic material from the site (Hood 1990*a*, 369–70; Wilson 1994, 27; Wilson and Day 2000, 50–1). The final *coup de grâce* to the Evans–Mackenzie scheme was delivered by Renfrew, who, in his original definition of the Final Neolithic (FN) phase in Greece and the Aegean, moved the 'Sub-Neolithic' group of Cretan material from EM I into the latter part of FN (Renfrew 1964; 1972, 71).

Over the following four decades, scholarly attention generally focused on other Cretan sites. Several key publications of excavated FN assemblages appeared, principally Phaistos (Vagnetti 1972–3) and Nerokourou (Vagnetti *et al.* 1989) and there was also a more detailed definition of the FN phase that followed Renfrew in its inclusion of the 'Sub-Neolithic' group (Vagnetti and Belli 1978; Vagnetti 1996; but see Cadogan 1983, 508). Throughout this period there has been an ongoing debate regarding how the Knossos sequence might be correlated with the ever-increasing number of identified sites that belong to the Phaistian FN phase. The main sticking point has been the difficulty of finding parallels at Knossos in the main published deposits (i.e. Area ABCD; Evans 1964). Several scholars have suggested that J. D. Evans's Knossos Stratum I and/or Arthur Evans's Strata a and b should be seen as equivalent to Neolithic Phaistos (Renfrew 1972, 71; Warren and Hankey 1989, 12; Vagnetti and Belli 1978, 132, 157). More recently, however, Manteli (1993*a*, 26–9, 59; 1993*b*, 32–59) argued, on the basis of a review of the published literature and a restudy of J. D. Evans's West Court pottery notebooks, that Stratum I represents a late phase of 'LN' that precedes Phaistian FN and that the latest Neolithic levels at Knossos, which are at least partly contemporary with Phaistos, are to be found in the upper part of West Court Trench FF. Obviously an apparent absence of deposits at an otherwise continuously occupied site has to be accounted for and explanations have focused on taphonomic (dispersal due to later levelling of the hill: Evans 1968, 276; 1971, 114) and demographic factors (contraction in the size of the FN settlement: Broodbank 1992, 42). It has also been suggested that Phaistian FN might have been a regional style contemporary with the EM I Well (Hood 1990*a*; but see Wilson and Day 2000, 54) or with the 'LN' pottery from Knossos (Wilson and Day 2000, 54). Such statements reflect ongoing uncertainty about the nature, relationship and meaning of the 'LN' and 'FN' phases on Crete, exemplified by the use of different terminology, whether 'LN' (Branigan 1998; Watrous 1982) or 'FN' (e.g. Vagnetti 1996), to refer to ceramic material of the same type and date.

The Evans–Mackenzie scheme resurrected (1994–)

Such were the prevailing views regarding the Knossos sequence. It is, however, worth reflecting on the fact that these were entirely based on published (Evans 1964; 1968; 1971) and unpublished sources (Evans's 1969–70 pottery notebooks) produced before the full range of material characteristic of Phaistian 'FN' was made available by the publications of Phaistos (Vagnetti 1972–3) and Nerokourou (Vagnetti *et al.* 1989). Since the early 1970s very little restudy of the ceramic material from J. D. Evans's excavations has been conducted. Additional Neolithic material has been encountered in several small, isolated tests on and around the Kephala hill (Hood and Smyth 1981, 6; Whitelaw 1992, 226–8), most recently during excavations initiated by the Archaeological Service as part of conservation work in the palace that included a full test to bedrock on the north-east side of the Central Court (Efstratiou *et al.* 2004). However, of these post-1970 tests only those excavated in 1987 below the Throne Room System have so far been fully published (Manteli and Evely 1995).

In 1994, J. D. Evans suggested that the problems surrounding the latter part of the Knossos sequence may have less to do with the absence of comparable material from excavated deposits, as had originally been thought, and rather more to do with the use of conflicting terminology to describe similar material; he now believes that it may have been misleading to place so much emphasis on the uniqueness of an isolated group of Phaistian-type material from the West Court Trench FF and that 'many traits characteristic of the FN pottery from Phaistos' are present among his unpublished material from later Neolithic levels in both the Central Court and the West Court (Evans 1994, 19). In addition, he suggested that the transition to EM I should be seen in terms of stratigraphical disruption but with clear hints of continuity. With these brief statements he cleared the way for a reassessment of later Neolithic Knossos that might offer the possibility of a return to the original Evans-Mackenzie view of an uninterrupted Neolithic sequence with continuity into EM I.

Such was the situation in 1997 before the start of a systematic re-examination of the Neolithic sequence at Knossos. This comprised a detailed study of the ceramic sequence combining macroscopic study of fabric, form, forming and finishing methods with selective sampling for microscopic analyses (petrology, Scanning Electron Microscopy: e.g. Tomkins *et al.* 2004). This work also benefited from access to unpublished archive materials from the 1957–60 and 1969–70 excavations, generously made available by J. D. Evans. This facilitated a detailed comparison of deposits across the site, which has made clear that the locus of habitation occupied different parts of the Kephala hill at different times (Tomkins 2000*a*, 228–9). This shifting pattern of settlement helps to explain why specific areas of the site might appear to have been periodically 'abandoned' (Efstratiou *et al.* 2004, 47) without calling into question year-round continuity of settlement.

TABLE 1.3: **Central Court Strata: Strata IA–IIIB redefined for Area ABCD (1957–60), and extended to Trenches P and Q and Areas F, KLMN and RST (1969–70).**

Strata	Corresponding Levels in areas ABCD, KLMN and RST	Structures	Deposition date
Backfill	C1; D4; F1; K1–2; M1; N1 [basket 62]; P1–3		Recent
Surface/ Topsoil	A1; B1; D1; BD extension 1; K North 2; KL1		Minoan / post-Minoan mixed with Stratum IA
Stratum IA	A2; B2; C2; K North 1; N1 [basket 67]; R1; S1, 23; T1 [basket 368] Stratum b (A.J. Evans 1928)		Early Minoan I / IIA
Stratum IB	B3–4 [9/8/57]; C3; D2–3, 5; F4; F extension II 2; KL 2; M2 [basket 69]; N2; Uppermost level of Stratum a (A.J. Evans 1928)	House H.2 House K	Early Minoan I
Stratum IC	B4 [10/8/57]; KL4 M2; N3–5; P4; Stratum a (A.J. Evans 1928)	House H.1 House J	Final Neolithic IV
Stratum IIA	C4a; D2a, 6–7; BD extension 2–3; F5; F extension III 3; KL3, 5–6; N6; P5; S8		Final Neolithic III
Stratum IIB	A3; B5–7 (1959); C4, 5–8a; D8; BD extension 4–5; F6; F extension III 4; K3–9; K North 3–7; KL7–14, 16; KL Room 1 1–2; Room 2 1–6; M3–8; N7–9; P6–7; Q1–2; R2–3 [baskets 148, 150]; S2–7, 9–16, 18–21, 24–25; T1 [baskets 369–71]–2	House B.2 House G.2 House H	Final Neolithic II NB some FN III in latest occupation deposits from Houses G and H
Stratum IIIA	A4–6; B7 (1957) –12; C9–10, 10 pit α; D9–10, 10 pit α; BD extension 6; F7; F extension II 3; K10–13; K North 8; KL Room 1 2–5, pits 2–3; M9–13; N10; P8; R3 [basket 149], 4–6, 9, 11; S17, 22, 26; T3–13; RST9–17, 20–25	House B.1 House G.1	Final Neolithic IB
Stratum IIIB	A7–8, 10; B13–16; C10–15 (1958); D10a–14; BD extension 7–8; K14; KL15; M14; R7–8, 10; T14–16; RST18–19	House A	Final Neolithic IA

It was also possible to review and revise the stratigraphy for Area ABCD in the Central Court (Evans 1964) and to link it directly to the later (1969–1970) series of trenches in this area and, via Area E (Evans 1964, 134, 188), to Houses K and L excavated by A. J. Evans in 1923–4. Several adjustments have been made to the stratigraphy of Area ABCD. Stratum VI has been divided into lower (VIB) and upper (VIA) parts, corresponding to separate MN and LN I contexts. Comparison of the sections for Area AC and BD (Evans 1964, figs. 4–5) revealed a discrepancy in where the boundary between Stratum IIIA and Stratum II was drawn: the lower part of Stratum II in Area AC is the equivalent of Stratum IIIA in Area BD (see Evans 1964, 174; figs. 4–5). This error explains the otherwise puzzling absence of Stratum IIIA from Trench C (Evans 1964, 138 fn). The more complete stratigraphy defined in Area BD has been preferred and the boundary between Strata IIIA and II in Area AC redrawn (FIG. 1.2 and TABLE 1.3).

More serious changes were required for Strata I and II (FIG. 1.2 and TABLE 1.3). Restudy identified a more complex stratigraphy, which indicated that these strata could no longer be treated as single-phase deposits. It is now clear that Stratum II comprises two stratigraphical sub-units, IIA and IIB, corresponding to two successive ceramic phases (FN II and FN III). Stratum IIB, the lower unit, is present in all three excavated areas (ABCD, KLMN and RST), but, owing to a combination of topography and levelling activity, lies directly below Stratum I in Area RST and Trenches A, B, C, K and M. Stratum IIA, the upper unit, is preserved in part or in whole in the northern (D2a, 6–7), eastern (C4a) and southern (e.g. F5, P5) edges of Area ABCD–KLMN. Further to the west and north, in Area RST and Trench Q, all traces of Stratum IIA have been truncated or entirely removed by a series of levelling episodes. Debris from the levelling episode that preceded the deposition of Stratum IC appears to have been deposited as a levelling fill over Stratum IIA at a point where it slopes

down sharply to the south and east (Trench N). This reading of the stratigraphy necessitates the reassignment of several contexts in Area ABCD to stratigraphical units different from those to which they were originally allocated (see TABLE 1.3; see Evans 1964, 138 fn). Most notable among these are a 'pit' (actually the edge of Stratum IIA) in the south-east corner of Trench C (C4a) and a stretch of walling in the northern part of Trench D (D2a, 6) (Evans 1964, figs. 4–5, 21), which have been moved from Stratum I to Stratum IIA.

Stratum I proved to consist of a few relatively pure, single-phase deposits preserved within built structures (Houses H.1 and J) and many more from external areas that are mixed. The mixed nature of much of Stratum I explains why in the past there has been confusion regarding its relationship with other FN assemblages. Restudy indicates a more complex stratigraphy, which may be divided into three sub-phases (FIG. 1.2, TABLE 1.3). The lowest sub-unit (Stratum IC) comprises House J (Stratum a) and the earlier phase of House H (H.1). Deposits from within these houses make clear that Stratum IC corresponds to the very end of the Neolithic, as represented at Phaistos and Nerokourou (see below, the Stratum IC Group).

Stratum IB includes House K and a later phase of House J (J.2). The walls and any occupation deposits that may once have existed on the floors of Houses K and H.2 have been almost entirely removed by levelling activity that took place prior to the deposition of Stratum IA. Nevertheless, patches of floors and walls, together with the shallow foundation trenches from these houses, allow partial plans to be re-constructed. House K has in the past been dated on the basis of the deposit that directly overlies it (Stratum b), which some have placed at the end of the Neolithic (Evans 1928, 7–8; Vagnetti and Belli 1978, 132), and others in EM I (Mackenzie 1924, 25; Warren 1969, 109, n. 1; Hood 2000, 21). Restudy of Stratum b found it to be a mixture of FN II–EM I / EM IIA, MM III–LM III and post-Minoan material. Comparison with the uppermost levels from elsewhere in the Central Court suggest that Stratum b is a mixture of Stratum IA (FN II–EM I / EM IIA fill) and surface material (TABLE 1.3). A more secure indication of the date of House K is provided by small amounts of EM I material that can be assigned to the make-up of its floors (M2 [basket 69]). EM I material is also associated in a similar way with the make-up of floors belonging to a late phase of House H (H.2). In this way, the built features in Stratum IB, although poorly preserved and lacking proper occupation deposits, may be cautiously dated to EM I.

Stratum IA directly overlies Stratum IB in all parts of the excavated area and consists primarily of redeposited FN II–III material (e.g. Stratum b: Evans 1928, fig. 3 q, x, y, bb) with an admixture of EM I–IIA. Some contexts also contain a few MM III–LM III sherds, which probably correspond to episodes of later disturbance associated with the (re)-laying of the paved surface of the Central Court. Stratum IA would appear to be a levelling fill, deposited some time during EM IIA, which should perhaps be associated with other alterations to the Kephala hill that took place at this time (Wilson 1985, 1994).

Thus, as predicted by J. D. Evans (1994, 19), well-stratified deposits contemporary with Neolithic Phaistos (i.e. FN II–IV) are present in the Central Court, and may be used to construct a secure sub-phasing of FN at Knossos. These proved to be most poorly preserved in the area that has been most comprehensively published (Area ABCD; Evans 1964), an irony which accounts for previous difficulties in locating such deposits at Knossos (Evans 1968, 276). An additional complicating factor has been the mixed nature of the material in the uppermost levels in Trenches FF and in much of Stratum I, deposits which hitherto had been thought to define the latest Neolithic at Knossos.

New light has also been shed on the transition to EM I at Knossos. There is a growing consensus that the EM I Well deposit, originally dated to the beginning of EM I (Hood 1990*a*, 1990*b*), actually finds its best parallels in EM I assemblages containing Cycladic or Cycladic-style pottery typical of the late EC I–II Kampos Group (e.g. Ayia Photia, Pyrgos Cave, Poros–Katsambas: see Chapter 2; Manning 1995, 44–8; Wilson and Day 2000, 50–6; Wilson *et al.* 2004, 67–9; Warren 2004, 118). A late EB I / EM I date for these Kampos Group–EM I assemblages is also supported by strong continuity in surface treatment and fabric with EM IIA (Wilson and Day 2000, 51). This redating of the EM I Well Group undermines previous phasing of EM I deposits at Knossos (see Cadogan *et al.* 1993, 23–4; Wilson 1994, 25–30) and, together with the recognition of a new latest Neolithic phase (FN IV), reopens the question of stylistic, technological and chronological development at Knossos between the end of the Neolithic and EM I. The large stylistic and technological gap between the EM I Well and the uppermost Neolithic levels from Trench FF now appears to have been an artificial creation, produced by the selection of inappropriate deposits for comparison. To avoid this, reassessment of the Neolithic–EM I sequence should rely only on deposits whose stratigraphy makes clear their relationship to material of the Stratum IC Group (FN IV) and/or the EM I Well Group.

The present study has identified several EM I assemblages (i.e. Trench FF, Level 4; D.VII.21 #1209; M2 [basket 69]; B4 [9/8/57]) which can be shown to have a direct stratigraphical relationship with the FN IV Stratum IC Group. While demonstrating a stratigraphical succession between the end of the Neolithic and EM I, these deposits cannot provide at present a secure basis for a definition of an early EM I phase at Knossos because of their small size (some comprise no more than a handful of sherds). Differences

TABLE 1.4: **West Court Strata: Area AABB, Strata A–P with corresponding excavated level numbers (courtesy of J. D. Evans).**

Strata	Corresponding levels in Area AABB	Relative date
Stratum A	West Court House (Wilson 1985)	Early Minoan IIA
Stratum B	AA: 26, 28, 29, 31, 32, 33, 37, 39, 43 BB: 11, 12, 13, 15, 16, 18, 19, 20 CC: 50	Final Neolithic IB
Stratum C	AA: 34, 36, 38, 40, 41, 42, 45 BB: 21, 22, 23 CC: 51 AABB: 58, 59 61, 18	Final Neolithic IB
Stratum D	AA: 46 BB: 24 CC: 52, 53, 54, 56, 57 AABB: 60. 62, 63, 64, 65, 66, 67, 69, 71, 72, 73, 74, 75, 76, 78, 79, 80, 82, 83, 86, 93, 95, 96, 100, 103, 104	Final Neolithic IA
Stratum E	AABB: 83, 87, 88, 89, 91, 92, 94, 102, 107, 108, 111, 114, 129, 131, 134, 151	Final Neolithic IA
Stratum F	AABB: 70, 77, 81, 84, 90, 97, 98, 99, 101, 105, 106, 109, 110, 112, 113, 115, 117, 118, 119, 120, 121, 122, 123, 124, 125, 127, 128, 130, 132, 133, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 152, 153, 154, 155, 156, 158	Final Neolithic IA
Stratum G	AABB: 116, 126, 157, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 183, 184, 185, 186, 187, 188, 192, 193, 194, 198, 199, 200, 201, 202, 211	Late Neolithic II
Stratum H	AABB: 182, 189, 190, 191, 195, 196, 197, 203, 204, 205, 213	Late Neolithic II
Stratum J	AABB: 206, 207, 208, 209, 210, 212, 214, 215, 216, 217, 218, 219, 221, 222, 223, 225, 226, 230, 231, 232, 234	Late Neolithic II
Stratum K	AABB:220, 224, 227, 228, 229, 233, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 247, 248, 249 ZAB: 1, 2	Late Neolithic II
Stratum L	AABB: 246 ZAB: 3	Late Neolithic I
Stratum M	AABB: 250, 251, 252, 253, 254, 259 ZAB: 4	Late Neolithic I
Stratum N	AABB: 255, 256, 257 258, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269	Late Neolithic I
Stratum P	AABB: 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286	Middle Neolithic

can nevertheless be detected between them and the EM I Well Group, hinting at the existence of stylistic developments within EM I, which might allow a subdivision of this phase at Knossos with the future discovery of additional stratified EM I deposits. The stratigraphical proximity of these EM I assemblages to the preceding Stratum IC Group is complemented by stylistic and technological links that bridge the gap between the latest Neolithic and EM I at Knossos. An important part of any future sub-phasing of EM I is the relative position of 'Sub-Neolithic' material, and it is thus significant that ceramics of 'Sub-Neolithic' type first occur at Knossos alongside other EM I features (e.g. red-on-buff painted ware: Trench FF, Level 4; FIG. 1.16: 3). This indicates that the term 'Sub-Neolithic', if it must be used at all, refers to a style of EM I pottery that was perhaps most common early in that period, and not a separate chronological phase.

The wider context of the Knossos Neolithic sequence: problems of integration

For the earlier part of the Neolithic (Knossos Strata X–VIB = IN–MN, *c.* 7000–*c.* 5300 BC; see TABLES 1.1–2), the integration of the Knossos sequence with other Cretan Neolithic assemblages has been restricted by a lack of identified comparative material and the perception that the earlier Neolithic ceramics from Knossos were stylistically homogeneous and entirely locally produced (Mackenzie 1903; Furness 1953, 95, 103, n. 16; Evans 1964, 194; 1973, 133). This has given rise to speculation that Knossos was the main or sole settlement on the island until late in the Neolithic (Broodbank 1992, 47–9; Manning 1995, 42, 1999, 469–70). Recently, however, stylistic and petrographic studies have pointed to the existence of other ceramic-producing centres in Crete from the very beginning of the ceramic Neolithic (Tomkins and Day 2001; Tomkins *et al.* 2004). Such research not only situates local ceramic development at Knossos within a much broader context, but also, ahead of future discoveries of other contemporary sites, currently constitutes our principal source for ceramic development in most regions of Crete before the fifth or even fourth millennium BC. Only among the material from the lower levels of the Gerani Cave (near Rethymnon) are there form types that could date to MN (see below, Strata VII–VIB Group). However, in advance of a full publication of the material from this site, this early date should be treated with caution.

For the later part of the Neolithic (LN–FN, *c.* 5300–*c.* 3000 BC: Knossos Strata VIA–I; TABLES 1.1–3), particularly the FN period, the number of known sites outside Knossos increases greatly. Early work at Knossos, based on the wide range of later Neolithic ceramic material excavated by Arthur Evans, had little difficulty in identifying ceramic links with other sites, principally Phaistos (Evans 1921, 32, 34, 37; Furness 1953, 108, 123, 125). It was thus only in later studies, which relied on the better excavated but interrupted ceramic sequence excavated by J. D. Evans, that problems of seriation and synchronisation first emerged (see above). Now that a complete and continuous later Neolithic stratigraphical sequence has been defined at Knossos, it is possible to identify links with a very large number of Cretan Neolithic sites. A small number of assemblages may be assigned to the LN period (LN I–LN II): Katsambas (near Herakleion), Sphoungaras (Mirabello Bay), Magasa (Siteia) and possibly Gerani Cave (near Rethymnon) and Kavousi (Mirabello Bay) (see below, LN I Strata VIA–V Group). Many more may now be assigned to the FN period, especially its final phases (see below, FN III–IV; TABLE 1.6). In this way the Knossos Neolithic sequence may be used to establish a stratigraphically secure later Neolithic Cretan chronology.

