

PALACE AND LANDSCAPE AT PALAIKASTRO, 2012–16

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SUPPLEMENTARY MATERIAL

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Chapter 8

Architectural analysis

by Q. Letesson

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SUPPL. TABLE 8.1. Wall categories in Building AM₁ (façade walls appear in bold). Different sections of Walls 15 and 17 were considered separately – these could then be considered hybrid walls (see FIG. 8.1).

<i>Type I</i>	<i>Type II</i>	<i>Type III</i>	<i>Type IV</i>	<i>Type V</i>	<i>Type VI</i>	<i>Type VII</i>
12	10	5	29	6	83	33
15'	13	8	57	17 (s)		44
17 (middle)	19	15	80	18		
20	23	17 (N)		32		
28	31	34		35		
40	36	37		79		
78	42	41				
		43				

SUPPL. TABLE 8.2. Additional wall characteristics in Building AM₁ (façade walls appear in bold).

<i>Horizontal binding</i>	<i>Wall ending</i>	<i>Levelling slabs/course</i>	<i>Ashlar</i>
8	8	10	15'
17 (middle)	15'	12	40
20	19	35	
29	20	40	
34	23		
35	28		
37	31		
41	34		
42	35		
	36		
	40		
	43		

SUPPL. TABLE 8.3. Wall categories in Building AP₁ (façade walls appear in bold).

<i>Type I</i>	<i>Type II</i>	<i>Type IV</i>	<i>Type VI</i>	<i>Type VII</i>
11	25	26	66	85
16	30	63	81	
48	50			
49	51			
53	52			
	54			
	55			
	65			
	67			

SUPPL. TABLE 8.4. Additional wall characteristics in Building AP1 (façade walls appear in bold).

<i>Horizontal binding</i>	<i>Wall ending</i>	<i>Levelling slabs/course</i>	<i>Ashlar</i>
48	48	16	16
50	49	5 ¹	
5 ¹	50		
53	53		
	55		
	63		
	66		

SUPPL. TABLE 8.5. Wall categories in Building MP1 (façade walls appear in bold).

<i>Type I</i>	<i>Type II</i>	<i>Type V</i>	<i>Type VI</i>
22	24 (E and N)	61	77
24 (W)	74	62	
58	75	73	
59	76		
60			
84			

SUPPL. TABLE 8.6. Additional wall characteristics in Building MP1 (façade walls appear in bold).

<i>Horizontal binding</i>	<i>Wall ending</i>	<i>Levelling slabs/course</i>	<i>Ashlar</i>
/	22	/	/
	74		

Chapter 9

Plant resource use and management: the PALAP archaeobotanical remains

by A. Livarda

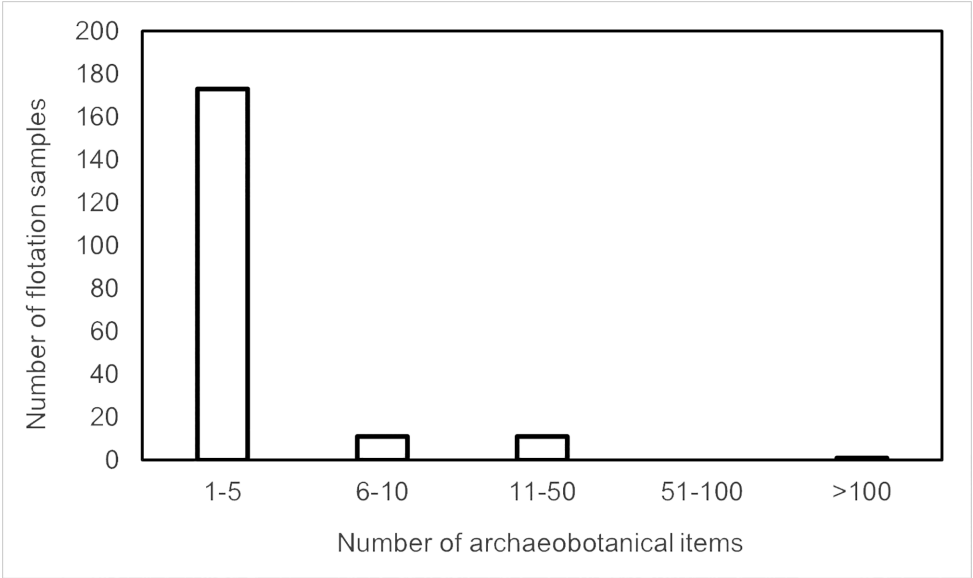
See pp. 263–78 in the printed Volume, with PLATE 25.

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SUPPL. TABLE 9.1: The wild taxa found in the PALAP assemblage that could be identified at least to the Genus level and their ecological characteristics (sources <http://www.cretanflora.com>; CABI 2018).

<i>Taxon</i>	<i>Description</i>	<i>Habitat</i>
<i>Urtica</i> sp.	herbs with stinging hairs, edible with durable fibres, can produce green colour	ruderals
<i>Rumex</i> sp.	herbs, rarely shrubs	wide range of open habitats, some associated with wet habitats, ruderals
<i>Portulaca oleracea</i> (common purslane)	annual herbaceous plant	waste places, roadsides, field margins
<i>Vaccaria hispanica</i> (cow basil)	annual herb	cultivated, waste and fallow land, waste places
<i>Astragalus</i> sp.	herbs and small shrubs	various including fields, open ground, waste ground, grassland, phrygana
<i>Medicago</i> sp.	herbs or small shrubs	open habitats, roadsides, cultivated fields or grassy places
<i>Malva</i> sp.	herbs	mainly in dry, open habitats. Nitrophilous, usually occur as ruderals or weeds of cultivation
<i>Lithospermum arvense</i> (corn gromwell)	annual herb	cultivated, fallow and waste ground, roadsides, stony slopes
<i>Anthemis cotula</i> (stinking mayweed)	annual herb	weed of cultivation, roadsides, fallow and waste ground, garrigue, salt marsh edges, adapted to rich soils
<i>Glebionis coronaria</i> (crown daisy)	annual herbaceous plant	cultivated and fallow ground, roadsides, disturbed places, banks, open garrigue, seashores
<i>Hordeum</i> sp.	grasses	found mostly in grasslands and as ruderals



SUPPL. CHART 9.1. The quantity of archaeobotanical remains across the PALAP soil samples.

Chapter 10

The faunal remains

by V. Tzevelekidi

See pp. 279–85 in the printed Volume.

SUPPLEMENTARY MATERIAL

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SUPPL. TABLE 10.1. Species representation in the PALAP assemblage by chronological phase (MinAU, sheep/goat have been proportionally assigned to sheep and goat).

	<i>MM</i>		<i>LM IA</i>		<i>LM IB</i>		<i>LM II</i>		<i>LM III</i>		<i>TOTAL</i>	
	<i>MinAU</i>	%	<i>MinAU</i>	%	<i>MinAU</i>	%	<i>MinAU</i>	%	<i>MinAU</i>	%	<i>MinAU</i>	%
Cattle	6	15	16	11.1	21	6.1	0	0	73	6.6	116	7.1
Pig	1	2.5	9	6.3	23	6.7	1	25.0	44	4.0	78	4.8
Sheep	21	52.5	101	70.1	218	63.2	2	50.0	750	67.8	1088	66.3
Goat	13	32.5	17	11.8	81	23.5	1	25.0	236	21.3	352	21.5
Sheep, goat & sheep/goat	34	85.0	118	81.9	299	86.7	3	75.0	986	89.2	1440	87.8
Dog	0	0	1	0.7	2	0.6	0	0	0	0	3	0.2
Hare	0	0	0	0	0	0	0	0	1	0.1	1	0.1
Fallow deer	0	0	0	0	0	0	0	0	1	0.1	1	0.1
Roe deer	0	0	0	0	0	0	0	0	1	0.1	1	0.1
<i>All species/phase</i>	41	2.5	144	8.8	345	21.0	4	0.2	1106	67.4	1640	

SUPPL. TABLE 10.2. Comparison of anatomical breakdown of sheep, goat and sheep/goat recovery during excavation (hand-picked, dry-sieved) and flotation (MinAU).

	<i>Flotation</i>		<i>Total PALAP</i>
	<i>MinAU</i>	<i>% out of total</i>	
Horn core/Antler	0	0	2
Mandible	4	1.2	342
Scapula	0	0	21
Humerus proximal	0	0	32
Humerus distal	0	0	85
Radius proximal	0	0	100
Ulna	0	0	10
Radius distal	0	0	58
Metacarpal proximal	0	0	61
Metacarpal distal	0	0	50
Pelvis	2	8.7	23
Femur proximal	1	1.8	57
Femur distal	0	0	46
Tibia proximal	0	0	121
Tibia distal	0	0	127
Astragalus	1	6.7	15
Calcaneus	0	0	30
Metatarsal proximal	0	0	89
Metatarsal distal	0	0	59
Phalanges ₁₋₃	8	9.6	83
Metapodial proximal	0	0	4
Metapodial distal	0	0	25
<i>All anatomical units</i>	16	1.1	1440

SUPPL. TABLE 10.3. Abundance of small and large limb bones of cattle, pig, and sheep and goat, and sheep/goat (MinAU, neonatal excluded). Key: small limb bones: proximal ulna, astragalus, calcaneum, phalanges 1–3; large limb bones: scapula, proximal humerus, distal humerus, proximal radius, distal radius, proximal metacarpal, distal metacarpal, pelvis, proximal femur, distal femur, proximal tibia, distal tibia, proximal metatarsal, distal metatarsal, proximal metapodial, distal metapodial.

	<i>Large limb bones</i>	<i>Small limb bones</i>	<i>% of small limb bones</i>
Limb bones in whole skeleton	28	18	39.1
Cattle	77	24	31.2
Pig	67	4	6.0
Sheep and goat and sheep/goat	958	138	14.4

SUPPL. TABLE 10.4. Abundance of neonatal elements by species (MinAU).

	<i>Cattle</i>		<i>Pig</i>		<i>Sheep, goat and sheep/goat</i>	
	<i>MinAU</i>	<i>%</i>	<i>MinAU</i>	<i>%</i>	<i>MinAU</i>	<i>%</i>
Neonatal	2	1.7	3	4.1	15	1.0
Neonatal (recovered during flotation)	0	0	0	0	1	0
Post-neonatal	116	98.3	71	95.9	1424	98.9

SUPPL. TABLE 10.5. Abundance of adjacent small and large limb bones of the commonest domesticates (MinAU, neonatal excluded. Key: Td = tibia distal, A = astragalus, C = calcaneus, MCd = metacarpal distal, MTd = metatarsal distal, PH = phalanx, Rp = radius proximal, U = ulna).

	<i>Cattle</i>		<i>Pig</i>		<i>Sheep, goat and sheep/goat</i>	
	<i>MinAU</i>	<i>ratio Td:A:C</i>	<i>MinAU</i>	<i>ratio Td:A:C</i>	<i>MinAU</i>	<i>ratio Td:A:C</i>
Td	8		7		127	
A	0	1:0:0.25	0	1:0:0	16	1:0.1:0.2
C	2		0		30	
	<i>MinAU</i>	<i>ratio MCd & MTd:PH1:PH2:PH3</i>	<i>MinAU</i>	<i>ratio MCd & MTd:PH1:PH2:PH3</i>	<i>MinAU</i>	<i>ratio MCd & MTd:PH1:PH2:PH3</i>
MCd & MTd	7		0		134	
PH1	12	1:1.7:0.6:0.3	2	0:1:0:0.5	55	1:0.4:0.2:0.1
PH2	4		0		22	
PH3	2		1		6	
	<i>MinAU</i>	<i>ratio Rp:U</i>	<i>MinAU</i>	<i>ratio Rp:U</i>	<i>MinAU</i>	<i>ratio Rp:U</i>
Rp	13	1:0.3	5	1:0.2	100	1:0.1
U	4		1		10	

SUPPL. TABLE 10.6. Incidence of old and new breaks per species (MaxAU, loose teeth and loose epiphyses excluded; percentage of 'whole' and 'old break' calculated out of 'whole elements'+ 'old breaks'; percentage of 'new breaks' calculated out of 'whole elements'+ 'old breaks'+ 'new breaks'.

	<i>Whole elements</i>		<i>Old breaks</i>		<i>New breaks</i>	
	<i>MaxAU</i>	%	<i>MaxAU</i>	%	<i>MaxAU</i>	%
Cattle	5	6.3	74	93.7	32	28.8
Pig	5	8.2	56	91.8	14	18.7
Sheep, goat and sheep/goat	54	6.5	782	93.5	358	30.0
Dog	0	0	0	0	2	100
Hare	1	100	0	0	0	0
Fallow deer	0	0	0	0	1	100
Roe deer	0	0	2	100	0	0
All	65	6.6	914	93.4	407	29.4

SUPPL. TABLE 10.7. Incidence of gnawing per species (MaxAU, loose teeth and neonatal excluded, percentage of 'eroded, not gnawed' calculated out of 'not gnawed', percentage of 'gnawed' calculated out of 'total').

	<i>Gnawed</i>		<i>Not gnawed</i>	<i>Eroded, not gnawed</i>		<i>Total</i>
	<i>MaxAU</i>	%	<i>MaxAU</i>	<i>MaxAU</i>	%	<i>MaxAU</i>
Cattle	14	12.2	101	56	55.4	115
Pig	14	18.2	63	29	46.0	77
Sheep, goat and sheep/goat	130	10.2	1140	492	43.2	1270
Dog	0	0	2	0	0	2
Hare	0	0	1	0	0	1
Fallow deer	0	0	1	0	0	1
Roe deer	1	50.0	1	0	0	2
All	158	10.8	1310	577	44.0	1468

SUPPL. TABLE 10.8. Incidence of gnawing on limb bones in relation to age (fused *versus* unfused) for cattle, pig and sheep/goat (MaxAU, postcranial bones only, neonatal excluded).

	<i>Cattle</i>			<i>Pig</i>			<i>Sheep, goat and sheep/goat</i>		
	<i>Gnawed</i>		<i>Total</i>	<i>Gnawed</i>		<i>Total</i>	<i>Gnawed</i>		<i>Total</i>
	<i>MaxAU</i>	%		<i>MaxAU</i>	%		<i>MaxAU</i>	%	
Fused	6	27.3	22	2	25.0	8	23	9.7	236
Unfused	0	0	3	1	20.0	5	3	6.8	44

SUPPL. TABLE 10.9: Incidence of gnawing on different elements by species (MaxAU, neonatal and loose teeth excluded.
Key: see SUPPL. CHART 10.1.

	<i>Cattle</i>		<i>Pig</i>		<i>Sheep, goat and sheep/goat</i>	
	<i>MaxAU</i>	<i>% Within element</i>	<i>MaxAU</i>	<i>% Within element</i>	<i>MaxAU</i>	<i>% Within element</i>
MD	0	0	0	0	1	0.8
SC	1	7.1	0	0	2	1.6
H	2	14.3	0	0	11	8.5
R	3	21.4	3	21.4	18	14.0
MC	1	7.1	0	0	8	6.2
PE	0	0	0	0	1	0.8
FE	1	7.1	1	7.1	8	6.2
T	1	7.1	8	57.1	41	31.8
MT	1	7.1	1	7.1	30	23.3
U	1	7.1	1	7.1	3	2.3
C	0	0	0	0	2	1.6
A	0	0	0	0	1	0.8
PH ₁	1	7.1	0	0	3	2.3
PH ₂	2	14.3	0	0	0	0
PH ₃	0	0	0	0	0	0

SUPPL. TABLE 10.10. Breakdown of old break morphological types for long bones by taxon (MaxAU, neonatal, loose teeth and loose epiphyses excluded. Key: long bones = humerus, radius, metacarpal, femur, tibia, metatarsal).

	<i>Cattle</i>		<i>Pig</i>		<i>Sheep, goat and sheep/goat</i>	
	<i>MaxAU</i>	<i>%</i>	<i>MaxAU</i>	<i>%</i>	<i>MaxAU</i>	<i>%</i>
End + shaft; end splinter + shaft splinter; end only; end splinter	10	13.5	5	8.9	109	13.9
Shaft fragments	63	85.1	45	80.4	498	63.7
Cylinder	1	1.4	6	10.7	175	22.4

SUPPL. TABLE 10.11. Incidence of complete elements, old and new breaks (MaxAU, long bones only, loose epiphyses and loose teeth excluded).

	<i>Cattle</i>		<i>Pig</i>		<i>Sheep, goat and sheep/goat</i>	
	<i>MaxAU</i>	%	<i>MaxAU</i>	%	<i>MaxAU</i>	%
Whole	0	0	2	2.8	1	0.1
Old	72	87.8	56	78.9	773	74.4
New	10	12.2	13	18.3	265	25.5

SUPPL. TABLE 10.12. Anatomical representation for cattle by chronological phase (MinAU). Key: see SUPPL. CHART 10.1.

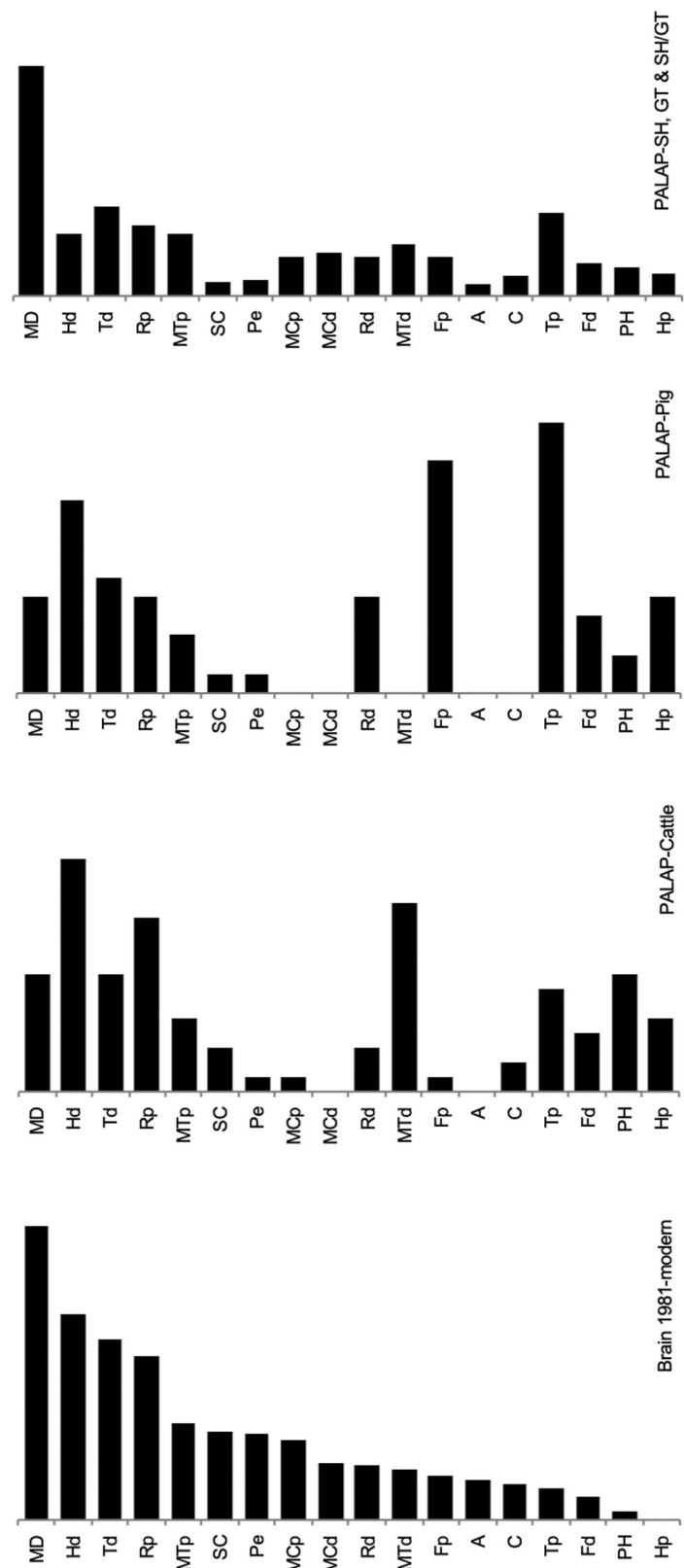
	<i>H/A</i>	<i>MD</i>	<i>SC</i>	<i>Hp</i>	<i>Hd</i>	<i>Rp</i>	<i>U</i>	<i>Rd</i>	<i>MCp</i>	<i>MCd</i>	<i>PE</i>	<i>Fp</i>	<i>Fd</i>	<i>Tp</i>	<i>Td</i>	<i>A</i>	<i>C</i>	<i>MTp</i>	<i>MTd</i>	<i>PH1-3</i>
MM	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	1	0	0
LMI A	0	2	0	0	1	1	0	0	1	0	1	1	2	1	0	0	0	1	1	2
LMI B	0	5	0	2	5	2	0	0	0	0	0	0	0	3	0	0	0	0	0	2
LM III	3	4	3	3	9	10	3	4	1	0	0	1	1	3	7	0	2	3	6	5

SUPPL. TABLE 10.13. Anatomical representation for pig by chronological phase (MinAU) Key: see SUPPL. CHART 10.1.

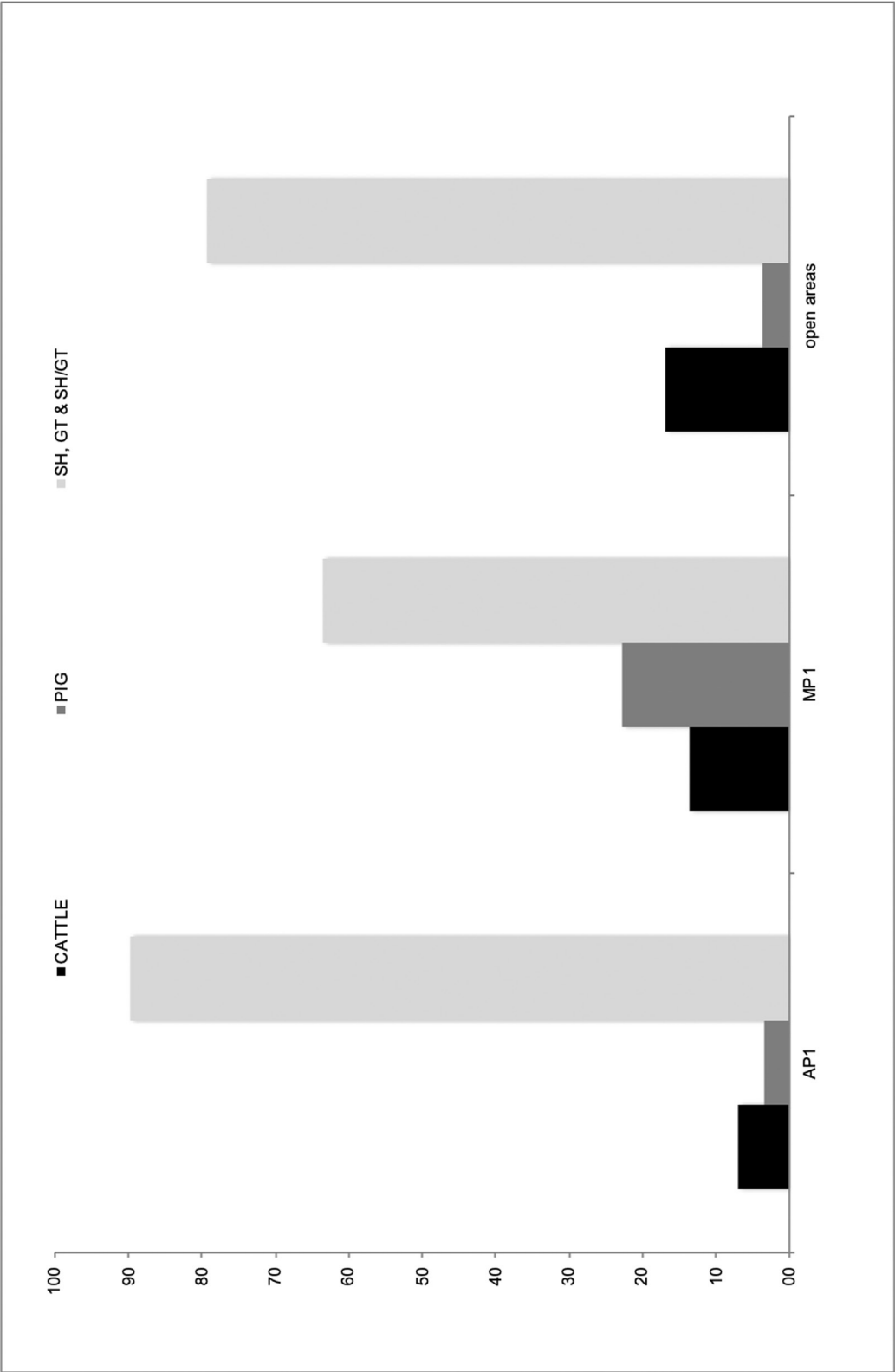
	<i>MD</i>	<i>SC</i>	<i>Hp</i>	<i>Hd</i>	<i>Rp</i>	<i>U</i>	<i>Rd</i>	<i>MCp</i>	<i>MCd</i>	<i>PE</i>	<i>Fp</i>	<i>Fd</i>	<i>Tp</i>	<i>Td</i>	<i>A</i>	<i>C</i>	<i>MTp</i>	<i>MTd</i>	<i>PH1</i>	<i>PH2</i>	<i>PH3</i>
MM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
LMI A	2	0	0	1	0	1	1	0	0	0	2	2	0	0	0	0	0	0	0	0	0
LMI B	3	0	2	1	1	0	2	0	0	1	3	1	4	3	0	0	1	0	1	0	0
LM III	2	0	3	8	4	0	2	0	0	0	7	1	9	4	0	0	2	0	1	0	1

SUPPL. TABLE 10.14. Anatomical representation for sheep, goat and sheep/goat by chronological phase (MinAU). Key: see SUPPL. CHART 10.1.