Links between Knossos and sites in other neighbouring Aegean regions have been generally regarded as non-existent. Early researchers drew enthusiastic

TABLE 1.5: **Past attempts to correlate the Greek and Knossian / Cretan Neolithic sequences and scheme proposed in this chapter.**

Greek mainland phases	Renfrew 1972: table 5.I	Sampson 1984	Warren & Hankey 1989	Gallis 1996	New Scheme
Aceramic/IN (*c.* 7000–6500/6400 BC)				Knossos, Stratum X	Knossos, Stratum X
Early Neolithic (*c* .6500/6400–5900 BC)	Knossos, Strata X–VIII			Knossos, Strata IX–VIII	Knossos, Strata IX–VIII
Middle Neolithic (*c.* 5900–5300 BC)	Knossos, Strata VII–V	Knossos, Strata VII–VI		Knossos, Strata VII–V	Knossos, Strata VII–VIB
Late Neolithic I-II (*c.* 5300–4500/4400 BC)	Knossos, Strata IV–II	Knossos, Strata V–III		Knossos, Strata IV–I	Knossos, Strata VIA–IV
Final Neolithic (*c.* 4500/4400–3100/3000 BC)	Knossos, Strata II–I Phaistos Partira	Knossos, Strata II–I Phaistos Pyrgos	Knossos, Stratum I Phaistos Partira	Phaistos Pyrgos	Knossos, Strata III–I Phaistos
Early Bronze I (*c.* 3100/3000–2650 BC)	Lebena Knossos, Palace Well		Knossos, Palace Well Pyrgos		Partira Knossos FF 4 Knossos, Palace Well Pyrgos

TABLE 1.6: **Selected Cretan sites with material contemporary with the Stratum IC Group (FN IV) and with EM I (Sub-Neolithic) assemblages.**

	FN IV	EM I ('Sub-Neolithic')
West Crete	**Koumarospilio:** Jantzen 1951: pls. 8, 9, 10: A6 **Nerokourou:** Vagnetti *et al.* 1989: figs. 15–49 **Lera Cave:** Guest-Papamanoli & Lambraki 1976: fig. 2: A20, A23, A25; fig. 3.	**Ellenes Cave:** Godart & Tzedakis 1992, pl. XCIII.2 **Koumarospilio:** Jantzen 1951, pl. 13: K7; **Lera Cave:** Guest-Papamanoli & Lambraki 1976: fig. 1: L55; fig. 2: A19, A22; fig. 5: D5–10, A7, A16, A28, A34; fig.6: S14
North-central Crete	**Eileithyia Cave:** Marinatos 1930, fig. 5; Betancourt & Marinatos 2000, fig. 10: 8–10 **Kastellos Tzermiadon:** Pendlebury *et al.* 1938, pl. V: 38, 41 **Mesa Karteros:** Karetsou 1974, fig. 1, pls. 183a, 184a **Trapeza Cave:** Pendlebury *et al.* 1936, figs. 6–7	**Eileithyia Cave:** Betancourt & Marinatos 2000, fig. 10: 1–6, fig. 11: 12, 19–20, fig. 12: 46–7; Vagnetti & Belli 1978, pl. IV: 7 **Grymani Cave:** Pendlebury *et al.* 1938, fig. 7: N21; pl. V: 1.21 **Skaphidia Cave:** Pendlebury *et al.* 1938, fig. 7: T31-6 **Partira:** Mortzos 1972, pls. 1–32
South-Central Crete	**Gortyn Acropolis:** Vagnetti 1973, fig. 2: 4–5, 22 **Phaistos:** Vagnetti 1972–3, figs. 26–56	**Ayia Kyriaki pre-tomb deposit:** Blackman & Branigan 1982, 20–3, fig. 7: A2, B7, B9 **Lebena Gerokampos II, level F:** Alexiou & Warren 2004, 117–20, fold-out A **Miamou Cave:** Taramelli 1897, figs. 7, 10, 13 **Mitropolis:** Vagnetti 1973, fig. 1: 21 **Moni Odigitria (?):** Marangou 1992, 64–8, nos. 1–12
East Crete	**Kastelli Phournis Well:** Manteli 1992 **Kephala Petras:** Papadatos & Tomkins in preparation **Pseira:** Betancourt 1999, pl. VIII.a.6	**Ayios Nikolaos rockshelter:** Tod 1902–3, figs. 1–2; Mortzos 1972, pls. 37–8 **Kastelli Phournis Well:** Manteli 1992, nos. 36-7 **Kephala Petras:** Papadatos & Tomkins in preparation **Palaikastro/Palaikastro Kastri:** Forsdyke 1925, A406; Bosanquet & Dawkins 1923, 57–8, fig. 44; Sackett *et al.* 1965, 250, 277

parallels with areas such as Anatolia and the Near East (Evans 1921, 38, 42, 45, 49–54; Furness 1953, 114, 134; Pendlebury 1939, 42; Childe 1937, 32) that in time proved impossible to sustain because the parallels were either insufficiently close or not at all synchronous (Ucko 1968, 384–6). Subsequent studies have been more cautious and have not detected any secure links (Evans 1968, 273; 1970, 383–5). It is thus generally accepted that Crete was isolated from the rest of the Aegean until the end of the Neolithic (Renfrew 1964, 111–12; Evans 1968, 273–6, 1971, 114; Vagnetti and Belli 1978, 126; Cherry 1985, 24, 27; Broodbank 1992, 47–9; Vagnetti 1996, 30; Manteli 1996, 132; Manning 1995, 42, 1999, 469–70). J. D. Evans (1968, 273–4) has argued that certain features link the earlier Neolithic pottery from Knossos to Late Chalcolithic sites in the eastern Aegean and Anatolia, and that an earlier parent culture must await discovery (Evans 1970, 383). In this second prediction he has been partly proved correct, since there is now evidence for widespread Anatolian LN occupation along the Aegean coast of Anatolia, contemporary with the EN pottery from Knossos Strata IX–VIII (6500–5900 BC, i.e. Hacılar IX–VI; French 1965, 18–20; Eslick 1992, 67–8, 81; Meriç 1993; 1997; Çilingiroğlu *et al.* 2004). However, the distinct character of the Anatolian material argues against any direct influence or shared source.

This lack of external anchors means that studies of Greek or Anatolian Neolithic chronology have either ignored Knossos (Eslick 1992) or treated it separately as an isolated case (Weinberg 1965, 301; 1970, 608–18). Studies that include Knossos in their comparative

chronological tables do so on the basis of radiocarbon dates. Changes in the radiocarbon calibration curve, large error biases on certain dates, their potential long life (charcoal) and errors in calculation have meant that the Knossos sequence has shown a tendency to 'float' (TABLE 1.5). The incompatibility of the chronological terminology used so far on Crete has also been an additional complicating factor (see TABLES 1.1–2) and the full extent of this mismatch has not always been fully appreciated (Warren and Hankey 1989, 12–13; Manning 1995, 169). The net result of these problems has been the intellectual isolation of the Cretan Neolithic from mainstream Aegean Neolithic studies. Most synthetic works in this field either ignore Crete or treat it separately, and this has severely restricted the extent to which ideas, explanations and models developed elsewhere over the last 30 years have influenced Cretan Neolithic studies (Tomkins 2004).

It is therefore of great significance for the wider integration of the Knossos Neolithic sequence that a range of imported material can now be identified, beginning with the very earliest pottery-producing levels. In addition, a comprehensive review of published assemblages from neighbouring regions of the Aegean has led to the identification of very small amounts of ceramic material similar in form or finish to that typical of the various Neolithic phases at Knossos. In this way, through imports, exports, stylistic parallels and radiocarbon dates the Knossos Neolithic sequence can for the first time be securely anchored to the Greek and Anatolian sequences (TABLE 1.1).

THE STRATA IX–VIII GROUP (EN)

Archaeological contexts

The transition from an aceramic to a ceramic Neolithic at Knossos seems to have been smooth, unaccompanied by any other significant changes in material culture or any break in settlement (Evans 1968, 275, 1970, 381; *contra* Weinberg 1965, 301). The earliest pottery is found in very small quantities either embedded in the surface (Area AC, Stratum X) or within the top 15 cm (Trench X) of the IN deposit (Evans 1971, 102; Tomkins 2001, 484–5). The new EN phase has only recently been distinguished through restudy of ceramic material from Strata IX and VIII in Area AC (Tomkins 2001, 485–94). Both strata consisted chiefly of mudbrick debris and the remains of houses of mudbrick and stone construction (Evans 1964, 144–50). Also probably EN in date are several small pits dug into the IN deposit in Trench X (level 18) (Evans 1971, 101–2, fig. 3). A full publication of all EN deposits from all excavations at Knossos is under way (Tomkins, in preparation *a*). Discussion of the stratigraphy and finds from Strata IX–VIII may be found in preliminary reports from the 1957–60 excavations (Evans 1964; Warren *et al.* 1968).

Characteristics of the Strata IX–VIII Group

The present scarcity of EN deposits imposes limitations on the ceramic characterisation of this group and the identification of additional assemblages of this date remains a priority for future research. In order to offset bias caused by small sample size, the definition of EN presented below has been restricted to features of form and finish present in fabrics that commonly occur in subsequent phases. This increases the likelihood that features only found in these fabrics in Strata IX and VIII are a result of chronological differences rather than sampling biases.

Fabrics

In general Strata IX and VIII are characterised by a higher degree of fabric diversity (i.e. fabrics/1,000 sherds) than subsequent phases. Macroscopic and petrographic study has allowed a group of limestone-tempered fabrics, comprising a little less than half of any individual assemblage, to be associated with a local (<7 km) provenance (PLATE 1: 1, 6; Tomkins *et al.* 2004, 52–6, fig. 2.1). The transition to Stratum VII (MN) is marked by the appearance of a new local fabric (Fabric 1d: see p. 25; PLATE 1: 3) and thus the absence of this fabric, at least at Knossos, may be used as an additional indicator of an EN date.

Wares

In contrast to fabric, there is a general homogeneity in surface treatment (Tomkins *et al.* 2004). EN Knossos, in common with the earliest EN sites on the Greek mainland (Weinberg 1965, 287, 290; 1970, 584) and LN sites in south-west Anatolia (Mellaart 1970, 146; Eslick 1992, 81–2), is characterised by monochrome wares and a scarcity of decorative motifs. Vessels are either burnished, where the surface retains visible tool-marks, or polished, where is does not. Plastic decoration occurs on large, burnished deep bowls (FIG. 1.3: 1–3, 15) and incised decoration of any type is almost entirely absent. Diagnostic of Strata IX and VIII are miniature strap handles on the offset rim of curved or carinated bowls/jars (FIG. 1.3: 14, 18, 19) and triple pellet decoration on carinated jars with offset rim (FIG. 1.3: 17). Typical also are pairs of pierced or unpierced 'ears' on the rim of bowls (FIG. 1.3: 7, 27, 29) and punched decoration on straight-sided hole-mouthed jars (FIG. 1.3: 21). All later forms of decoration are absent (FIGS. 1.4–7).

Forms

Most fabric groups also exhibit a highly similar range of forms. Thus, for example, the small number of vessels, whose source can be shown to lie in the Mirabello Bay, are indistinguishable in form and finish from those made locally to Knossos (Tomkins and Day 2001; Tomkins *et al.* 2004, 56, fig. 2.2). A wide range of form-types are found in EN levels, even in the very

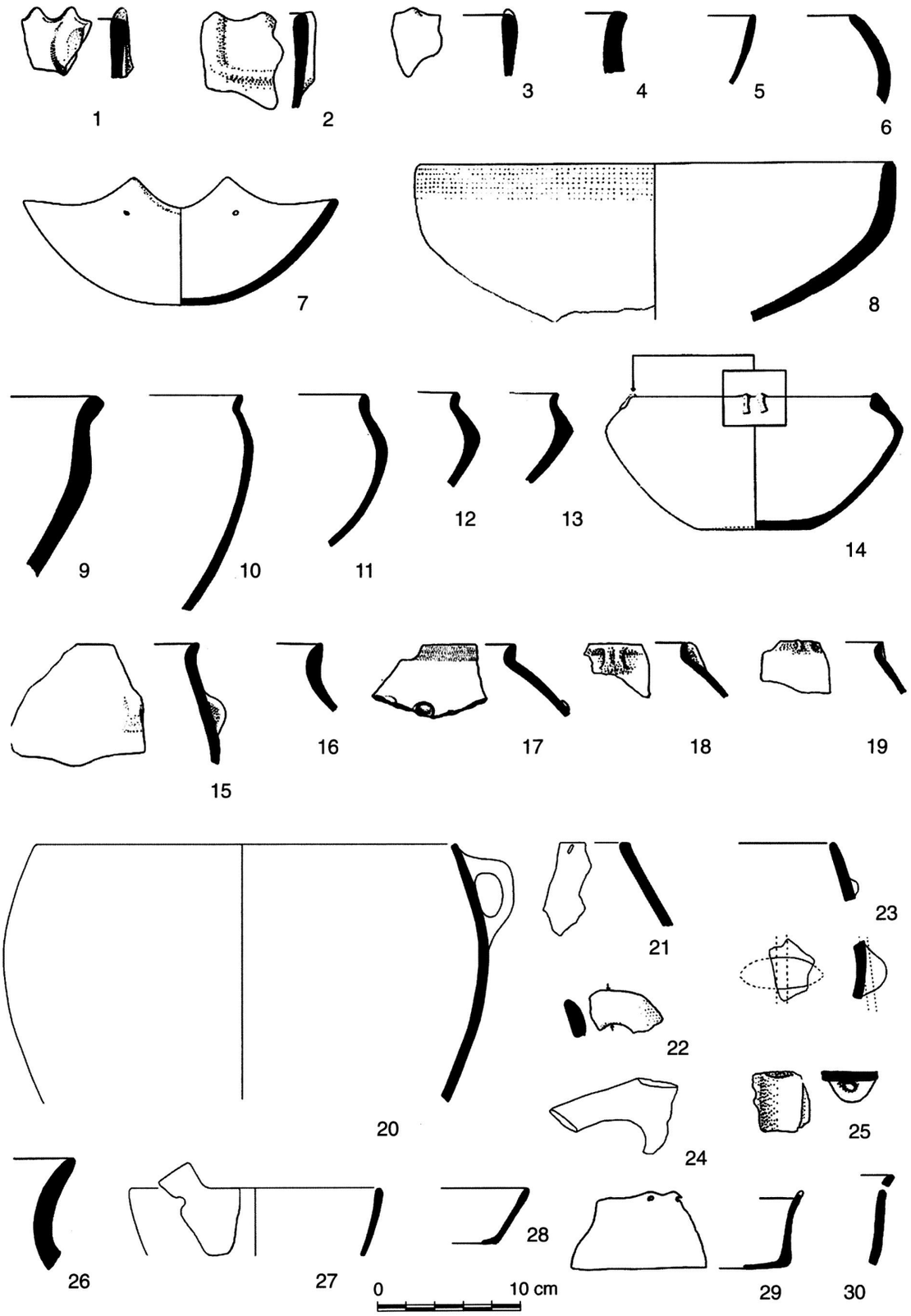


Fig. 1.3. Strata IX–VIII Group: EN pottery (after Evans 1964, figs. 22–8, 39).

earliest pottery-producing levels: the deep bowl (FIG. 1.3: 1–3), the medium bowl (FIG. 1.3: 5, 27), the shallow bowl with rounded base and pierced 'ear' (FIG. 1.3: 7) or wishbone handle (FIG. 1.3: 24), the flared bowl (FIG. 1.3: 4, 30), the carinated bowl (FIG. 1.3: 8), the hole-mouthed jar (FIG. 1.3: 6, 20–1, 23), the deep bowl with offset rim (FIG. 1.3: 9–11), the carinated bowl or jar with offset rim (FIG. 1.3: 12–19) and the low collared jar with strap handle (FIG. 1.3: 26). Although present also in later strata (Evans 1964, 214), hole-mouthed jars, especially straight-sided types (FIG. 1.3: 21), are notably more common in EN. In contrast, the flat-based mug, typical of MN–LN I Knossos, is a rare feature of Stratum VIII (FIG.1.3: 28–9). Since most forms continue without obvious change into MN (FIG. 1.4), EN is perhaps best characterised by the absence of distinctive MN–LN I forms, such as flat-based mugs with incised-pointillé decoration, large strap handles with rim attachment, high collared or funnel-necked jars, double-horned wishbone handles, winged strap handles and flared cups.

Relative (and absolute) chronology of the Strata IX–VIII Group

Evidence for ceramic use in other parts of the island is provided by a number of fabrics at Knossos that exhibit distinctive non-local mineralogies. In some cases these can be linked to geological formations at some distance from Knossos (e.g. Mirabello Bay, eastern Crete; see Tomkins and Day 2001; Tomkins *et al.* 2004). Some of these non-local fabrics are present only as single sherds, and in several cases these also exhibit unique features of form and finish that find their closest stylistic parallels with regions outside the island. For example a burnished hole-mouthed jar decorated with a single pellet a little distance below the rim and an oval, vertically pierced lug is unique at Knossos (FIG. 1.3: 23), but is the standard EN form in the Peloponnese and Attica, especially among coarse wares (Phelps 1975, 98–9, fig. 9.29–36; Caskey 1958, pl. 37a, f; Pantelidou Gopha 1995, figs. 2: 1–26, 1–27; 5: 2–35; 7: 2–31, 2–36, 2–68, 2–69, 2–94; Vitelli 1993, figs. 1j, 2a, d, j, k). Parallels for round or oval lugs and pellets are common in the EN Peloponnese, but generally rare thereafter (Phelps 1975, 109–10, 168). Stylistic links with the east Aegean are provided by a small group of pierced or unpierced tubular lugs that are vertically or diagonally positioned (FIG. 1.3: 25). These are always slipped (red brown) and burnished and occur in a grog-tempered fabric. The closest contemporary parallels for these are with LN sites in south-west Anatolia and the eastern Aegean, particularly the recently published site of Ulucak Höyük near Izmir (French 1965, 24, fig. 5.1–3; Meriç 1993). (See also for Hacılar, Mellaart 1961, fig. 3; for Chios, Hood 1981, 19–20; for Gökpinar, Eslick 1992; for Kuruçay, Duru 1994; and for Ulucak Höyük, Çilingiroğlu *et al.* 2004, figs. 22: 8–10, 23: 17–19, 25: 27–9)

The above links suggest that the Strata IX–VIII Group is broadly contemporary with Greek EN and Anatolian LN. Further support is provided by a single radiocarbon sample from Stratum IX (AC 24; BM-272, 7570 ± 150 BP), which suggests that the first ceramics appeared around the middle of the seventh millennium BC. This compares well with the date for the beginning of EN in Greece (Gallis 1996, fig. 3; Andreou *et al.* 2001, table 1; Perlès 2001, 99–110) and LN in south-west Anatolia (Mellaart 1970; Duru 1994, 114–15). The lack of radiocarbon samples from Strata VIII–VII means that the EN–MN transition at Knossos cannot be dated accurately at present. The earliest available MN date (Area AABB, Stratum P; BM-1372; 6482 ± 161 BP) indicates that MN was in part contemporary with the middle of the sixth millennium BC, leaving a gap between *c.* 6200 BC and *c.* 5700 BC for EN late (Stratum VIII) and MN early (Stratum VII). A date of *c.* 5900 BC seems plausible and this would be broadly consistent with the dates for the EN–MN transition in Greece (Perlès 2001, 110) and the LN–Early Chalcolithic transition (i.e. Hacılar VI–V: Mellaart 1970; Kuruçay: Duru 1994; Ulucak Höyük: Çilingiroğlu *et al.* 2004) in south-west Anatolia (see TABLE 1.1).

THE STRATA VII–VIB GROUP (MN)

Archaeological contexts

This new definition of MN Knossos is based on a restudy of ceramics from the following deposits excavated in 1957–60 and 1969–70 (Evans 1964, 150–7; 1971, 101–6, fig. 3; 1973, 133; 1994, 4, 8, 10; Tomkins 2001, 495–505; in preparation *a*).

West Court

1) Area AABB, Stratum P. The lowest deposit within Stratum P comprised a series of thin levels and pits, some dug directly into the bedrock. These are thought to represent the accumulation of refuse 'probably on the edge of the existing settlement' (Evans 1971, 104). The upper levels comprised a series of occupation layers containing walls, floors and hearths and the remains of a house first constructed in MN and occupied into LN I (Evans 1971, fig. 5). The similarity between the ceramics from Stratum P and those from Stratum VII in Area AC was first noted by J. D. Evans (1994, 4).

Central Court

2) Area AC, Strata VII–VIB. Ceramic change between Strata VIII (EN) and VII (MN) is paralleled by a change in construction technique from mudbrick and stone to pisé and stone. Stratum VII contained the remains of at least two rooms belonging to House C. Restudy of ceramics and stratigraphy suggests that Stratum VI should be divided into two parts: the lower part (Stratum VIB: C24, A19), dating to MN, contained traces of walls; the upper part (Stratum VIA: C23, A17–

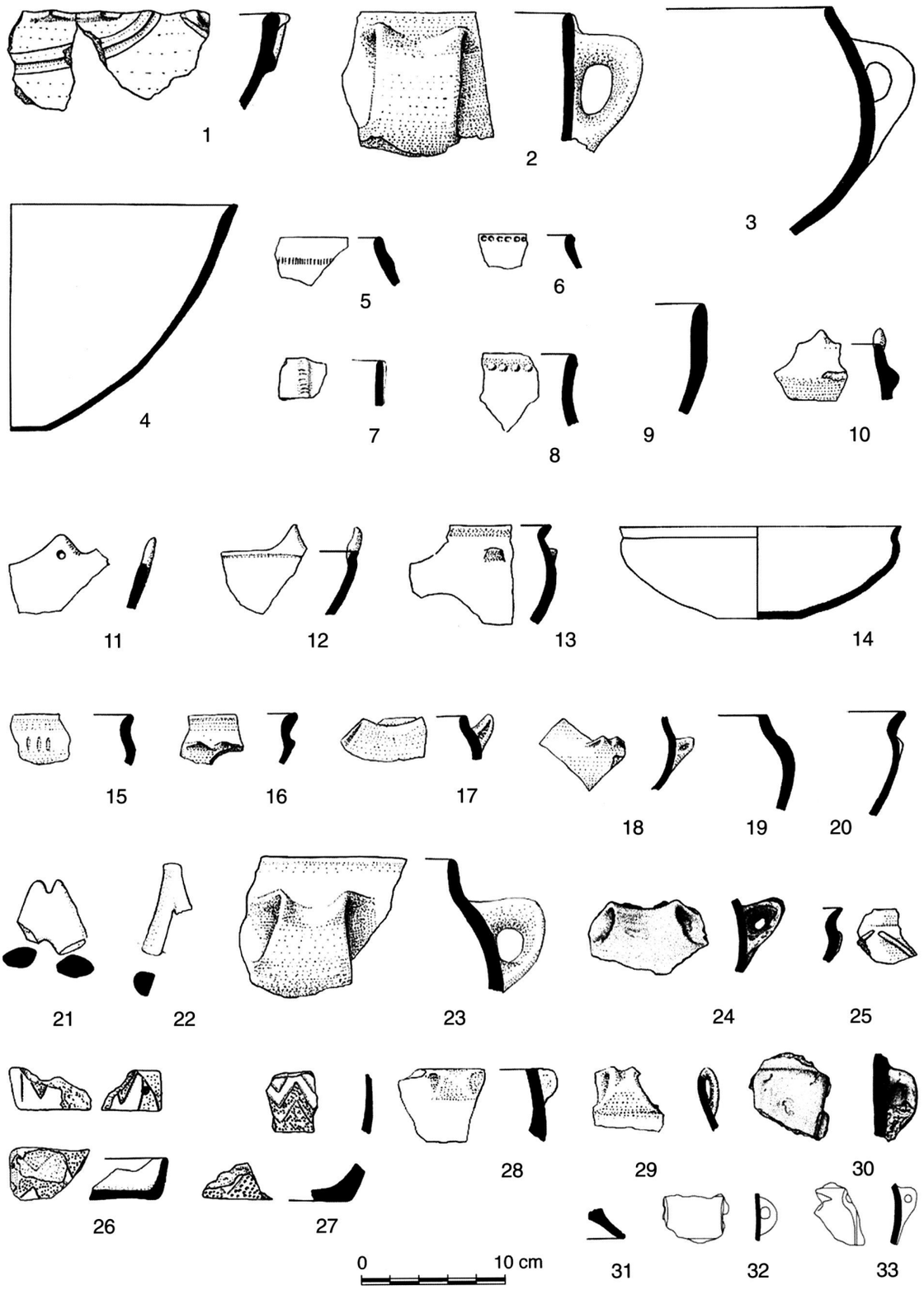


Fig. 1.4. Strata VII–VIB Group: MN pottery from Strata VII–VIB (after Evans 1964, figs. 22–8, 39–40) and Trench X (courtesy of J. D. Evans).

18), dating to LN I, consisted of dark grey earth, ash and possible traces of walls and flooring.

3) Trench X. In Trench X a series of thin levels, which directly overlie the IN and EN deposit and are in turn sealed by an LN I level (Evans 1971, fig. 3), contain material identical to the Strata VII–VIB Group.

Characteristics of the Strata VII–VIB Group

Fabrics

In addition to the main EN fabrics, which continue unchanged, Stratum VII sees the appearance of a new fabric (Fabric 1d; PLATE 1: 3), dominated by bioclastic limestone, which has close mineralogical and technological links with other broadly local fabrics. This fabric is common in Strata VII–VIB and is the most common fabric in Strata VIA–V (LN I). As in EN, local fabrics comprise approximately half of any assemblage.

Wares

The most common type of decoration is incised-pointillé (triangle motif), usually but not exclusively found on flat-based mugs (FIG. 1.4: 27). Plastic cordon decoration similar to the EN type continues and is joined by new variations, such as the double scallop, the slashed cordon/rope pattern, the row of pellets below the rim and cordon decoration on fine polished vessels (FIG. 1.4: 1, 5–8, 10, 12–13, 25). Rare examples of barbotine decoration more typical of the Strata VIA–V Group (LN I) first occur in non-local fabrics in Stratum VIB and Stratum P (late MN). Rippled decoration, previously thought to appear only in LN II (Stratum IV; Evans 1964, fig. 46), first appears in non-local fabrics in Stratum VIB (FIG. 1.5: 2).

Forms

A diagnostic feature of the Strata VII–VIB Group is the occurrence of 'winged' strap handles with an exaggerated, often upward flare (Evans 1964, pl. 45.1). These occur in a variety of sizes, from large to miniature, on deep bowls (FIG. 1.4: 2), incurved bowls (Evans 1964, pl. 42.4), large collared jars (FIG. 1.4: 23–4), bowls/jars with offset rim (FIG. 1.4: 16–18, 23, 24) and flat-based mugs (FIG. 1.4: 29). Also typical are double horned wishbone handles (FIG. 1.4: 21) and the vertical-sided flat-based mug, with or without offset rim and sometimes with incised-pointillé decoration (FIG. 1.4: 27–9). Flat-based mugs vary considerably in size from small to very large, but all have some sort of vertically placed handle that normally joins at the rim. Although the flat-based mug is also common in the Strata VIA–V Group (LN I; e.g. Furness 1953, pl. 30c), very large examples are specific to the Strata VII–VIB Group and their large rim-attached strap handles are thus particularly diagnostic (FIG. 1.5: 1).

Relative (and absolute) chronology of the Strata VII–VIB Group

Within Crete this group shares similarities with some of the material from the lower levels of the Gerani Cave: the double-horned wishbone handle (Godart and Tzedakis 1992, pls. CII: 838, CIV: 823; see FIG. 1.4: 21); the carinated bowl (Godart and Tzedakis 1992, pl. CIII.2: 1199, 1227; see FIG. 1.4: 9); and the bowl with offset rim (Godart and Tzedakis 1992, pl. CIII.2: 956, 1150; see FIG. 1.4: 12, 14, 17, 19). Such links should, however, be treated with caution in advance of a full publication of this site. Additional evidence for ceramic production at other, as yet undiscovered, sites is provided by the occurrence in Strata VII–VIB at Knossos of a variety of non-local fabrics (e.g. Mirabello fabric).

A number of sherds in unique fabrics exhibit also unique stylistic features with close parallels from sites in MN Greece or the Early Chalcolithic eastern Aegean. For example, two sherds have a dark-on-light painted cross-hatched motif (FIG. 1.6), which finds close parallels at sites in the Peloponnese (e.g. Franchthi, Nemea), where this painted motif is characteristic of MN (Phelps 1975, 100–2, 121, 158, 160, 167; Blegen 1975, 267–8, pls. 65: 3, 66: 1–7, 9–10); a unique ring base (ring foot type; FIG. 1.4: 31) compares closely with examples from the Peloponnese, where this is diagnostic of MN when found outside an FN context (Phelps 1975, 96, 120); a thin-walled cup or bowl with the broken-off stump of a tubular handle in a soft, very fine (gritless), pale white fabric (FIG. 1.5: 3) finds exact parallels for form (Phelps 1975, 447, fig. 1.11; 512, fig. 66.33, 38; Vitelli 1999, fig. 6j), finish (white ware: Pantelidou Gopha 1995, 305–6, 313, fig. 1; Phelps 1998, 433–4), and fabric (Phelps 1975, 72–5) at MN sites in southern Greece. In addition, incised-pointillé decoration (bands, triangles) similar to that of the Strata VII–VIB Group occurs at MN Franchthi (FCP 3; Vitelli 1999, 24; figs. 8e, f, g; 9a, c), and two otherwise unique examples of slashed cordon/rope decoration from MN Nemea are indistinguishable from Knossian examples (Phelps 1975, 114, fig. 9.13–14; Blegen 1975, 264; pl. 68: 4).

Eastern Aegean links are suggested by several horizontally positioned tubular lugs, two in the same grog-tempered fabric as the EN vertically or diagonally positioned tubular lugs (FIG. 1.4: 32), two with decorative 'tails' in an otherwise unique red burnished non-local fabric (FIG. 1.4: 30, 33). The shift at Knossos from (Strata IX–VIII) vertical or diagonal to (Strata VII–VIB) horizontal positioning parallels a similar development between LN and Early Chalcolithic in the eastern Aegean–Anatolian littoral. Red burnished horizontal tubular lugs, sometimes with tails, are held to characterise Early Chalcolithic at Ayio Gala (Chios) and Baraklı (south of Izmir) (Hood 1981, 19–20, 34, fig. 5: 12–10; Meriç 1997). In addition, a small number of sherds from Ayio Gala exhibit stylistic links with the

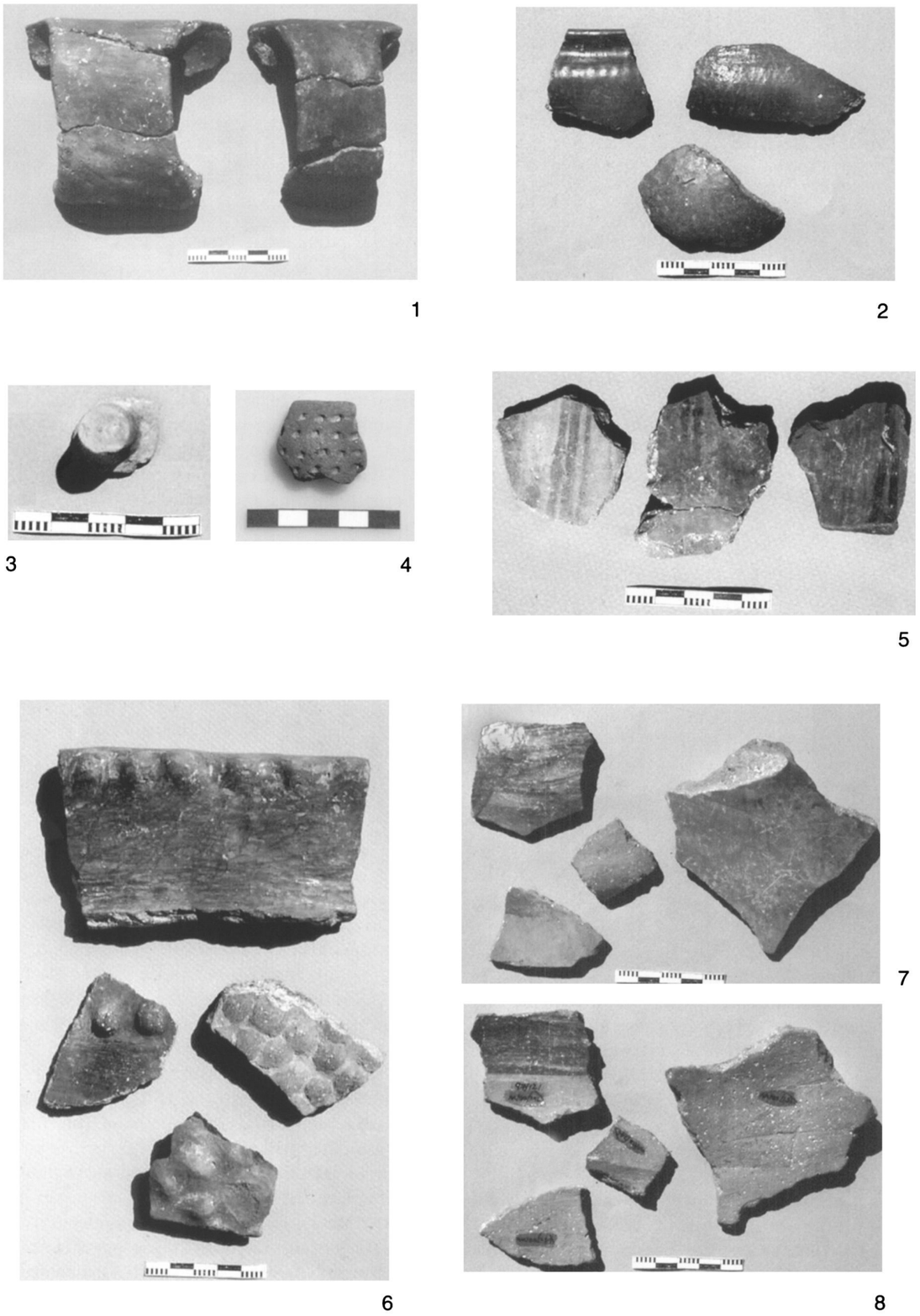


Fig. 1.5. Strata VII–VIB and Strata IVA–V pottery (MN and LN I). (1) MN. Large rim-attached strap handles; (2) MN. Rippled decoration; (3) MN. Import. Soft, fine, pale grey fabric; (4) LN I. Import. Red, schist fabric; (5) LN I. Dribble-painted decoration; (6) LN I. Pellet/barbotine decoration; (7–8) LN I. Exterior and interior view of sherds with brushed decoration and painted decoration.

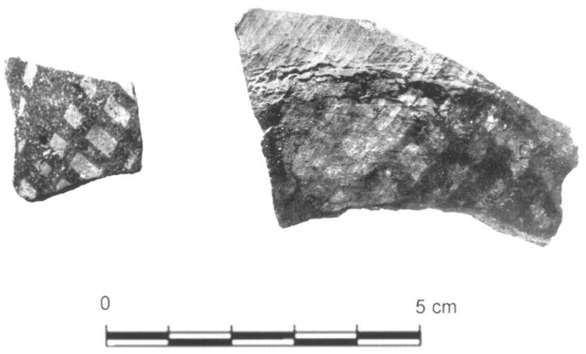


Fig. 1.6. MN. Dark-on-light painted imports (Trench X).

Strata VII–VIB Group: incised-pointillé decoration (Hood 1981, 61, fig. 42: 286, pl. 7c: 42–3, 60–1); rippled decoration (Hood 1981, 60, fig. 33: 202; slashed cordon/rope combined with incised-pointillé decoration (Hood 1981, pl. 7d: 24, figs. 7: 24, 42: 308).

These links suggest that the Strata VII–VIB Group at Knossos may be considered contemporary with MN in Greece and Early Chalcolithic in south-west Anatolia. This is also supported by the available radiocarbon dates. The large error margin of BM-1371 (6201 ± 252 BP) from the upper part of Stratum P gives an over-large calibrated date range. BM-1372 (6482 ± 161 BP) from the lowest levels in Stratum P gives a calibrated range in the middle of the sixth millennium. BM-273 (6210 ± 150 BP) from Stratum VIA (early LN I; A17) suggests that MN at Knossos ends shortly before the last quarter of the sixth millennium (*c.* 5300 BC; TABLE 1.1). These dates agree well with the dating of MN and the MN–LN I transition in northern (Andreou *et al.* 2001, table 1) and southern Greece (Vitelli 1999, table 9) and Early Chalcolithic in south-west Anatolia (Mellaart 1970).

THE STRATA VIA–V GROUP (LN I)

Archaeological contexts (FIG. 1.1)

This new definition of LN I at Knossos is based on a restudy of ceramics from the following deposits (Evans 1964, 157–64; Tomkins 2001, 505–7; Tomkins, in preparation *a*).

West Court

1) Area AABB, Strata N, M, L. Stratum N contained the remains of a house (Evans 1971, fig. 5), which was originally constructed in the upper part of Stratum P (late MN) and went through several phases of use. Stratum M also contained evidence for occupation in the form of walls and fire pits. Stratum L lacked evidence for built structures and directly underlaid the walls of a building belonging to Stratum K (LN II).

North Wing

2) Area XY. In this area the lowest levels (XY7–7e) can be assigned to this group and dated to LN I.

Central Court

3) Area AC, Strata VIA–V. Stratum VIA comprised a layer of dark earth with patches of *kouskouras* and ash and possible traces of a wall and flooring. Stratum V contained habitation debris, patches of flooring and the remains of an unnamed house (Evans 1964, 157–64), here termed House F.

Characteristics of the Strata VIA–V Group

Fabrics

This group is marked by a series of technological changes occurring in the local group of fabrics, which include the introduction of several new ones (Fabrics 1b, 1e, 1f; PLATE 1: 2, 4, 5) that represent finer (i.e. tempered with a finer fraction of rock temper) versions of the MN local fabrics (Fabrics 1a, 1d, 2a; Tomkins 2004; Tomkins *et al.* 2004). Some of the coarser MN local fabrics disappear (Fabric 1a; PLATE 1: 1), while others continue into Stratum VIA–V and Strata N–L (Fabrics 1d, 2a; PLATE 1: 3, 6). Typical of this group is a major decline in the frequency of non-local fabrics from around 50% (EN–MN) to around 15% (LN I–FN IV). The presence or absence or proportion of specific fabrics at Knossos can be used to separate assemblages belonging to the Strata VIA–V Group (LN I: mostly Fabric 1d) and the Stratum IV Group (LN II: mostly Fabric 1e).

Wares

This group sees the appearance of several new types of decoration in the local fabrics, i.e. painted ware, brushed ware, scribble burnished and barbotine ware. Most diagnostic is orange, red or dark brown-on-buff painted decoration (Fabrics 1d, 1e), whose occurrence in the local fabrics at Knossos is almost entirely confined to the Strata VIA–V Group: simple motifs occur, such as dots, dribbles or brush strokes (FIG. 1.5: 5). Sometimes the entire upper or lower register of the interior or exterior of a vessel is treated (FIG. 1.5: 8 top left), sometimes painted decoration occurs with brushed decoration, where the vessel surface is covered with criss-crossing brush-marks of dark paint or slip applied over a buff surface (FIG. 1.5: 7–8). Scribble burnished ware, usually orange, red, or dark brown on a buff background, first appears in very small quantities. Barbotine decoration now occurs in local fabrics (Fabric 1d) and differs from that of LN II (see below) in being larger, more rounded and less densely arranged (FIG. 1.5: 6; FIG. 1.7: 11; cf. FIG. 1.8: 41, 46). Rows of pellets continue to occur and these are now also found in a vertical arrangement not only near the rim, but also

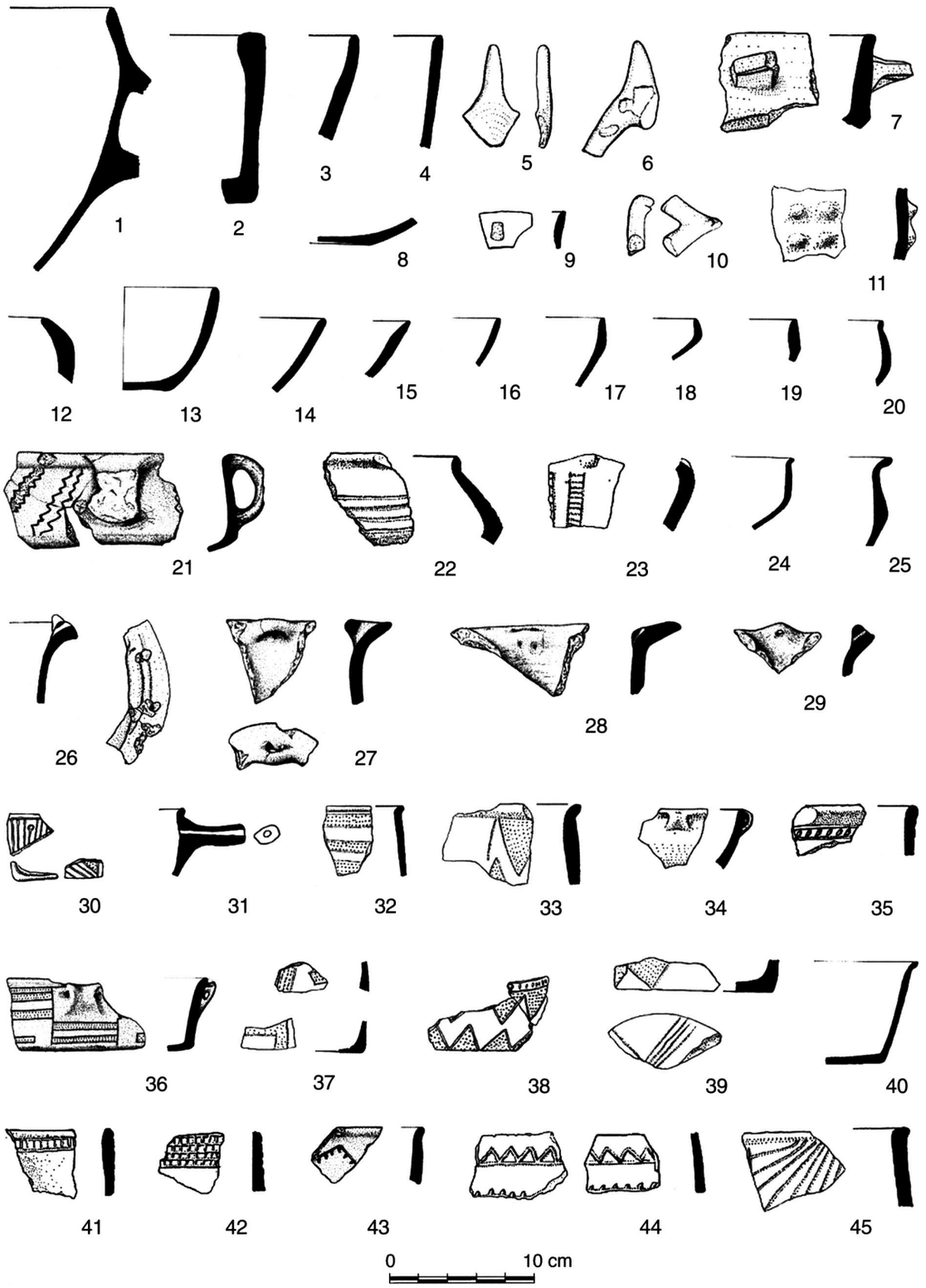


Fig. 1.7. Strata VIA–V Group: LN I pottery from Strata VIA–V (after Evans 1964, figs. 22–8, 40–1) and Trenches AABB, Z and ZG (courtesy of J. D. Evans).

elsewhere on the body of the vessel (FIG. 1.5: 6). Rippled decoration remains rare and occurs for the first time in local fabrics. Incised-pointillé decoration is still common, but is joined by a series of new incised motifs lacking pointillé filling (diagonal lines, cross-hatching, ladder, chevrons, 'barbed wire': FIG. 1.7: 21–3, 30, 35, 39, 41–5), which will dominate the incised repertoire in LN II.