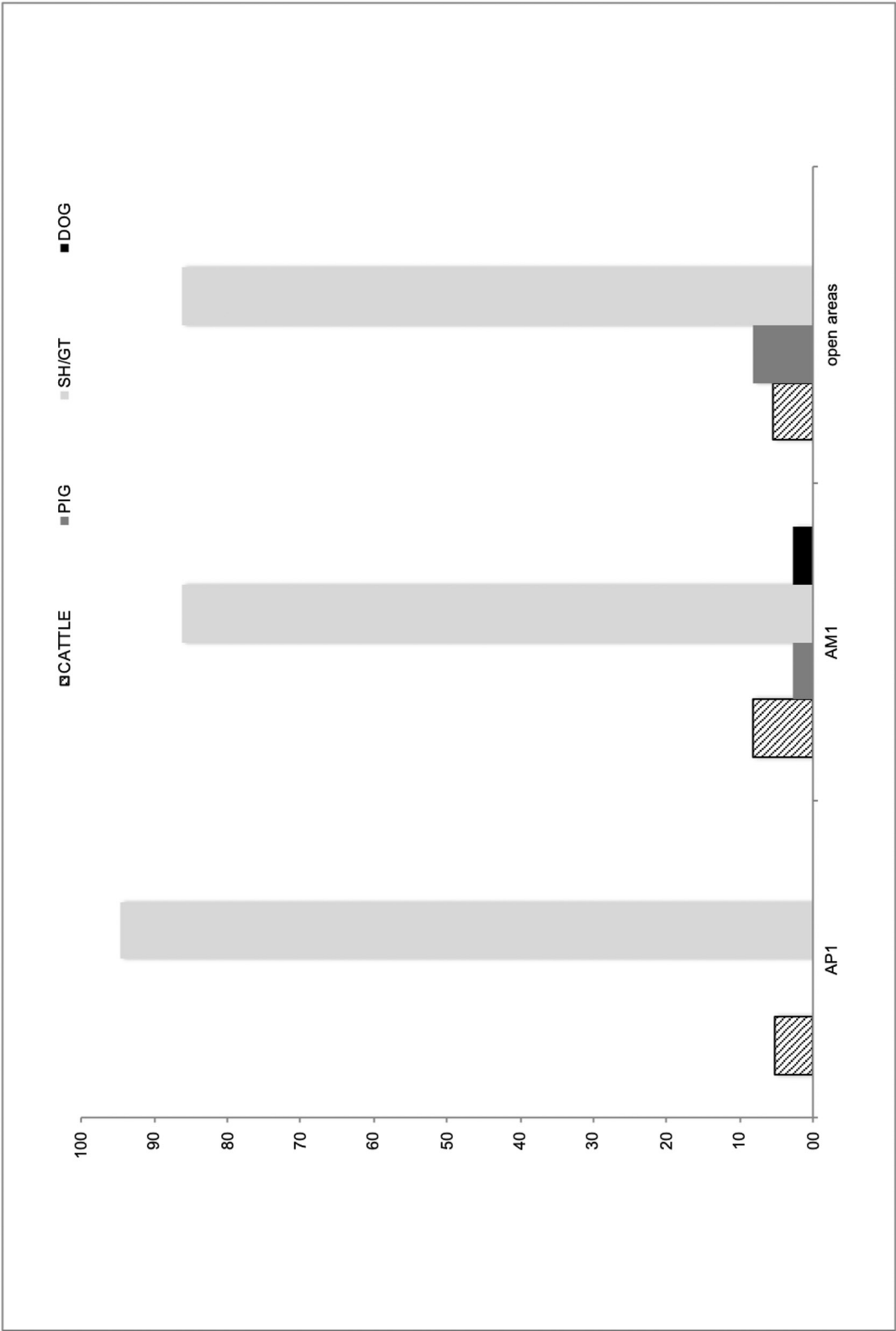
	<i>H/A</i>	<i>MD</i>	<i>SC</i>	<i>Hp</i>	<i>Hd</i>	<i>Rp</i>	<i>U</i>	<i>Rd</i>	<i>MCp</i>	<i>MCd</i>	<i>PE</i>	<i>Fp</i>	<i>Fd</i>	<i>Tp</i>	<i>Td</i>	<i>A</i>	<i>C</i>	<i>MTp</i>	<i>MTd</i>	<i>PH1-3</i>
MM	1	10	1	1	3	0	1	0	0	0	1	0	0	4	3	2	2	2	3	0
LM IA	0	30	2	1	7	8	1	7	6	3	1	2	3	4	8	4	1	8	7	8
LM IB	1	77	5	6	20	22	4	10	14	8	4	10	6	20	19	2	7	20	13	15
LM III	0	205	13	24	55	70	4	41	42	50	17	42	35	89	94	7	20	61	50	19



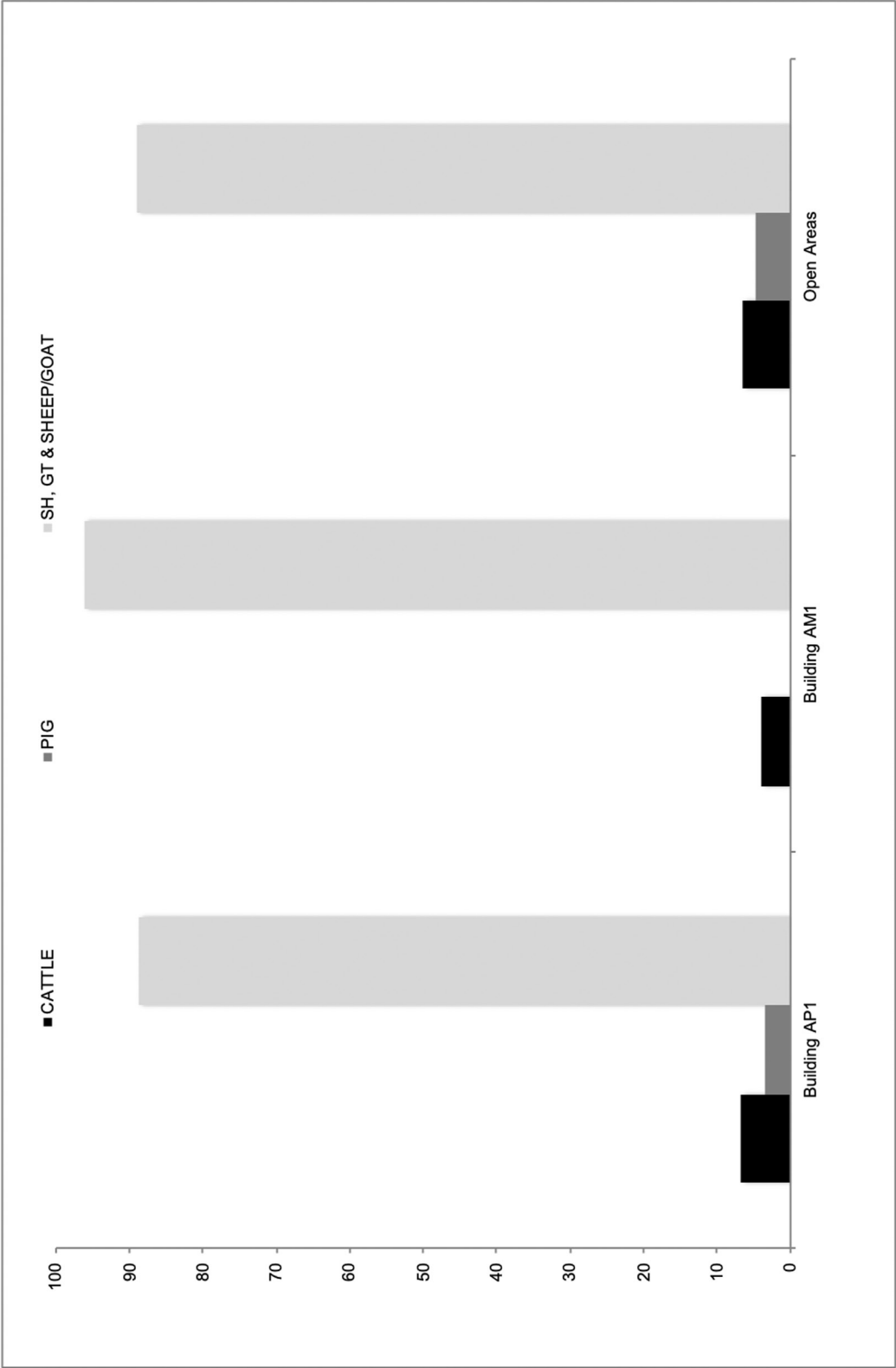
SUPPL. CHART 10.1. Comparison of anatomical element survivorship (MinAU) for PALAP cattle, pigs and sh, gt and sh/gt with modern goats (after Brain 1981) (key: MD= mandible, Hd=humerus distal, Td=tibia distal, Rp=radius proximal, MTP=metatarsal proximal, SC=scapula, Pe=pelvis, MCp=metacarpal proximal, MCd=metacarpal distal, Rd=radius distal, MTd=metatarsal distal, Fp=femur proximal, A=astragalus, C=calcaneus, Tp=femur distal, Fd=femur proximal, PH=phalanx, Hp=Humerus proximal).



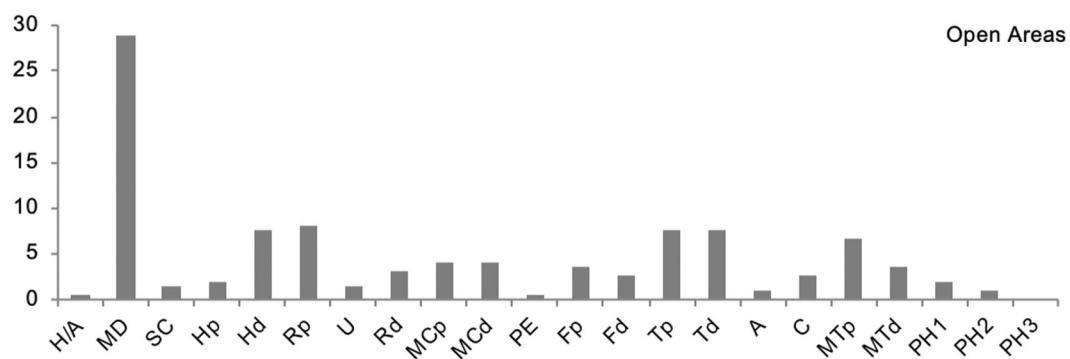
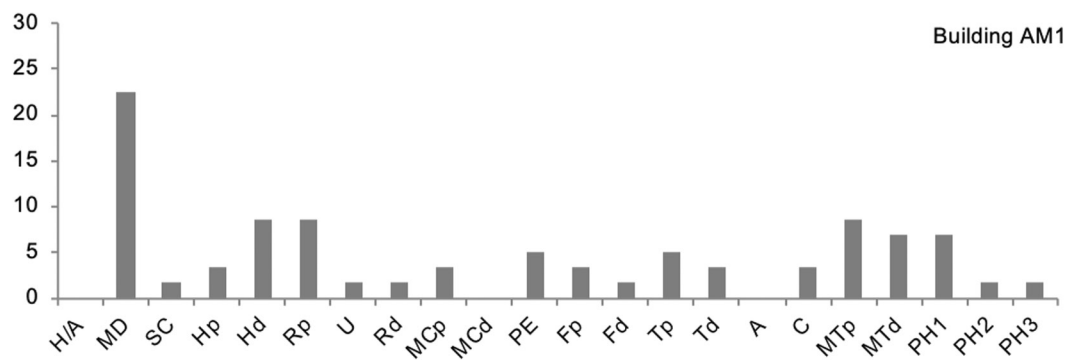
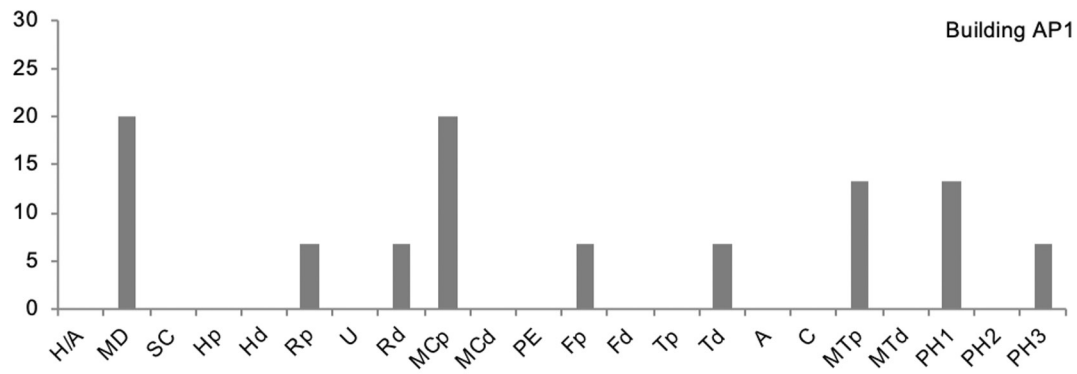
SUPPL. CHART 10.2. Species representation by type of context in LM IA deposits (% MinAU).



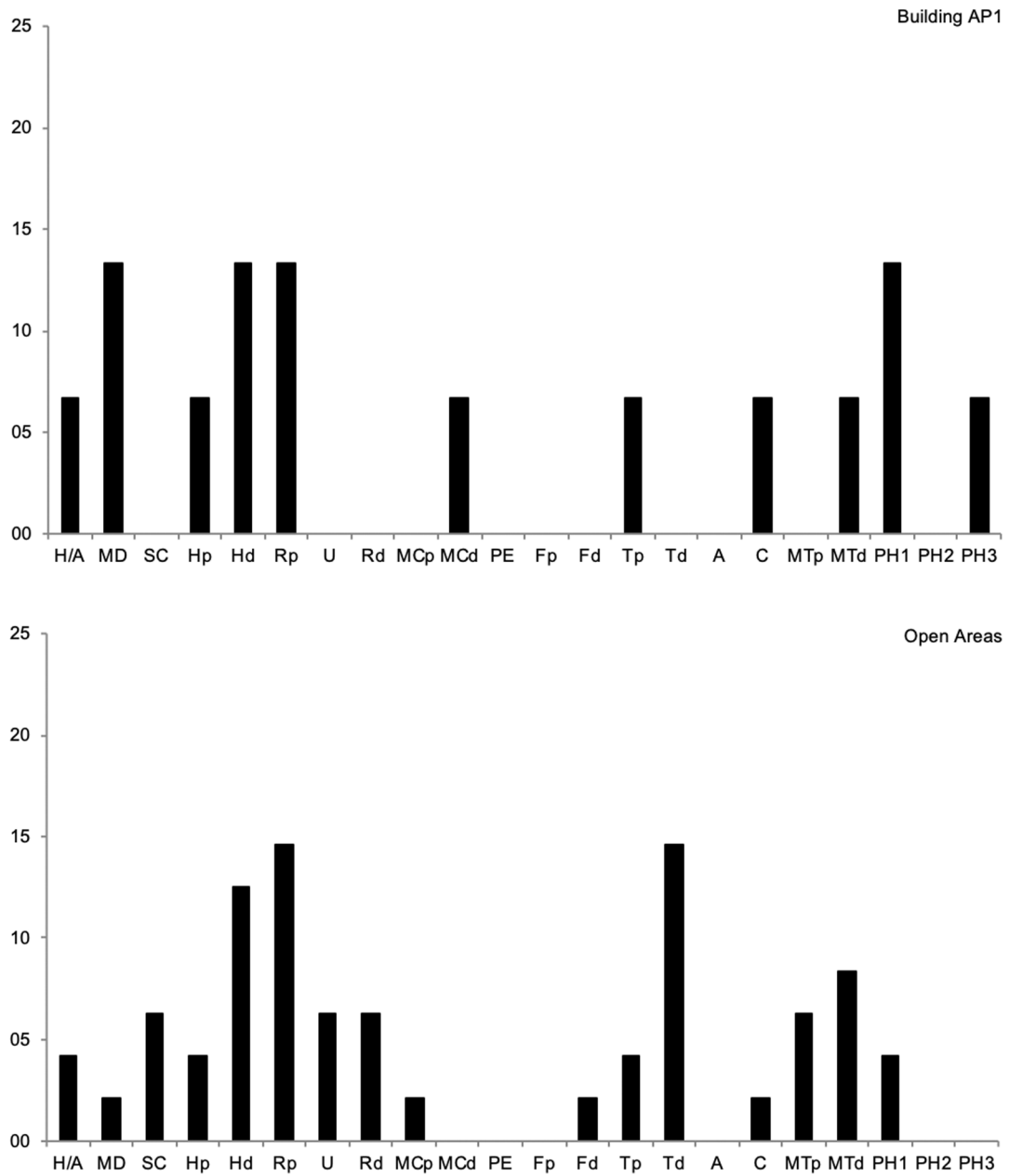
SUPPL. CHART 10.3. Species representation by type of context in LM IB deposits (% MinAU).



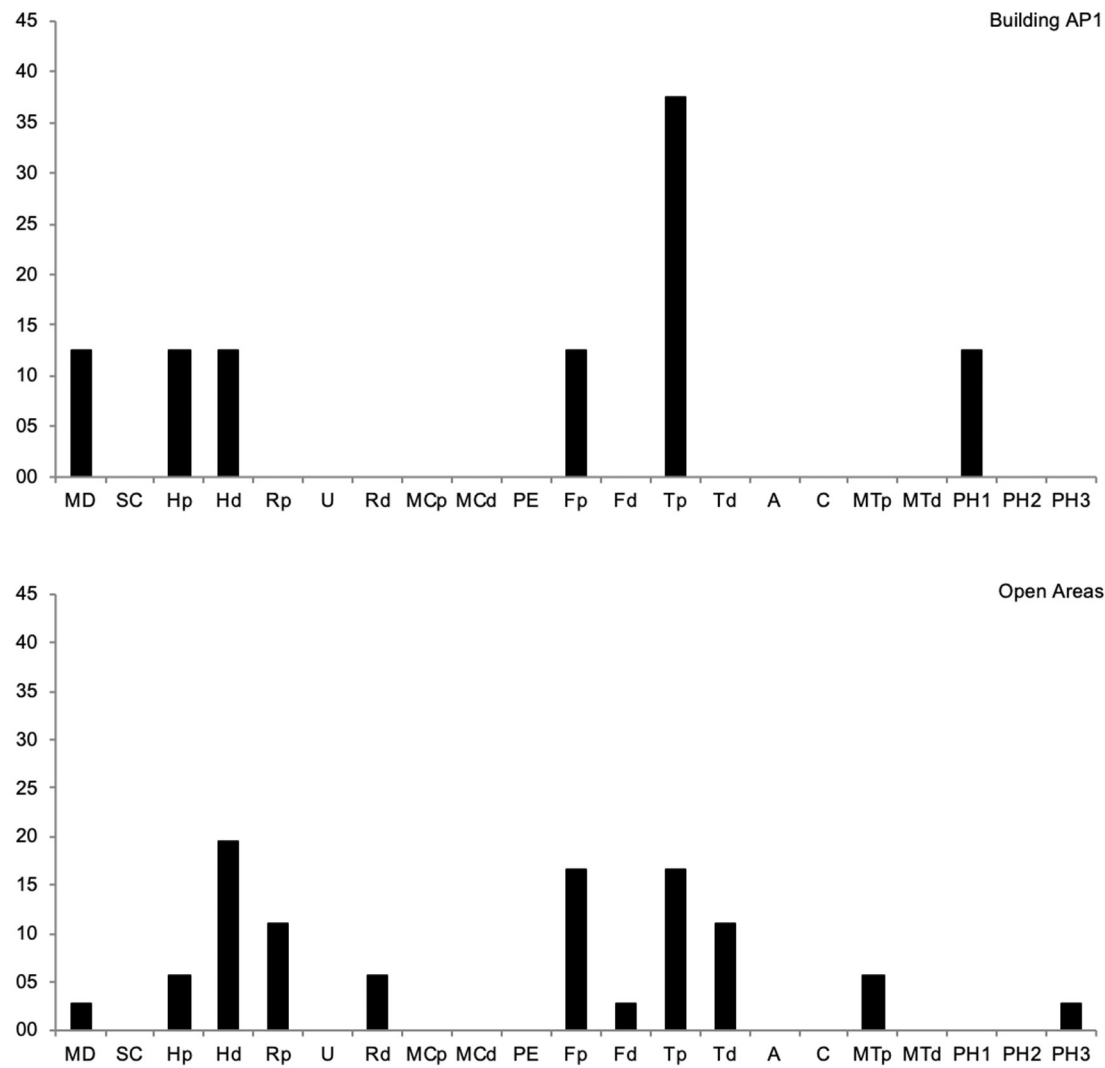
SUPPL. CHART 10.4: Anatomical representation for sheep, goat and sheep/goat by type of context in LM IB deposits (% MinAU).



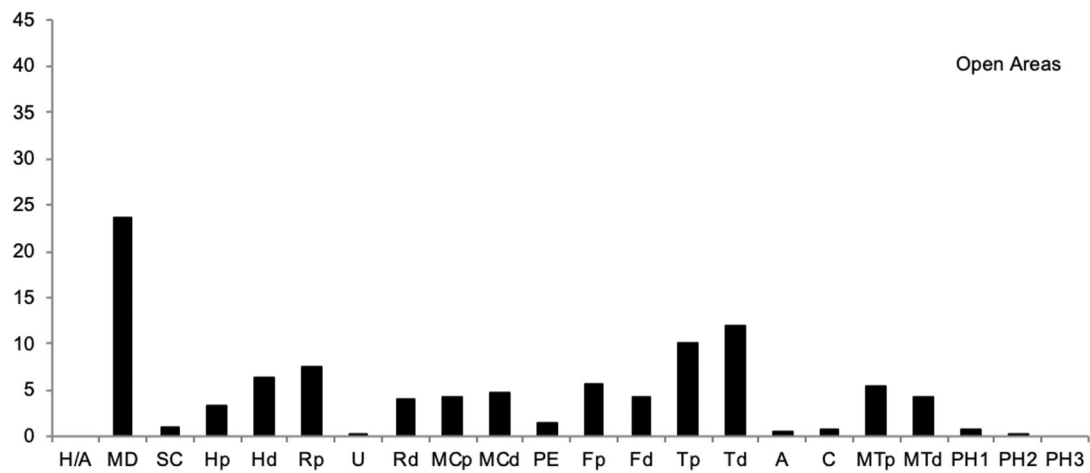
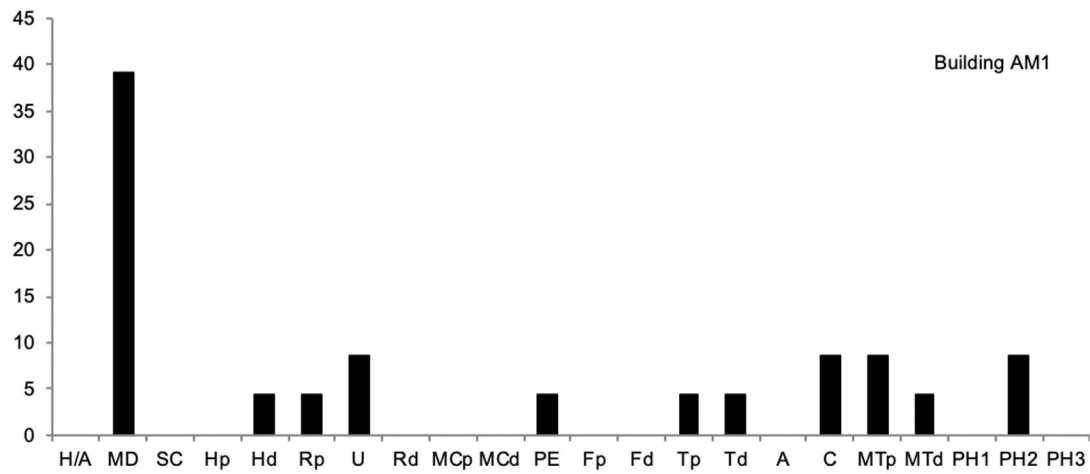
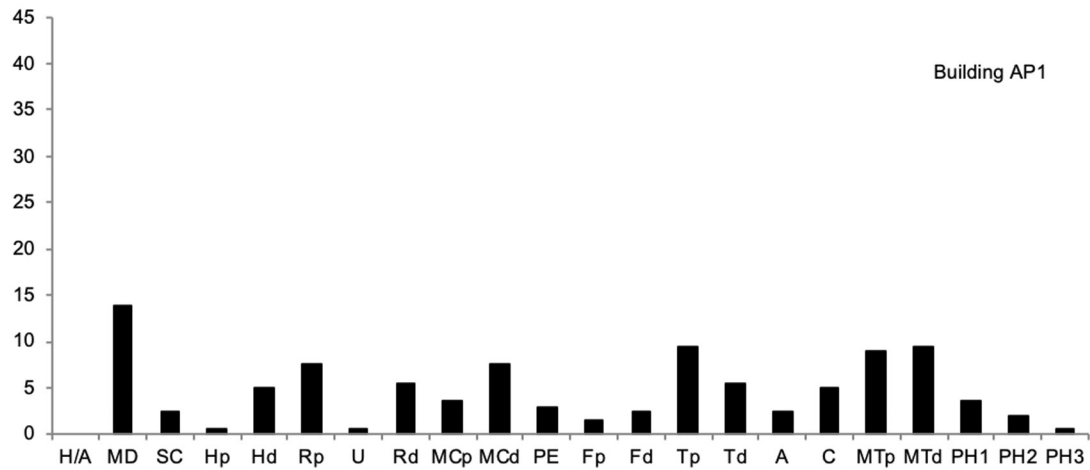
SUPPL. CHART 10.5. Representation of main domesticates by type of context in LM III deposits (% MinAU).
 (key: MD= mandible, Hd=humeral distal, Td=tibia distal, Rp=radius proximal, MTp=metatarsal proximal, SC=scapula, Pe=pelvis, MCp=metacarpal proximal, MCd=metacarpal distal, Rd=radius distal, MTd=metatarsal distal, Fp=femur proximal, A=astragalus, C=calcaneus, Tp=tibia proximal, Fd=femur distal, PH=phalanx, Hp=Humerus proximal).



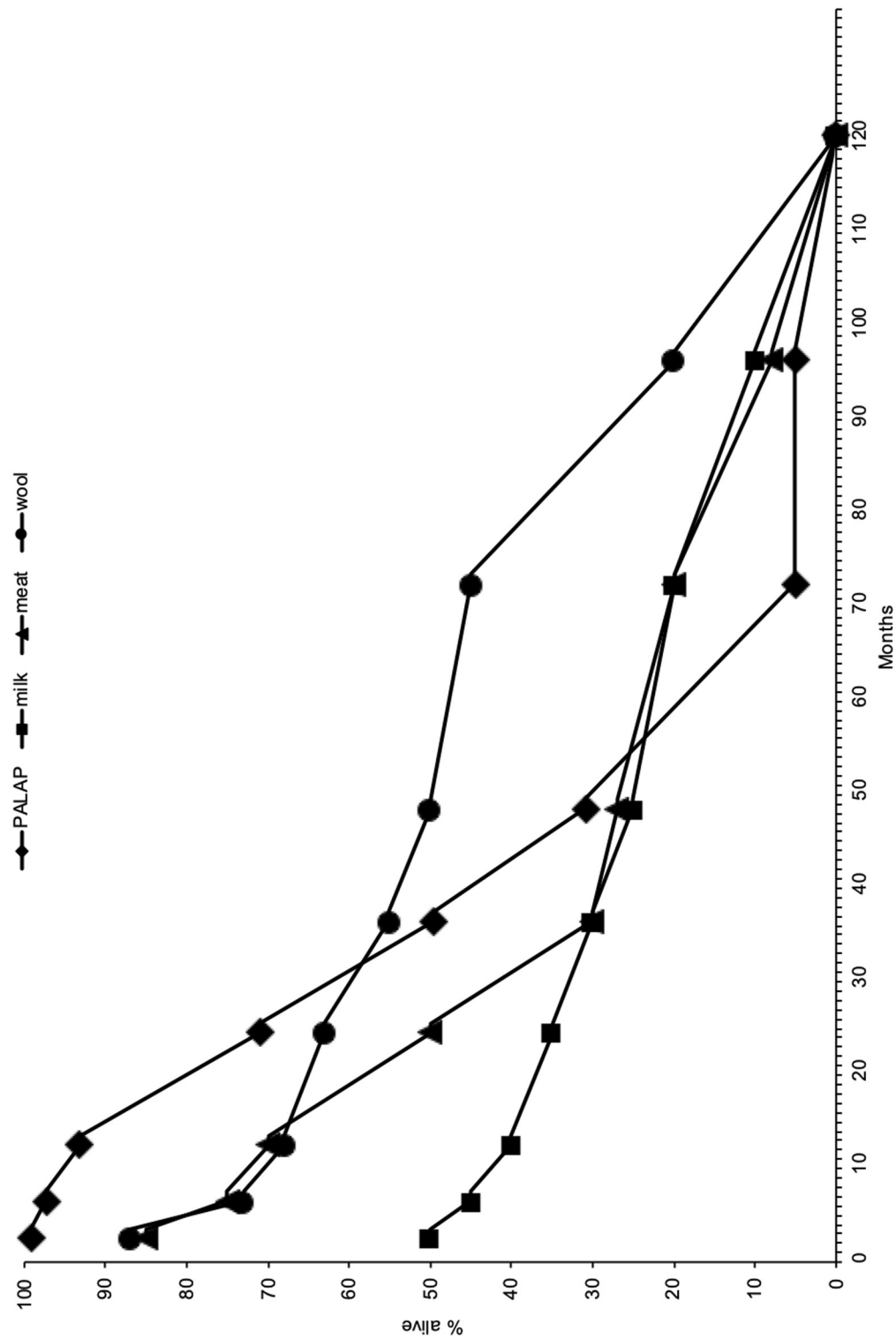
SUPPL. CHART 10.6. Anatomical representation of cattle by type of context in LM III deposits (% MinAU).
 (key: MD= mandible, Hd=humeral distal, Td=tibia distal, Rp=radius proximal, MTp=metatarsal proximal, SC=scapula,
 Pe=pelvis, MCp=metacarpal proximal, MCd=metacarpal distal, Rd=radius distal, MTd=metatarsal distal, Fp=femur
 proximal, A=astragalus, C=calcaneus, Tp=tibia proximal, Fd=femur distal, PH=phalanx, Hp=Humerus proximal).



SUPPL. CHART 10.7. Anatomical representation for pig by type of context in LM III deposits (% MinAU).
(key: MD= mandible, Hd=humeral distal, Td=tibia distal, Rp=radius proximal, MTp=metatarsal proximal, SC=scapula, Pe=pelvis, MCp=metacarpal proximal, MCd=metacarpal distal, Rd=radius distal, MTd=metatarsal distal, Fp=femur proximal, A=astragalus, C=calcaneus, Tp=tibia proximal, Fd=femur distal, PH=phalanx, Hp=Humerus proximal).



SUPPL. CHART 10.8. Anatomical representation for sheep, goat and sheep/goat per type of context in LM III deposits (% MinAU).
 (key: MD= mandible, Hd=humeral distal, Td=tibia distal, Rp=radius proximal, MTp=metatarsal proximal, SC=scapula, Pe=pelvis, MCp=metacarpal proximal, MCd=metacarpal distal, Rd=radius distal, MTd=metatarsal distal, Fp=femur proximal, A=astragalus, C=calcaneus, Tp=tibia proximal, Fd=femur distal, PH=phalanx, Hp=Humerus proximal).



SUPPL. CHART 10.9. Cumulative age curves based on eruption and wear of mandibular cheek teeth of sheep, goat and sheep/goat (MinAU) from LM III deposits.

Chapter 11

Firewood use at Palaikastro: a charcoal analysis

by L. Picornell-Gelabert

See pp. 287–95 in the printed Volume.

SUPPLEMENTARY MATERIAL

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SUPPL. TABLE 11.6	Percentage occurrence of each taxon, excluding indeterminable and cf.	S33

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SUPPL. TABLE 11.1. Number of charcoal fragments recovered from flotation (fine flots and heavy residue sorting) and hand-picked during the excavation.

<i>Sampling technique</i>	<i>n</i>	<i>%</i>
Flotation fine flots	4138	59.79
Flotation heavy residue	280	4.04
Hand-picked	2503	36.16
Total	6921	100

SUPPL. TABLE 11.2. Wood anatomy alterations and occurrence of indeterminable and cf. fragments among the total assemblage analysed.

<i>Alterations/Indeterminable</i>	<i>n</i>	<i>%</i>
Radial Cracks	1562	22.57
Vitrification	1465	21.17
Fragments with vitrification and radial cracks	722	10.43
Anatomical nut	869	12.56
Total fragments with alterations	3896	56.29
Indeterminable angiosperm	948	13.70
Indeterminable conifer	50	0.72
Fragments with 'cf.' identification	575	8.31
Total indeterminable fragments	1573	22.73

SUPPL. TABLE 11.3. Occurrence of tension wood among the conifers identified among the total assemblage.

<i>Tension wood in conifers</i>	<i>n</i>	<i>%</i>	<i>Total per taxa</i>
Conif indet	10	20.00	50
<i>Juniperus</i>	3	33.33	9
<i>Pinus</i> sp.	54	23.28	232
<i>Pinus</i> t. <i>halapensis</i>	224	39.37	569
<i>Pinus</i> t. <i>pinea</i>	44	69.84	63
Total tension wood	335	36.29	923

SUPPL. TABLE 11.4. Number of charcoal fragments studied for each kind of charcoal assemblages.

<i>Type of assemblage</i>	<i>Outside the buildings</i>	<i>Inside the buildings</i>	<i>Mixed and topsoils</i>	<i>Total</i>	
				<i>n</i>	<i>%</i>
Concentrated charcoal fragments	539	74		613	8.86
Dispersed charcoal fragments	2516	3730	50	6296	90.97
Fragments from burnt wooden objects	12			12	0.17
Total	3067	3804	50	6921	100

SUPPL. TABLE 11.5. Taxonomic identifications of charcoal fragments from PALAP excavated areas in Palaikastro.

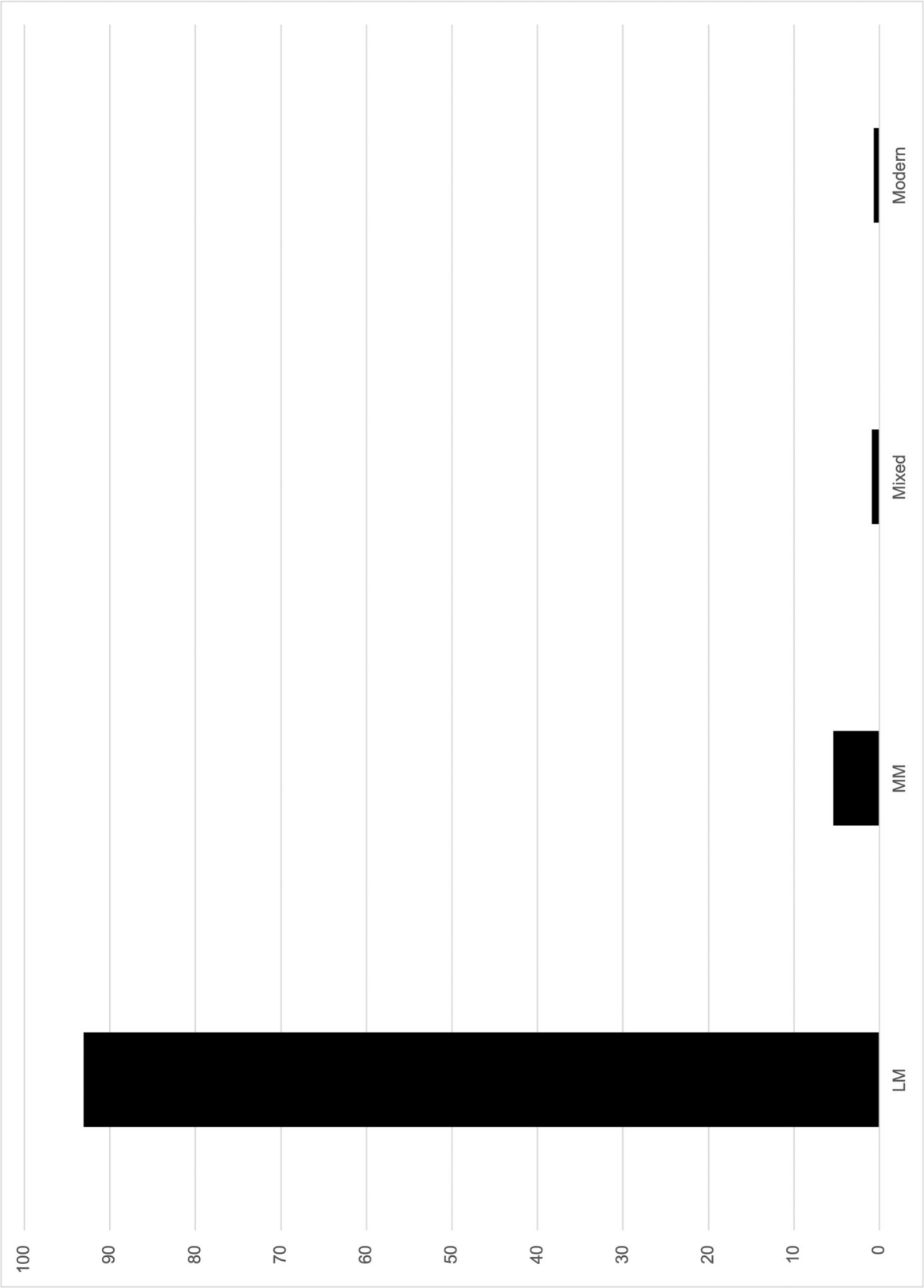
<i>Taxa</i>	<i>Latin name</i>	<i>Common English name</i>	<i>LM</i>			<i>MM</i>	<i>Mixed</i>	<i>Modern</i>	<i>TOTAL</i>
			<i>Concentrated</i>	<i>Dispersed</i>	<i>Object beam</i>				
	Indeterminable angiosperm	Indeterminable angiosperm	83	810	5	26	8	16	948
	<i>Arbutus</i> sp.	Strawberry tree		6		1			7
	cf. <i>Cistus</i> sp.	cf. Rockrose genus		1					1
	cf. <i>Erica</i>	cf. Heathers	1	9					10
	cf. Fabaceae	cf. Legume family		12		1			13
	cf. <i>Ficus</i>	cf. Fig tree		1					1
	cf. <i>Olea europaea</i>	cf. Olive tree		327		15	2	2	346
	cf. <i>Pistacia</i>	cf. Mastic or lentisk	73	103	7	1		1	185
	cf. <i>Prunus</i>	cf. Prunus genus (almond, etc.)	2	8				4	14
	Cf. <i>Quercus</i> sp.	cf. Oak genus		4					4
	Cistaceae	Rockrose family		63		1	1		65
	Indeterminable gymnosperm	Indeterminable gymnosperm	1	43		5	1		50
	<i>Erica</i> sp.	Heathers	2	166		7	10		185
	Fabaceae	Legume family	1	80		3			84
	<i>Ficus carica</i>	Fig tree		36		1			37
	<i>Fraxinus</i> sp.	Ash genus		6					6
	Indeterminable	Indeterminable		1					1
	<i>Juniperus</i> sp.	Juniper genus		9					9
	Lamiaceae	Lamiaceae family (rosemary, thyme, etc.)		40					40
	Monocotyledonous	Monocotyledonous		1					1
	<i>Olea europaea</i>	Olive tree	32	2640		121	27	16	2836

SUPPL. TABLE 11.5. Taxonomic identifications of charcoal fragments from PALAP excavated areas in Palaikastro. *Cont'd.*

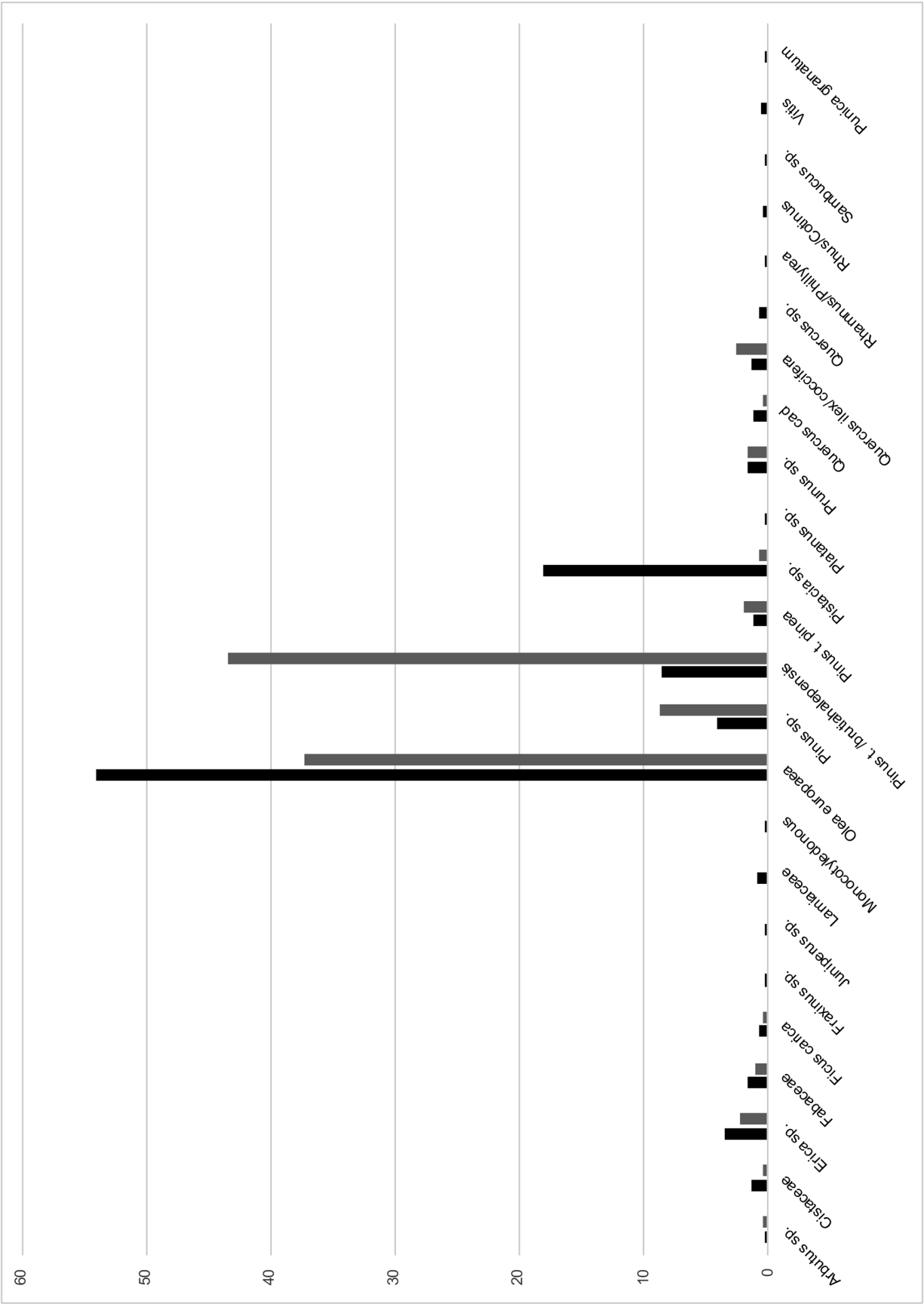
Taxa		Common English name	LM				MM Dispersed	Mixed Dispersed	Modern Dispersed	TOTAL
Latin name			Concentrated	Dispersed	Object beam	Total				
<i>Pinus</i> sp.		Pine (indeterminate species)	11	189		200	28	3	1	232
<i>Pinus t. brutia/halepensis</i>		Turkish/Aleppo pine type	20	404		424	141	4		569
<i>Pinus t. pinea</i>		Stone pine type	2	54		56	6	1		63
<i>Pistacia</i> sp.		Mastic/Lentisk	379	511		890	2	3	6	901
<i>Platanus</i> sp.		Oriental plane		3		3				3
<i>Prunus</i> sp.		Prunus genus (almond, etc.)	2	81		83	5			88
<i>Quercus</i> cad		Oak (deciduous)		57		57	1			58
<i>Quercus ilex/coccifera</i>		Holm/kermes oak	4	60		64	8			72
<i>Quercus</i> sp.		Oak (indeterminable species)		34		34		1		35
<i>Rhamnus/Phillyrea</i>		Buckthorn (various possible species)		10		10				10
<i>Rhus/Cotinus</i>		Sumac/Smoketree		18		18				18
<i>Sambucus</i> sp.		Elder		3		3				3
<i>Vitis</i>		Grape vine		23		23				23
cf. <i>Punica</i>		cf. Pomegranate		2		2				2
<i>Punica granatum</i>		Pomegranate		1		1				1
TOTAL			613	5816	12	6441	373	61	46	6921

SUPPL. TABLE 11.6. Percentage occurrence of each taxon, excluding indeterminable and cf.

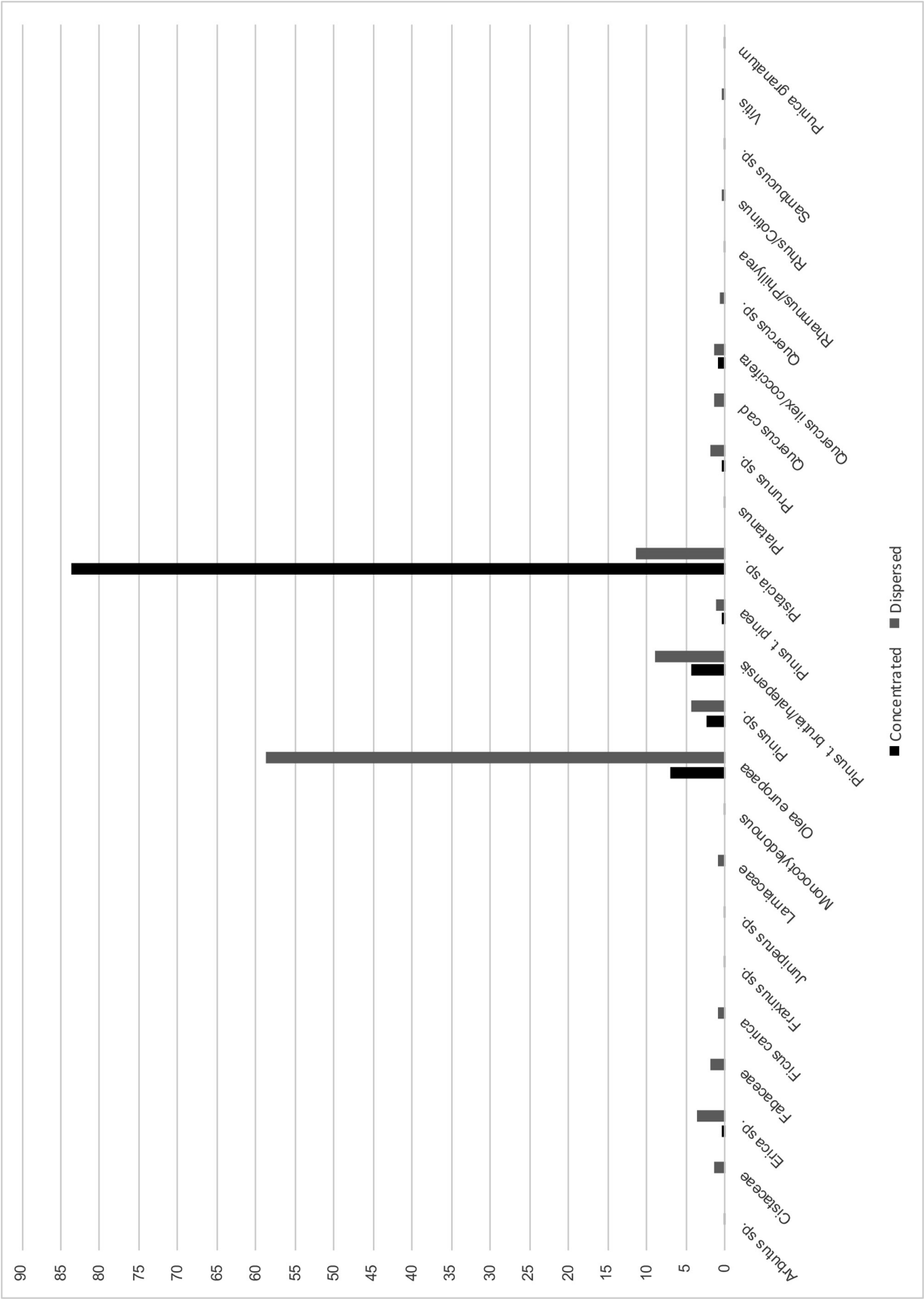
<i>Taxa</i>	<i>LM</i>						<i>MM</i>	
	<i>Concentrated</i>		<i>Dispersed</i>		<i>Total</i>		<i>Dispersed</i>	
	n	%	n	%	n	%	n	%
<i>Arbutus</i> sp.			6	0.13	6	0.12	1	0.31
Cistaceae			63	1.40	63	1.27	1	0.31
<i>Erica</i> sp.	2	0.44	166	3.69	168	3.40	7	2.15
Fabaceae	1		80	1.78	81	1.64	3	0.92
<i>Ficus carica</i>			36	0.80	36	0.73	1	0.31
<i>Fraxinus</i> sp.			6	0.13	6	0.12		
<i>Juniperus</i> sp.			9	0.20	9	0.18		
Lamiaceae			40	0.89	40	0.81		
Monocotyledonous			1	0.02	1	0.02		
<i>Olea europaea</i>	32	7.06	2640	58.73	2672	54.00	121	37.23
<i>Pinus</i> sp.	11	2.43	189	4.20	200	4.04	28	8.62
<i>Pinus</i> t. <i>brutia/halepensis</i>	20	4.42	404	8.99	424	8.57	141	43.38
<i>Pinus</i> t. <i>pineae</i>	2	0.44	54	1.20	56	1.13	6	1.85
<i>Pistacia</i> sp.	379	83.66	511	11.37	890	17.99	2	0.62
<i>Platanus</i> sp.			3	0.07	3	0.06		
<i>Prunus</i> sp.	2	0.44	81	1.80	83	1.68	5	1.54
<i>Quercus</i> cad			57	1.27	57	1.15	1	0.31
<i>Quercus ilex/coccifera</i>	4	0.88	60	1.33	64	1.29	8	2.46
<i>Quercus</i> sp.			34	0.76	34	0.69		
<i>Rhamnus/Phillyrea</i>			10	0.22	10	0.20		
<i>Rhus/Cotinus</i>			18	0.40	18	0.36		
<i>Sambucus</i> sp.			3	0.07	3	0.06		
<i>Vitis</i>			23	0.51	23	0.46		
<i>Punica granatum</i>			1	0.02	1	0.02		
TOTAL	453	100	4495	100	4948	100	325	100



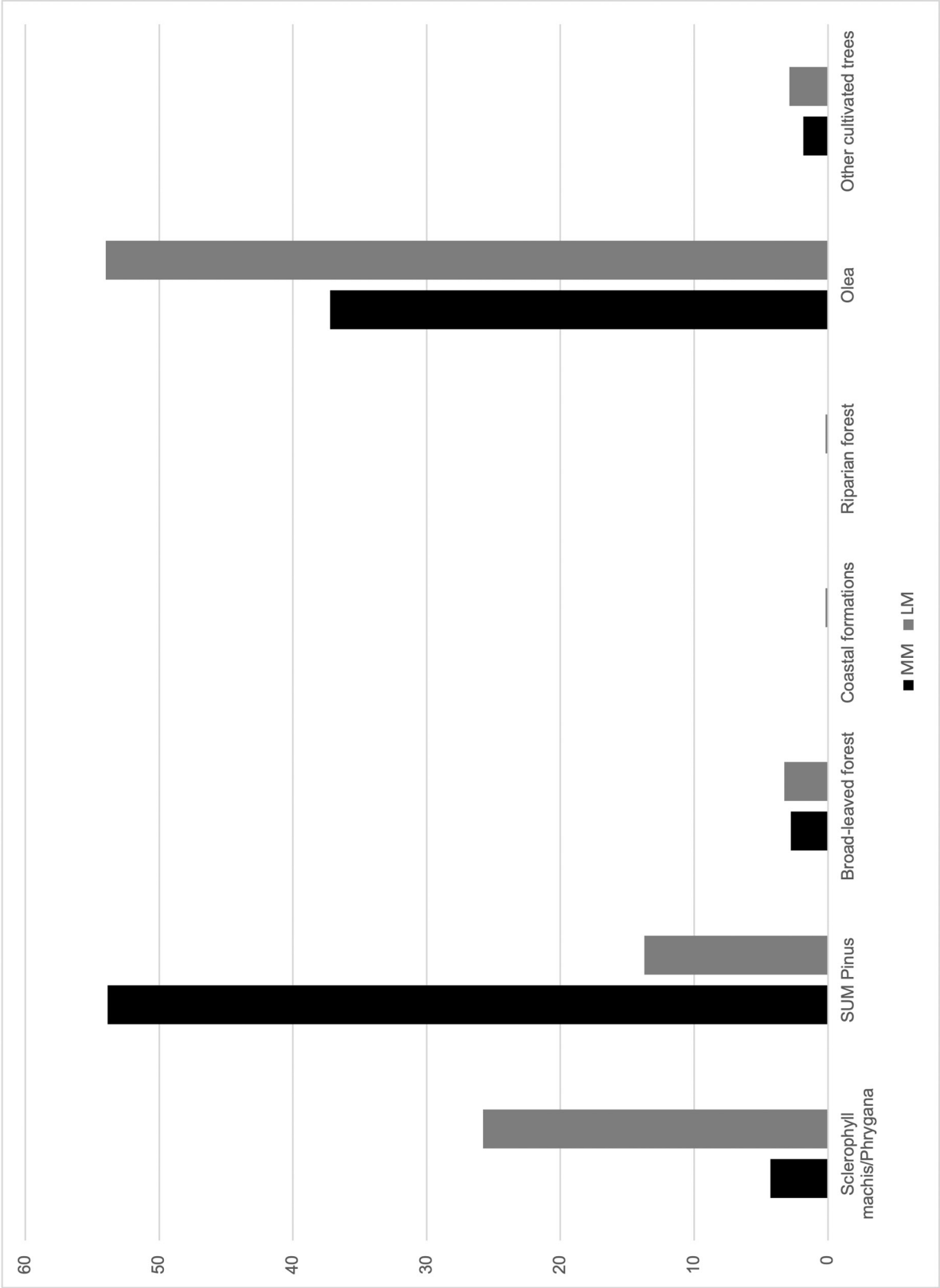
SUPPL. CHART 11.1.1. Percentage of charcoal fragments studied for the different occupation phases documented.