Forms

The flat-based mug (FIG. 1.7: 32–4, 36–40) with incised-pointillé decoration continues to be common, and particularly characteristic are flat-based mugs in the new finer local fabrics or decorated with the new types of incised motif (FIG. 1.7: 35, 39, 41–5). A diagnostic form is the flared cup with sharply everted or flared rim, on the interior of which there is often a pierced lug (FIG. 1.7: 26–9). Fragments suggest a profile with steep sides, a small diameter and a flat base. Also typical are deep bucket-like vessels with a flat-topped rim (FIG. 1.7: 2). Fine shallow bowls with a thickened rim (FIG. 1.7: 15), carinated shallow bowls of a variety of types (FIG. 1.7: 17–19) and the carinated bowl with offset rim, strap handle and incised decoration (FIG. 1.7: 21–3) first appear in this group and become more common in LN II. Knobbed wishbone handles are typical of this group. Pronged wishbone handles and the practice of squaring off the edges of strap and other handles to create a rectangular section both first appear in this group and continue until FN IA (FIGS. 1.7: 5–7; 1.8: 8, 11; 1.9: 13). Concave flat bases are now common (FIG. 1.7: 8, 13).

Relative (and absolute) chronology of the Strata VIA–V Group

Ceramics incised with the types of motif typical of the Strata VIA–V (LN I) and the Stratum IV (LN II) Groups (i.e. cross-hatching, chevrons, 'barbed wire', incised-pointillé triangles, chevrons, bands) are illustrated in preliminary reports from the site of Katsambas, on the edge of modern Herakleion (Alexiou 1953, fig. 7, 1954, fig. 4). Restudy of published and unpublished material from the site of Magasa in eastern Crete (Dawkins 1904–5) indicates an LN date for the entire assemblage: carinated bowl with offset rim (Dawkins 1905, fig. 3b; Forsdyke 1925, A404 no. 5, fig. 83); knobbed wishbone handle (Dawkins 1905, fig. 3c, pl. VIII: 27–9); pellet decoration (Dawkins 1905, 265, pl. VIII: 30); flat-based mug with incised-pointillé decoration; incised 'barbed wire' motif (Dawkins 1905, pl. VIII: 26); and incised ladder motif (Dawkins 1905, pl. VIII: 24–5). A small Neolithic deposit discovered at Sphoungaras (Mirabello Bay) contains LN carinated bowls with offset rims and a knobbed wishbone handle of Magasa (i.e. LN) type (Hall 1912, 47; Betancourt 1983, 43, fig. 13: 110–11; see FIGS. 1.7: 21–5, 1.8: 26–9). A concave flat base from Kavousi (locus 92) appears to be of LN type and other sherds in the same group, although less diagnostic, would not be incompatible with this date (Haggis 1996*a*, 389–400, fig. 5: 338–41). The fabric of the carinated bowl with strap handle (no. 338) is identical to the Neolithic Mirabello fabric defined at Knossos (Tomkins and Day 2001). The continued presence of the Mirabello fabric at Knossos in Strata VIA–IV provides further support for LN occupation in this area. Among unpublished material from the Gerani Cave in western Crete there are forms (carinated bowls, carinated bowls with offset rim and strap handle) and types of decoration (pellet decoration, incised cross-hatched motif) that could be LN in date (Tzedakis 1980; Manteli 1993*b*).

Stylistic links between the Stratum VIA–V Group and early LN assemblages in the southern Aegean include a unique vessel with a long narrow pierced tubular spout from Stratum V (FIG. 1.7: 31), which is paralleled at LN Saliagos (Evans and Renfrew 1968, figs. 39, 59: 15, 18, 19) and early LN Franchthi (Vitelli 1999, fig. 35g). In addition, a single and otherwise unique example of barbotine decoration, indistinguishable from that typical of the Strata VIA–V Group, occurs in an early LN context at Nea Makri (Pantelidou Gopha 1995, pl. 41: 9–23; Phelps 1998, 434). The 'barbed wire' motif (e.g. FIG. 1.7: 43) also occurs incised at MN / LN Kouphovouno (Renard 1989, pl. xxxiv: 4) and painted at early LN Franchthi (Vitelli 1999, figs. 17h, 23c). The combined zigzag and line motif is incised at Knossos (FIG. 1.7: 44) and painted at early LN Franchthi (Vitelli 1999, figs. 23a–b, 24b, d, e). Also from early LN Franchthi are: a carinated bowl with offset rim and rim strap handle (Vitelli 1999, fig. 26k; cf. FIGS. 1.7: 21, 1.8: 22–3); and squared off handles on rhyta, which may be compared with similar handles from Knossos (Vitelli 1999, fig. 28h).

A link between the Strata VIA–V Group and Middle Chalcolithic (Eslick 1980, 1992) sites in the eastern Aegean and south-west Anatolia is provided by a red-slipped sherd, in a unique schist-tempered fabric, decorated with repeating rows of small dimples or rounded depressions (FIG. 1.5: 4), which finds parallels at Emporio IX–VIII (Hood 1981, nos. 401–3, 418, 297, fig. 111: 14–16, pls. 39, 42), Aphrodisias VIIIC (Joukowsky 1986, 521, fig. 375: 1) and LN Saliagos (Evans and Renfrew 1968, fig. 45: 2). In addition, the parallel adoption of similar geometric motifs (e.g. multiple chevrons) is a feature that links the Strata VIA–V Group at Knossos to Emporio VIII and early LN Nea Makri, where they are incised, and LN Saliagos and early LN Franchthi, where they are painted (Washburn 1983; Hood 1981, 295, figs. 111: 4, 6–16; 112: 17–20, 25–33; Vitelli 1999, figs. 21b, e, 22e, f). Although only the incised multiple chevrons at LN Nea Makri (Pantelidou Gopha 1995, col. pl. E: 8–87, fig. 45: 9–32, 9–35) find parallels at Knossos (Evans 1964, pl. 48:1 no. 4), a much wider range of motifs are shared between Knossos and Emporio VIII (Hood 1981, figs. 111: 4, 6–16;

112: 17–20, 25–33). A general synchronism between Anatolian Middle Chalcolithic and Greek LN is independently supported by other links (Eslick 1980, 10–12).

This evidence suggests that the Strata VIA–V Group at Knossos is contemporary with LN I in Greece and Middle Chalcolithic in south-west Anatolia. This is also supported by the radiocarbon dates from LN I contexts at Knossos: BM-273 (6210 ± 150 BP) from Stratum VIA and BM-274 (6140 ± 150 BP) from Stratum V suggest a date in the last quarter of the sixth millennium for LN I. This is strongly supported by a new series of dates, taken from the thick LN I stratum (levels 34–28) in the 1997 test dug below the Central Court, which together indicate a calibrated date range for LN I of 5260–4990 BC (Efstratiou *et al.* 2004, 45–6; table 1.1). Radiocarbon dates for the beginning of LN II at Knossos would be consistent with a transition to LN II at *c.* 4900 BC (TABLE 1.1; see also below). These dates agree well with the date range of LN I in Greece (Gallis 1996, fig. 3).

THE STRATUM IV GROUP (LN II)

Archaeological contexts (FIG. 1.1)

Detailed discussion of stratigraphy and small finds can be found in reports from the 1957–60 (Evans 1964, 164–72) and 1969–70 excavations (Evans 1973, 133, 136; 1971, 107–9, 1994, table I, 11; see also Furness 1953, 117–20, Evans 1964, 212–19, where this material is called EN II). A full publication of all deposits at Knossos belonging to this group is under way (Tomkins, in preparation *a*).

West Court

1) Area AABB, Strata G, H, J, K. Three building levels were identified in four strata occupying a total of 2.5–3.0 m of deposit. Each building was larger than the exposed area and consisted of several, small rectangular rooms (Evans 1994, figs. 5–6).

North Wing

2) Area XY, Levels 2c–6f. Here, evidence for three building levels was found stratified directly over LN I (Evans 1964, 166; fig. 15.i–ii).

Central Court

3) Area AC, Stratum IV. Stratum IV was a thick deposit that sloped down from west to east and consisted of a series of thin levels containing traces of walls, hearths, small clay structures, pits and pebble pavements.

Characteristics of the Stratum IV Group

Fabrics

In Stratum IV Fabric 1d, which dominated LN I assemblages, declines significantly, and is replaced by Fabric 1e.

Wares

Incised decoration typical of the Stratum IV Group may be distinguished from that of the Stratum IIIA Group (FN IA) by the greater variety of patterns, the greater carelessness or irregularity of their execution and its greater frequency compared with other forms of decoration (Evans 1964, 216–17). Motifs include 'barbed wire', herringbone, tree, rows of chevrons, zigzag lines (single, double or triple), hatched lozenges and (more rarely) the vertical ladder (Evans 1964, 217, 219, pls. 43: 3, 47: 3–4, 48). Incised decoration is most frequently found on carinated bowls with offset rim and rim-attached strap handle. Incised-pointillé decoration is rare and motifs include triangles, bands and the 'chessboard' (FIG. 1.8: 45; Evans 1964, pl. 48.1: 18). The Stratum IV Group also sees the first appearance of a new sort of pointillé decoration unbordered by incised lines (FIG. 1.8: 39). Scribble burnished and brushed wares are common (Evans 1964, pl. 43.2, 1994, 14); rippled ware also occurs throughout (*contra* Evans 1964, 219). Barbotine decoration typical of the Stratum IV Group differs from that of the earlier (LN I) group in having smaller, less rounded and more densely arranged lumps (FIG. 1.8: 41, 46; Evans 1964, pl. 47: 3, 6). Plastic cordon decoration is very rare and rows of pellets no longer occur (Evans 1964, pl. 49: 2; 1994, 14).

Forms

Flat-based mugs become rare in this group and disappear thereafter (Evans 1964, 214). This decline may be linked to their gradual replacement by the carinated bowl with offset rim, rim-attached strap handle and incised decoration, which first appeared in LN I (Evans 1964, 214 type 4A). This is typical of the Stratum IV Group, where it accounts for the majority of incised vessels, and continues into FN I (FIG. 1.8: 22–3, 38–9, 42–4; Evans 1964, pls. 47.3: 6, 47.4: 1–3, 8, 48.2: 4, 15; Furness 1953, fig. 10). This group is also characterised by bowls with internally thickened rims (FIG. 1.8: 17) and a variety of carinated bowl types (FIG. 1.8: 14–16, 19–21), most of which first appear in LN I. Also typical of this group are: pronged wishbone handles crowned with a round knob (FIG. 1.8: 10) and multiple handles, both vertical and horizontal, which are often squared off and seem to serve a primarily decorative function (FIG. 1.8: 8, 11; Evans 1964, pl. 47: 2). House models, previously labelled 'legged receptacles' (FIG. 1.8: 7; Tomkins 2004, fig. 5; Furness 1953, 133; Evans 1964, 214) and 'shuttles', decorated with incised lines and/or pointillé decoration, also occur (Evans 1964, 233, 235).

Relative (and absolute) chronology of the Stratum IV Group

Within Crete the Stratum IV Group may be linked to LN material from Katsambas, Magasa, Sphoungaras,

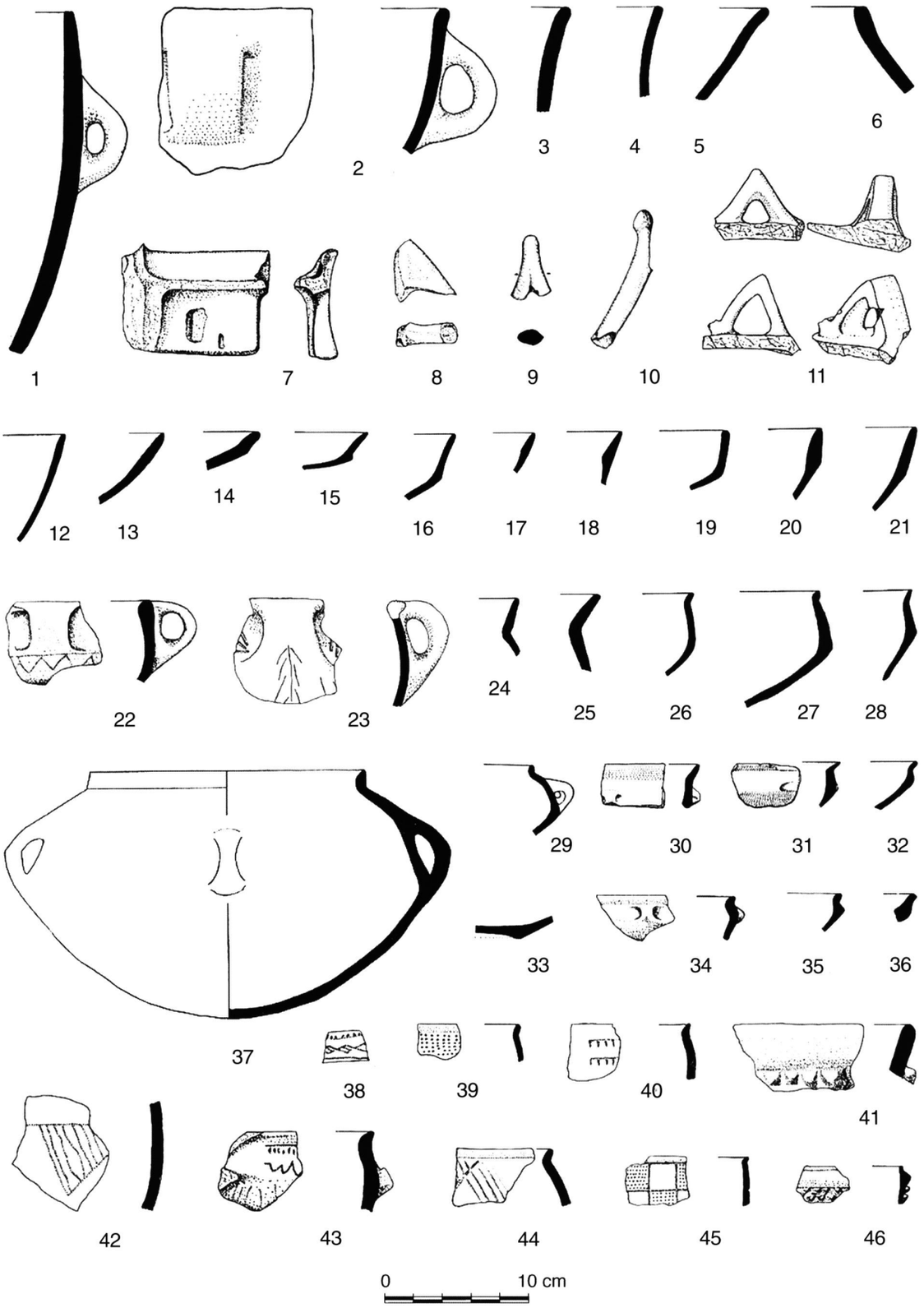


Fig. 1.8. Stratum IV Group: LN II pottery from Stratum IV (after Evans 1964, figs. 29–32, 40).

and possibly the Gerani Cave and Kavousi (see p. 29). In addition, the existence of other undiscovered sites in Crete is implied by the continued occurrence at Knossos of non-local fabrics, such as the Mirabello fabric.

Outside Crete, a general synchronism between the popularity of carinated bowls at Knossos in Strata V–IV and their late MN / LN popularity on the Greek mainland has been noted by J. D. Evans (1971, 109). In addition, the Stratum IV Group may be linked to LN Greek and Middle Chalcolithic Anatolian assemblages by the use of similar decorative motifs (see also previous group) and by the very rare presence of barbotine typical of the Stratum IV Group at Saliagos (Evans and Renfrew 1968, 43, fig. 43: 15, 16) and Emporio VIII (Hood 1981, 299, pl. 41d: 421). A concave base from LN Saliagos also compares closely with Knossian types (Evans and Renfrew 1968, fig. 53: 12).

These links, together with those noted for the Stratum VIA–V Group, support a synchronism between the Stratum IV Group and LN II in Greece and Middle Chalcolithic in south-west Anatolia. This is also supported by the available radiocarbon dates. BM-719 (5967 ± 41 BP), a mixture of samples from early and late LN II contexts, suggests a very early fifth millennium BC date. BM-577 (5884 ± 188 BP) and BM-279 (5680 ± 150 BP), both of which are from late LN II contexts, suggest that LN II occupies the first half of the fifth millennium BC. This is consistent with BM-580, which indicates a date after *c.* 4550 for FN IA (see below). A new series of dates from a LN II stratum in the 1997 test below the Central Court provide a combined calibrated date range of 4961–4799 BC (Levels 28–14; Efstratiou *et al.* 2004, 46 and table 1.1). The links noted between LN II Knossos, LN Saliagos and Middle Chalcolithic Emporio allow additional dates to be considered. The dates from LN Saliagos (Stuckenrath 1968, 144) and LN I–LN II Ftelia (Sampson 2002, 153–7) agree well with those from LN I–II Knossos, and the new dates for Beşik-Sivritepe pattern-burnished ware, through their synchronisation with Kum Tepe IA and Emporio VIII (Eslick 1980, 11), suggest a possible date range of 4800–4300 BC for Emporio VIII (Korfmann and Kromer 1993, 136, 145–6). Taken together these indicate an approximate date range of *c.* 4900–*c.* 4500 BC for the Stratum IV Group.

THE STRATUM IIIB AND STRATUM IIIA GROUPS (FN IA–B)

The FN period, as now defined at Knossos, is divided into four main sub-phases (FN I–IV) (TABLES 1.1–4). The longest of these sub-phases, FN I, may be further divided into early (FN IA: the Stratum IIIB Group) and late (FN IB: the Stratum IIIA Group) phases, partly on the basis of previous observations (i.e. for FN IA see Furness 1953, 120–6 and Evans 1964, 219–25, where it is termed 'MN'). Although these early and late phases of FN I are stylistically and stratigraphically distinct (*contra* Winder 1991, 42), other similar assemblages outside Knossos (see below) are either too poorly stratified or insufficiently published to allow confident phasing and dating. Further discussion of relevant stratigraphy and small finds can be found in reports from the 1957–60 and 1969–70 excavations (Evans 1964, 172–9, 1971, 111, 1973, 133, 136, 1994, 14–16).

Archaeological contexts of the Stratum IIIB Group (FN IA) (FIG. 1.1)

West Court

1) Area AABB, Strata D, E, F; Trench EE, Levels 21–34. Strata D, E and F comprised a series of walls and floor deposits belonging to a large, complex structure, part of which was also encountered in Trench EE (Evans 1971, 111, figs. 4, 8, pl. VIII). This structure went through several phases of use that continued into FN IB (Stratum C).

North Wing

2) Area XY, Levels 1–2b. Levels 1–2b, comprising the uppermost surviving Neolithic levels in Area XY, directly overlaid a LN II building (Evans 1964, 178).

Central Court

3) Area ABCD–KLMN–RST, Stratum IIIB. This contained the remains of a house (House A) built directly over Stratum IV (LN II) and in turn sealed by House B (Stratum IIIA; Evans 1964, 172–6, figs. 2, 16, 1994, 15). House A was covered by a large mound of clay, representing the collapse of its pisé superstructure, and into this two pits were dug, filled with pottery belonging to the Stratum IIIA Group (FN IB; see below). In Areas RST and KLMN excavation generally focused on revealing structures associated with Stratum IIIA and material of the Stratum IIIB group was only encountered in small pockets. In Trench X a very thin level (Level 9) stratified above LN contained material typical of the Stratum IIIB Group.

Characteristics of the Stratum IIIB Group (FN IA)

Fabrics

The Stratum IIIB Group shows strong continuity in fabric with LN II and FN IB.