SUPPL. CHART 11.2. Percentage of every taxon in dispersed charcoal assemblages from MM (grey) and LM (black) contexts.



SUPPL. CHART 11.3. Percentage of every taxon for LM concentrated and dispersed charcoal assemblages.



SUPPL. CHART 11.4. Percentage of every taxon/plant community for MM (black) and LM (grey) dispersed charcoal assemblages.

Chapter 12

The archaeomalacological remains

by R. Veropoulidou

See pp. 297–323 in the printed Volume, with FIG. 12.1 and PLATE 26 *a–d*.

SUPPLEMENTARY MATERIAL

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SUPPL. TABLE 12.1. Summary of units by period and context that received full archaeomalacological analysis. Void of shells and not studied units are also noted.

<i>Units</i>	<i>Studied</i>		<i>Not studied</i>		<i>No shells</i>		<i>TOTAL</i>
<i>Contexts</i>	<i>n</i>	<i>%</i>	<i>n</i>	<i>%</i>	<i>n</i>	<i>%</i>	
AM1	177	57.5	39	12.7	92	29.9	308
AP1	131	62.4	18	8.6	61	29.0	210
MP1	52	46.0	35	31.0	26	23.0	113
Deposits	37	69.8	6	11.3	10	18.9	53
No context	21	21.2	41	41.4	37	37.4	99
<i>TOTAL</i>	418	53.4	139	17.8	226	28.9	783

SUPPL. TABLE 12.2. Summary of Heavy Residue samples (HR) by building that received full archaeomalacological analysis. Void of shells and not studied HR samples are also noted

<i>Buildings</i>	<i>Studied</i>		<i>Not studied</i>		<i>No shells</i>		<i>TOTAL</i>
<i>HR</i>	<i>n</i>	<i>%</i>	<i>n</i>	<i>%</i>	<i>n</i>	<i>%</i>	
AM1	39	26.7	101	69.2	6	4.1	146
AP1	56	48.3	58	50.0	2	1.7	116
MP1	16	29.6	30	55.6	8	14.8	54
<i>TOTAL</i>	111	35.1	189	59.8	16	5.1	316

SUPPL. TABLE 12.3. List of species found at PALAP excavations, including quantities (NISP, MNI, NI, NF, Used, Worked, BW: beach-worm), average wear (Wear, 1: low, 2: medium, 3: high) and common English names. The habitat column indicates where species live. Marine: the first character refers to depth (S: shallow, D: deep, A: both) and the second to substrate (H: hard, S: soft, A: both, P: plants). Land snails: the first character refers to where the snail lives (U: up, B: below surface) and the second to environment (R: rocks, S: sands, dunes, P: plants, Sr: shrublands, DrySh: dry shrublands, Gras: grasslands, Cul: cultivations, Gar: gardens, TR: terra rosa).

<i>Species</i>	<i>Ecology</i>	<i>NISP</i>	<i>NISP%</i>	<i>MNI</i>	<i>MNI%</i>	<i>NI</i>	<i>NF</i>	<i>Used</i>	<i>Worked</i>	<i>BW</i>	<i>Wear</i>	<i>English name</i>
<i>Bitium reticulatum</i>	S/S-P	3	0+			1	1			3	3	Needle whelk
<i>Bolinus brandaris</i>	S/S	1	0+	1	0+						3	Purple dye murex
<i>Bolma (Astraea) rugosa</i>	D/H-P	2	0+	2	0+						2	Rough turbo
<i>Cerithium lividulum</i>	S/A	18	0.1	4	0.1	10	5			10	2-5	(cerith)
<i>Cerithium protractum</i>	S/A	1	0+	1	0+	1		1			3	(cerith)
<i>Cerithium rupestre</i>	S/A	14	0.1	7	0.1	12	1			7	2-3	(cerith)
<i>Cerithium</i> sp.		3	0+	1	0+	2				2	2-3	(cerith)
<i>Cerithium vulgatum</i>	S/S-P	23	0.1	2	0+	11	3	1	1	21	2-7	Common cerith
<i>Charonia variegata</i>	A/H	112	0.4	10	0.1	1	86	2	1	74	2-4	Triton, trumpet shell
<i>Columbella rustica</i>	S/H-P	22	0.1	3	0+	12	4		1	19	2-4	Rustic dove shell
<i>Conus ventricosus</i>	S/H-P	86	0.3	15	0.2	70	6		6	71	2-3	Mediterranean cone
<i>Euthria cornea</i>	S/S	36	0.1	15	0.2	19	10		1	17	2-1	Horn whelk
<i>Galeodea echinophora</i>	D/S	14	0.1	1	0+	4	9			5	2-4	Helmet shell
<i>Gibbula</i> sp. cf. <i>albida</i>	S/H	5	0+			3	1			4	2-6	(top-shell)
<i>Haliotis tuberculata</i>	S/H	6	0+	2	0+	1	3			1	2-2	Mediterranean orner
<i>Hexaplex trunculus</i>	S/S	25816	93-9	6781	89.8	45	18959	27	2	135	2-7	Banded dye-murex
<i>Luria lurida</i>	A/A	32	0.1	8	0.1	15	3		1	23	2-3	(lurid) cowrie
<i>Mangelia</i> sp.	S/S	2	0+			2				2	3	
<i>Mitra</i> sp. cf. <i>zonata</i>	A/S	2	0+	1	0+	2				1	2	Zoned miter
<i>Monoplex parthenopeus</i>	A/S	1	0+							1	2	Giant triton
<i>Notocochlis dilleyinii</i>	D/S	1	0+			1				1	1	Moon shell?
<i>Patella caerulea</i>	S/H	168	0.6	94	1.2	85	65	45		13	2-3	Mediterranean limpet
<i>Patella lusitanica (rustica)</i>	S/H	297	1.1	219	2.9	192	64	152		18	2-2	Lusitanian limpet
<i>Patella</i> sp.		3	0+	1	0+		2			1	2-7	(limpet)
<i>Patella uhyssiponensis</i>	S/H	65	0.2	54	0.7	43	10	20		1	2-1	Rough limpet

SUPPL. TABLE 12.3. List of species found at PALAP excavations. *Cont'd.*

<i>Species</i>	<i>Ecology</i>	<i>NISP</i>	<i>NISP%</i>	<i>MNI</i>	<i>MNI%</i>	<i>NI</i>	<i>NF</i>	<i>Used</i>	<i>Worked</i>	<i>BW</i>	<i>Wear</i>	<i>English name</i>
<i>Phorcus turbinatus</i>	S/H	437	1.6	285	3.8	226	147	157	1	6	2.1	Top-shell
<i>Pisania striata</i>	S/H	11	0+	9	0.1	9	1			2	2.2	Spotted pisanina
<i>Rissoa</i> sp.		11	0+	1	0+	6	1			10	3	
<i>Rissoa</i> sp. cf. <i>ventricosa</i>	S/P	1	0+			1				1	3	
<i>Semicassis undulata</i>	D/S	11	0+	1	0+		10			2	2.5	Mediterranean bonnet
<i>Stamonita haemostoma</i>	S/S	1	0+				1				2	Red-mouthed rock shell
<i>Tarantinaea lignaria</i>	S/H	1	0+							1	3	Tarentine spindle snail
<i>Tonna galea</i>	D/S-P	13	0+				13			3	2.5	Tun shell
<i>Tricolia pullus</i>	S/P	5	0+			3	2			5	2.8	Pheasant shell
<i>Tricolia</i> sp. cf. <i>speciosa</i>	S/P	1	0+	1	0+	1					3	
<i>Tritia gibbosula</i>	S/P	1	0+			1				1	2	Swollen nassa
<i>Tritia mutabilis</i>	S/P	1	0+	1	0+	1					2	Mutable nassa
<i>Tritia reticulata</i>	S/P	2	0+	1	0+	2				1	2	Tarentine spindle snail
<i>Truncatella</i> sp. cf. <i>subcylindrica</i>	S/P	4	0+	2	0+	4				2	2.75	Looping snail
<i>Vermetus</i> sp.	S/H	21	0.1	19	0.3		2				2	
Undetermined gastropod	S/H	2	0+				2			2	3	
GASTROPODS (n=37)		27256	99.2	7542	99.8	786	19411	405	14	466	2.4	
<i>Acanthocardia tuberculata</i>	S/S	32	0.1	2	0+	7	19		1	24	2.55	Rough cockle
<i>Arca noae</i>	S/A	31	0.1	3	0+	3	22	1		6	2.6	Noah's ark shell
<i>Arca tetragona</i>	S/H	1	0.0			1				1	2	Tetragonal ark
<i>Barbatia barbata</i>	S/A	8	0+	1	0+	5	2			6	2.1	Bearded ark
<i>Cardites antiquatus</i>	S/S	9	0+			9			1	9	2.8	
<i>Cerastoderma glaucum</i>	S/S	33	0.1			8	24			25	2.5	Lagoon cockle
<i>Chamelea gallina gallina</i>	S/S	5	0+			3	2			5	2	Stripped venus
<i>Ctena decussata</i>	S/S-P	1	0+			1				1	2	
<i>Dosinia exoleta</i>	S/S	1	0+			1				1	2	Rayed dosinia
<i>Glycymeris</i> sp.	S/S	32	0.1	1	0+	8	18		2	26	2.15	Dog cockle
<i>Laevicardium oblongum</i>	S/S	1	0+				1			1	3	Oblong cockle

SUPPL. TABLE 12.3. List of species found at PALAP excavations. *Cont'd.*

<i>Species</i>	<i>Ecology</i>	<i>NISP</i>	<i>NISP%</i>	<i>MNI</i>	<i>MNI%</i>	<i>NI</i>	<i>NF</i>	<i>Used</i>	<i>Worked</i>	<i>BW</i>	<i>Wear</i>	<i>English name</i>
<i>Lima lima</i>	S/H	1	0+							1	3	Spiny lima
<i>Macra stultorum</i>	S/S	4	0+				4			1	3	Rayed trough shell
<i>Mytilus</i> sp.	S/H	2	0+				2				3	Mediterranean mussel
<i>Ostrea edulis</i>	S/H	1	0+				1				3	Edible/common oyster
<i>Perna nobilis</i>	S/S	37	0.1	1	0+		35			1	2.4	Common pen shell
<i>Polititapes aureus</i>	S/S	1	0+				1			1	3	Golden carpet clam
<i>Spondylus gaederopus</i>	D/H	12	0+			4	4			12	2.3	Thorny oyster
<i>Venus verrucosa</i>	S/S-P	3	0+				3			2	2.25	Warty venus
BIVALVES (n=19)		215	0.8	8	0.1	50	138	1	4	123	2.5	
<i>Cancer pagurus</i>	S/H	3	0+	3	0+			1			2	Edible crab
<i>Paracentrotus lividus</i>	S/S-P	11	0+	1	0+		10				2.6	Purple sea urchin
Serpulidae	S/P	2	0+							2	2	Serpulid tubeworm
MARINE total (n=59)		27487	100.0	7554	100.0	836	19559	406	18	591	2.4	
<i>Albinaria</i> sp. cf. <i>ariadne</i>	U/R	55	0.8	28	0.9	8	26				2.5	
<i>Cecilioides</i> sp.	B/R	48	0.7	43	1.4	23	5				2.1	
<i>Cermeuella</i> sp. cf. <i>virgata</i>	U/S-P	13	0.2	12	0.4	10	1				2	
<i>Cochlicella</i> sp. cf. <i>acuta</i>	U/S	1	0+	1	0+						2	
Eniidae		65	1.0	54	1.7	25	9				1.4	
<i>Eobania vermiculata</i>	U-B/DryP	415	6.4	224	7.1	101	185	6			1.3	
<i>Helix aperta</i>	U-B/Sr-Gar	526	8.1	311	9.9	204	208				1.4	Garden snail
<i>Helix aspersa</i>	U/S-Sr	7	0.1	3	0.1	2	4				1	
<i>Helix cincta</i>	B/Sr-R	58	0.9	24	0.8	11	34				1.7	
<i>Helix</i> sp.		470	7.3	143	4.5	51	327				1.2	
<i>Mastus</i> sp. cf. <i>cretensis</i>	U/Sr	8	0.1	6	0.2	2	2				2.5	
<i>Metafulvicola</i> sp. cf. <i>pellita</i>	U/Lim	1057	16.3	802	25.5	601	255	2			1.4	
<i>Monacha</i> sp.	U/DrySr	26	0.4	22	0.7	15	3				1.8	
<i>Oxychilus</i> sp.	U/R-Cul	37	0.6	33	1.0	28	4				1.3	
<i>Pleurodiscus</i> sp.	B/TR	13	0.2	12	0.4	9	1				1.7	

SUPPL. TABLE 12.3. List of species found at PALAP excavations. *Cont'd.*

<i>Species</i>	<i>Ecology</i>	<i>NISP</i>	<i>NISP</i> _%	<i>MNI</i>	<i>MNI</i> _%	<i>NI</i>	<i>NF</i>	<i>Used</i>	<i>Worked</i>	<i>BW</i>	<i>Wear</i>	<i>English name</i>
<i>Pseudoxerophila</i> sp.	U/Sr	2217	34.2	383	12.2	213	1832	2			1.6	
<i>Rumina</i> sp. cf. <i>saharica</i>	U/Cul	82	1.3	63	2.0	41	12				1.8	
<i>Theba pisana</i>	U-B/S-P	28	0.4	25	0.8	22		2			1.6	
<i>Truncatellina</i> sp.	U/S-R	1	0+			1					3	
<i>Xerocrassa cretica</i>	U/DrySr	1226	18.9	915	29.1	726	305				1.8	
<i>Xerolenta</i> sp. cf. <i>obvia</i>	U/DrySr-S	85	1.3	28	0.9	14	57				1.7	
<i>Zebrina</i> sp. cf. <i>detrита</i>	U-B/R-Gras	18	0.3	13	0.4	3	5				1.85	
<i>Undetermined snail</i>		19	0.3				19				2	
LAND SNAILS (n=20)		6475	100.0	3145	100.0	2110	3294	12			1.76	
GRAND TOTAL		33962		10699		2946	22853	418	18	591		

SUPPL. TABLE 12.4. List of species (NISP, MNI) in the EM deposit.

<i>Species</i>	<i>NISP</i>	<i>MNI</i>
<i>H. trunculus</i>	1	1
<i>H. aperta</i>	3	3
<i>H. cincta</i>	7	4
<i>Metafruticicola</i> sp.	25	23
<i>Pseudoxerophila</i> sp.	2	2

SUPPL. TABLE 12.5. Temporal distribution of marine and land snail remains: diversity, NISP and MNI (absolute number, density, frequencies).

<i>Species</i>	<i>Date</i>	<i>Diversity</i>	<i>NISP</i>				<i>MNI</i>			
			<i>n</i>	%	<i>m</i> ³	<i>m</i> ³ %	<i>n</i>	%	<i>m</i> ³	<i>m</i> ³ %
Marine	EM	1	1	0.0	0.7	0.1	1	0.0	0.7	0.5
	MM	19	1970	7.2	306.3	63.4	524	6.9	81.5	59.5
	LM IA	35	799	2.9	30.9	6.4	327	4.3	12.7	9.2
	LM IB	36	481	1.7	16.8	3.5	114	1.5	4.0	2.9
	LM II	6	30	0.1	n/a		3	0.0	n/a	
	LM III	52	23626	86.0	11.1	2.3	6377	84.3	3.0	2.2
	MM/LM I	11	71	0.3	56.7	11.7	11	0.1	8.8	6.4
	LM IA mixed	6	25	0.1	5.9	1.2	13	0.2	3.1	2.2
	LM IB mixed	10	25	0.1	14.6	3.0	13	0.2	7.6	5.5
	LM I/III	20	161	0.6	14.2	2.9	62	0.8	5.5	4.0
	LM III mixed	6	18	0.1	1.3	0.3	10	0.1	0.7	0.5
	Mixed	14	225	0.8	16.6	3.4	82	1.1	6.0	4.4
	Unclear	12	55	0.2	7.8	1.6	24	0.3	3.4	2.5
	Marine total	59	27487	100.0	482.9	100.0	7561	100.0	136.9	100.0
Land snails	EM	4	37	0.6	26.7	8.4	32	1.0	23.1	12.5
	MM	13	493	7.6	76.6	24.1	283	9.0	44.0	23.8
	LM IA	18	837	12.9	32.4	10.2	271	8.6	10.4	5.6
	LM IB	15	953	14.7	33.4	10.5	383	12.2	13.4	7.2
	LM II	4	58	0.9	n/a		12	0.4	n/a	
	LM III	19	3469	53.6	1.6	0.5	1786	56.7	0.8	0.5
	MM/LM I	10	78	1.2	62.3	19.6	42	1.3	33.5	18.1
	LM I?	1	1	0.0	20.0	6.3	1	0.0	20.0	10.8
	LM IA mixed	4	21	0.3	4.9	1.6	19	0.6	4.5	2.4
	LM IB mixed	6	26	0.4	15.2	4.8	15	0.5	8.7	4.7
	LM I/III	12	189	2.9	16.7	5.3	101	3.2	8.9	4.8
	LM III mixed	9	127	2.0	9.0	2.8	92	2.9	6.5	3.5
	Mixed	6	103	1.6	7.6	2.4	70	2.2	5.2	2.8
	Unclear	7	83	1.3	11.7	3.7	43	1.4	6.1	3.3
	Land snails total	20	6475	100.0	318.2	100.0	3150	100.0	185.2	100.0

SUPPL. TABLE 12.6. List of species (NISP, MNI) in MM contexts and deposits.

Species	NISP												MNI															
	AMi	AMi-0.1	AMi-0.4	AMi-13.1	APi	APi-0.2	APi-4.1	MPi	MPi-10.1	MPi-9.3	Zone A2	Zone A3	Zone Pi	TOTAL	AMi	AMi-0.1	AMi-0.4	AMi-13.1	APi	APi-0.2	APi-4.1	MPi	MPi-10.1	Zone A2	Zone A3	Zone Pi	TOTAL	
A. tuberculata											1			1														
C. glaucum					1	1								1														
Glycymeris sp.								1		1				1														
M. stultorum												1		1														
B. brandaris					1	1								1					1	1								1
C. lividulum					1	1								1														
C. rupestre					1	1								1					1	1								1
C. rustica											1			1														
C. vulgatum	1		1											1														
Cerithium sp.					1	1								1														
Ch. variegata	2		2											2														
E. cornea					1	1								1														
Gibbula sp.					1	1								1														
H. trunculus	19	1	17	1	1832	1831	1	3	3	66	6	2	1928	10			9	1	450	449	1	2	2	43	3	1	509	3
P. caerulea					3	1	2			1				4					3	1	2							3
P. rustica					2	1	1							2					1	1	1							1
P. striata					1	1								1					1	1								1
Ph. turbinatus	1		1		5	5		4	4	5	4			19					2	2	1	1	2	3				8
Rissoa sp.					1	1								1														
T. pullus					1	1								1														
Albinaria sp. cf. ariadne					2	2								2					2	2								2
Cochlicella sp. cf. acuta					1	1								1					1	1								1
Eniidae											5	1		6										3	1			4
Helix aperta								2	2	4	15			21							2	2	2	10				14

SUPPL. TABLE 12.6. List of species (NISP, MNI) in MM contexts and deposits. *Cont'd.*

Species	NISP												MNI														
	AM _i	AM _i -0.1	AM _i -0.4	AM _i -13.1	AP _i	AP _i -0.2	AP _i -4.1	MP _i	MP _i -10.1	MP _i -9.3	Zone A2	Zone A3	Zone P _i	TOTAL	AM _i	AM _i -0.1	AM _i -0.4	AM _i -13.1	AP _i	AP _i -0.2	AP _i -4.1	MP _i	MP _i -10.1	Zone A2	Zone A3	Zone P _i	TOTAL
<i>Helix cincta</i>											8			8										2			2
<i>Helix</i> sp.											10		4	14												1	1
<i>Metafruticicola</i> sp. cf. <i>pellita</i>					4	4		8	8		31	207		250					2	2		5	5	19	154		180
<i>Monacha</i> sp.											1	1		2										1	1		2
<i>Oxychilus</i> sp.					3	3								3					3	3							3
<i>Pseudoxerophila</i> sp.					91	91		1	1		3			95					15	15		1	1	3			19
<i>Rumina</i> sp. cf. <i>saharica</i>												1		1											1		1
<i>Theba pisana</i>					1	1					1	2		4					1	1				1	2		4
<i>Xerocrassa cretica</i>					49	48	1	3	3		5	25		82					22	21	1	3	3	2	20		47
<i>Zebrina</i> sp. cf. <i>detrita</i>					4	4								4					3	3							3

SUPPL. TABLE 12.7. List of species (NISP, MNI) in MM/LM I contexts and deposits.

<i>Species</i>	<i>NISP</i>				<i>MNI</i>			
	AM1-0.4	AP1-0.2	Zone A3	TOTAL	AM1-0.4	AP1-0.2	Zone A3	TOTAL
<i>A. noae</i>		1		1		1		1
<i>C. glaucum</i>	2		1	3				
<i>C. ventricosus</i>		1		1				
<i>E. cornea</i>			1	1			1	1
<i>H. trunculus</i>		49	5	54		5	1	6
<i>P. caerulea</i>		1		1				
<i>P. lividus</i>		2		2		1		1
<i>P. rustica</i>		1		1				
<i>Ph. turbinatus</i>		3		3		1		1
<i>Rissoa</i> sp.		2		2		1		1
<i>T. galea</i>			2	2				
<i>Albinaria</i> sp.			1	1			1	1
Eniidae			1	1			1	1
<i>H. aperta</i>		6		6		4		4
<i>H. cincta</i>			5	5			2	2
<i>Helix</i> sp.		13		13		3		3
<i>Metafruticicola</i> sp.			13	13			10	10
<i>Pleurodiscus</i> sp.		2		2		2		2
<i>Pseudoxerophila</i> sp.		23	2	25		5	2	7
<i>Rumina</i> sp.		3		3		3		3
<i>X. cretica</i>		8		8		8		8
<i>Zebrina</i> sp.		1		1		1		1

SUPPL. TABLE 12.8a. List of species (NISP) in LM IA contexts and deposits.

Species	NISP																								Zone P1	TOTAL
	AP1	AP1-0.2	AP1-0.3	AP1-3a.1	AP1-3a.2	AP1-3c.1	AP1-4.3	AP1-4.4	AP1-5.1	AP1-5.2	AP1-6.1	MP1	MP1-0.2	MP1-1.1	MP1-10.2	MP1-2.1	MP1-3.1	MP1-3.2	MP1-4.1	MP1-4.2	MP1-5.1	MP1-6.1	MP1-8.1	MP1-9.2		
A. noae	1								1			1											1			2
A. tetragona												1		1												1
A. tuberculata	2			2																						2
B. barbata												2		1		1										2
C. antiquatus												1		1												1
C. decussata	1			1																						1
C. glaucum	1						1					3			1							2				4
Glycymeris sp.	1						1																			1
P. nobilis												1										1				1
Sp. gaederopus												1		1												1
V. verrucosa	1								1																	1
B. reticulatum												2						1		1						2
C. lividulum									3	1		4		1				1		1	1					8
C. rupestre	4	1							3			1									1					5
C. rustica	2						1		1			3									1	2				5
C. ventricosus	3								2	2	1	7		1		2		1		1		2				10
C. vulgatum	1								1			1		1												2
C. pagurus	1								1																	1
Ch. variegata	5	1	1						3			9		1				5		1		1	1	1	1	15
E. cornea	4		2						2			3		1								2				7
G. echinophora	1				1							1		1												2
Gibbula sp.	1								1			1				1										2
H. trunculus	271	35	48	24	2	1	21	3	115	20	2	218	2	61	6	27	9	29	7	24	13	38		2	3	492
L. lurida	1								1			2		1								1				3
Mangelia sp.	2								2																	2
P. caerulea	25	1	6	1		1	5	5	2	1	3	13	1	1		2		1		1						38

SUPPL. TABLE 12.8a. List of species (NISP) in LM IA contexts and deposits. *Cont'd.*

Species	NISP																									
	AP _i	AP _i -0.2	AP _i -0.3	AP _i -3a.1	AP _i -3a.2	AP _i -3c.1	AP _i -4.3	AP _i -4.4	AP _i -5.1	AP _i -5.2	AP _i -6.1	MP _i	MP _i -0.2	MP _i -1.1	MP _i -10.2	MP _i -2.1	MP _i -3.1	MP _i -3.2	MP _i -4.1	MP _i -4.2	MP _i -5.1	MP _i -6.1	MP _i -8.1	MP _i -9.2	Zone P _i	TOTAL
<i>P. lividus</i>	2								2																	2
<i>P. rustica</i>	13		3			1	3	3	3			13		1	1	1		1		3	6					26
<i>P. striata</i>	2								2																	2
<i>P. ulysipponensis</i>	18		11		1			4	1		1															18
<i>Ph. turbinatus</i>	17	4	1	1	2		1		5	1	2	117		1	2	6	1	4		2	95	5		1	1	135
<i>Rissoa</i> sp.	1	1										1						1								2
<i>T. galea</i>	1								1																	1
<i>T. pullus</i>												1										1				1
<i>T. subcylindrica</i>	1			1																						1
<i>Albinaria</i> sp.	1								1			13		1			6	1	3			2				14
<i>Cecilioides</i> sp.	4	1		2			1					6		1			2	2	2	1						10
<i>Ceruellea</i> sp.	1			1																						1
Eniidae												1		1												1
<i>E. vermiculata</i>	1			1								11									3			8		12
<i>H. aperta</i>	15	8	7									15		1		1						8			5	30
<i>H. cincta</i>												4			1									3		4
<i>Mastus</i> sp.												6							6							6
<i>Metafruticicola</i> sp.	15	15										7			2									5	1	23
<i>Monacha</i> sp.												4					4								1	5
<i>Oxychilus</i> sp.												1		1												1
<i>Pleurodiscus</i> sp.	1								1			1							1							2
<i>Pseudoxerophila</i> sp.	227	112		19					84	12		270		13		31		94		70	13	48		1		497
<i>Rumina</i> sp.	1	1										31	1				7		1	7	3			12		32
<i>Th. pisana</i>																									1	1
<i>X. cretica</i>	92	16	18	2	4	1	4	1	44	2		85	1	16	1	10	4	9	8	6	11	15	4			177
<i>Xerolenta</i> sp.												16							16							16
<i>Zebrina</i> sp.	3	3										2									1	1				5

SUPPL. TABLE 12.8b. List of species (MNI) in LM IA contexts and deposits. *Cont'd.*

Species	MNI																								
	AP ₁	AP ₁ -0.2	AP ₁ -0.3	AP ₁ -3a.1	AP ₁ -3a.2	AP ₁ -4.3	AP ₁ -5.1	AP ₁ -5.2	AP ₁ -6.1	MP ₁	MP ₁ -0.2	MP ₁ -1.1	MP ₁ -10.2	MP ₁ -2.1	MP ₁ -3.1	MP ₁ -3.2	MP ₁ -4.1	MP ₁ -4.2	MP ₁ -5.1	MP ₁ -6.1	MP ₁ -8.1	MP ₁ -9.2	Zone P ₁	TOTAL	
<i>P. rustica</i>	9		2			3	2				11			1		1		3	6						20
<i>P. striata</i>	2						2																		2
<i>P. uhyssiponensis</i>	14		9		1		1		1																14
<i>Ph. turbinatus</i>	7	3	1			1	1	1	1	92		1	1	5		1				80	4		1		99
<i>Rissoa</i> sp.																									
<i>T. galea</i>																									
<i>T. pullus</i>																									
<i>T. subcylindrica</i>	1			1																					1
<i>Albinaria</i> sp.	1						1			7		1				2	1	2			1				8
<i>Cecilioides</i> sp.	4	1		2		1				6		1				2		2	1						10
<i>Cernuella</i> sp.	1			1																					1
Eniidae																									
<i>E. vermiculata</i>										10										2			8		10
<i>H. aperta</i>	7	4	3							11											6		5		18
<i>H. cincta</i>										2													2		2
<i>Mastus</i> sp.										4							4								4
<i>Metafruticicola</i> sp.	4	4								6			1										5	1	10
<i>Monacha</i> sp.										3						3								1	4
<i>Oxychilus</i> sp.										1		1													1
<i>Pleurodiscus</i> sp.	1						1			1							1								2
<i>Pseudoxerophila</i> sp.	30	12					16	4		33		2		1		4		12	2	11		1			63
<i>Rumina</i> sp.	1	1								21						3		1	4	2			12		22
<i>Th. pisana</i>																							1	1	1
<i>X. cretica</i>	47	11	6	1	3	4	19	2		62		10	1	9	3	9	7	5	10	6	2				109
<i>Xerolenta</i> sp.										2							2								2
<i>Zebrina</i> sp.	3	3								2									1	1	1				4

SUPPL. TABLE 12.9a. List of species (NISP) in LM IB contexts and deposits.