Wares

The Stratum IIIB Group is best defined by a predominance of rippled decoration in dark polished fine wares (Evans 1964, 225). It is found on a wide range of forms, principally on the exterior, but often also inside the rim of carinated bowls (FIG. 1.9: 18). Incised decoration may be distinguished from LN II types by the precision and regularity of its application and the

greater standardisation of its motifs (Evans 1964, 223). The most common incised motif comprises diagonal parallel lines, either in a chevron arrangement or as a filling for triangles (FIG. 1.9: 33–5). These motifs continue into FN IB, where they are joined by new types (see below; FIG. 1.9: 56, 57, 61). Barbotine decoration, similar to that found in LN II, is a rare feature of the Stratum IIIB Group and is absent thereafter. Other wares that first occur in LN (such as unbordered pointillé decoration and scribble burnished ware) are present in this group and in FN IB.

Forms

The majority of forms in this group are also common in the following Stratum IIIA Group. These include: the flared cup with flat base (FIG. 1.9: 9, 45, 46); shallow circular 'trays' or more probably lids (FIG. 1.9: 16, 52); 'dippers' with pronged wishbone handles with rippled decoration (FIG. 1.9: 10–11; Evans 1964, fig. 43.3); house models, sometimes with ripple decoration (Furness 1953, 133, fig. 13.b: 10); 'shuttles'; carinated bowls, frequently with a flared or everted rim and rim-attached handle (FIG. 1.9: 26–36, 49–51, 54–61). Carinated bowls are the main decorated form in both groups and appear to develop directly from LN II types. Specific to the Stratum IIIB Group are: square projections above the rim of coarse ware bowls, rim-attached strap handles that project above the rim and 'hammer' rims (FIG. 1.9: 6–7, 12, 25). Although typical of LN I–II, multiple strap handles and shallow bowls with internally thickened rim also occur in the Stratum IIIB Group and are absent thereafter (FIG. 1.9: 13, 19).

Archaeological contexts of the Stratum IIIA Group (FN IB) (FIG. 1.1)

West Court

1) Area AABB, Strata C, B; Trench EE, Levels 14–20. Stratum C represents the final phases of reuse associated with a large complex structure, parts of which were also revealed in Trench EE. Stratum B, which immediately underlaid the EM IIA West Court House (Stratum A: see Chapter 2), was a greyish clayey deposit containing stone and *kouskouras* walls, traces of flooring and patches of darker occupation debris.

2) Trench FF, Levels 25–8 and 39–41. Substantial walls and material of Stratum IIIA type came to light at the bottom of Trench FF, where they are stratified below FN II (Evans 1971, 111, fig. 8, pl. VIII).

West Wing

3) Throne Room Area. Ten rippled sherds from below rooms 44 and 44a suggest the presence of a deposit belonging either to the Stratum IIIB Group or, more probably, the Stratum IIIA Group (Manteli and Evely 1995, 9, pl. 3c).

Central Court

4) Area ABCD–KLMN–RST, Stratum IIIA. This comprises the early phases of a house (House B.1), which overlaid the collapsed remains of House A in Stratum IIIB (Evans 1964, 176; 1971, 98, 111, pl. VII, 1994, 15, fig. 7). Close to House B.1 an important group of pottery was found in two pits dug into the pisé collapse of House A (Evans 1964, 174, 178, figs. 20, 40–43). To the south of House B.1 is a large, unnamed structure, termed here House G (Evans 1964, 176–8, figs. 4, 18; 1971, 97–8, 111, fig. 7; 1994, 15, pl. 1d). A collapse of the pisé superstructure of House G (G.1), which occurred close to the transition to FN II, sealed the exterior surface to the north and west. The interior of House G.1 was subsequently rebuilt in FN II (House G.2, Stratum IIB; see below) and this involved a wholesale clearance of its interior, removing all but pockets of Stratum IIIB occupation.

Characteristics of the Stratum IIIA Group (FN IB)

Fabrics

There is strong continuity in fabric with the Stratum IIIB Group. Fabrics 1b and 1f (PLATE 1) become rare and disappear before the beginning of FN II.

Wares

A characteristic feature of this group is a significant drop in the proportion of rippled ware, when compared with the Stratum IIIB Group (FIG. 1.9: 60). Rippled and scribble burnished wares steadily decline in frequency, becoming rare in stratigraphically late contexts belonging to this group. There is a concomitant increase in the proportion of incised wares and new motifs include the horizontal ladder, often in a chequerboard arrangement, the rope pattern, the 'sewn' motif and the 'sewn cordon', a variation of the 'sewn' motif that combines a plastic cordon with an incised 'sewn' pattern (FIG. 1.9: 48, 58–9, 60).

Forms

This group is marked by the first appearance of the bridge spout, usually on bowls with offset rim (FIG. 1.9: 44), but also on an unusual fenestrated vessel (Evans 1964, 174, fig. 20). Bowls with a pedestal base, usually fenestrated, are also a feature of this group and continue into FN II (FIG. 1.9: 15).

Relative (and absolute) chronology of the Stratum IIIB and Stratum IIIA Groups (FN IA–IB)

Outside Knossos, ripple decoration has been reported from several cave sites: Skaphidia, where there is also incised pottery of FN IB–II type (Pendlebury *et al.* 1938, 17, pl. V.16–18); Platyvola, where it occurs on a typical FN I-type carinated bowl (Warren and Tzedakis 1974,

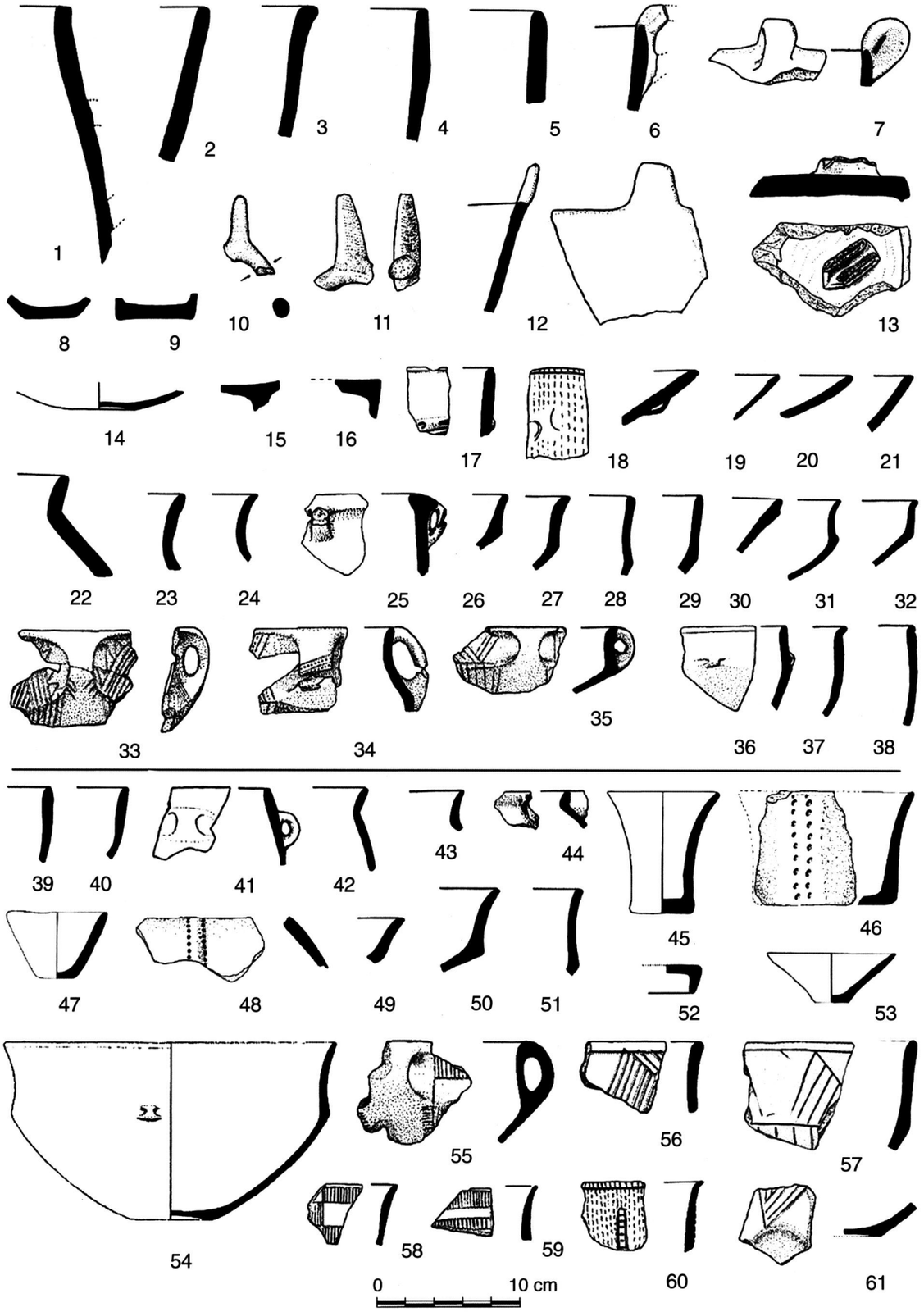


Fig. 1.9. Stratum IIIB and Stratum IIIA Groups (FN IA and IB). Upper (nos. 1–38): pottery from Stratum IIIB. Lower (nos. 39–61): pottery from Stratum IIIA (after Evans 1964, figs. 33–5, 40–1) and Area AABB (courtesy of J. D. Evans).

337; Vagnetti 1996, 37); Gerani, where it occurs on pronged wishbone handles and carinated bowls of FN I type (Tzedakis 1980; Manteli 1993*b*); Lentaka (Hood 1965*b*, 112) and Ellenospilia (Marinatos 1928, 100–1). Several sherds from the Lera Cave have been compared with Neolithic ripple burnish (Guest-Papamanoli and Lambraki 1976, 193, 196, D5–10). However, much closer parallels for their form (small squat, globular jar with high collared neck and pouring lip) and their ribbed finish are to be found in Greek EH I contexts (e.g. Eutresis III: Caskey and Caskey 1960, 140, III.10, pl. 47). Examples of rippled decoration are also known from the open sites of Mitropolis (Mesara), where there are other sherds of FN I type (Vagnetti 1996, 37; 1973, fig. 1.16 = incised decoration, fig. 1.19 = flared cup, pl. I.1.1–14 = rippled ware; pl. I.2.10 = pronged wishbone handle) and Kephala Petras (Siteia) (Papadatos and Tomkins, in preparation).

Outside Crete rippled decoration occurs on a small number of black or grey ware sherds at LN–FN sites in central and southern Greece (e.g. Corinth, Delphi, Elateia, Attica and Euboia: Phelps 1975, 233–4). Although the exact form of the design lacks parallels at Knossos, similarity in some of the forms (carinated bowls, bowls with offset rim) and in the timing of the appearance of this type of decoration in Greece (i.e. LN–FN) both suggest contacts between Crete and southern Greece at this time.

Three dates are available for FN IA, two on charcoal samples from the excavations of J. D. Evans (BM-718, 5892 ± 91 BP; BM-580, 5522 ± 88 BP) and one from the 1997 test (DEM-640; Efstratiou *et al.* 2004, table 1.1). BM-718 and DEM-640, when calibrated, fall well within LN II; in the case of BM-718 this can be explained by the potential long use-life of the original source material (wood), and is thus not an argument against the existence of this phase (*contra* Winder 1991, 42). Unfortunately no information is available regarding the source material for DEM-640. BM-580 indicates a date for FN IA in the range 4550–4220 (Oxcal 3.9 at 90.8% accuracy) and this fits far better with the evidence for an end to LN II at *c.* 4500 BC. Although more dates on short-lived samples are urgently required, it seems probable that FN IA spans the third quarter of the fifth millennium BC. This places it broadly in the same period as the beginning of FN in Greece, dated to *c.* 4500/4400 BC by the LN ('Classical Dhimini') to earliest FN ('Early Rachmani') sequence from Pefkakia (Andreou *et al.* 2001, 268–9; Sampson 2002, 156), the late Middle Chalcolithic in south-west Anatolia and the Late Chalcolithic 1 phase in Syria (Akkermans and Schwartz 2003: fig. 6.3).

A total of four dates from charcoal samples are available for FN IB (BM-717, 5806 ± 124 BP; BM-575, 5636 ± 94 BP; BM-581, 5588 ± 145 BP; BM-579, 5534 ± 76 BP). Unfortunately all overlap with the date ranges for LN II or FN IA and again the most likely explanation is the long life and thus old age of the original source timber. Not only do LN–FN houses at Knossos have long use-lives (e.g. House G: FN IB–FN II / III), but it is also likely that building materials, such as roof timbers, were reused following abandonment. FN IB probably dates to the final quarter of the fifth millennium BC, making it contemporary with Late Chalcolithic 1 in Anatolia (*c.* 4300/4200–3900/3800 BC; Lloyd and Mellaart 1962, 19; Joukowsky 1986, 160–4, 167; Manning 1995, 169) and Late Chalcolithic 2 in Syria (Akkermans and Schwartz 2003, fig. 6.3). A single date from a late FN IB / early FN II context (BM-716, 5003 ± 213 BP; see below) would be consistent with an end to FN I at *c.* 3900/3800 BC.

THE STRATUM IIB GROUP (FN II)

Archaeological contexts (FIG. 1.1)

West Court

1) Trench FF, Levels 17–24. These are stratified directly above FN IB and cut by a large FN III pit (see below).

West Wing

2) Throne Room Area. During the 1987 excavations in this area a northward dip, similar to that of Stratum IIB in Trench S, was identified below the floor of Room 48 and material typical of the Stratum IIB Group has been published (Manteli and Evely 1995, 3, figs. 4: 6–10, 5: 1–7, pl. 1b–d).

Central Court

3) Area ABCD–KLMN–RST, Stratum IIB. Stratum IIB is stratified directly above Stratum IIIA (FN IB) in Areas ABCD, KLMN and RST and Trenches P and Q and directly below Stratum IIA (FN III) in Trenches C, D, F, KL and N. From the north-west part of the Central Court (Trenches A and Q) Stratum IIB slopes down to the north, east and south and in all but the very northern, eastern and southern edges of the excavated area it has been truncated by levelling activity that occurred just before the deposition of Stratum IC (FN IV). As a result, in many trenches Stratum IIB (FN II) is stratified directly below Stratum IC (FN IV). Several buildings can be assigned to Stratum IIB, including a rebuilt House B (B.2) in Trenches B, D and R (Evans 1964, fig. 20, oblique walls; Evans 1971, pl. VII) and a rebuilt House G (G.2). The clearing and rebuilding of House G removed all but small pockets of FN IB occupation and as a result Stratum IIB is in places stratified above Stratum IIIB (FN IA) and at depth of more than 2 m below the surface of the Central Court. Outside House G.2 to the west and north Stratum IIB sits directly above the pisé collapse of House G.1 and thus lies at a higher level. Occupation of House G.2 also ends with a pisé collapse, which corresponds to the yellow *kouskouras* deposit that underlies the north-east corner of House J (Stratum a)

(Evans 1964, 184, 1971, 112–13). The rare presence of sherds of FN III type (e.g. grooved, pattern jabbed; pattern-burnished ladder) among the final occupation deposits of House G.2 suggests that the close of stratum IIB occurred just after the beginning of FN III. A full publication of all FN II deposits from all excavations at Knossos will appear elsewhere (Tomkins, in preparation *b*).

Characteristics of the Stratum IIB Group (FN II)

Fabrics

The only major change is the disappearance of Fabrics 1b and 1f (PLATE 1: 2, 5).

Wares

All the main FN IB incised motifs continue: the horizontal ladder, often in a chequerboard arrangement (FIG. 1.10: 19); unbordered pointillé (FIG. 1.10: 18, 20); incised parallel lines/linear decoration, often vertically (FIG. 1.10: 25) or diagonally orientated; the vertical sewn motif, sometimes in pairs (FIG. 1.10: 4, 22); the sewn cordon; the rope pattern (FIG. 1.10: 5). However, these now occur on the low-collared globular jar, which replaces the carinated bowl as the main decorated form type. Particularly characteristic are: a variant of the horizontal ladder motif with diagonal rungs (FIG. 1.10: 20, 24); a variant of the barbed-wire motif that differs from LN examples in its lighter incision and the careful orientation of the slashes at a diagonal to the incised line; the application of oval pellets, either singly or in a horizontal row; miniature strap handles in multiples one above the other on fine polished bowls (FIG. 1.10: 11); miniature strap handles rendered purely by incision (FIG. 1.10: 10). The disappearance of scribble burnished ware in Fabric 1e seems to coincide with the rare occurrence in this same fabric of pattern-burnished decoration. Pattern-burnish motifs include rectangular reserved zones and vertical stripes on high-carinated shallow bowls (FIG. 1.11, bottom right). Stratum IIB also sees an early version of pattern-jabbed decoration, which differs from FN III examples in that the sequence of the jabs that form the linear patterns is not overlapping. Ripple decoration is generally absent from FN II assemblages. Deposits close to the transition to FNIB may contain very small quantities of usually small-sized or worn rippled sherds.

Forms

Typical of Stratum IIB are globular, low-collared jars, sometimes carinated, with flat base and often a single rim-attached handle (FIG. 1.10: 19–26). These often have some form of incised decoration and sometimes a groove and/or thickened profile at the transition between shoulder and neck (e.g. FIG. 1.10: 23). Largely, if not entirely confined to Stratum IIB are flared bowls with a small, triangular wishbone handle projecting above the rim (FIG. 1.10: 1), shallow bowls with a high carination, rendered by little more than a groove below the rim, and a curved or flared lower profile that ends in a flat base (FIG. 1.10: 6–8), shallow carinated bowls with thickened carination (FIG. 1.10: 2), wide flat-topped rims (FIG. 1.10: 3) and solid, unpierced pinched lugs (FIG. 1.10: 9). The tall, small-diameter vessels, termed 'rhyta' in J. D. Evans's pottery notebooks (see also Manteli 1993*a*, 1993*b*), are a less common feature. They occur in three main form types: type 1 has an inverted unpierced conical base (FIG. 1.10: 12–13); type 2 is cylindrical with a flat base and a vertical tubular handle (FIG. 1.10: 14; see also Evans 1921, 37, fig. 6: 2); type 3 sat on a solid pedestal (FIG. 1.10: 17). The typical FN I flat-based flared cup does not continue into Stratum IIB and rhyta, especially the cylindrical, flat-based variety, should probably be seen as its direct, functional replacement. Bowls with fenestrated pedestal bases continue to occur (FIG. 1.10: 27), as do ring bases, which are joined by a variant that is solid.

Relative (and absolute) chronology of the Stratum IIB Group (FN II)

A small amount of material published from Phaistos finds its best or only parallels in the Stratum IIB Group from Knossos. This pottery is fragmentary and appears to occur together with better preserved material of FN III–IV date. These likely FN II ceramics include fenestrated pedestal bases (Vagnetti 1972–3, fig. 60: 15–16), a shallow 'tray' (Vagnetti 1972–3, fig. 57: 23), a miniature false strap handle rendered by two dots (Vagnetti 1972–3, fig. 108: 9) and four sherds decorated with incised ladder with diagonal 'rungs' (Vagnetti 1972–3, fig. 100: 6–9). Although some of these features can occur in FN IB, the absence of ripple burnish supports an FN II date for this material, which marks the earliest known occupation at Phaistos (Vagnetti 1996, 37). FN II material has also been published from Mitropolis (Vagnetti 1973, fig. 1: 15, vertical ladder, fig. 1: 20, type 2 rhyton), Monastiraki Katalimata (Nowicki 2002, fig. 3: 2 flat base from globular jar with incised sewn decoration), and the Lera Cave (unbordered pointillé decoration; incised decoration of horizontal ladder, parallel lines; rounded-section wishbone handles; shallow carinated bowls with thickened carination: Guest-Papamanoli and Lambraki 1976, figs. 3: L.1; 4: V.11, 13, 14, 16–18; 5: D.4, D.19; 6: S.10).