Species	NISP																	APi	APi-3b.1	APi-6.2	APi-7.1	TOTAL
	AMi	AMi-0.11	AMi-0.5	AMi-1.1	AMi-10.1	AMi-11.1	AMi-12.1	AMi-13.1	AMi-13.2	AMi-14.1	AMi-2.1	AMi-3.1	AMi-3.2	AMi-4.1	AMi-5.1	AMi-6.1	AMi-7.1	AMi-8.1	AMi-9.1			
<i>A. noae</i>	4	1	3																			4
<i>A. tuberculata</i>	7		3	1			1	1								1				1		8
<i>B. barbata</i>	1															1						1
<i>C. antiquatus</i>	1					1																1
<i>C. glaucum</i>	6		2							1			2			1						6
<i>Ch. gallina</i>	1		1																			1
<i>Glycymeris</i> sp.	4		3													1						4
<i>M. stultorum</i>	2	2																				2
<i>Mytilus</i> sp.	1												1									1
<i>P. nobilis</i>	3	3																				3
<i>Sp. gaederopus</i>	2		2																			2
<i>V. verrucosa</i>	1									1												1
<i>B. reticulatum</i>	1						1															1
<i>C. lividulum</i>	2												1	1								2
<i>C. protractum</i>	1		1																			1
<i>C. rupestre</i>	2													1		1						2
<i>C. rustica</i>	4		3						1													4
<i>C. ventricosus</i>	6	1	3	1										1						2	2	8
<i>C. vulgatum</i>	3	1	1													1						3
<i>C. pagurus</i>	2			2																		2
<i>Ch. variegata</i>	31		5							24				1		1						31
<i>E. cornea</i>	5		2			1		1								1				3	2	8
<i>G. echinophora</i>	5		2			1	2															5
<i>Gibbula</i> sp.	1	1																				1
<i>H. trunculus</i>	256	27	84	10	5	2	9	27	8	29	2	2	11	17		3	6	5	9	28	4	284
<i>L. lurida</i>	7	2	3							1					1							7

SUPPL. TABLE 12.9a. List of species (NISF) in LM IB contexts and deposits. *Cont'd.*

[illegible]

SUPPL. TABLE 12.9b. List of species (MNI) in LM IB contexts and deposits.

Species	MNI																							TOTAL
	AM _i	AMi-0.10	AMi-0.11	AMi-0.5	AMi-1.1	AMi-10.1	AMi-11.1	AMi-12.1	AMi-13.1	AMi-13.2	AMi-14.1	AMi-2.1	AMi-3.2	AMi-4.1	AMi-5.1	AMi-6.1	AMi-7.1	AMi-8.1	AMi-9.1	AP _i	APi-3b.1	APi-6.2	APi-7.1	
<i>A. noae</i>	1																				1		1	
<i>A. tuberculata</i>								1																
<i>B. barbata</i>																								
<i>C. antiquatus</i>																								
<i>C. glaucum</i>																								
<i>Ch. gallina</i>																								
<i>Glycymeris sp.</i>																								
<i>M. stultorum</i>																								
<i>Mytilus sp.</i>																								
<i>P. nobilis</i>																								
<i>Sp. gaederopus</i>																								
<i>V. verrucosa</i>																								
<i>B. reticulatum</i>																								
<i>C. lividulum</i>																								
<i>C. protractum</i>	1			1																			1	
<i>C. rupestre</i>																								
<i>C. rustica</i>																								
<i>C. ventricosus</i>																								
<i>C. vulgatum</i>	1															1								1
<i>C. pagurus</i>	2				2																			2
<i>Ch. variegata</i>	1			1																				1
<i>E. cornea</i>	2			1				1													1	1		3
<i>G. echinophora</i>																								
<i>Gibbula sp.</i>																								
<i>H. trunculus</i>	73		6	37	5	2	2	1	4	2	2		2	5				2	4		5	2	3	
<i>I. lurida</i>	3		1								1				1									3

SUPPL. TABLE 12.gb. List of species (MNI) in LM IB contexts and deposits. *Cont'd.*

[illegible]

SUPPL. TABLE 12.10. List of species (NISP, MNI) in the LM II (?) unit.

<i>Species</i>	<i>NISP</i>	<i>MNI</i>
<i>C. glaucum</i>	1	
<i>C. lividulum</i>	1	
<i>C. rustica</i>	1	
<i>H. trunculus</i>	23	2
<i>P. caerulea</i>	2	
<i>Ph. turbinatus</i>	2	1
<i>Albinaria</i> sp.	2	
<i>Cecilioides</i> sp.	1	1
<i>Pseudoxerophila</i> sp.	49	5
<i>X. cretica</i>	6	6

SUPPL. TABLE 12.11a. List of species (NISP) in LM III contexts and deposits from Building AM1, Zone A1, Zone A4S-M1, Zone A6 and Zone P1.

Species	NISP																				TOTAL LM III		
	AMi	AMi-0.10	AMi-0.13	AMi-0.14	AMi-0.2	AMi-0.3	AMi-0.5	AMi-0.6	AMi-0.7	AMi-0.8	AMi-0.9	AMi-15.1	AMi-16.1	AMi-17.1	AMi-18.1	AMi-19.1	AMi-3.3	AMi-7.2	Zone A1	Zone A4S-Mi		Zone A6	Zone P1
A. noae	7		4					1							1			1					21
A. tuberculata	5						1			1	1					1		1		1		1	18
B. barbata	1														1								3
C. antiquatus	2		1															1					7
C. glaucum	6	1	1			1		1								1							13
Ch. gallina																							4
D. exoleta																							1
Glycymeris sp.	4		1													2		1					22
L. lima																							1
L. oblongum																							1
M. stultorum																							1
Mytilus sp.																							1
O. edulis																							1
P. nobilis	6										2	2			1				1				23
P. aureus	1		1																				1
Sp. gaederopus	2										1	1											8
V. verrucosa	1										1												1
B. rugosa																							2
C. lividulum																							6
C. rupestre	3		1										1		1								5
C. rustica	5		2							1	1				1								11
C. ventricosus	13		7					1		1	1	1			1		1		1				59
C. vulgatum	4		2												2								13

SUPPL. TABLE 12.11b. List of species (NISP) in LM III contexts and deposits from Building AP1.

Species	NISP																								TOTAL LM III
	AP1-0.1	AP1-0.3	AP1-0.4	AP1-0.5	AP1-0.6	AP1-0.7	AP1-0.8	AP1-0.9	AP1-1.2	AP1-1.3	AP1-2.1	AP1-3a.3	AP1-3a.4	AP1-3a.5	AP1-3a.6	AP1-3a.7	AP1-3b.3	AP1-3c.2	AP1-4.5	AP1-4.6	AP1-5.2	AP1-5.3	AP1-6.3	AP1-7.2	
A. noae	14		2		6	2	2							1								1			21
A. tuberculata	11		1		1		1					2		1	1	2			1			1			18
B. barbata	2				1		1																		3
C. antiquatus	5		3				1								1										7
C. glaucum	7			1										2	1							2	1		13
Ch. gallina	4		1				1			1					1										4
D. exoleta	1		1																						1
Glycymeris sp.	18		4	1		4	5	1	1	1		1							1						22
L. lima	1														1										1
L. oblongum	1																						1		1
M. stultorum	1													1											1
Mytilus sp.	1									1															1
O. edulis	1				1																				1
P. nobilis	17		1						4	3		1			4				1			3			23
P. aureus																									1
Sp. gaederopus	6		3				1									1				1					8
V. verrucosa																									1
B. rugosa	2				1													1							2
C. lividulum	6				1	1	1			1					2										6
C. rupestre	2		1		1																				5
C. rustica	6				1		1		1	1				1										1	11
C. ventricosus	45		15	2	6		3	1	2		2			1	1	3			3		4	2			59
C. vulgatum	9			1	1		3							1	2				1						13

[illegible]

SUPPL. TABLE 12.11b. List of species (NISP) in LM III contexts and deposits from Building AP1. *Cont'd.*

Species	NISP																								TOTAL LM III	
	AP ₁	AP ₁ -0.1	AP ₁ -0.3	AP ₁ -0.4	AP ₁ -0.5	AP ₁ -0.6	AP ₁ -0.7	AP ₁ -0.8	AP ₁ -0.9	AP ₁ -1.2	AP ₁ -1.3	AP ₁ -2.1	AP ₁ -3a.3	AP ₁ -3a.4	AP ₁ -3a.5	AP ₁ -3a.6	AP ₁ -3a.7	AP ₁ -3b.3	AP ₁ -3c.2	AP ₁ -4.5	AP ₁ -4.6	AP ₁ -5.2	AP ₁ -5.3	AP ₁ -6.3		AP ₁ -7.2
<i>T. ligniaria</i>	1																						1			AP ₁ -7.2
<i>T. mutabilis</i>	1					1																				AP ₁ -6.3
<i>T. pullus</i>	2										1					1										AP ₁ -5.3
<i>T. reticulata</i>	1				1																					AP ₁ -5.2
<i>Tricolia</i> sp.																										AP ₁ -4.6
<i>T. subcylindrica</i>	2					1		1																		AP ₁ -4.5
Undetermined gastropod	1						1																			AP ₁ -3c.2
<i>Vermetidae</i> sp.																										AP ₁ -3b.3
<i>Albinaria</i> sp.	11			4		2		1		1	2														1	AP ₁ -3a.7
<i>Cecilioides</i> sp.	20					1	1	9		1	1	1	1			4								2		AP ₁ -3a.6
<i>Cernuella</i> sp.	2																							2		AP ₁ -3a.5
Eniidae	31			5	8	1									6						11					AP ₁ -3a.4
<i>E. vermiculata</i>	231			32	55	3		28		1					15		16		5	64	7		2	1	2	AP ₁ -3a.3
<i>H. aperta</i>	201		5	50	10	43	7	5	9		3	5	1		24	8	6	6		18	6		1			AP ₁ -3a.2
<i>H. aspersa</i>																										AP ₁ -3a.1
<i>H. cincta</i>	17		4																							AP ₁ -3a.0
<i>Helix</i> sp.	367			57	103			15					4		118					67	3					AP ₁ -2.2
<i>Mastus</i> sp.																										AP ₁ -2.1
<i>Metafruticicola</i> sp.	231			61	24	29		12			15				61					23	6					AP ₁ -2.0
<i>Monacha</i> sp.	14										10	2	1						1							AP ₁ -1.9
<i>Oxychilus</i> sp.	13			6											6	1										AP ₁ -1.8
<i>Pleurodiscus</i> sp.	4		2																				2			AP ₁ -1.7

[illegible]

SUPPL. TABLE 12.11d. List of species (MNI) in LM III contexts and deposits from Building AP1. *Cont'd.*

Species	MNI																								TOTAL LM III		
	AP ₁	AP ₁ -0.1	AP ₁ -0.3	AP ₁ -0.4	AP ₁ -0.5	AP ₁ -0.6	AP ₁ -0.7	AP ₁ -0.8	AP ₁ -0.9	AP ₁ -1.2	AP ₁ -1.3	AP ₁ -2.1	AP ₁ -3a.3	AP ₁ -3a.4	AP ₁ -3a.5	AP ₁ -3a.6	AP ₁ -3a.7	AP ₁ -3b.3	AP ₁ -3c.2	AP ₁ -4.5	AP ₁ -4.6	AP ₁ -5.2	AP ₁ -5.3	AP ₁ -6.3		AP ₁ -7.2	
<i>C. rupestre</i>																										1	
<i>C. rustica</i>	1														1											3	
<i>C. ventricosus</i>	9			3				1		1					1						1		2			10	
<i>C. vulgatum</i>																											
<i>Cerithium</i> sp.																										1	
<i>Ch. variegata</i>	4			2	1										1											8	
<i>E. cornea</i>	5			2	1										1	1										7	
<i>Gibbula</i> sp.																											
<i>G. echinophora</i>																										1	
<i>H. trunculus</i>	521			54	43	222	5	28	2	2	6	2	2	2	41	15	8	1	1	1	64	14	3	5	2	1	5896
<i>H. tuberculata</i>	1							1																		2	
<i>L. lurida</i>	2			1	1	1																				2	
<i>M. parthenopeus</i>																											
<i>Mitra</i> sp.																										1	
<i>Natica</i> sp.																											
<i>P. caerulea</i>	34			5	1		1	4		1	2	1	1		3	14	1	2	2			1				44	
<i>P. lividus</i>																											
<i>P. rustica</i>	153			8	2	81	4	8	1	2	1	1	1		2	28	5				4	3	2	2	1	178	
<i>P. striata</i>	1																				1					3	

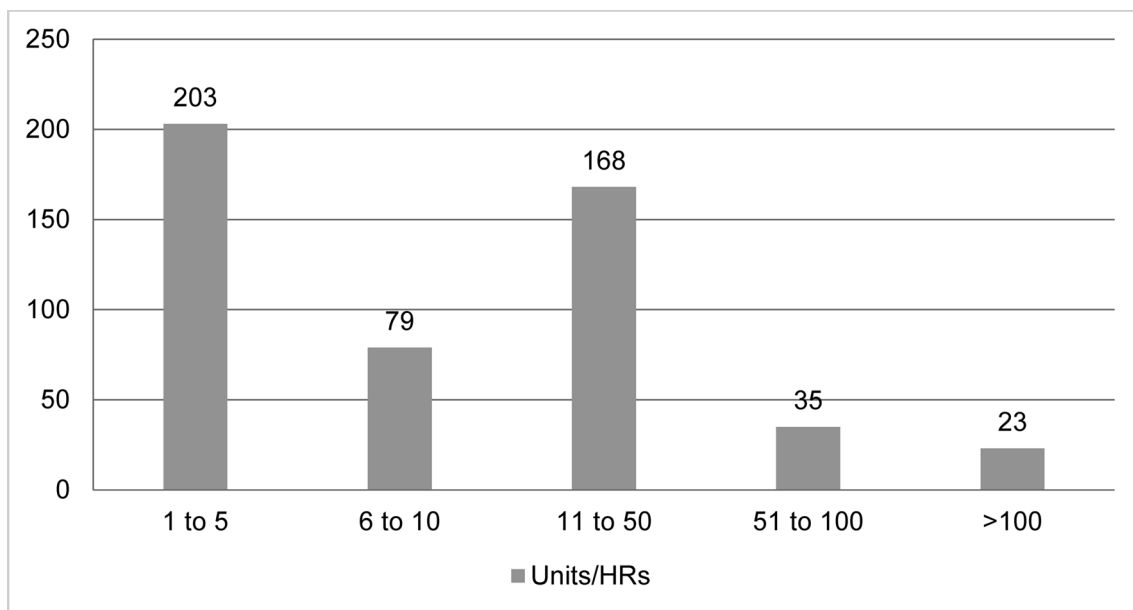
SUPPL. TABLE 12.11d. List of species (MNI) in LM III contexts and deposits from Building AP1. *Cont'd.*

Species	MNI																								TOTAL LM III	
	AP1	AP1-0.1	AP1-0.3	AP1-0.4	AP1-0.5	AP1-0.6	AP1-0.7	AP1-0.8	AP1-0.9	AP1-1.2	AP1-1.3	AP1-2.1	AP1-3a.3	AP1-3a.4	AP1-3a.5	AP1-3a.6	AP1-3a.7	AP1-3b.3	AP1-3c.2	AP1-4.5	AP1-4.6	AP1-5.2	AP1-5.3	AP1-6.3		AP1-7.2
<i>P. ulyssiponensis</i>	34			10		15									2	1				4	2					36
<i>Patella</i> sp.	1					1																				1
<i>Ph. turbinatus</i>	117	1	1	24	13	16	4	6		3	3	1	2		15	10	4			6	6	1	1		1	154
<i>Rissoa</i> sp.																										
<i>S. undulata</i>																										
Serpulidae																										
<i>T. galea</i>																										
<i>T. gibbosula</i>																										
<i>T. ligniaria</i>																										
<i>T. mutabilis</i>	1					1																				1
<i>T. pullus</i>																										
<i>T. reticulata</i>																										1
<i>Tricolia</i> sp.																										1
<i>T. subcylindrica</i>	1							1																		1
Undetermined gastropod																										
<i>Vermetidae</i> sp.																										18
<i>Albinaria</i> sp.	6			3		1				1	1													1		11
<i>Cecilioides</i> sp.	18					1	1	7		1	1		1				4						2			21
<i>Cernuella</i> sp.	2																						2			2

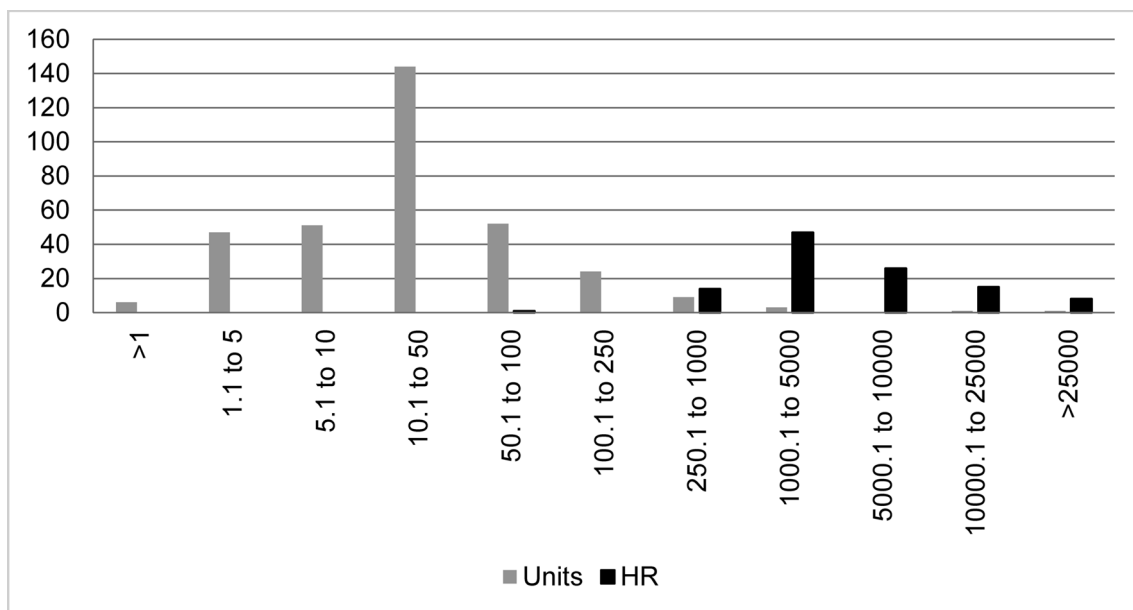
[illegible]

SUPPL. TABLE 12.12a. List of species (NISP) in LM I/III contexts and deposits.

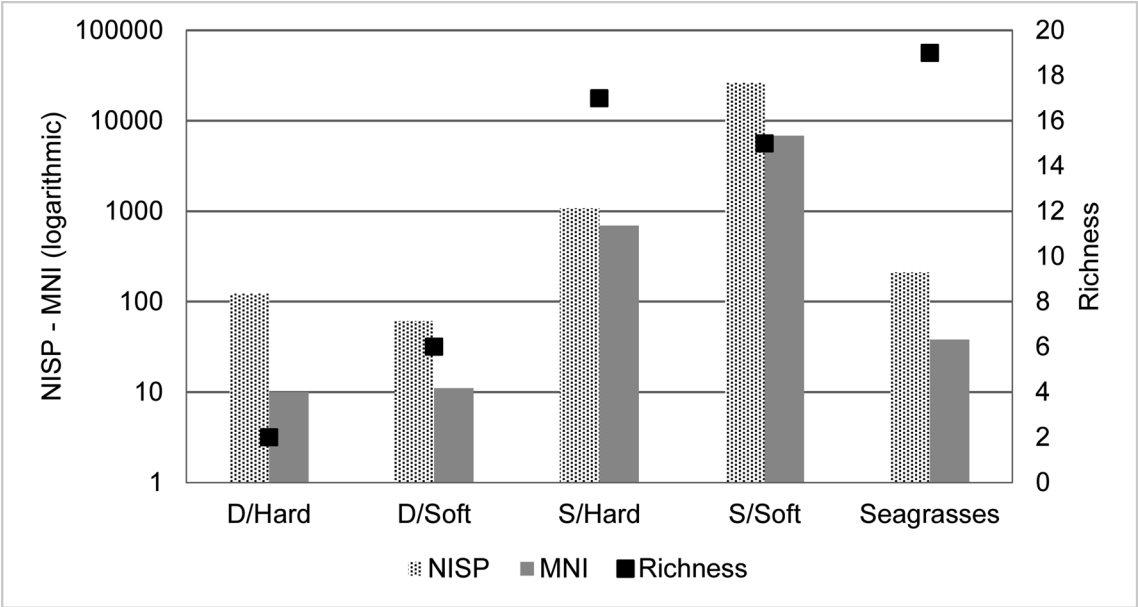
<i>Species</i>	<i>NISP</i>													
	AM ₁	AM _{1-0.10}	AM _{1-0.2}	AM _{1-0.3}	AM _{1-0.6}	AM _{1-0.9}	AP ₁	AP _{1-3a.1}	AP _{1-3b.2}	AP _{1-5.2}	Zone A ₁	Zone A ₃	Zone P ₁	TOTAL
<i>A. noae</i>	1			1										1
<i>A. tuberculata</i>							1		1					1
<i>B. barbata</i>											1			1
<i>C. glaucum</i>												1		1
<i>P. nobilis</i>							1			1		4	1	6
<i>C. rupestre</i>							1	1						1
<i>C. ventricosus</i>	1				1		6		1	5	1			8
<i>C. vulgatum</i>												2		2
<i>Ch. variegata</i>	1	1										1		2
<i>E. cornea</i>							1			1				1
<i>G. echinophora</i>											1	1	1	3
<i>H. trunculus</i>	4	4					51	28	4	19	44	11	1	111
<i>L. lurida</i>	1					1								1
<i>P. caerulea</i>							2		1	1		1		3
<i>P. rustica</i>	2	1	1				2			2		2		6
<i>P. striata</i>												1		1
<i>P. ulyssiponensis</i>												1		1
<i>Ph. turbinatus</i>							2			2	1	4		7
<i>T. galea</i>							2			2		1		3
<i>Vermetidae</i> sp.												1		1
<i>Cernuella</i> sp.							1			1	9			10
Eniidae											2	3	1	6
<i>E. vermiculata</i>	2	1	1									1		3
<i>H. aperta</i>	8	4			4		1			1	3	5		17
<i>H. cincta</i>												8		8
<i>Helix</i> sp.												3		3
<i>Metafruticicola</i> sp.											29	22		51
<i>Monacha</i> sp.							2		2					2
<i>Pseudoxerophila</i> sp.							19	19			9	16		44
<i>Rumina</i> sp.												1		1
<i>Th. pisana</i>											1	2		3
<i>X. cretica</i>	16	2		9		5	6	1	2	3		1		23
Undetermined snail							1	1			17			18



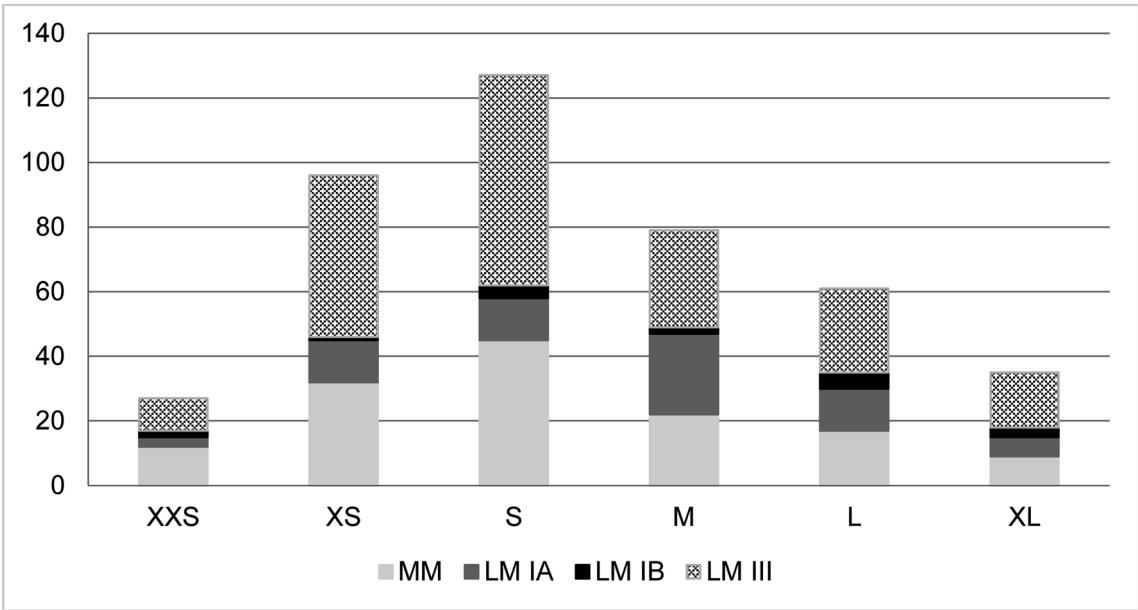
SUPPL. CHART 12.1. The quantity of archaeomalacological remains (NISP) across the studied samples (units=397, HR=111).



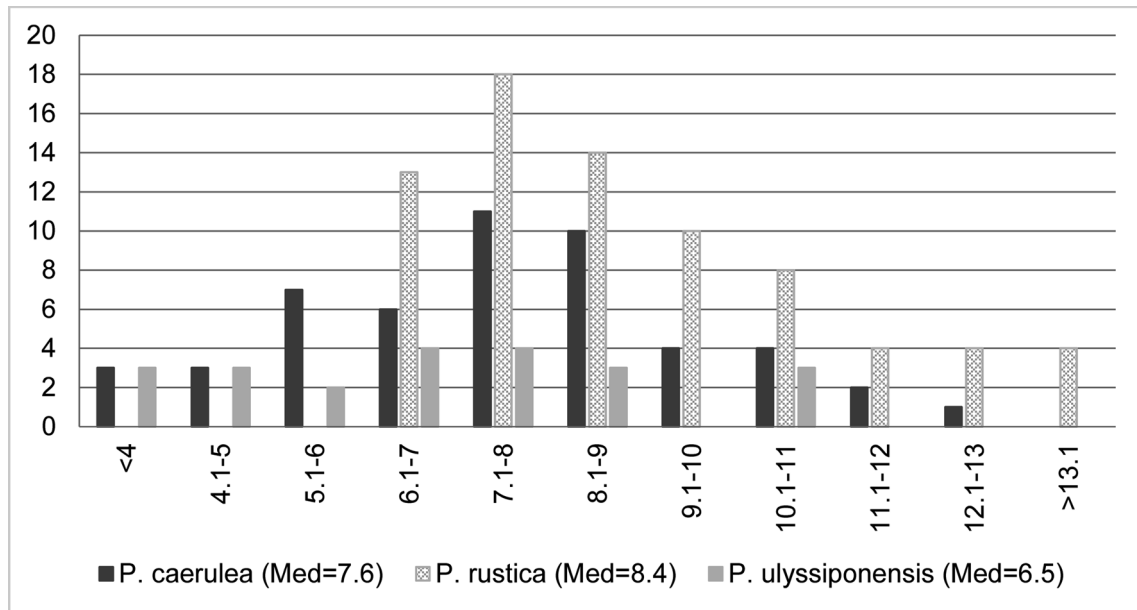
SUPPL. CHART 12.2. The density of archaeomalacological remains (NISP/1m³) across the studied samples (units=338 units, HR=111).



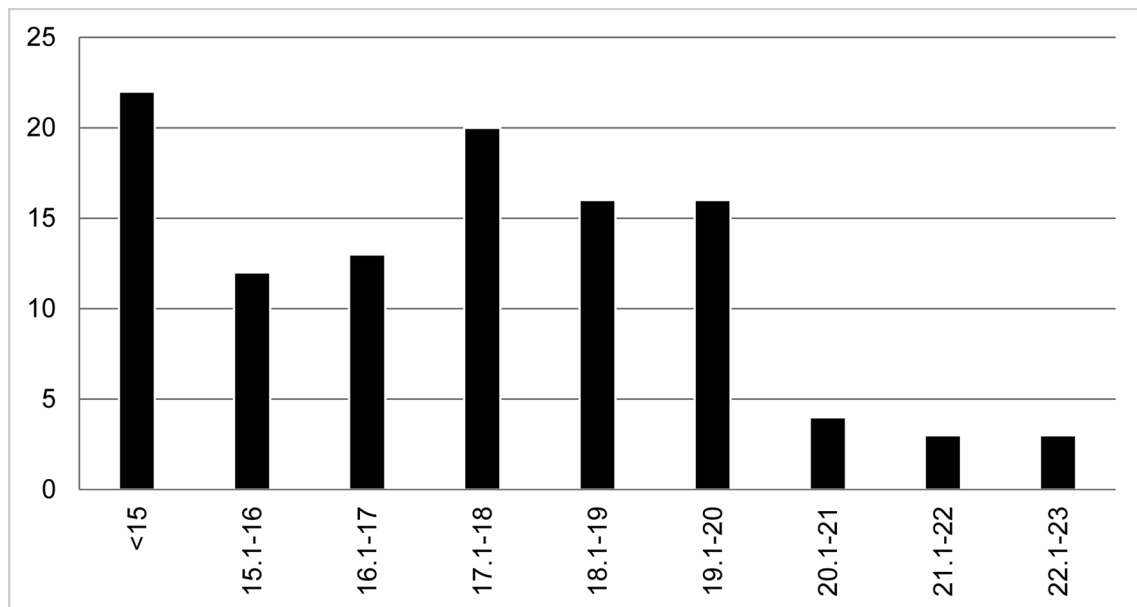
SUPPL. CHART 12.3. Marine mollusc abundance (NISP, MNI in logarithmic scale: left axis) and diversity (right axis) in different water zones and substrates: Deep/Hard, Deep/Soft, Shallow/Hard, Shallow/Soft and Seagrasses.



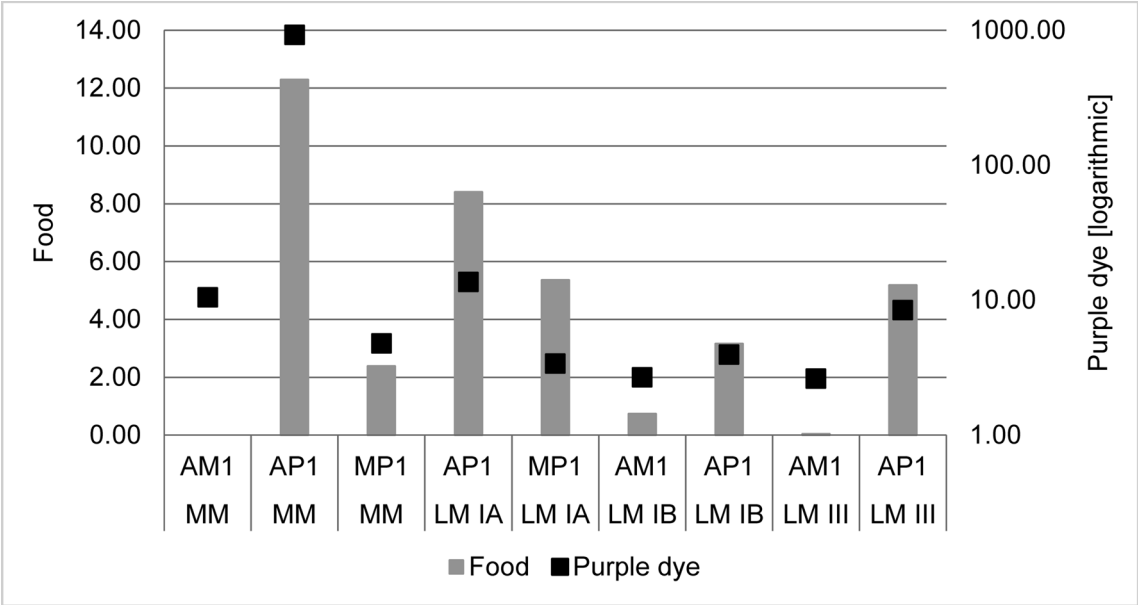
SUPPL. CHART 12.4. Temporal distribution of the *H. trunculus* individuals according to the size of siphonal canals.



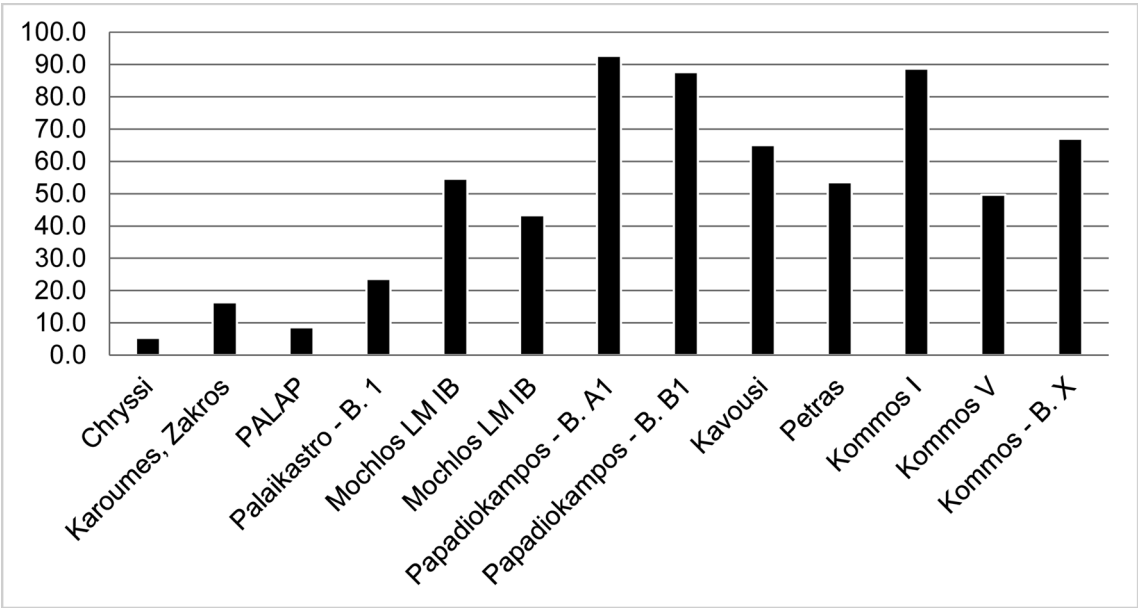
SUPPL. CHART 12.5. Distribution of the height (in mm) of *P. caerulea*, *P. rustica* and *P. lusitanica* individuals. In parenthesis, the median height for each species is noted.



SUPPL. CHART 12.6. Distribution of the width (in mm) of *Ph. turbinatus* individuals.



SUPPL. CHART 12.7. Temporal and spatial distribution of mollusc food refuse (left axis) and purple dye manufacture waste (right axis, logarithmic scale) on the basis of MNI/m³.



SUPPL. CHART 12.8. Frequency of mollusc food refuse (MNI) in settlements in eastern and central Crete.

Chapter 13

The fish remains

by R. Marlasca Martín

See pp. 325–31 in the printed Volume, with FIGS. 13.1–13.2 and PLATE 26 *e–h*.

SUPPLEMENTARY MATERIAL

SUPPL. TABLES 13.1–13.2

SUPPL. TABLE 13.1	The Minimum Number of Individuals (MNI) of the PALAP fish assemblage.	S83
SUPPL. TABLE 13.2	Number of fish remains per building.	S83

SUPPL. CHARTS 13.1–13.5

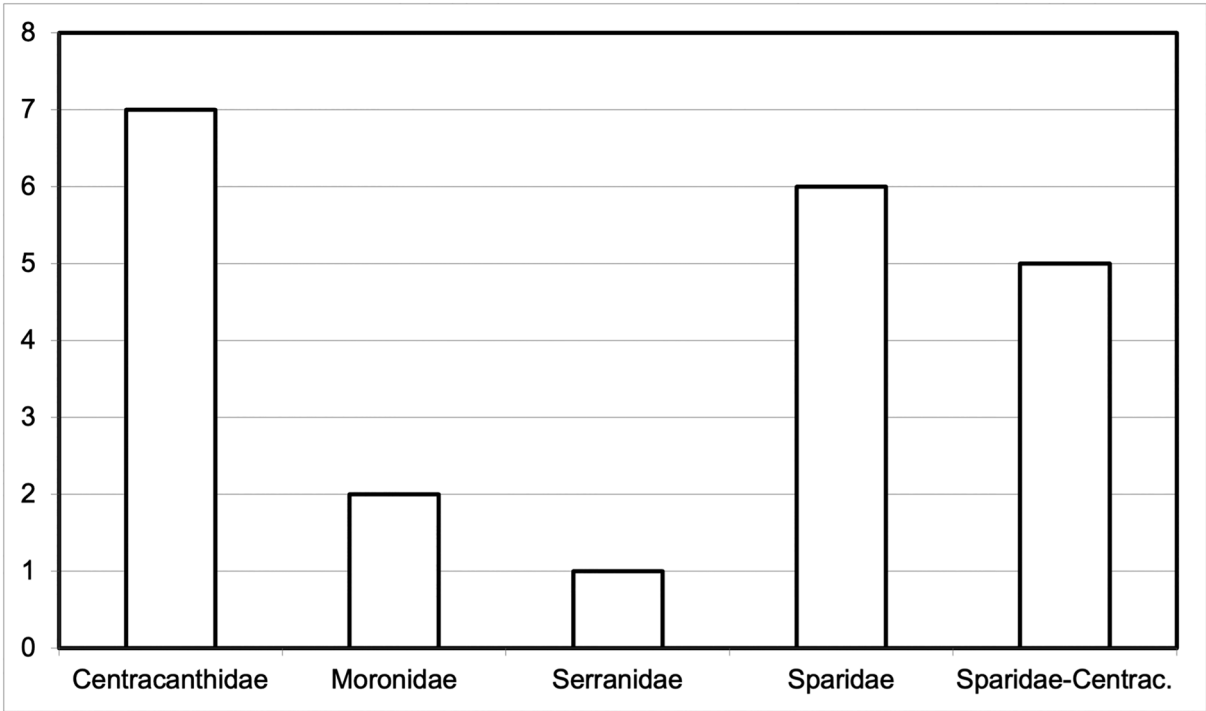
SUPPL. CHART 13.1	Representation of the number of fish remains of the PALAP assemblage by family.	S84
SUPPL. CHART 13.2	Representation of the size of the fish in the assemblage, within the minimum and maximum size range of the species to which they belong.	S84
SUPPL. CHART 13.3	Dimensions in TL of the fish identified in the sample.	S85
SUPPL. CHART 13.4	Proportions of the main anatomical element groups identified in the PALAP assemblage.	S85
SUPPL. CHART 13.5	Number of identified and indeterminate fish remains of the assemblage by period.	S86

SUPPL. TABLE 13.1. The Minimum Number of Individuals (MNI) of the PALAP fish assemblage.

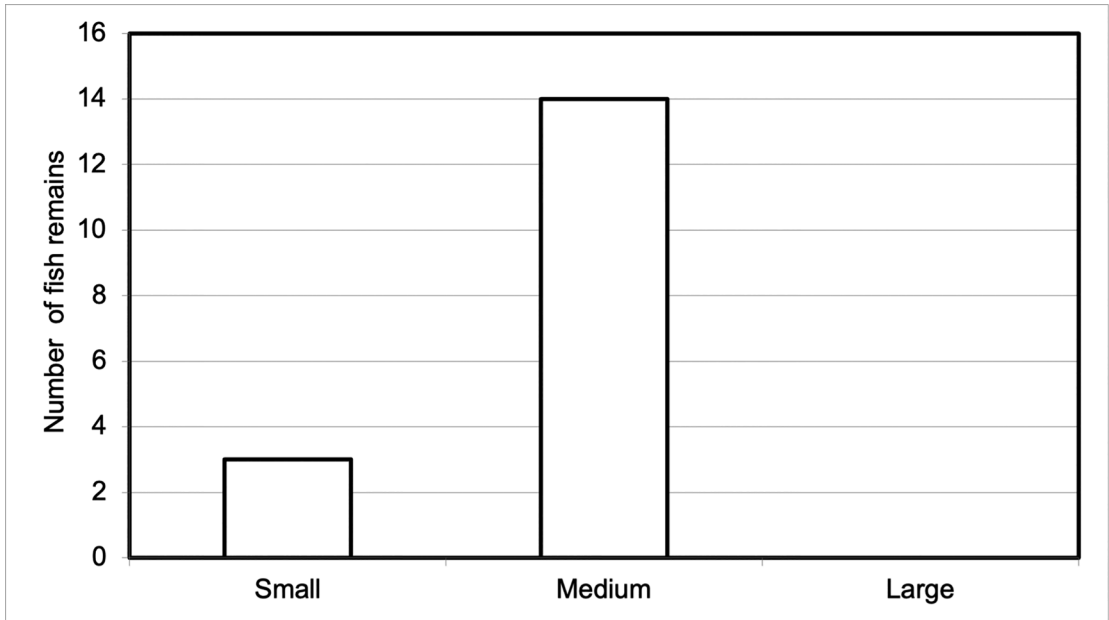
	<i>MNI</i>
Family Centranchidae total	6
<i>Spicara</i> sp.	4
<i>Spicara smar</i> is (Linnaeus 1758)	2
Family Moronidae total	2
<i>Dicentrarchus</i> sp.	2
Family Serranidae total	1
<i>Epinephelus</i> sp.	1
Family Sparidae total	5
<i>Diplodus puntazzo</i> (Cetti 1777)	1
Sparidae indeterminate	4
Family Sparidae-Centranchidae Total	5
Sparidae-Centranchidae indeterminate	5
Total	19

SUPPL. TABLE 13.2. Number of fish remains per building.

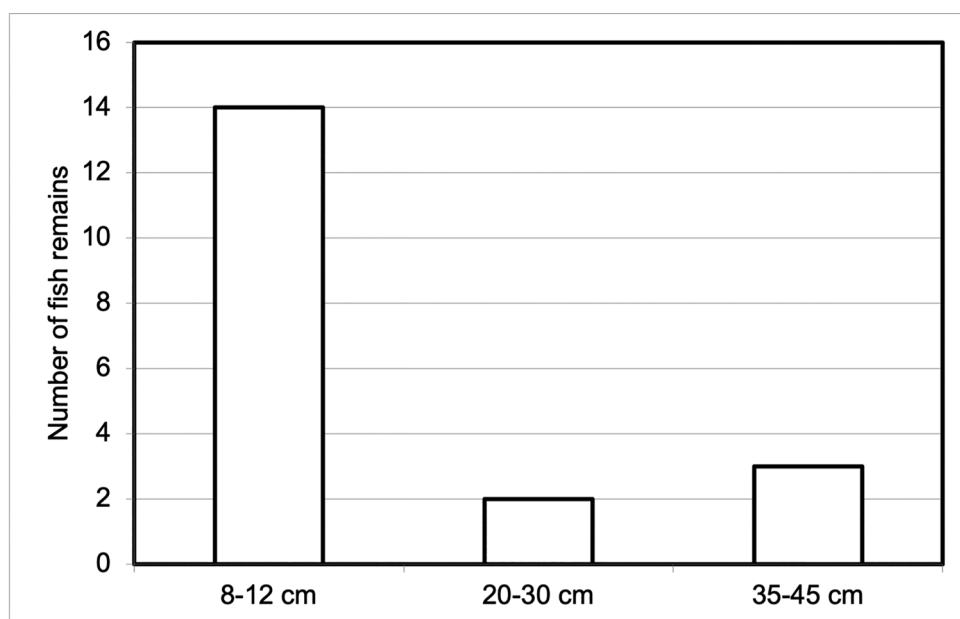
<i>Building-room-space</i>	<i>Number of fish remains</i>
AP1-1-2	35
AP1-1-3	4
AP1-3a-1	1
AP1-3a-2	1
AP1-3a-5	1
AP1-5-1	3
AP1-5-2	2
AP1-6-2	1
AP1-0-4	1
AP1-0-5	1
A3-1	3
AM1-0-7	1
AM1-6-1	1
AM1-7-1	1
AM1-15-1	1
AM1 16-1	1
MP1-2-1	2
MP1-3-2	1



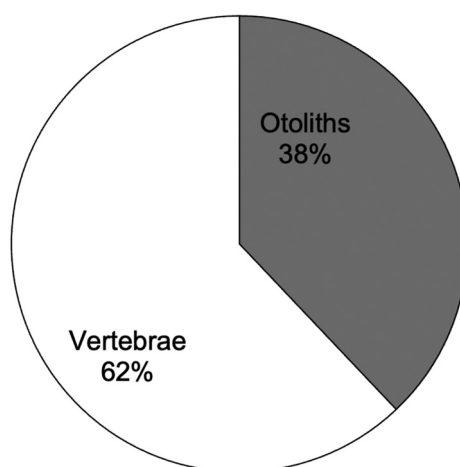
SUPPL. CHART 13.1. Representation of the number of fish remains of the PALAP assemblage by family.



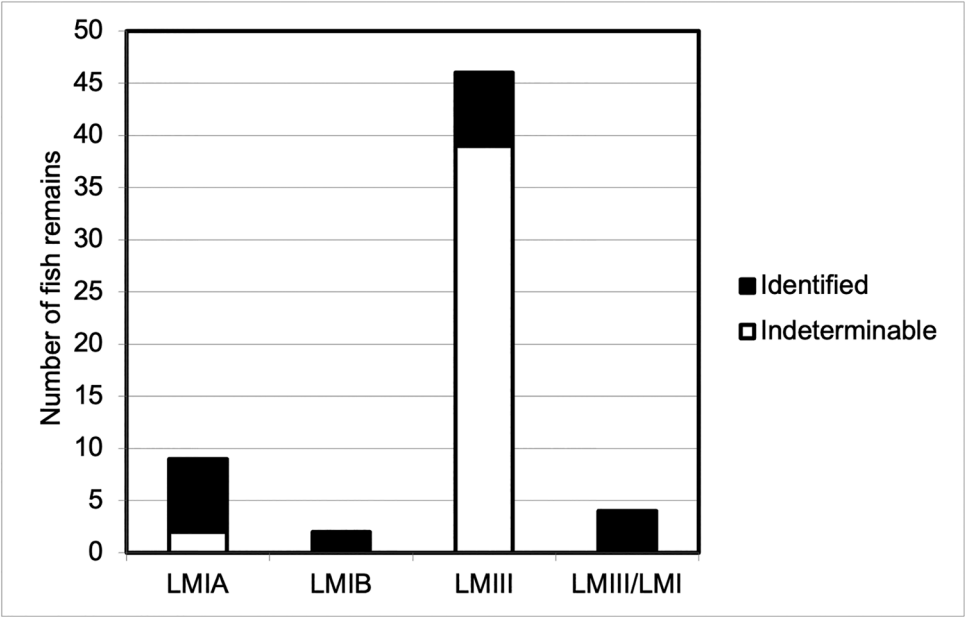
SUPPL. CHART 13.2. Representation of the size of the fish in the assemblage, within the minimum and maximum size range of the species to which they belong.



SUPPL. CHART 13.3. Dimensions in TL of the fish identified in the sample.



SUPPL. CHART 13.4. Proportions of the main anatomical element groups identified in the PALAP assemblage.



SUPPL. CHART 13.5. Number of identified and indeterminate fish remains of the assemblage by period.

Chapter 15

Micromorphology at PALAP: contributions to understanding building uses and site formation processes

by R. Kulick

See pp. 335–58 in the printed Volume, with FIGS. 15.1–15.17.

SUPPLEMENTARY MATERIAL

SUPPL. TABLES 15.1–15.7

SUPPL. TABLE 15.1	Micromorphological descriptions of Palaikastro microfabrics (SMTs) microfacies (MFTs) (adapted from Kulick 2017; 2019 and Kulick and Westgate 2021).	S89
SUPPL. TABLE 15.2	Trends in rates of deposition and in degree of roundness and sphericity of coarse grains (possibly indicating different grain origins) among SMT/MFTs (*indicates that type/subtype may be related to either rapid and/or slow depositional and post-depositional processes).	S93
SUPPL. TABLE 15.3	Micromorphological sample locations and contextual information from Argyrakis plot, Trench 2 (2013).	S94
SUPPL. TABLE 15.4	Micromorphological sample locations and contextual information from Argyrakis plot, Trench 3 (2013).	S96
SUPPL. TABLE 15.5	Micromorphological sample locations and contextual information from Building AP1 (*designates measurements adjusted from DGPS measurements).	S97
SUPPL. TABLE 15.6	Micromorphological sample locations and contextual information from Building AM1 (*designates measurements adjusted from DGPS measurements).	S98
SUPPL. TABLE 15.7	Micromorphological sample locations and contextual information from Building MP1.	S99

COLOUR PLATES 15.1–15.2

COLOUR PLATE 15.1	Examples of SMTs 1–4 (images after Kulick 2017; 2019).	S101
COLOUR PLATE 15.2	SMT 5 and 6 and tephra MFTs (images after Kulick 2017; Kulick and Westgate 2021).	S103

SUPPL. TABLE 15.1. Micromorphological descriptions of Palaikastro microfibrils (SMTs) microfacies (MFTs) (adapted from Kulick 2017; 2019 and Kulick and Westgate 2021).