Parallels with sites outside Crete are scarce. Shallow bowls with a high carination rendered by a groove below the rim find a parallel at Kum Tepe IB2, while later examples of this form at Kum Tepe IB3 have a carination that is slightly lower down the body (Sperling 1976, figs. 13: 409, 15: 547). A sherd from Emporio VII combines FN II style incised diagonal lines with the sewn motif (Hood 1981, 334 no. 668, fig. 155, pl. 45). However, this otherwise unique sherd may be out of context since Emporio strata VII–VI find their closest

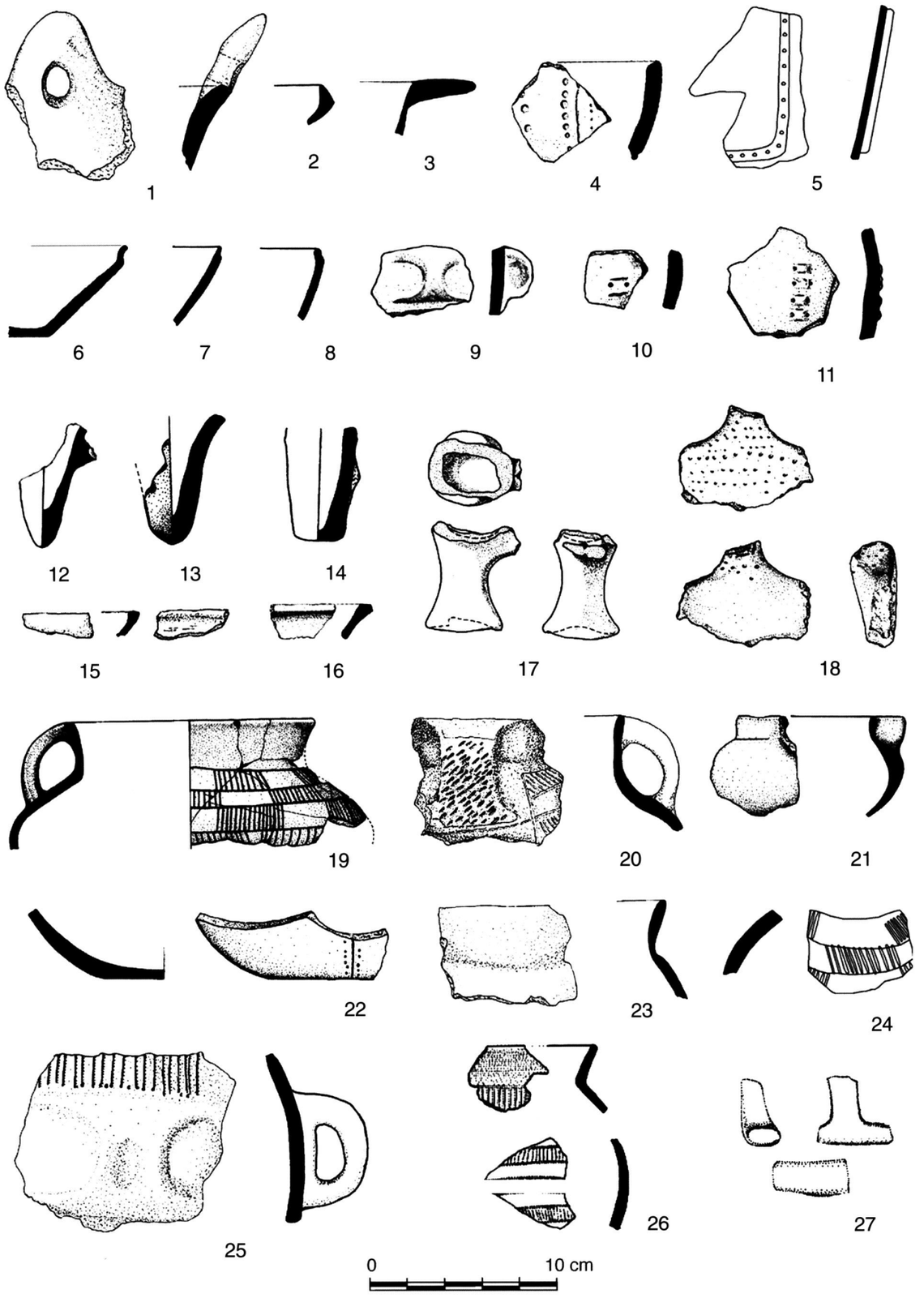


Fig. 1.10. Stratum IIB Group (FN II): pottery from Stratum IIB (after Evans 1964, figs. 37–8) and Trenches EE and FF (courtesy of J. D. Evans).

Fig. 1.11. FN II–FN III pattern-burnished decoration (late Stratum IIB and Stratum IIA).

parallels at Anatolian Late Chalcolithic 3–4 sites. These parallels, together with the links noted between Emporio VIII and the LN Aegean, suggest a significant break in the sequence at Emporio between strata VIII and VII, perhaps covering Late Chalcolithic 1–2 (see also Hood 1981, 104).

The only radiocarbon date available (BM-716, 5003 ± 213 BP), from a late FN IB / early FN II context in the West Court (FF35), supports a date for FN II in the first half of the fourth millennium BC (4050–3500 BC; Oxcal 3.9 at 68.2% accuracy). This would make FN II broadly contemporary with Late Chalcolithic 2 in Anatolia and Late Chalcolithic 3 in Syria (Akkermans and Schwartz 2003: fig. 6.3). The absence of any further radiocarbon samples from Strata IIB–IC and equivalent levels accounts for the noted lack of fourth millennium BC dates from Knossos (Manning 1995, 168–70). This severely limits the dating of FN II, III and IV to best guesses, based partly on an equal division of the 800–900 years between the end of FN I and the start of EM I, and partly on links between FN II–IV Knossos, FN sites in Greece and Late Chalcolithic 2–4 sites in Anatolia and the eastern Aegean.

THE STRATUM IIA GROUP (FN III)

Archaeological contexts (FIG. 1.1)

West Court

1) Trench FF, Levels 16–24. A large pit, cutting deep into underlying FN IB–II levels, was dug in the southern part of Trench FF. The stratigraphy within this pit is complicated, suggesting many individual episodes of filling, digging and refilling. At the bottom of this pit was found the well-known pottery group that provided the first indications of an overlap with the Phaistos Neolithic sequence (Evans 1971, 98, 113–14, pl. III, 1994, 18, pl. 2f; Manteli 1993*a*, 1993*b*). The ceramic material from the pit finds close parallels in Stratum IIA below the Central Court. There is some FN IB–II material, which most likely represents contamination with adjacent FN IB–II levels that occurred during excavation. This pit is the first in a sequence of several dug in this area (FN III–EM I), and is itself cut by the lower portion of a FN IV pit (FF10). To the north, a sequence of mixed FN II–III spoil layers and trodden surfaces overlie a FN II deposit.

West Wing

2) Throne Room Area. Several sherds from tests below the Throne Room are identical to examples from the Stratum IIA Group and suggest that an equivalent layer may be preserved in this area (Manteli and Evely 1995, figs. 4: 3, 7, 11–14; 5: 10–11). Although the material from these tests has been linked to Stratum I (Manteli and Evely 1995, 9–11), the absence of any obvious FN IV or later material suggests that it corresponds to Strata IIIA–IIA.

Central Court

3) Area ABCD–KLMN–RST and Trench P, Stratum IIA. Stratum IIA has been entirely removed from the western half of the excavated area (Trenches A, B, K, Q, R and T) but traces of it remain to the north, east and south (Trenches C, D, F, KL, N, P and S), where it is stratified directly over Stratum IIB. In the northern part of Trench D, it includes a short stretch of wall with traces of red plaster (Evans 1964, figs. 5, 21). To the south-west there are traces of Stratum IIA stratified below House J (Stratum IC) and above Stratum IIB (Trenches M and P; see, e.g., Evans 1928, fig. 3n, o, s). Stratum IIA is best preserved to the south, where it comprises a series of sloping exterior surfaces and pits that overlie the final pisé collapse of House G.2 (Stratum IIB). In the southernmost part of the excavated area (Trench N) it lies approximately 1.5 m below the surface of the Central Court. To the west, in Trenches M and P, Stratum IIA is thinner and lies above Stratum IIB and below House J (Stratum IC); a handful of material of Stratum IIA Group type is illustrated in the original report on Houses J and K (Evans 1928, fig. 3n, o, s). In

Trench N Stratum IIA is covered by a fill deposited as part of the levelling activity associated with Stratum IC. This fill mostly contains material typical of the Stratum IIA Group and it seems likely that it derives from levels belonging to Stratum IIA that were removed during levelling. Numerous mudbricks, some with plaster still adhering to their face, occur in this fill and could represent the debris from the demolished building with plastered walls that stood in the area of Trench D.

Characteristics of the Stratum IIA Group (FN III)

Fabrics

A coarse red fabric with large calcite inclusions makes its first appearance and continues through FN IV.

Wares

Typical of this group is the decrease of incised decoration combined with the appearance of several new types of impressed decoration. The most common incised motif is the vertical ladder, sometimes found in a chequerboard arrangement (FIG. 1.12: 22, 24), sometimes in combination with the horizontal ladder (FIG. 1.12: 11). New types of impressed decoration include: pattern jabbed, where linear patterns (e.g. diagonal or horizontal lines, chevrons, horizontal ladder) are created by a sequence of overlapping jabs (FIG. 1.12: 18–21); punched borderless ladder (horizontal, vertical, diagonal, chequerboard), where the rungs of the ladder are punched with a rectangular tipped tool (FIG. 1.12: 13, 27); and triangular jabbed, where a triangular-shaped tool is used (FIG. 1.12: 14–15). Zones of unbordered pointillé decoration, typical of FN IB–II, are replaced by zones of jabbed or impressed decoration, whether triangular (FIG. 1.12: 14) or rounded (FIG. 1.12: 8, 9). Sometimes the bases of large coarse vessels are also covered with round impressions (FIG. 1.12: 28). Typical also are rims decorated with a sequence of slashes, incisions or impressions (Evans 1971, pl. IV top row); incised and jabbed decoration, which combines incised linear or curvilinear motifs with lines of round jabs or pointillé (FIG. 1.12: 16, 17); horizontal grooved decoration on fine ware, often on the collar, shoulder or body of low-collared jars (FIG. 1.12: 6, 7); pattern wiping on coarse vessels, where different zones of vertically, horizontally or diagonally orientated wiped decoration are deliberately created. Pattern-burnished decoration consists of simple reserved squares and rectangles or a rectangular reserved zone filled with vertical lines to create a horizontal ladder motif (FIGS. 1.11, 1.12: 10; Furness 1953, pl. 31b: 14–16). Very occasionally bands of red encrusted decoration occur on the exterior or interior of non-local vessels (FIG. 1.12: 27).

Forms

New features specific to the Stratum IIA Group include: vessels with small feet; hole-mouthed jars, sometimes with a very sharply incurved rim, a carinated body, and often some form of decoration (FIG. 1.12: 21–5); strap handles pierced by a round hole (FIG. 1.13: 2) and a variation of this type, where the body of the vessel beneath the handle is pierced either before (FIG. 1.12: 24) or after firing. The earliest examples of this type of handle first appear at the very end of Stratum IIB (FIG. 1.13: 1). A variety of carinated bowl/jar types occur: deep incurved (FIG. 1.12: 22), shallow incurved (FIG. 1.12: 23) and flared (FIG. 1.12: 10; FIG. 1.11: top right). The sharpness of the carination also varies from sharp (FIG. 1.12: 13, 21, 27, 28) to more rounded (FIG. 1.12: 22–3). Carinated, incurved bowls often have impressed decoration (e.g. pattern jabbed, triangular jabbed, borderless punched ladder). Although rare, high-carinated bowls with or without thickened carination and a vertical or flared rim (FIG. 1.12: 27, 28; Evans 1994, pl. 2f) are important for their links to Phaistos and Late Chalcolithic 3–4 south-west Anatolia (see below). Several features appear that continue into FN IV: wishbone handles with a wider flatter section (FIG. 1.12: 4); oval section strap handles; V-shaped spouts (FIG. 1.12: 3; Evans 1971, pl. IV); horned handles (FIG. 1.12: 26); and shallow bowls with a bevelled or tapered-up rim. Collared jars continue to have strap handles attached between collar and shoulder (FIG. 1.12: 2) and some examples are decorated (e.g. FIG. 1.12: 17, incised and jabbed decoration). Bowls of various types sometimes have ledge lugs in place of strap handles (FIG. 1.12: 1).

Relative (and absolute) chronology of the Stratum IIA Group (FN III)

Numerous parallels can be drawn between the Stratum IIA Group and Neolithic Phaistos: triangular jabbed decoration (Vagnetti 1972–3, figs. 67: 9, 72: 3, 72: 18, 104: 7–8, 105: 3); incised or punched borderless ladder (Vagnetti 1972–3, figs. 71: 9, 105: 9 and 11, 112: 3); vertical ladder decoration (Vagnetti 1972–3, fig. 100: 4, 11–13, 18–19); incised and jabbed decoration (Vagnetti 1972–3, figs. 59: 3, 60: 24); red encrusted decoration, which is considerably more common than at Knossos (Vagnetti 1972–3, fig. 74); carinated bowls with or without thickened carination (Vagnetti 1972–3, fig. 65: 18–19); collared jar with strap between collar and shoulder (Vagnetti 1972–3, fig. 92); horned strap handle not attached to the rim (Vagnetti 1972–3, figs. 59: 9, 69: 16); V–shaped spouts (Vagnetti 1972–3, fig. 69: 25–8, 30); hole-pierced strap handle (Vagnetti 1972–3, figs. 59: 5, 84); incised/slashed rims (Vagnetti 1972–3, figs. 57: 11, 80: 1–4); flattened dipper handles (Vagnetti 1972–3, fig. 61: 12). Almost all of this material is in the form of sherds, rather than complete profiles or whole pots. Where there are indications of stratigraphical position, such as with the sherds decorated with the ladder motif (Vagnetti and Belli 1978, 129), these suggest a location on the bedrock or in the lower Neolithic deposit (Vagnetti 1972–3, 48: *neolitico*

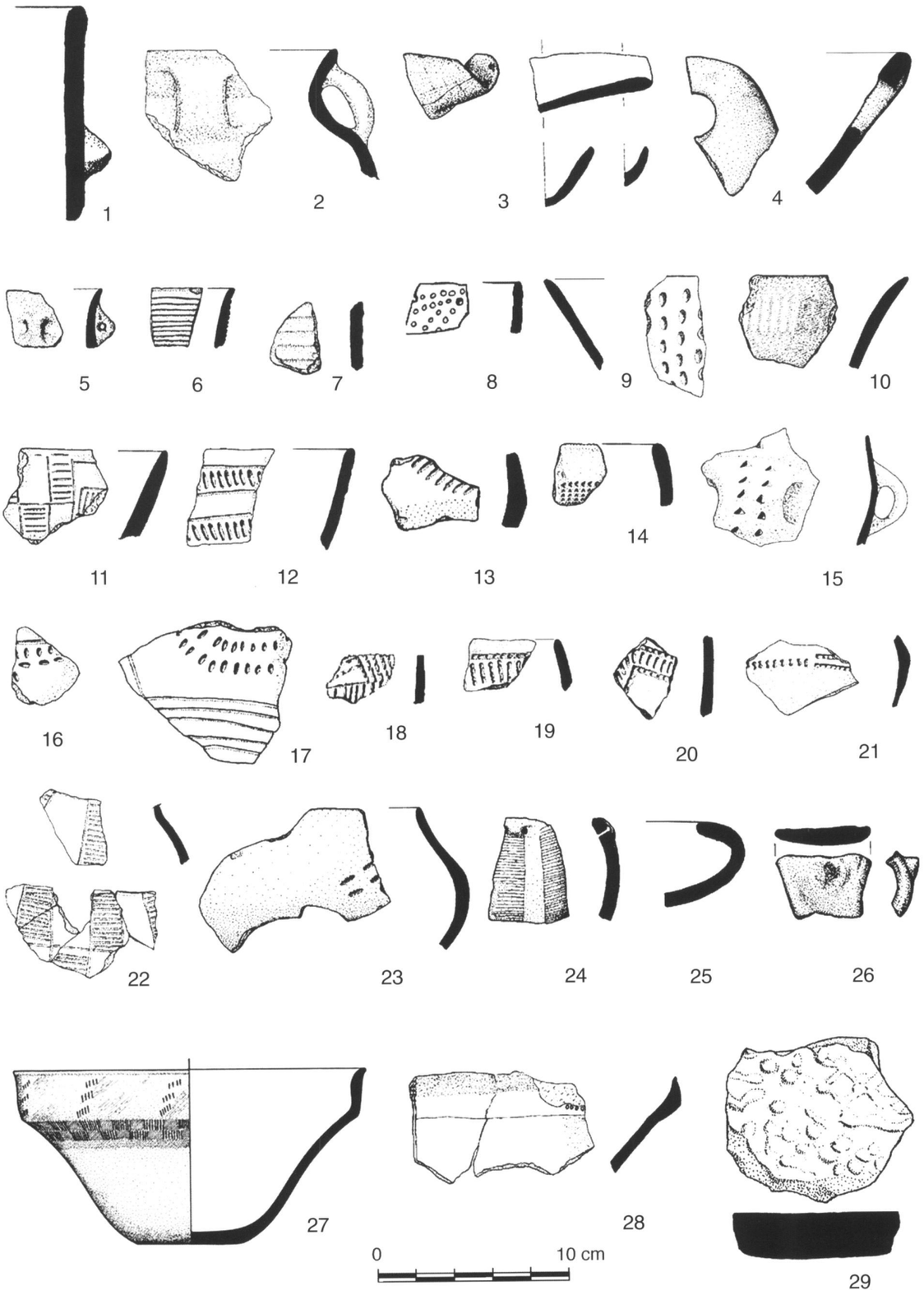


Fig. 1.12. Stratum IIA Group (FN III): pottery from Stratum IIA (after Evans 1964, figs. 36–8) and Trench FF (courtesy of J. D. Evans).

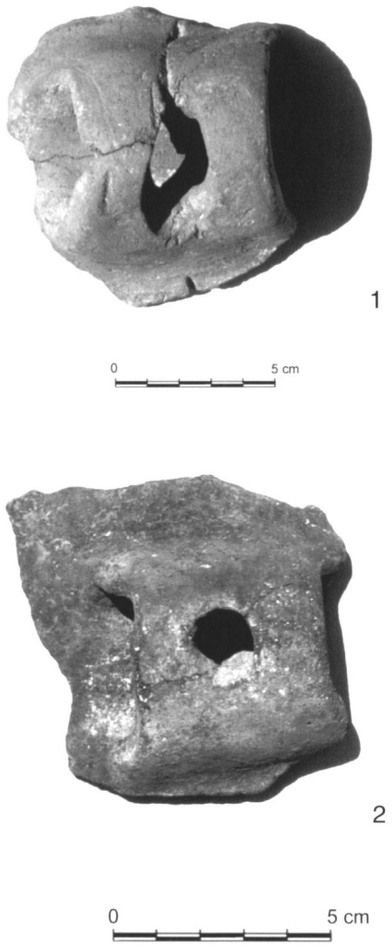


Fig. 1.13. (1) FN III pierced strap handle (late Stratum IIB); (2) FN III pierced strap handle (Stratum IIA).

inferiore). Links may also be drawn with material from Monastiraki Katalimata (incised or slashed rim: Nowicki 2000*b*, fig. 2.8), Vrionisi VN2 (jabbed decoration: Hayden 2003, fig. 11: 39), Vrokastro Phanourios (jabbed decoration: Hayden 2003, fig. 11: 40), Kastellos Tzermiadon (incised/slashed rim: Pendlebury *et al.* 1938, pl. V: 2.43), Trapeza Tzermiadon (borderless ladder: Pendlebury *et al.* 1936, pl. 7: N.1–4), Gortyn Acropolis (incised decoration: Vagnetti 1973, fig. 2: 15), Vainia Stavromenos (triangular jabbed; hole-pierced strap: Nowicki 2002, figs. 26: 20, 30: 21), Rethymnon Fortezza (jabbed decoration: Schiering *et al.* 1982, fig. 2; FIG. 1.12: 23).

Links to sites outside Crete suggest an approximate correlation with Anatolian Late Chalcolithic 3 and the latter half of FN in Greece. The practice of piercing a handle with a hole is a feature of Late Chalcolithic 3 in south-west Anatolia (e.g. Kuruçay 6A: Duru 1996, pl. 54: 5, 6, 8; Bağbaşi: Eslick 1992, 74, pl. 22: 51–3). Sharply incurved hole-mouthed jars, similar to FN III examples from Knossos are a feature of Kum Tepe IB3, which should probably be equated to Late Chalcolithic 3 (e.g. Sperling 1976, fig. 14: 524, 525). Knossian FN III high-carinated bowls are similar to those from Late Chalcolithic 3 Beycesultan (Lloyd and Mellaart 1962, 93, type 19, figs. P8: 1, 6, 7, 11; P9: 16–20), Emporio VII (Hood 1981, figs. 144–5) and Tigani II (Felsch 1988, pls. 19, 56, 57: 130–45). Pattern burnish of the Stratum IIA Group, where reserved areas are filled with a geometric pattern (horizontal ladder), compares well with that of Tigani II (Felsch 1988, pl. 19). There are also similarities between FN III shallow flared bowls with bevelled rim and type 4 bowls from Late Chalcolithic 2–3 Beycesultan (Lloyd and Mellaart 1962). Bevelled rims are also a highly diagnostic feature of Late Chalcolithic 4–5 Syrian sites thought to represent an 'Uruk expansion' (Akkermans and Schwartz 2003, 193–4, figs. 6: 3, 6: 4e). Their broadly contemporaneous appearance in Syria, Anatolia and now, via Knossos, the Aegean at around or just after 3600 BC suggests a greater degree of interaction between these regions than has hitherto been thought possible. Links to Greece and the Cyclades are far less clear. A fragment of a vertical tubular handle with an unusual incised linear motif from Knossos is similar to the decorated handles of 'scoops' from Kephala (Coleman 1977, pl. 82, esp. 82: 102), an example of which also occurs at Tigani II (Felsch 1988, pl. 19: 132); FN III incurved/hole-mouthed jars share the same incurved form (but not the pedestal base) as the pattern-burnished footed bowls from Kephala (Coleman 1977, pl. 42: 164).

Currently no radiocarbon dates are available for this phase at Knossos and thus its absolute date and duration cannot be fixed with certainty. External links to sites or sequences that have radiocarbon dates, namely Late Chalcolithic 3 Beycesultan XXVIII (P297/a, 4690 ± 62 BP = 3640–3350 BC Oxcal 3.9 at 95.4% accuracy; Lloyd and Mellaart 1962, 23), Late Chalcolithic 3 Kuruçay 6A (*c.* 3650–3370 BC; Duru 1996, 143) and possibly FN Kephala (P1280, 4826 ± 56 BP = 3710–3500 BC Oxcal 3.9 at 90.6% accuracy) are all broadly compatible with an estimated date range of *c.* 3600–*c.* 3300 BC.