<i>SMT/MFT type</i>	<i>Sub-type</i>	<i>Summary of micromorphological descriptions</i>	<i>Archaeological contexts: interpretation</i>
1		Close porphyric c/f _{10µm} -related distribution of poorly-sorted sand, clay, and silt, with varying proportions (80/20-60/40); smooth, sub-angular to rounded grains of quartzite, phyllite, and sandstone, dominantly v.f.s and f.s.-size. Complex (mainly massive, angular blocky) microstructure, weakly/moderately-separated, partially/well-accommodated. Pedofeatures: rotational features, dusty clay coatings and hypocoatings (some with microlaminations); Fe/Mn nodules; calcitic/Fe/clay depletion and concentrations. Few charcoal, shell, bone, ceramic inclusions. B-fabric is reddish-brown and crystallitic (stipple-speckled).	Interpretation: E/Bt horizon and/or colluvial material, may be associated with deforestation or other anthropogenic changes, such as cultivation. Representative of non-laminated colluvial material based on silty and loamy composition, massive, weakly-developed angular blocky microstructure, fine fractions, disorthic Fe/Mn nodules, fragments of clay coatings, and rotational features suggesting colluviation. Some depletion/impregnation pedofeatures may represent urban soils affected by former sealed surfaces (Adderley <i>et al.</i> 2010, 582).
	1a	Type 1 with the addition of light gray aggregates of possible recrystallised ash. Individual ash fragments have sharp/angular edges; aggregates have cemented nature and dull birefringence.	Ash-mixed aggregates from site/local fires, possibly from hearth use in A6 sections.
	1c	Type 1 with the addition of a greater proportion of coarse sand-size (c.s.-size); c.s./v.c.s./f.g.-size grains frequent (c/f _{10µm} is 60/40).	Representative of non-laminated colluvial material based on the silty and loamy composition, massive, weakly-developed angular block microstructure, fine fractions, disorthic Fe/Mn nodules, and fragments of clay coatings
	1d	Type 1v with the additional diagonal-alignment of the elongated vughs/vesicles and increased intrapedal porosity. High silt and sand content and lower clay content, calcitic, crystallitic b-fabric, and iron-rich clay laminations/intercalations/slaking crusts. Inclusion of anthropogenic materials such as bone fragments.	‘Vesicular crusts’ forming via two possibilities: (1) directional pressure due to trampling, suggesting that 1d is a beaten earth floor/surface (or intentional constructional support); (2) ancient exposed surfaces subject to flooding/water saturation events.
	1o	Type 1 with increased charred organic material.	The occurrence of charred organic material with the simultaneous occurrences of water-lain sediments (Type 4) might support an association of burning events and alluvial events
	1t	Type 1 with 5–10% tephra (v.f.s.-size) in groundmass. Pedofeatures: some limpid clay coatings.	Interpretation: Same as Type 1, with sediment additionally being mixed with tephra and redeposited, with subsequent typical soil pedogenesis.
	1v	Vesicular (and vughy) microstructure type1 with different, vesicular structure (comprised of rough and smooth channels (10–200 µm, 10% (most 20–100 µm (8%)) and semi-smooth, irregular-shaped vughs/vesicles (10–200 µm, 10%), with a total intrapedal porosity of 20%).	A vughy/vesicular microstructure may indicate (1) the transport of sediment by hydrogeological processes; (2) a vesicular microstructure may occur due to air being incorporated into a water-saturated sediment close to the surface; (3) a vughy/vesicular microstructure may have formed through debris flow processes.

SUPPL. TABLE 15.1. Micromorphological descriptions of Palaikastro microfibrils (SMTs) microfacies (MFTs). *Cont'd.*

<i>SMT/MFT type</i>	<i>Sub-type</i>	<i>Summary of micromorphological descriptions</i>	<i>Archaeological contexts: interpretation</i>
2		Fine-grained, close porphyric c/f _{10µm} -related of moderately to well-sorted silt, sand, and clay, (80/20); crack microstructure; higher proportion of silt-size grains (70%) compared to the higher proportions of v.f.s.-f.s.-size grains in MF1; very low intrapedal porosity of 5–10%; greater crystalline birefringence of the reddish-brown micritic calcite matrix compared to that of Type 1; possible hematite inclusions; some graded bedding.	Interpretation: Silty components may be aeolian materials transported into the site then possibly settled into dense areas when surfaces were exposed/able to be permeated. Silty components may alternatively derive from degraded earthen construction material, such as mud-brick. Micritic calcite may indicate mixing with ash or lime plaster; hematite a possible indication of mud-brick burning (oxidation).
3		Poorly to moderately-sorted chito-gefuric c/f _{10µm} -related distribution of sub-angular to sub-rounded grains, which appear in larger grain sizes (c.s.-size and larger) than those of the MF1 groundmass, and with minimal silt-size grains. Dusty clay bridges may connect the coarser grains.	Interpretation: Possibly related to pebbly layer noted to be 'nerochoma' during excavations. However, the dusty clay bridges that characterise this chito-gefuric distribution, and the subangular to rounded grains which demonstrate larger sizes than those of the surrounding matrix, suggest that this layer may have been deposited via a debris/overland flow event, likely to have impacted exposed spaces.
	3r	Poorly to moderately sorted chito-gefuric c/f _{10µm} -related distribution of subrounded to rounded grains (more rounded than that of standard type 3), which appear in larger grain sizes (c.s.-size and larger) than those of type 1, and with minimal silt-size grains. Dusty clay bridges may connect the coarser grains.	Interpretation: Possibly related to overland flow events (e.g. rainwash), but may also be alluvial in origin, attributable to increased weathering (rounding) of grains.
4		Well-sorted chito-gefuric/chito-gefuric-monic c/f _{10µm} related distribution of about 95/5–90/10, of predominantly v.f.s.- and silt-size grains and silt. Sorting exhibits graded bedding (fining upwards), and multiple episodes of beddings may be present.	Water-lain graded bedding, indicative of multiple wetting and drying events. These episodes of water saturation occurring simultaneously with, or preceding, colluvial depositions, suggest that they occur during phases of abandonment/no disturbance.
	4b	Well-sorted chito-gefuric/chito-gefuric-monic and porphyric c/f _{10µm} -related distribution (90/10–80/20) of predominantly v.f.s.- and silt-size grains and silt. No grading/bedding visible. All subrounded to rounded grains; appeared to be very weathered, exhibiting roundedness similar to beach sand grains, but may be aeolian.	Interpretation: Sediment deriving from a pre-existing deposition of weathered sands, either from water-rounding or aeolian-rounding. Possibly related to overland flow (e.g. rainwash) events due to lack of bedding.
	4d	Type 4 (+subtype) with the additional diagonal-alignment of the elongated vughs/vesicles and increased intrapedal porosity. Also, planar voids apparent parallel to direction of elongated vughs/vesicles.	Vesicular elongated microstructure may result from directional pressure due to trampling or ancient exposed surfaces subject to flooding/water saturation events.

SUPPL. TABLE 15.1. Micromorphological descriptions of Palaikastro microfibrils (SMTs) microfacies (MFTs). *Cont'd.*

<i>SMT/MFT type</i>	<i>Sub-type</i>	<i>Summary of micromorphological descriptions</i>	<i>Archaeological contexts: interpretation</i>
5		Well-sorted, porphyric, dense distribution with high proportion silt-size grains; crackly/crumby microstructure with long planar voids, high proportion of micritic calcite mixed with clay; possible hematite inclusions; reverse graded bedding below microfabric.	Degraded mud-brick (or other earthen construction material); planar voids may suggest shrinkage; micritic calcite may indicate mixing with ash or lime plaster; fine material and reverse graded bedding beneath indicative of mud-brick degradation; hematite a possible indication of mud-brick burning (oxidation).
		Dense porphyric groundmass with long planar voids, cross-striated b-fabric, and increased fine component c/f _{10µm} -related distribution (40/60): accumulation of silt-size (dust) grains) The fine components may be dust being trampled into the street surface.	(Neopalatial) street surface. Long planar voids, cross-striated b-fabric, increased fine (dust) components are indicative of beaten floors/trampling. Location of sample outside building supports this interpretation.
7		Close fine enaulic and close porphyric c/f _{10µm} -related distribution of well-to moderately-sorted tephra (80% tephra) (90/10–80/20); smooth, angular tephra grains, dominantly v.f.s.-size, with few grains of quartzite, phyllite, and sandstone. Massive microstructure, weakly-separated, partially-accommodated. Yellow-brown b-fabric is largely undifferentiated (isotropic) and infrequently crystallitic (10%). Samples frequently contain pedofeatures of graded bedding/sandy-silty laminations.	Interpretation: Water-lain pyroclastic deposit mixed with detrital sediments to varying degrees; here, with post-depositional compaction and re-working into massive microstructure. Graded bedding and laminations are indicative of multiple wetting and drying events. These episodes of water saturation occurring simultaneously with, or preceding, colluvial depositions, suggest that bedding/laminations occur during phases of abandonment/no disturbance.
	7h	Type 7 with complex (vesicular and planar) microstructure, weakly-separated, partially-accommodated. Vesicles, horizontally-aligned connected vesicles, and planes (90%) dominate void structure.	Interpretation: Water-lain pyroclastic deposit indicating mixing with detrital sediments to varying degrees suggesting (1) transportation into its context by hydrogeological processes, and/or (2) shearing under wet conditions (Karkanas 2019, 24, fig. 14).
	7r	Chitonic and close porphyric c/f _{10µm} -related distribution of well-to moderately-sorted tephra (80% tephra) (90/10–80/20); smooth, sub-angular and sub-rounded tephra grains, dominantly v.f.s.-size, with few grains of quartzite, phyllite, and sandstone. Apedal, compact grain and granular microstructure. Intrapedal clay hypocoatings (10–50 µm) in simple packing voids. No anthropogenic inclusions. B-fabric is reddish-brown and granostriated.	Interpretation: Water-lain graded bedding of pyroclastic deposit, indicative of multiple wetting and drying events. Possibly related to overland flow events (e.g. rainwash), but may also be alluvial in origin, based on increased weathering (rounding) of grains; more gradual deposition events.
	7p	Enaulic c/f _{10µm} -related distribution of moderately-sorted pyroclastic deposit (80% tephra) (90/10–80/20); angular tephra grains, with frequent v.f.s.- and f.s.-size (60%) pumiceous pyroclasts, with few grains of quartzite, phyllite, and sandstone. Apedal, compact grain, aggregated, and granular microstructure. No anthropogenic inclusions. B-fabric consists of yellowish-brown and crystallitic silty-clay aggregates.	Interpretation: Water-lain pyroclastic deposit with silty components, which may be aeolian materials transported into the site then possibly settled into dense areas when tephra layers were exposed/able to be permeated.

SUPPL. TABLE 15.1. Micromorphological descriptions of Palaikastro microfibrils (SMTs) microfacies (MFTs). *Cont'd.*

<i>SMT/MFT type</i>	<i>Sub-type</i>	<i>Summary of micromorphological descriptions</i>	<i>Archaeological contexts: interpretation</i>
	7a	Enaulic (close fine; single/double spaced; coarse) and granular/aggregate c/f _{10µm} -related distribution of moderately-sorted tephra (60% tephra), smooth, angular and subangular tephra grains – majority pumiceous pyroclasts, dominantly v.f.s.-size (60%), few grains of quartzite, phyllite, and sandstone (5%), silt (30%), and clay (5%). Intergrain microaggregate structure with porous crumbs (rounded, dusty/ opaque aggregates of silt and clay), weakly developed and unaccommodated, and complex packing voids. Yellow-brown undifferentiated (isotropic) and stipple-speckled, crystallitic b-fabric, matrix with ellipsoidal and mamillated, dense microaggregates. Horizontal alignment of dusty-clay/silt pedofeatures and fining upwards. High silt and sand content. Diagonal alignment of the elongated vughs/vesicles and increased intrapedal porosity.	Interpretation: Water-lain pyroclastic deposit mixed with rounded clay-silt aggregates, may result from result from deposition of tephra by heavy rain, eroding dry surrounding sediments (Federoff <i>et al.</i> 2018, 844). This would be indicative of a more rapid deposition event. Subsequently silty laminations may have been transported after deposition onto exposed surface.
	7v	Same as type 7p subtype but with porphyric and vughy microstructure and dusty clay coatings; higher clay content and well-oriented clay.	Interpretation: Water-lain mass-transported pyroclastic sediment mixed with detrital debris – a rapid deposition microfacies, possibly mass transportation as in mudflows (Federoff <i>et al.</i> 2018, 843). The presence of dusty clay coatings in vesicles suggest the mobilisation and redeposition of clays after saturation.

SUPPL. TABLE 15.2. Trends in rates of deposition and in degree of roundness and sphericity of coarse grains (possibly indicating different grain origins) among SMT/MFTs (*indicates that type/subtype may be related to either rapid and/or slow depositional and post-depositional processes).

<i>SMT/MFT type</i>	
	<i>Rate of deposition</i> (<i>determined by degree of sorting, microstructure</i>)
1, 1a, 1c, 1d*, 1o, 1v, 1t, 3, 3r, 4d*, 7a, 7v	Rapid (dominantly poorly sorted sediments; vughy/vesicular microstructure may have formed through debris flow processes)
2, 1d*, 4, 4d*, 6, 7, 7h, 7r, 7p	Gradual (dominantly moderately sorted to well-sorted sediments; increased content of silty components)
	<i>Origin</i> (<i>determined by degree of roundness and sphericity of coarse grains</i>)
1, 1a, 1c, 1o, 1v, 1t, 2, 3, 4, 4d, 6, 7, 7h, 7p, 7a, 7v	Alluvial/slope (subangular to angular grains; rougher)
3r, 4b, 7r	Aeolian/beach/river (subrounded to rounded grains; smoother)

SUPPL. TABLE 15.3. Micromorphological sample locations and contextual information from Argyrakis plot, Trench 2 (2013).

<i>Thin Section Sample No.</i>	<i>Relative Height (masl)</i>	<i>Associated unit #s</i>	<i>Contexts/Units</i>	<i>Ceramic Date</i>	<i>Building, Room #</i>	<i>SMT</i>
A2MM1A	23.95–23.64	2003, 2004	AM1-0-2	Modern	Trench A2	1v
A2MM1B						1v
A2MM1C						1v
A2MM2A	23.77–23.45	2004, 2006	2004: AM1-0-2; 2006: AM1-0-3	2004: Modern; 2006: LM III	Trench A2	1v
A2MM2B						1v
A2MM2C						1v
A2MM3A	23.50–23.15	2006, 2007	2006: AM1-0-3; 2007: AM1-0-4	2006: LM III; 2007: LM IIIA	Trench A2	1v, 4
A2MM3B						1v, 4
A2MM3C						1, 1v, 4
A2MM4A	23.23–22.95	2006–2009	2006: AM1-0-3; 2007: AM1-0-4; 2008: AM1-0-5; 2009: AM1-0-5	2006: LM III; 2007: LM IIIA; 2008: N/A; 2009: LM I	Trench A2	1, 1v
A2MM4B						1v
A2MM4C						1v
A2MM5A	23.10–22.90	2007–2009	2007: AM1-0-4; 2008: AM1-0-5; 2009: AM1-0-5	2007: LM IIIA; 2008: N/A; 2009: LM I	Trench A2	1v
A2MM5B						1, 1v
A2MM5C						1v
A2MM6A	22.93–22.72	2008–2011	2008: AM1-0-5; 2009: AM1-0-5; 2010: AM1-0-5; 2011: AM1-0-5	2008: N/A; 2009: LM I; 2010: MM III; 2011: MM III/ LM I	Trench A2	1v
A2MM6B						1v
A2MM6C						1, 1v
A2MM7A	22.80–22.58	2010–2011	AM1-0-5	2010: MM III; 2011: MM III/ LM I	Trench A2	1, 1v
A2MM7B						1, 3
A2MM7C						1, 3
A2MM8A	22.68–22.43	2012	AM1-0-6	LM IA	Trench A2	1v, 3
A2MM8B						1v, 3
A2MM8C						1v
A2MM9A	22.49–22.22	2012	AM1-0-6	LM IA	Trench A2	1
A2MM9B						1, 1d, 3r
A2MM9C						1v, 4b
A2MM10A	22.35–22.12	2013, 2014	2013: AM1-0-7; 2014: AM1-0-8	2013: MM; 2014: MM	Trench A2	1v, 3r, 4b
A2MM10B						1v, 3r
A2MM10C						1d, 1v
A2MM11A	22.17–21.92	2014	AM1-0-8	MM	Trench A2	1d, 1v, 3r
A2MM11B						1v, 3r
A2MM11C						3r, 4b

SUPPL. TABLE 15.3. Micromorphological sample locations and contextual information from Argyrakís plot, Trench 2 (2013).
Cont'd.

<i>Thin Section Sample No.</i>	<i>Relative Height (masl)</i>	<i>Associated unit #s</i>	<i>Contexts/Units</i>	<i>Ceramic Date</i>	<i>Building, Room #</i>	<i>SMT</i>
A2MM12A	22.01–21.75	2014	AM1-o-8	MM	Trench A2	1v, 3r, 4b
A2MM12B						1v
A2MM12C						1d, 1v, 3r
A2MM13A	21.81–21.48	2014	AM1-o-8	MM	Trench A2	1v, 3, 3r
A2MM13B						1v, 3
A2MM13C						1v, 4b
A2MM14A	21.50–21.25	2014, 2026	AM1-o-8	2014: MM; 2026: MM I–II	Trench A2	1v, 3
A2MM14B						1v, 3, 3r, 4b
A2MM14C						3r, 4b
A2MM15A	21.43–21.03	2026	AM1-o-8	MM I–II	Trench A2	3, 3r, 4b
A2MM15B						1d, 1v, 3, 4d
A2MM15C						1v, 3, 4b
A2MM16A	21.09–20.74	2026, 2028	2026: AM1-o-8; 2028: AM1-o-9	2026: MM I–II; 2028: MM IA	Trench A2	1v, 3, 4b
A2MM16B						1v
A2MM16C						1v, 3, 4b

SUPPL. TABLE 15.4. Micromorphological sample locations and contextual information from Argyrakís plot, Trench 3 (2013).

<i>Thin Section Sample No.</i>	<i>Relative Height (masl)</i>	<i>Associated unit #s</i>	<i>Contexts/ Units</i>	<i>Ceramic Date</i>	<i>Building, Room #</i>	<i>SMT</i>
A3MM1A	22.6–22.42	3008A	A3-1	LM III	Trench A3	4
A3MM1C						4
A3MM2A	22.46–22.25	3008A/B	A3-1	LM III	Trench A3	1
A3MM2B						1
A3MM2C						1
A3MM3A	22.27–22.06	3008B, 3009	A3-1	3008B: LM IIIA 3009: MM–LM I	Trench A3	1, 1d
A3MM3B						1, 3
A3MM3C						3
A3MM4A	22.20–21.86	3009	A3-1	MM–LM I	Trench A3	1, 2, 3
A3MM4B						3r
A3MM4C						1, 3r
A3MM4.2B	22.15–21.92	3009	A3-1	MM–LM I	Trench A3	1
A3MM4.2C						1
A3MM5A	21.89–21.75	3009, 3010, 3013	A3-1	3009: MM–LM I 3010: MM–LM I 3013: MM	Trench A3	3, 3r
A3MM5B						2, 3
A3MM5C						2

SUPPL. TABLE 15.5. Micromorphological sample locations and contextual information from Building AP1 (*designates measurements adjusted from DGPS measurements).

<i>Thin Section Sample No.</i>	<i>Relative Height (masl)</i>	<i>Associated unit #s</i>	<i>Contexts</i>	<i>Ceramic Date</i>	<i>Building, Room #</i>	<i>MFT/SMT</i>
MM10A	26.77–26.50*	3148, possibly 3132	3148 - AP1-1-2, 3132 - AP1-1-3	LM III	AP1, Room 1	1, 1v, 4
MM10B						1, 1v, 1d, 4
MM10C						1, 1v, 1d, 4
MM14A	26.30–27.07	3164, 3157	AP1-1-1	LM I	AP1, Room 1	4b, 7v
MM14B						1t, 3r, 4b, 7v
MM11A	26.79–26.64	3128, 3124	AP1-2-1	LM III	AP1, Room 2	1, 1v
MM11B						1, 1v, 2
A5EMM1A	26.90–26.54	3050–3056/3058	AP1-3a-5	LM III	AP1, Room 3(a)	1, 4
A5EMM1B						1, 1c
A5EMM1C						1, 4
A5EMM1D						1, 10, 2, 4
A5EMM2A	26.89–26.54	3050–3056/3058	AP1-3a-5	LM III	AP1, Room 3(a)	1, 4
A5EMM2B						1, 4
A5EMM2C						1, 4
A5WMM01	26.92–26.83	3050, 3051	3050 - AP1-3a-5	LM III	AP1, Room 4	1
			3051 - AP1-4-5			
A9MM1A	26.84–26.44	6039–6043	AP1-0-5	LM III	AP1, Exterior Space: Trench Ag	1
A9MM1B						1
A9MM1C						1
A9MM2A	26.82–26.45	6039–6043	AP1-0-5	LM III	AP1, Exterior Space: Trench Ag	1, 3
A9MM2B						1
A9MM2C						1
A9MM2D						1, 1d

SUPPL. TABLE 15.6. Micromorphological sample locations and contextual information from Building AM₁ (*designates measurements adjusted from DGPS measurements).

<i>Thin Section Sample No.</i>	<i>Relative Height (masl)</i>	<i>Associated unit #s</i>	<i>Contexts</i>	<i>Ceramic Date</i>	<i>Building, Room #</i>	<i>MFT/SMT</i>
A6MM1A	26.71–26.47	1069, 1081	1069 - assoc. w/ AM1-3-2; 1081 - assoc. w/ AM1-4-1	1069 - LM III; 1081 - LM I	AM1, Room 4	1, 1a, 2
A6MM1B						1
A6MM1C						1, 1a, 1d, 1v, 2, 4
A6MM2A	26.70–26.46	1069, 1081	1069 - assoc. w/ AM1-3-2; 1081 - assoc. w/ AM1-4-1	1069 - LM III; 1081 - LM I	AM1, Room 4	1, 2
A6MM2B						1, 2
A6MM2C						1, 2
MM5A	26.36–26.11	2158	AM1-8-1	LM I	AM1, Rm. 8	1, 4
MM5B						1, 2
MM5C						1, 1t, 7
M1/A4SMM1A	26.65–26.38	2099–2104	AM1-12-1	LM I	AM1, Room 12	1d, 1v
M1/A4SMM1B						1v, 3
M1/A4SMM1C						1, 1a, 2
M1/A4SMM2	26.50–26.40	2099–2104	AM1-12-1	LM I	AM1, Room 12	3
						1v, 3
M1/A4SMM3A	26.35–26.28	2099–2104	AM1-12-1	LM I	AM1, Room 12	1v, 2
M1/A4SMM3B						3
MM1A	27.53–27.28*	2120, 2121, 2122, 2123	AM1-0-6	LM III	AM1, Rm. 14	1, 2, 3, 4
MM1B						1, 4
MM1C						1, 1c, 4
MM1D						1, 1c
MM2A	27.28–27.08*	2120, 2121, 2122, 2123	AM1-0-6	LM III	AM1, Rm. 14	1
MM2B						1
MM3A	26.71–26.32	2134	AM1-14-1	LM I	AM1, Rm. 14	1
MM3B						1, 10, 2
MM3C						1, 10, 1c
MM3D						1, 10, 1c, 3
MM3E						1, 1c
MM4A	26.37–26.23	2145	AM1-0-6	LM I–III	AM1, Rm. 14	1, 1v, 4
MM4B						1

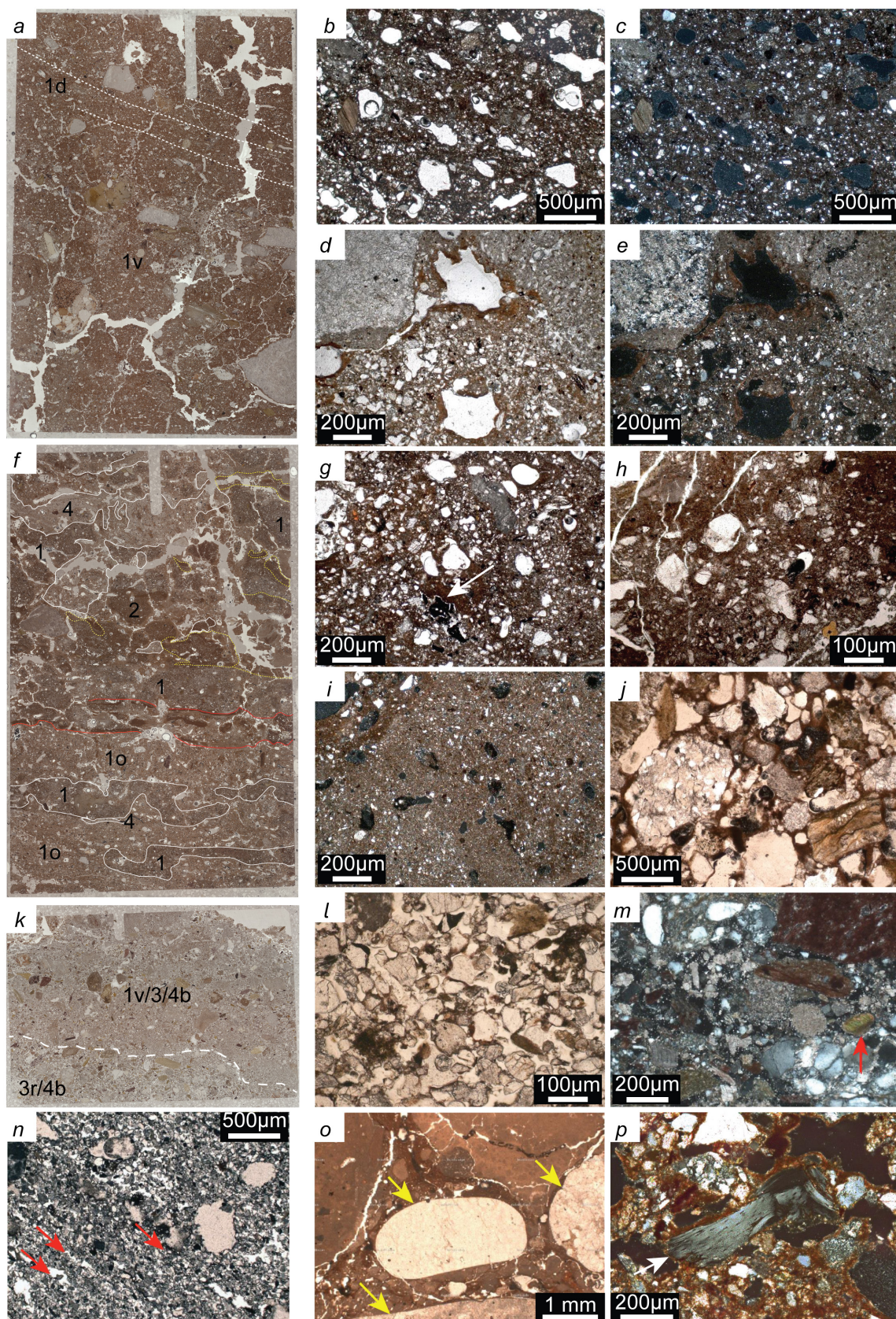
SUPPL. TABLE 15.7. Micromorphological sample locations and contextual information from Building MP1.