THE STRATUM IC GROUP (FN IV)

Archaeological contexts (FIG. 1.1)

West Court

1) Trench FF, Level 10 (FF10). In the south part of Trench FF the remains of two pits are stratified directly above, and cut into, a large FN III pit (see above). The pottery from these pits is identical to that of Stratum IC in the Central Court (see below). Their upper portion was cut away during the excavation of a large EM I pit (Trench FF, Level 4; see below). To the north (Trench FF, Levels 5–7) material typical of the Stratum

IC Group is mixed with FN II–III in what is probably spoil from pit digging.

Central Court

2) Area ABCD–KLMN–RST, Stratum IC. As a result of levelling and terracing Stratum IC lies directly above Stratum IIB (FN II) in the western half of this area, and above Stratum IIA (FN III) to the east and south. In the eastern half of the Central Court it comprises an exterior surface, the bedding for which contains mostly redeposited FN III material. No material can be associated with the use of this surface, which appears to have been kept very clean. In the western half of this area pure deposits of the Stratum IC Group occur in House H.1 (B4 [10/8/57]; Evans 1964, fig. 20), the south-east corner of which is preserved in Trenches A and B (not visible in section, due to slope of mound; see FIG. 1.2) and in House J (Stratum a: see Evans 1928, fig. 8a). These deposits are sealed by the floors of structures belonging to Stratum IB. Small amounts of EM I material occur as part of the make-up of these superimposed floors (e.g. House K: M2 [basket 69]; House H.2: B4 [9/8/57]), thus allowing the built features in Stratum IB to be dated to EM I.

South-West Wing

3) D.VII.21, #1210–11, 1213. A small deposit assignable to the Stratum IC Group was found stratified above FN IB in a test excavated in 1987 by Sinclair Hood and Colin Macdonald (Macdonald and Knappett, in press). This ceramic material comes from the lower of two thin burnt layers. The upper one (D.VII.21, #1209) produced five EM I sherds (see below).

Characteristics of the Stratum IC Group (FN IV)

Fabrics

Fabric 1e remains common and very coarse-tempered versions of the main local fabrics increase in frequency (e.g. FIG. 1.14: 2, middle row right, bottom row).

Wares

Almost all types of incised or jabbed decoration (e.g. triangular jabbed, pattern jabbed, punched ladder, incised ladder, slashed/incised rims) disappear. The main type of decoration to survive is the application of single jabs (rounded, square, rectangular) to the body of vessels (FIG. 1.14: 1, left). In some cases, it is clear that the jabs formed a horizontal or diagonal row (FIG. 1.14: 2, top right). On coarsely finished vessels these jabs are often large, and are formed using the finger (FIG. 1.14). Pointillé decoration, although rare, also occurs and the most common motif comprises a horizontal or diagonal band consisting of two or three rows of dots (FIG. 1.15: 5, 9–10). Local coarse vessels are treated only to a very light burnish or are smoothed. *Granulata* Ware (Vagnetti 1972–3, 86: *superficie granulata*) similar to examples from Phaistos and rope decoration similar to Trapeza Ware occur in non-local fabrics (FIG. 1.15: 23; Pendlebury *et al.* 1936, fig. 6.T9).

Forms

Bowls with curved or tapered-up rim (FIG. 1.15: 4–5, 7–8) and shallow bowls with bevelled rim (FIG. 1.15: 13, 15, 17) are common. Also typical is the deep hemispherical bowl with everted rim (FIG. 1.15: 11). Sharply carinated bowls and bowls with a sharply offset rim are rare, but examples of the high-carinated bowl, sometimes with handle looping above the rim, continue to occur. Also typical are very large globular jars with large strap handles and a tall flared collar, which sometimes has a sharply everted rim (FIG. 1.15: 20, 21, 24). Fragments of 'bottles', comprising a small, squat globular body, miniature strap handle and high, narrow neck also occur in the main local fabric (Fabric 1e) in both coarse (buff smoothed) and fine (dark polished) wares (FIG. 1.15: 19, 22). Cups with tapered-up rim and low foot, sometimes pierced, appear for the first time (FIG. 1.15: 16, 18). Incurved or hole-mouthed jars with strap handle situated just below the rim and

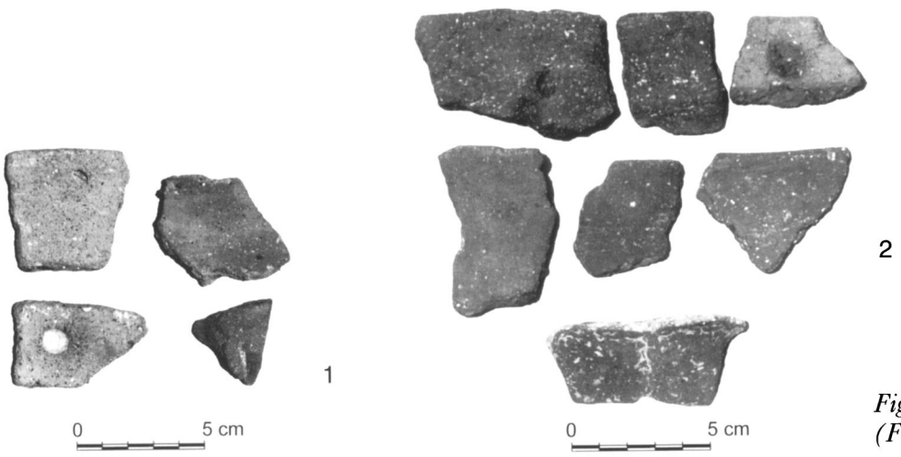


Fig. 1.14. Stratum IC Group (FN IV): coarse ware.

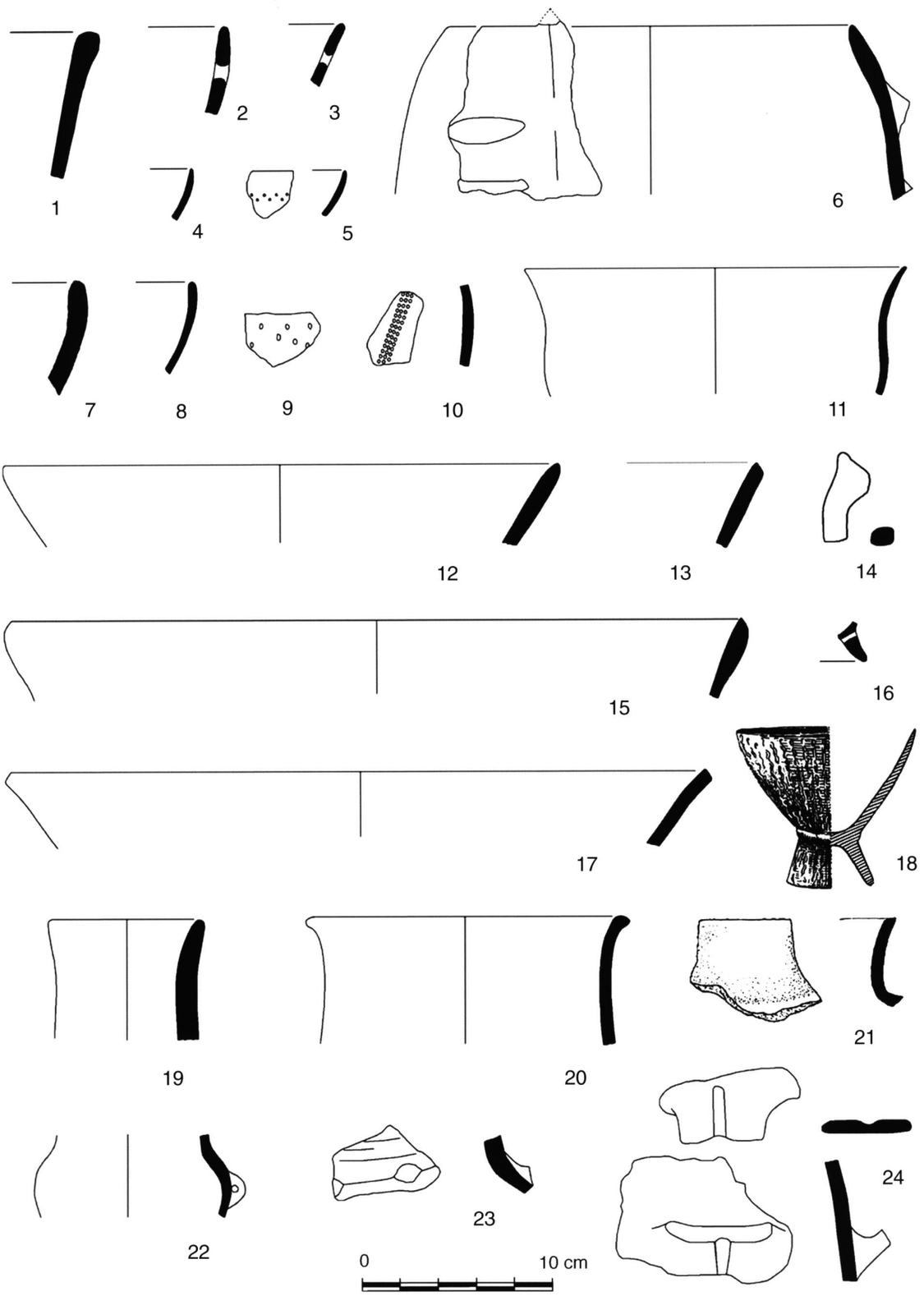


Fig. 1.15. Stratum IC Group (FN IV): pottery from Stratum IC and Trench FF, Level 10 (no. 18 after Evans 1928, fig. 3: m).

sometimes a small triangle or horn on the rim are present (FIG. 1.15: 6). Bowls or basins with a row of holes below the rim, commonly known as cheese-pots, are an extremely rare feature (e.g. Stratum a) and occur in non-local fabrics (FIG. 1.15: 2–3). Diagnostic handle types include vertical tubular handles with horn (FIG. 1.15: 14) and strap handles with a vertical groove (FIGS. 1.14: 2, bottom, 1.15: 24) or incised line (FIG. 1.14: 1, bottom right).

Relative (and absolute) chronology of the Stratum IC Group (FN IV)

Comparable material can be identified at a large number of excavated or surveyed sites around the island, making FN IV the best represented of all the Neolithic phases (TABLE 1.6). Close parallels with this group can be found among the complete pots and profiles in both upper and lower Neolithic phases at Phaistos. These include: bowls with curved or tapered-up rim (Vagnetti 1972–3, fig. 62: 18); high-necked squat jars or 'bottles' (Vagnetti 1972–3, fig. 67: 17); deep hemispherical bowls with everted rim (Vagnetti 1972–3, figs. 57: 14, 63: 17–23, 64); cups with low pierced or unpierced foot (Vagnetti 1972–3, figs. 70, 98); vertical tubular handles with horn (Vagnetti 1972–3, figs. 58: 11, 69: 17–19); vertically grooved strap handles (Vagnetti 1972–3, figs. 59: 7, 60: 6, 68: 28–9); *Granulata* Ware (Vagnetti 1972–3, figs. 76, 120, 121, pl. I: 4, 5). As at Knossos, cheese-pots are present but rare at Phaistos with only two published examples (Pernier 1935, fig. 41; Vagnetti 1972–3, fig. 62.7).

Comparable material may also be identified at: Gortyn Acropolis (cheese-pot: Vagnetti 1973, fig. 2: 4; bowl with tapered-up rim, fig. 2: 5; pierced ring base, fig. 2: 22); Mesa Karteros (cheese-pot: Karetsou 1974, pl. 184a); Eileithyia Cave (high-necked jar or 'bottle': Marinatos 1930, fig. 5); Kastellos Tzermiadon (high-necked jar or 'bottle'; horned handle: Pendlebury *et al.* 1938, pl. V: 38, 41); Trapeza Tzermiadon (e.g. Trapeza Ware; deep hemispherical bowl with everted rim: Pendlebury *et al.* 1936, figs. 6–7); Kastelli Phournis (high-necked jar or 'bottle': Manteli 1992); Pseira (low-footed cup: Betancourt 1999, pl. VIII: a.6); Lera (high-carinated bowl; hole-mouthed jar; necked jar or 'bottle': Guest-Papamanoli and Lambraki 1976, figs. 2: A24, 3); and Nerokourou (flattened profile dipper handles; bowls with upturned or tapered rims; cheese-pots, hole-mouthed jar with small triangle on the rim, high-carinated bowls with handle looping above the rim, shallow-medium depth bowls with triangles on the rim: Vagnetti 1996, figs. 1, 2; Vagnetti *et al.* 1989, figs. 15–49).

It has been suggested that assemblages where cheese-pots are common, such as Nerokourou and Kephala Petras, form a separate latest FN phase (Nowicki 2002, 15, 54, 59, fig. 32) that post-dates FN Phaistos (and the Stratum IC Group). However, the direct stratigraphical relationship and stylistic links between the Stratum IC Group (FN IV) and EM I at Knossos (see below, p. 46) offer no room for a missing phase. Moreover, the rare presence of cheese-pots at FN Phaistos and in the Stratum IC Group at Knossos (FIG. 1.15: 2–3) as well as the presence of material typical of the Stratum IC Group at cheese-pot sites, such as Nerokourou, suggest that the differences are cultural or functional rather than chronological. The FN IV phase on Crete is thus characterised by two interlinked ceramic traditions: one clearly rooted in a long history of ceramic development on the island (e.g. Knossos, Phaistos), and the other characterised also by features such as cheese-pots (e.g. Nerokourou, Kephala Petras: Vagnetti 1996, 34–6; Nowicki 2002, 54, 59), which have a longer history of development outside Crete. This raises some interesting questions regarding social, functional and possibly cultural differences among settlements in Crete during FN IV. In addition, the existence of these different but contemporary ceramic traditions goes a long way to account for the diverse range of influences that would come together to create EM I.

Links to sites outside Crete suggest that FN IV corresponds to latest FN in the Cyclades and to Late Chalcolithic 4 in the eastern Aegean and Anatolia. The presence of cheese-pots links the Stratum IC Group to Tigani III and Late Aegean Neolithic (LAN) 4 sites in the Dodecanese (Felsch 1988, pls. 31, 35: 8; Vagnetti 1996, 35–6; Sampson 1987). Large vertical handles with a vertical groove are known from the Kephala cemetery and from Ayia Irini I (Coleman 1977, pl. 78: 134–5; Wilson 1999, 7, I-62). Vessels with a low, flared foot occur at Tigani III and Poliochni Black (Felsch 1988, pls. 21–2, 194; Bernabò-Brea 1964, pl. IVa, i, k, q). Horned handles similar to those of the Stratum IC Group occur at Tigani I–III (Felsch 1988, pls. 11: 24, 14: 76, 15: 4–5, 22: 190–1, 22: 198, 37: 5–7).

A lack of radiocarbon dates means that the beginning date of FN IV proposed here (*c.* 3300 BC) is merely an educated guess. Support for an end date in the final quarter of the fourth millennium BC is provided by a new radiocarbon date from Knossos from an EM I level stratified directly over FN IV (D.VII.21, #1209: OxA-13420, 4490 ± 45 BP; 3360–3020 BC at 95.4%, OxCal 3; Macdonald and Knappett, in press). This would support an end to FN IV at *c.* 3100/3000 BC (see below).

EPILOGUE: THE BEGINNING OF EM I

The recognition of several deposits where EM I pottery is stratified directly above material dating to the very end of the Neolithic (FN IV, Stratum IC Group) has helped to throw the beginning of EM I at Knossos into a much sharper focus. The evidence currently available suggests that EM I follows directly from FN IV in several areas of the Kephala hill at Knossos (see archaeological contexts, below). These EM I deposits see the appearance of several new wares and forms, but the evidence for continuity with the Stratum IC Group

is sufficient to suggest a direct relationship with FN IV (see below). A new radiocarbon date from one of these EM I contexts (D.VII.21, #1209), suggests that the absolute date of the beginning of EM I at Knossos can be placed at *c.* 3100/3000 BC (see below).

Although these EM I deposits are too small in quantity to serve as the basis for a satisfactory definition of an early EM I phase at Knossos, comparison with the EM I Well Group hints at the possibility of stylistic and technological developments during EM I. For example, strap handles and strap-handle fragments similar to those in the Stratum IC Group also occur in these small EM I deposits (e.g. FF4), but are absent from the EM I Well Group. As in the Stratum IC Group, these EM I strap handles seem to derive from jars with a high collar, a form type which in the EM I Well Group always has horizontal tubular handles (Hood 1990*a*, figs. 1: 8–9, 2: 13). A similar pattern of handle development can be proposed for deep steep-sided bowls with a convex base, which in pit FF4 have vertical handles (FIG. 1.16: 3, bottom), but in the EM I Well Group have horizontal tubular handles (see FIG. 2.4: 1–2; Hood 1990*a*, fig. 1: 8–9). Other hints of development are a greater scarcity of red-on-buff painted decoration and a preference for broad painted bands in stratigraphically early EM I contexts (FF4, Stratum IB), which may be contrasted with a greater frequency of red-on-buff painted ware and an absence of broad bands in the EM I Well Group (Wilson 1985, 361; Chapter 2). However, considerable caution must, at present, be exercised in interpreting the significance of these differences. Some of these small EM I deposits stratified directly on FN IV are not closed and pure, but derive from fills or make-up levels mixed with Neolithic material (e.g. Stratum IB: see below). It should also be stressed that one or two sherds in the largest deposit (pit FF4) find exact parallels in the EM I Well (e.g. Wilson 1985, pl. 56: FF8). Without further excavation it is impossible to know whether this material formed part of the pit deposit or is intrusive, incorporated perhaps when the upper part of pit FF4 was levelled during EM II (see below). In addition, it currently remains unclear whether the EM I Well deposit is fully representative of the range of ceramics in use at a particular time or is functionally restricted (see Chapter 2). It is hoped that this issue will, in the future, be clarified by the identification of additional well-stratified and closed EM I deposits, through which the incidence of these and other stylistic features might be traced with more certainty.

Archaeological contexts (FIG. 1.1)

West Court

1) Trench FF, Level 4 (FF4). A large EM I pit (FF4), occupying the southern half of Trench FF, cuts into and overlies the remains of two earlier pits (Trench FF, level 10) containing material of the Stratum IC Group (see above). To the north is a mixed layer (Trench FF, Level 3) containing FN II–IV with some EM I, which may represent spoil from the digging of pit FF4. A single MM sherd in FF3 is probably intrusive from FF2, a mixed EM IIA–MM fill layer overlying both FF3 and FF4 (Wilson 1985, 359–64, fig. 1). Prior to the deposition of FF2, pit FF4 and layer FF3 were truncated by a levelling episode, perhaps to be associated with the construction or demolition of the West Court House during EM II (see Chapter 2; Wilson 1985, 284–92). As a result, the stratigraphical relationship between FF4 and any subsequent EM I–IIA levels is unclear. The material from FF4 is almost entirely EM I; there is a small amount of intrusive Neolithic material, mainly FN II–III in date, probably from the sides of the pit.

Central Court

2) Area ABCD–KLMN–RST, Stratum IB. In the eastern part of this area Stratum IB comprises an external clay surface, which appears to have been kept very clean, like that in Stratum IC. The make-up of this surface almost entirely consists of redeposited FN III–IV material. To the west and north, this surface is associated with the eastern wall of Houses K and H.1. Some time later, House H was rebuilt (H.2) and an eastern extension was laid out over part of this surface. Almost all traces of these houses, including all floor deposits, were removed prior to the deposition of Stratum IA. Only patches of flooring, wall foundation trenches and occasional stretches of wall survive and these are the latest built features to be preserved below the Central Court. Very small amounts of EM I material (e.g. Dark Grey Burnished Ware; Scored Ware; Red-on-Buff Painted Ware) occur among the make-up of these floors (e.g. House K: M2 [basket 69]; House H.2: B4 [9/8/57]; see FIG. 1.16: 1, 4) and directly overlie deposits of the Stratum IC Group. Stratum IB is covered by Stratum IA, a mixed FN II–EM I / IIA fill.

South-West Wing

3) D.VII.21, #1209. A small area of Neolithic–EM I deposit was found to have survived later Minoan activity in this area (Macdonald and Knappett, in press). The upper of two thin burnt layers from this deposit contained five diagnostic EM I sherds together with some small scraps of burnished or polished pottery that could be EM I. Below this, separated by a very thin layer of clay, was a second burnt layer, containing material of the Stratum IC Group (FN IV) (see above).

Ceramic development between FN IV and EM I

Fabrics

A comparison of fabrics between FN IV and the small EM I deposits listed above suggests both continuity and change in local ceramic production. The absence of the main local LN–FN fabric (Fabric 1e; PLATE 1: 4)

indicates that production in this fabric did not continue after the onset of EM I. The presence of finer fabrics, such as that typically used for dark grey burnished ware, also marks a significant change. Continuity may, however, be marked by the presence (e.g. in FF4: FIG. 1.16: 2) of coarse red or buff calcite-tempered fabrics, similar to those that occur in FN III–FN IV (Strata IIA–IC), but absent from the EM I Well Group. In general fabrics in these small EM I deposits stratified directly above FN IV are coarser than those assigned to the EM I Well Group (see Wilson 1985, 360, 364; Chapter 2).

Wares

A notable feature of the EM I pottery from the deposits listed above is the extreme rarity of Red-on-buff Painted Ware, most vessels being burnished, polished, scored or wiped (FIG. 1.16: 1–3). In the largest deposit (FF4) painted ware represents less than 9% of the selected material, which must equate to less than 5% of the original assemblage. Almost all painted sherds comprise broad bands (Stratum IB: FIG. 1.16: 4, top; FF4: Wilson 1985, 361, pl. 56: FF8). Red-on-buff Painted Ware finds no obvious parallels in the Stratum IC Group, but could conceivably be related to the FN red painted pottery from Phaistos (e.g. Vagnetti 1972–3, fig. 74). Dark Grey Burnished Ware, sometimes pattern-burnished with horizontal, vertical or scribbled lines, also appears for the first time (FF4: Wilson 1985, fig. 42: 1, 2, 6; Stratum IB). Although somewhat Neolithic in appearance, EM I Dark Grey Burnished Ware is easily distinguished from FN wares by its distinctive motifs and its semi-fine to fine red to dark grey fabric. Pattern-wiped decoration, not unlike FN III–FN IV types, occurs alongside a new, scored variant (Scored Ware: Wilson 1985, pl. 57: FF14), which appears to occur most commonly on the body of globular jars with collared neck (FIG. 1.16: 1; Wilson 1985, pl. 57: FF14). Wares that are burnished, polished, smoothed, scored or wiped share similarities in technique with the Stratum IC Group and could, *pace* A. J. Evans (see above, p. 14), be described as 'Sub-Neolithic'.

Forms

Forms shared with Stratum IC include: small, medium and large globular jars with collared neck (Wiped / Scored Ware; Red-on-buff Painted Ware; Red or Buff Smoothed Coarse Ware; FIG. 1.16: 2; Wilson 1985, fig. 42.10, pl. 57: FF15); large strap handles (FIG. 1.16: 2; Wilson 1985, fig. 43:15, pl. 57: FF15). Open (or hole-mouthed) jars with incurving rim are present in the Stratum IC Group (FIG. 1.15: 6) and in EM I deposits, where they are frequently wiped or scored and have a thickened or rolled rim (e.g. D.VII.21 #1209; FF4: Wilson 1985, fig. 43:19). Bowls with tapered-up rim similar to examples in the Stratum IC Group occur in Dark Grey Burnished Ware, but unlike FN IV examples these most likely belong to pedestalled chalices (Wilson 1985, fig. 42.1–2).

Features finding no parallels in the Stratum IC Group include: the vertically-pierced lug; tubular handles (FIG. 1.16: 2, 4); the pedestalled chalice (Wilson 1985, fig. 42:3, 12); the pedestalled chalice with fenestrated pedestal; vessels with long 'prongs' on the rim (FIG. 1.16: 3, top; see also below). A steep-sided bowl with a convex base and vertical handle also seems to represent a new form (FIG. 1.16: 3 bottom), although this is sufficiently close to the deep hemispherical bowl with everted rim in the Stratum IC Group to allow a developmental relationship between the two forms to be postulated. 'Baking plates', which often have a reserved, wiped or thickened band below the rim, also appear to be a new feature (Stratum IB: FIG. 1.16: 1; Evans 1964, fig. 37.23; FF4: Wilson 1985, fig. 43.16–17).

Relative (and absolute) chronology for EM I 'Sub-Neolithic'

Cups or bowls with a single vertical tubular or strap handle and prongs or triangular horns are a feature of 'Sub-Neolithic' material from a number of sites (TABLE 1.6), such as the Eileithyia Cave (Mortzos 1972, pl. 34; Betancourt and Marinatos 2000, fig. 11: 12, 19–20), the Grymani Cave (Pendlebury *et al.* 1938, pl. V: 1.21) and Partira (Mortzos 1972, pl. 32). A closely related type of bowl with a single lug (often vertically pierced) in place of the single vertical handle occurs at the Eileithyia Cave (Betancourt and Marinatos 2000, fig. 10: 1–6), at Palaikastro and at Partira (Mortzos 1972, pls. 26–31, 35 lower). 'Sub-Neolithic' material has in general been isolated on the basis of style from unstratified, mixed assemblages (Vagnetti and Belli 1978, 133–7; Betancourt and Marinatos 2000, 187) and has been dated either to EM I (see above; Evans 1921, 38, 56–64; Cadogan 1983, 508; Haggis 1995, 54) or more usually to the very end of the Neolithic (Renfrew 1972, 71; Vagnetti and Belli 1978, fig. VIII; Warren and Hankey 1989, 12–13; Betancourt and Marinatos 2000, 189; Warren 2004, 117–18). The absence of painted pottery from Partira has been thought to indicate a Neolithic date (Warren and Hankey 1989, 12; Warren 2004, 118). However, this requires one to ignore not only the presence of good EM I parallels for all the main wares and forms (Warren 2004, 118), but also the absence of close parallels (e.g. vertically pierced lugs; comparable pattern burnished motifs) in FN IV assemblages around the island. Two shallow hemispherical bowls with single vertical handle from the upper Neolithic deposit from Phaistos bear some resemblance to the bowls from Partira. However, they lack horns and pattern burnishing and have an S-shaped profile with everted rim that finds its best parallels in the FN IV Stratum IC Group at Knossos and in an unstratified group from the Eileithyia Cave (FIG. 1.15: 17; Vagnetti 1972–3, figs. 36, 55; Marinatos 1930, fig. 5; Betancourt and Marinatos 2000, fig. 10:8–10).

Some 'Sub-Neolithic' material, however, comes from stratified contexts, whose relationship with FN IV or

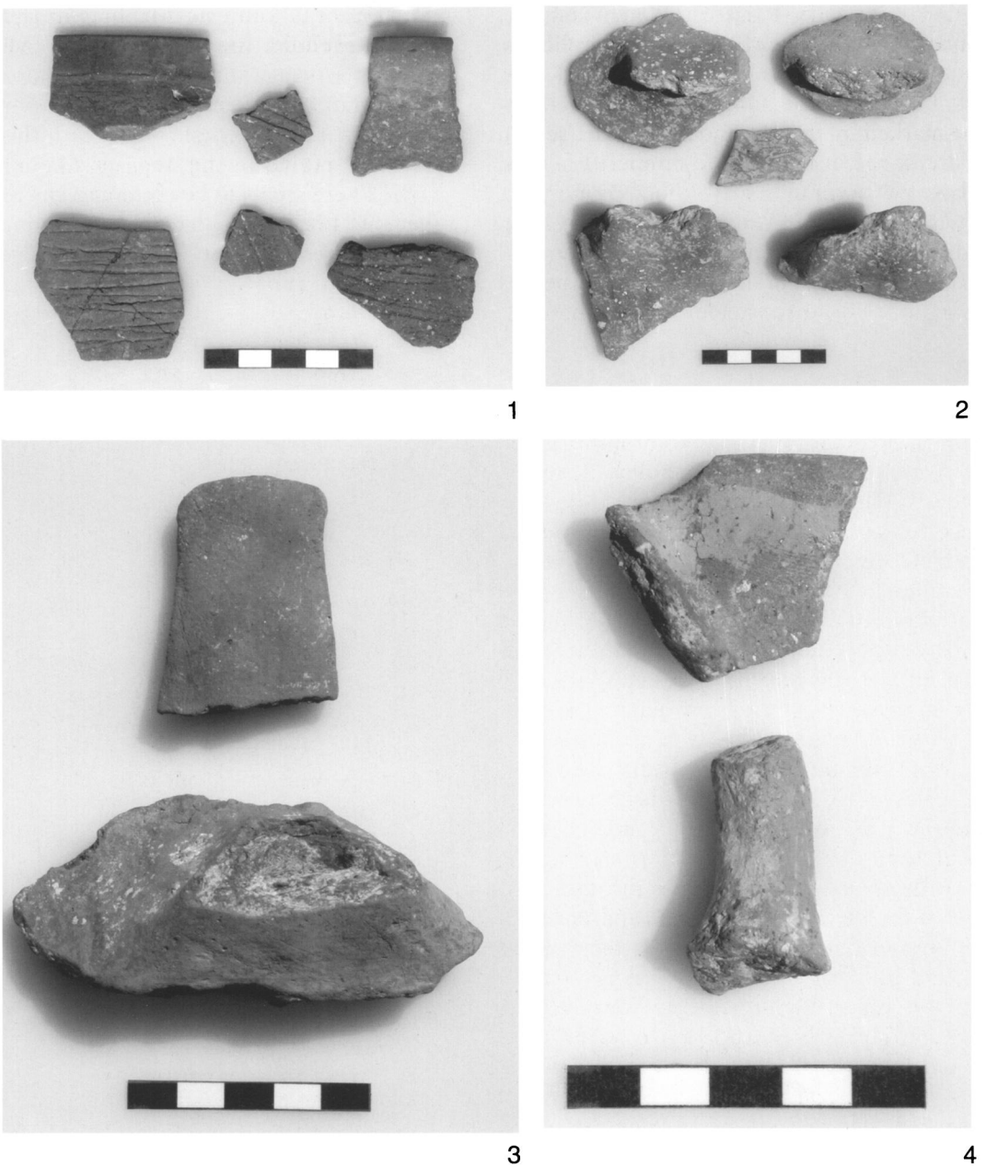
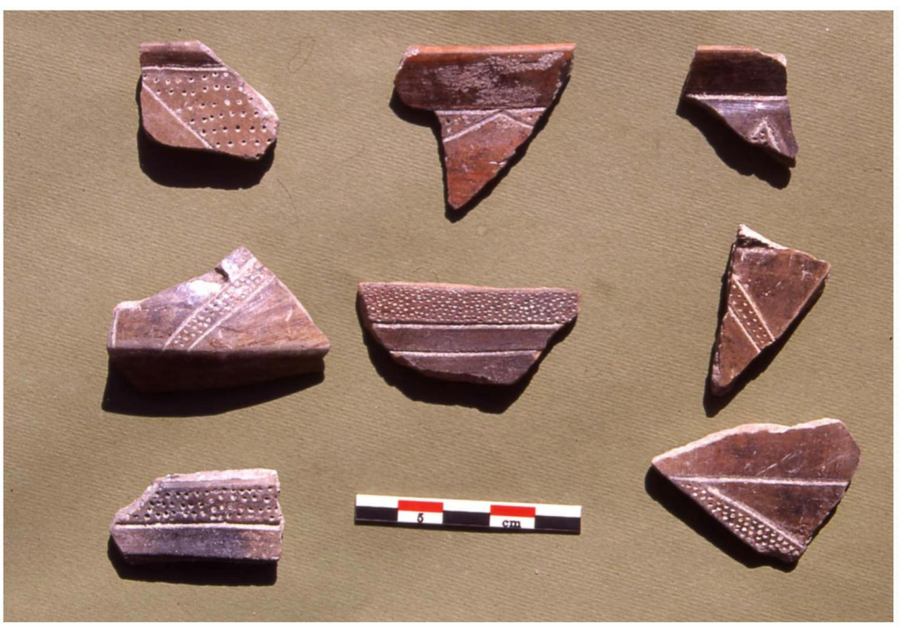


Fig. 1.16. Stratigraphically early EM I pottery: (1) Stratum IB (B4 [9/8/57]: bowl with horizontal band immediately below the rim (top left); (2) Trench FF, Level 4: strap handles; (3) Trench FF, Level 4: long prong from the rim of a bowl (top); steep-sided bowl with convex base and vertical handle; (4) Stratum IB (M2 [basket 69]): red-on-buff painted spout (top); unburnished tubular handle (bottom).

EM I is clearer. In the Phourni Well a fragment of a cup/bowl with prong and a Red-on-buff Painted sherd date the re-deposition of the otherwise Neolithic (FN IV) fill deposit to EM I (Manteli 1992, 105, 114 nos. 36–7). In the pre–tomb deposit below the Ayia Kyriaki tholos and in basal deposit F from Lebena Gerokampos Tomb II cups or bowls with prongs occur alongside EM I Red-on-buff Painted Ware (Blackman and Branigan 1982, 20–3, fig. 7.A2, B7, B9; Warren 2004, 117–20, fold-out A). These contexts indicate that bowls with long prongs on the rim are contemporary with EM I Red-on-buff Painted Ware. The new information available from Knossos complements and adds to this picture, confirming that the 'Sub-Neolithic' group is contemporary with EM I Red-on-buff Painted Wares and clarifying its stratigraphical position after FN IV and early in EM I. Additional stratigraphical support for this is provided by the FN IV–EM I sequence recently excavated at Kephala Petras near Siteia (Papadatos and Tomkins, in preparation). It would appear that outside south-central Crete the absence or rarity of Red-on-buff Painted Wares is a feature that links a number of (early?) EM I pottery groups, where burnished, polished, wiped or scored

wares predominate (e.g. Partira, Eileithyia Cave, Knossos, Ayios Nikolaos Rock Shelter, Kephala Petras; see TABLE 1.6).

Support for a synchronisation between the beginnings of EM I and of EB I in the rest of the Aegean is provided by a single radiocarbon date on a long-lived sample (charcoal) from D.VII.21 (#1209: OxA-13420, 4490 ± 45 BP; 3360–3020 BC at 95.4%, OxCal 3; Macdonald and Knappett, in press). The date range of the sample falls within that of other long-lived samples from early EB I contexts (Manning 1995, 144, 175, 185). The likely long life of the sample (Manning 1995, 144–5, 160) suggests that it provides a *terminus post quem* of *c.* 3100/3000 BC for the beginning of EM I, thus making it broadly synchronous with the beginning of the EB I period in the Aegean (Manning 1995, 144, 168). There seems to be no longer any reason to think that EM I begins any later than EC I in the Cyclades, EH I in Greece and EB I in the East Aegean (Manning 1995, 42, n. 13).



KNOSSOS POTTERY HANDBOOK

LIST OF CD COLOUR ILLUSTRATIONS

CHAPTER 1 (Peter Tomkins)

1.1. EN (Stratum IX) deep bowl with incurved rim (exterior).

1.2. EN (Stratum IX) deep bowl with incurved rim (interior).

1.3. EN (Stratum VIII) dark polished jar and buff polished bowl.

1.4. EN (Stratum VIII) jar.

1.5. EN (Stratum VIII) polished deep bowl.

1.6. EN deep bowls, left and middle with plastic cordon decoration.

1.7. EN miniature strap handles on rim.

1.8. MN collared jar with flared strap handle.

1.9. MN diagnostic, non-local fabrics (Strata VII-VIB)

1.10. MN (Stratum VII).

1.11. MN (Trench AABB, Stratum P).

1.12. MN (Trench X, level 17i) non-local fabrics.

1.13. LN I Fabric 1d.

1.14. LN I Brushed Ware.

1.15. LN I Fine Polished (Fabric Ib).

1.16. LN I Trench Z.

1.17. LN II Barbotine Ware (Fabric 1e).

1.18. LN II Coarse Burnished (Fabric 1e).

1.19. LN II deep jar with offset rim (Fabric 1b).

1.20. LN II Incised Ware (Fabric 1b).

1.21. LN II Incised and Incised-pointillé Ware(Fabric 1e).

1.22. LN II Incised Ware (Fabrics 1e and 1f).

1.23. LN II Incised- pointillé Ware (Fabric 1b).

1.24. LN II Polished Incised Ware (Fabric 1b).

1.25. LN II Scribble Burnished Ware (Fabric 1e).

1.26. FN IB and FN II fenestrated pedestal bowls.

1.27. FN II collared jar and FN II incised sherds.

1.28. FN III (Trench FF) v-shaped spouts.

1.29. FN III jar with rounded base.

1.30. FN III Pattern Wiped Ware (Fabric 1e).

1.31. FN III sherds (Area KLMN and Trench FF).

1.32. FN IV local coarseware.

1.33. FN IV local coarse ware.

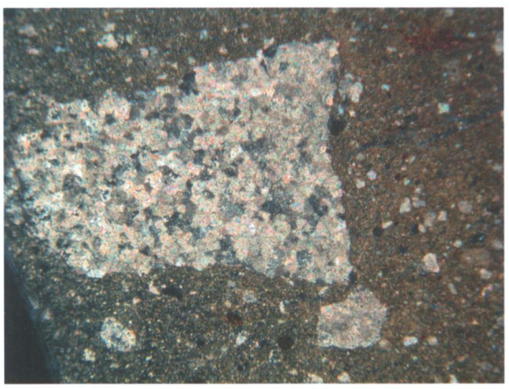
CHAPTER 2 (D.E. Wilson)

2.1. EM I. Dark Grey Pattern Burnished Ware chalice rims .
After Wilson and Day 2000; top: P6, P9; middle: P5; bottom: P2, P1.

2.2. EM I. Dark Grey Burnished Ware.
After Wilson and Day 2000; top: chalice P9; pedestalled bowl P33; bottom right: chalice P23. Bottom left: NE Magazines, KSM K.I.6, box 896.

2.3. EM I. Dark Grey Burnished Ware.
After Wilson and Day 2000; top: chalice P22; middle: chalice P24; bottom: pedestalled bowl P36.

2.4. EM I. Dark on Light Ware jug handles.
After Wilson and Day 2000; top: P76, P75, P77; bottom: P79, P80, P84, P86.



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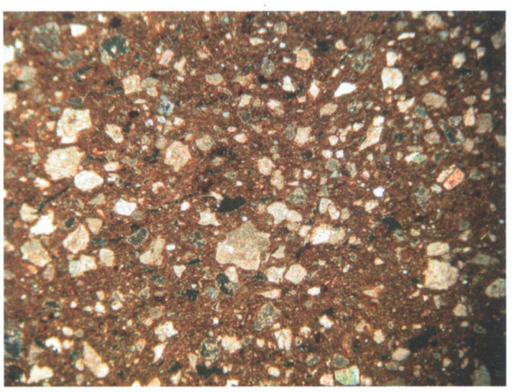

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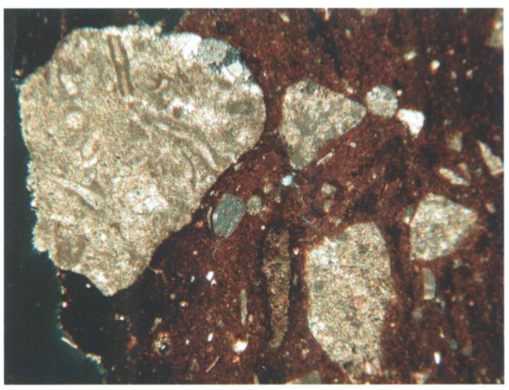

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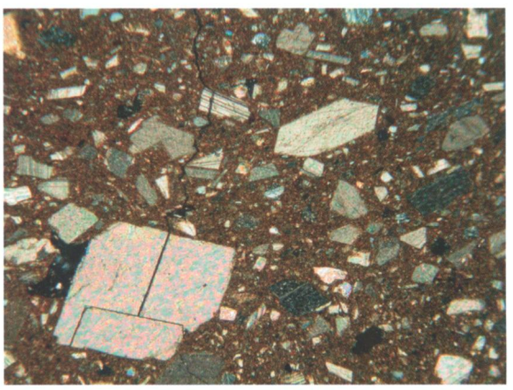

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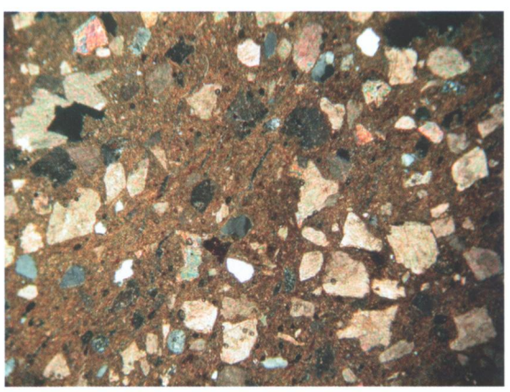

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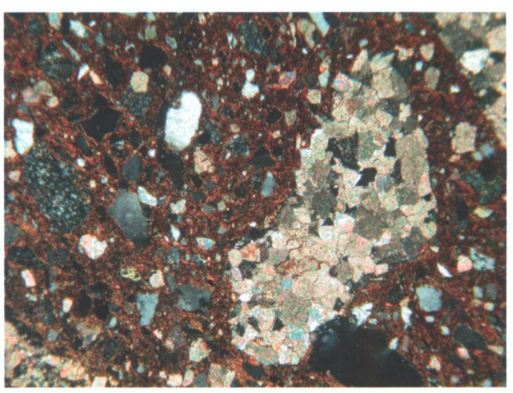

6

Photomicrographs of the main Neolithic fabrics local to Knossos.
(1) Photomicrograph of Fabric 1a, calcareous, rare quartz, fine-grained sparite; (2) Photomicrograph of Fabric 1b, calcareous, rare quartz, crushed fine-grained sparite; (3) Photomicrograph of Fabric 1d, calcareous, rare quartz, biomicrite/micrite; (4) Photomicrograph of Fabric 1e, calcareous, rare quartz, crushed euhedral calcite, biomicrite; (5) Photomicrograph of Fabric 1f, calcareous, rare quartz, crushed coarse-grained sparite; (6) Photomicrograph of Fabric 2a, low/non-calcareous, fine quartz-rich, chert, sparite.