<i>Thin Section Sample No.</i>	<i>Relative Height (masl)</i>	<i>Associated unit #s</i>	<i>Contexts</i>	<i>Ceramic Date</i>	<i>Building, Room #</i>	<i>MFT/SMT</i>
M4MM1	27.06– 26.91	7014, 7019	7014 - MP1-9-2 7019 - MP1-1-1, MP1-9-2	7014: MM III; 7019: MM I–III	MP1, Exterior Space 9	1, 5
M4MM2	27.11– 26.96	7014, 7019	7014 - MP1-9-2 7019 - MP1-1-1, MP1-9-2	7014: MM III; 7019: MM I–III	MP1, Exterior Space 9	1, 6
M4MM3	26.93– 26.82	7049, 7051, 7052	MP1-10-1	MM	MP1, Exterior Space 10	1
MM9A	26.84– 26.65	7134, 7136, 7144	MP1-2-1	LM IA / tephra	MP1, Room 2	2, 7, 7h
MM9B						1, 7, 7h
MM9C						7, 7r
MM12A	26.83– 26.72	7134, 7136	MP1-2-1	LM IA / tephra	MP1, Room 2	7, 7a
MM12B						2, 7, 7h
MM6A	27.11– 26.86	7111, 7112, 7120	MP1-6-1	LM IA / tephra	MP1, Space 6	7, 7v
MM6B						1t, 3, 7h, 7v
MM6C						1, 1t, 3
MM7A	27.19– 27.00	7111, 7112, 7120	MP1-6-1	LM IA / tephra	MP1, Space 6	1, 1t
MM7B						1, 1t, 7, 7h, 7p, 7a
MM7C						1, 7h
MM13AA	27.83– 27.64	7154	assoc. w/ MP1- 8-1	Modern	MP1, Space 8	1v
MM13AB						1v
MM13AC						1v
MM13BA	27.69– 27.50	7154	assoc. w/ MP1- 8-1	Modern	MP1, Space 8	1v
MM13BB						1v
MM13CA	27.58– 27.40	7154	assoc. w/ MP1- 8-1	Modern	MP1, Space 8	1, 1v
MM13CB					MP1, Space 8	1v
MM13DA	27.49– 27.25	7154	assoc. w/ MP1- 8-1	Modern	MP1, Space 8	1v
MM13DB						1, 1v
MM13DB						1, 1v
MM13EA	27.34– 27.09	7154, 7155	assoc. w/ MP1- 8-1	Modern	MP1, Space 8	1, 1v
MM13EB						1v
MM13EC						1v

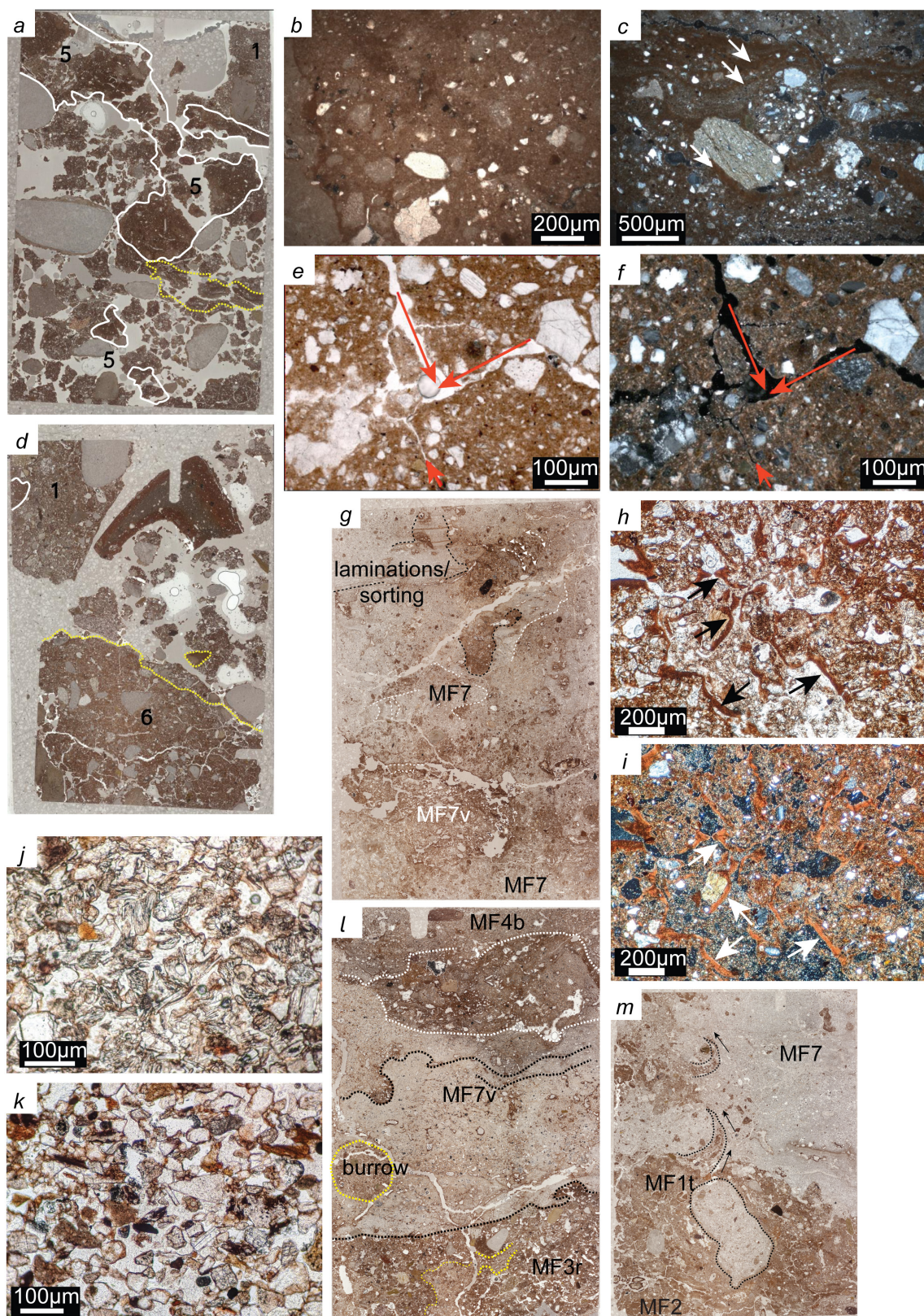
SUPPL. TABLE 15.7. Micromorphological sample locations and contextual information from Building MP1. *Cont'd.*

<i>Thin Section Sample No.</i>	<i>Relative Height (masl)</i>	<i>Associated unit #s</i>	<i>Contexts</i>	<i>Ceramic Date</i>	<i>Building, Room #</i>	<i>MFT/SMT</i>
MM13FA	27.23– 27.00	7155	assoc. w/ MP1- 8-1	Modern	MP1, Space 8	1
MM13FB						1
MM13FC						1, 1v
MM13GA	27.09– 26.90	7155, 7157	7157 - MP1-8-1	MM III–LM I	MP1, Space 8	1, 1v
MM13GB						1, 1v
MM13GC						1, 1v
MM13HA	27.00– 26.78	7157, 7159	MP1-8-1	MM III–LM I	MP1, Space 8	1v
MM13HB						1v
MM13HC						1v

COLOUR PLATE 15.1 (*opposite*). Examples of SMTs 1–4 (images after Kulick 2017; 2019). Examples of SMTs 1–4 (images after Kulick 2017; 2019). (a) Thin section M1/A4SMM1A, with SMT1v and SMT1d, displays a complex microstructure with sub-angular blocky, moderately-well separated, partially-accommodated peds; (b) SMT1d in M1/A4SMM3A (PPL) has diagonally-stratified and elongated vughs/vesicles that resemble vesicular crusts, as well as a calcitic, crystallitic b-fabric; (c) SMT1d in M1/A4SMM3A (XPL) displays a calcitic, crystallitic b-fabric; (d) SMT1v in M1/A4SMM2 (PPL) demonstrates a vesicular and vughy microstructure with irregular-shaped vughs; (e) SMT1v displays dusty and weakly limpid clay coatings and hypocoatings in M1/A4SMM2 (XPL). The sediment has a calcitic, crystallitic b-fabric, typical for vesicular crust formation; (f) A5EMM1D is characterised by a complex microstructure with angular blocky ped development through the upper half of the section, and moderately separated, partially-accommodated peds; (g) SMT1 in A9MM2A (PPL). Arrow indicates a charcoal fragment; (h) SMT2 in A6MM1A (PPL) shows a dominantly cracky microstructure and may related to a displaced plaster floor; (i) SMT2 in A9MM2A (XPL) illustrates a higher proportion of silt-size grains (70%) compared to the higher proportions of v.f.s.-f.s.-size grains in SMT1, and greater crystallic birefringence of the matrix than SMT1; (j) SMT3 in A9MM2A (PPL) is comprised of a much higher proportion of c.s.-size, m.s.-size, v.c.s.-size, and f.g.-size grains; (k) A2MM16A contains a diffuse boundary zone between units 2026 and 2028 (marked by a white dashed line); (l) SMT4b in A2MM10A (PPL) demonstrates a greater degree of roundness and sphericity of the coarse grains than those of the surrounding groundmass; (m) SMT4b in A2MM16A (XPL) containing weathered glauconite (marked by red arrow) and calcitic groundmass; (n) SMT3r/4d in A2MM15B (PPL) with diagonal-alignment of the elongated vughs/vesicles and increased intrapedal porosity. Planar voids are visible parallel to the direction of elongated vughs/vesicles (marked by red arrows); (o) Plaster floor fragment in A6MM1A (PPL), containing mm-sized, rounded pebbles; (p) Bone fragment in A2MM7B (XPL).



COLOUR PLATE 15.2 (*opposite*). SMT 5 and 6 and tephra MFTs (images after Kulick 2017; Kulick and Westgate 2021). (*a*) M₄MM₁ (PPL) with SMT₅ encircled in white. SMT₅, with a complex (granular, crumby) microstructure, may be degraded mud-brick or earthen building material; (*b*) SMT₅ in M₄MM₁ (PPL) displays a dense groundmass with micritic calcite and clay; (*c*) SMT₅ in M₄MM₁ (XPL) contains laminations of fine material, shown by white arrows, and graded bedding. Birefringent sand-size grains appear to alternate with dark silt/clay particles; (*d*) M₄MM₂ (PPL) contains SMT₆, which is characterised by a compact, cracky microstructure with long planar voids; (*e*) SMT₆ in M₄MM₂ (PPL) with long planar voids indicated by red arrows and a greater proportion of silt, which suggests that dust may have been trampled into the street surface; (*f*) SMT₆ in M₄MM₂ (XPL) has a cross-striated b-fabric which may be a result of pressure, possibly from trampling; (*g*) MM6B contains MFT₇ and MFT₇ tephra microfacies and deformation and pedoturbation features, indicated by dashed arrows; (*h*) MFT_{7v} in MM6B (PPL) with black arrows indicating dusty and limpid clay coatings in voids; (*i*) MFT_{7v} in MM6B (XPL) with white arrows indicating dusty and limpid clay coatings in voids; (*j*) Example of MF_{7r} (in SPK₅AA from previous excavations in Block M, Street B-M) (PPL), showing chitonic $c/f_{10\mu m}$ -related distribution of rounded, well- to moderately-sorted tephra (80% tephra) (90/10–80/20); (*k*) MF_{4b} in MM₁₄A (PPL) showing chito-gefuric-monic distribution; (*l*) MM₁₄B with layered microfacies and deformation and pedoturbation features; (*m*) MM₉B (PPL) showing rotational deformation features indicated by black arrows.



Chapter 17

Stone implements and vases: materials, activities and depositional processes

by C. Tsoraki

See pp. 375–96 in the printed Volume, with PLATES 27–32.

SUPPLEMENTARY MATERIAL

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SUPPL. TABLE 17.1. The types of ground stone objects present in the PALAP assemblage (excluding indeterminate cases n=59 and natural unworked stones n=526).

	<i>Frequency</i>	<i>Percent</i>
Edge tools – axe	1	.4
Edge tools total	1	.4
Percussive – indeterminate	1	.4
Percussive – hammerstone	21	9.2
Percussive – pounder	20	8.8
Percussive tools total	42	18.4
Grinding /abrasive – indeterminate	3	1.3
Grinding /abrasive – abrader	11	4.8
Grinding /abrasive – whetstone	5	2.2
Grinding /abrasive – polisher / smoothed stone	5	2.2
Grinding /abrasive – abraded polisher	1	.4
Grinding /abrasive – pestle	3	1.3
Grinding /abrasive – grinder	16	7.0
Grinding /abrasive – quern	19	8.3
Grinding /abrasive – quern or grinder	7	3.1
Grinding /abrasive – basin	3	1.3
Grinding /abrasive – mortar	3	1.3
Grinding /abrasive – working surface	1	.4
Grinding /abrasive tools total	77	33.8
Miscellaneous – indeterminate	7	3.1
Miscellaneous – weights	5	2.2
Miscellaneous – rocks with natural holes	11	4.8
Miscellaneous – pitted / cupped stone	1	.4
Miscellaneous – stone pot lids	1	.4
Miscellaneous objects total	25	11.0
Multiple use tool – indeterminate	1	.4
Multiple use – polisher / hammerstone	7	3.1
Multiple use – polisher / pounder	3	1.3
Multiple use – pestle / hammerstone	1	.4
Multiple use – drill guide / grinder	3	1.3
Multiple use – grinder / hammerstone	2	.9
Multiple use – grinder / pounder	8	3.5
Multiple use – abrader / hammerstone	1	.4
Multiple use – pestle / pounder	2	.9
Multiple – use tools total	28	12.3

SUPPL. TABLE 17.1. The types of ground stone objects present in the PALAP assemblage. *Cont'd.*

	<i>Frequency</i>	<i>Percent</i>
Container – indeterminate	2	.9
Container – stone vase (indeterminate shape)	13	5.7
Container – stone bowl	12	5.3
Container – stone lid	7	3.1
Container – lamp / libation table	3	1.3
Container – Bird's nest bowl	3	1.3
Container – Bowl with carinated and curved profile and lugs on the shoulder	3	1.3
Container – Bowl with carinated or curved profile and everted rim	4	1.8
Container – Bowl with carinated and curved profile	1	.4
Container – Bowl with rim lugs or handles	2	.9
Container – Bowl with rim spout	1	.4
Container – Stand / base	1	.4
Container – Palette	1	.4
Stone vases / containers total	53	23.6
Debitage – indeterminate	1	.4
Unworked nodule	1	.4
Nodules, cores anddebitage total	2	.9
<i>Total</i>	228	100.0

SUPPL. TABLE 17.2. Distribution of ground stone material across buildings (excluding natural and indeterminate cases and material from topsoil / modern / mixed date).

	<i>Frequency</i>	<i>Percent</i>
AM1	92	44.7
AM1 out of building contexts	21	10.2
AP1	58	28.2
AP1 out of building contexts	17	8.3
MP1	10	4.9
MP1 out of building contexts	4	1.9
Context A3.1	4	1.9
<i>Total</i>	206	100.0

SUPPL. TABLE 17.3. The chronological distribution of the ground stone assemblage (excluding natural and indeterminate cases and material from topsoil / modern / mixed date).

	<i>Frequency</i>	<i>Percent</i>
MM III	1	.5
LM IA	21	10.2
LM IB	82	39.8
LM IB (?)	3	1.5
LM I total	106	51.5
LM III	83	40.3
LM IIIA	2	1.0
LM IIIA ₂	2	1.0
LM IIIA ₂ -B	1	.5
LM III total	88	42.7
LMI / LM III	1	.5
LM III / LM I	7	3.4
LM III / LM IA	3	1.5
LM total	11	5.3
<i>Total</i>	206	100.0

SUPPL. TABLE 17.4. The temporal distribution of object types (% within Ceramic Date, excluding natural and indeterminate cases and material from topsoil / modern / mixed date).

<i>Object Category</i>		<i>Ceramic Date</i>				<i>Total</i>
		<i>MM</i>	<i>LM I</i>	<i>LM III</i>	<i>LM</i>	
Edge tool – axe	Count	0	1	0	0	1
	%	0.0%	0.9%	0.0%	0.0%	0.5%
Percussive tool – indeterminate	Count	0	0	1	0	1
	%	0.0%	0.0%	1.1%	0.0%	0.5%
Percussive – hammerstone	Count	1	6	10	0	17
	%	100.0%	5.7%	11.4%	0.0%	8.3%
Percussive – pounder	Count	0	9	9	0	18
	%	0.0%	8.5%	10.2%	0.0%	8.7%
Grinding /abrasive – abrader	Count	0	6	3	0	9
	%	0.0%	5.7%	3.4%	0.0%	4.4%
Grinding /abrasive – whetstone	Count	0	2	2	1	5
	%	0.0%	1.9%	2.3%	9.1%	2.4%
Grinding /abrasive – polisher / smoothed stone	Count	0	2	2	1	5
	%	0.0%	1.9%	2.3%	9.1%	2.4%
Grinding /abrasive – abraded polisher	Count	0	1	0	0	1
	%	0.0%	0.9%	0.0%	0.0%	0.5%
Grinding /abrasive – pestle	Count	0	1	2	0	3
	%	0.0%	0.9%	2.3%	0.0%	1.5%
Grinding /abrasive – grinder	Count	0	0	2	1	3
	%	0.0%	0.0%	2.3%	9.1%	1.5%
Grinding /abrasive – one hand grinder	Count	0	1	1	0	2
	%	0.0%	0.9%	1.1%	0.0%	1.0%
Grinding /abrasive – two hand grinder	Count	0	5	3	0	8
	%	0.0%	4.7%	3.4%	0.0%	3.9%
Grinding /abrasive – quern	Count	0	7	11	0	18
	%	0.0%	6.6%	12.5%	0.0%	8.7%
Grinding /abrasive – quern or grinder	Count	0	2	4	0	6
	%	0.0%	1.9%	4.5%	0.0%	2.9%
Grinding /abrasive – basin	Count	0	1	2	0	3
	%	0.0%	0.9%	2.3%	0.0%	1.5%
Grinding /abrasive – mortar	Count	0	3	0	0	3
	%	0.0%	2.8%	0.0%	0.0%	1.5%
Grinding /abrasive – working surface	Count	0	0	1	0	1
	%	0.0%	0.0%	1.1%	0.0%	0.5%
Miscellaneous – indeterminate	Count	0	3	3	0	6
	%	0.0%	2.8%	3.4%	0.0%	2.9%
Miscellaneous – weights	Count	0	2	2	1	5
	%	0.0%	1.9%	2.3%	9.1%	2.4%
Miscellaneous – rocks with natural holes	Count	0	9	2	0	11
	%	0.0%	8.5%	2.3%	0.0%	5.3%

SUPPL. TABLE 17.4. The temporal distribution of object types. *Cont'd.*

<i>Object Category</i>		<i>Ceramic Date</i>				<i>Total</i>
		<i>MM</i>	<i>LM I</i>	<i>LM III</i>	<i>LM</i>	
Miscellaneous – pitted / cupped stone	Count	0	0	1	0	1
	%	0.0%	0.0%	1.1%	0.0%	0.5%
Miscellaneous – stone pot lids	Count	0	1	0	0	1
	%	0.0%	0.9%	0.0%	0.0%	0.5%
Multiple use tool – indeterminate	Count	0	1	0	0	1
	%	0.0%	0.9%	0.0%	0.0%	0.5%
Multiple use – polisher / hammerstone	Count	0	4	3	0	7
	%	0.0%	3.8%	3.4%	0.0%	3.4%
Multiple use – polisher / pounder	Count	0	2	1	0	3
	%	0.0%	1.9%	1.1%	0.0%	1.5%
Multiple use – drill guide / grinder	Count	0	1	1	0	2
	%	0.0%	0.9%	1.1%	0.0%	1.0%
Multiple use – grinder / hammerstone	Count	0	2	0	0	2
	%	0.0%	1.9%	0.0%	0.0%	1.0%
Multiple use – grinder / pounder	Count	0	5	1	0	6
	%	0.0%	4.7%	1.1%	0.0%	2.9%
Multiple use – pestle / pounder	Count	0	0	2	0	2
	%	0.0%	0.0%	2.3%	0.0%	1.0%
Container – indeterminate	Count	0	0	1	0	1
	%	0.0%	0.0%	1.1%	0.0%	0.5%
Container – vase (indet. shape)	Count	0	5	6	0	11
	%	0.0%	4.7%	6.8%	0.0%	5.3%
Container – stone bowl	Count	0	3	4	2	9
	%	0.0%	2.8%	4.5%	18.2%	4.4%
Container – stone lid	Count	0	7	0	0	7
	%	0.0%	6.6%	0.0%	0.0%	3.4%
Container – lamp	Count	0	0	3	0	3
	%	0.0%	0.0%	3.4%	0.0%	1.5%
Bird's nest bowl	Count	0	3	0	0	3
	%	0.0%	2.8%	0.0%	0.0%	1.5%
Bowl with carinated and curved profile and lugs on the shoulder	Count	0	2	0	0	2
	%	0.0%	1.9%	0.0%	0.0%	1.0%
Bowl with carinated or curved profile and everted rim	Count	0	1	1	2	4
	%	0.0%	0.9%	1.1%	18.2%	1.9%
Bowl with carinated and curved profile	Count	0	0	1	0	1
	%	0.0%	0.0%	1.1%	0.0%	0.5%
Bowl with rim lugs or handles	Count	0	1	0	0	1
	%	0.0%	0.9%	0.0%	0.0%	0.5%
Bowl with rim spout	Count	0	1	0	0	1
	%	0.0%	0.9%	0.0%	0.0%	0.5%

SUPPL. TABLE 17.4. The temporal distribution of object types. *Cont'd.*

<i>Object Category</i>		<i>Ceramic Date</i>				<i>Total</i>
		<i>MM</i>	<i>LM I</i>	<i>LM III</i>	<i>LM</i>	
Stand / base	Count	0	1	0	0	1
	%	0.0%	0.9%	0.0%	0.0%	0.5%
Palette	Count	0	1	0	0	1
	%	0.0%	0.9%	0.0%	0.0%	0.5%
Debitage – indeterminate	Count	0	1	0	0	1
	%	0.0%	0.9%	0.0%	0.0%	0.5%
Unworked nodule	Count	0	0	1	0	1
	%	0.0%	0.0%	1.1%	0.0%	0.5%
Indeterminate – formal tools	Count	0	3	2	3	8
	%	0.0%	2.8%	2.3%	27.3%	3.9%
<i>Total</i>	Count	1	106	88	11	206
	%	100.0%	100.0%	100.0%	100.0%	100.0%

SUPPL. TABLE 17.5. Geological categories present in the assemblage (excluding indeterminate raw materials, natural and indeterminate cases and material from topsoil / modern / mixed date).

	<i>Frequency</i>	<i>Percent</i>
Sedimentary rocks	108	52.4
Metamorphic rocks	89	43.2
Igneous rocks	3	1.5
Minerals	6	2.9
<i>Total</i>	206	100.0

SUPPL. TABLE 17.6. The temporal distribution of rocks and minerals (% within Ceramic Date, excluding indeterminate raw materials, natural and indeterminate cases and material from topsoil / modern / mixed date).

<i>Raw Material</i>		<i>Ceramic Date</i>				<i>Total</i>
		<i>MM</i>	<i>LM I</i>	<i>LM III</i>	<i>LM</i>	
Sandstone <i>ammoudha</i>	Count	0	5	2	0	7
	%	0.0%	4.7%	2.3%	0.0%	3.4%
Sandstone	Count	0	8	1	0	9
	%	0.0%	7.5%	1.1%	0.0%	4.4%
Calcareous sandstone	Count	0	1	0	0	1
	%	0.0%	0.9%	0.0%	0.0%	0.5%
Orthoquartzite	Count	0	12	12	0	24
	%	0.0%	11.3%	13.6%	0.0%	11.7%
Conglomerate	Count	0	2	1	0	3
	%	0.0%	1.9%	1.1%	0.0%	1.5%
Limestone	Count	1	33	25	2	61
	%	100.0%	31.1%	28.4%	18.2%	29.6%
Chert / flint – like limestone	Count	0	0	0	1	1
	%	0.0%	0.0%	0.0%	9.1%	0.5%
Indeterminate sedimentary	Count	0	2	0	0	2
	%	0.0%	1.9%	0.0%	0.0%	1.0%
Phyllite	Count	0	0	0	1	1
	%	0.0%	0.0%	0.0%	9.1%	0.5%
Serpentinite	Count	0	21	11	3	35
	%	0.0%	19.8%	12.5%	27.3%	17.0%
Schist	Count	0	1	1	0	2
	%	0.0%	0.9%	1.1%	0.0%	1.0%
Marble	Count	0	3	1	2	6
	%	0.0%	2.8%	1.1%	18.2%	2.9%
Quartzite	Count	0	5	27	0	32
	%	0.0%	4.7%	30.7%	0.0%	15.5%
Amphibolite	Count	0	4	2	0	6
	%	0.0%	3.8%	2.3%	0.0%	2.9%
Greenstone	Count	0	1	1	0	2
	%	0.0%	0.9%	1.1%	0.0%	1.0%
Possible emery	Count	0	2	0	0	2
	%	0.0%	1.9%	0.0%	0.0%	1.0%
Indeterminate metamorphic	Count	0	1	2	0	3
	%	0.0%	0.9%	2.3%	0.0%	1.5%

SUPPL. TABLE 17.6. The temporal distribution of rocks and minerals. *Cont'd.*

<i>Raw Material</i>		<i>Ceramic Date</i>				<i>Total</i>
		<i>MM</i>	<i>LM I</i>	<i>LM III</i>	<i>LM</i>	
Basalt	Count	0	0	1	0	1
	%	0.0%	0.0%	1.1%	0.0%	0.5%
Indeterminate igneous	Count	0	1	1	0	2
	%	0.0%	0.9%	1.1%	0.0%	1.0%
Quartz	Count	0	2	0	1	3
	%	0.0%	1.9%	0.0%	9.1%	1.5%
Calcite	Count	0	1	0	0	1
	%	0.0%	0.9%	0.0%	0.0%	0.5%
Haematite	Count	0	1	0	1	2
	%	0.0%	0.9%	0.0%	9.1%	1.0%
<i>Total</i>	Count	1	106	88	11	206
	%	100.0%	100.0%	100.0%	100.0%	100.0%

SUPPL. TABLE 17.7. The degree of wear of grinding tools in LM I and LM III periods (% within Ceramic Date).

<i>Primary use</i>		<i>Ceramic Date</i>			<i>Total</i>
		<i>LM I</i>	<i>LM III</i>	<i>LM</i>	
light	Count	0	2	0	2
	%	0.0%	10.5%	0.0%	6.5%
moderate	Count	8	12	1	21
	%	72.7%	63.2%	100.0%	67.7%
heavy	Count	3	5	0	8
	%	27.3%	26.3%	0.0%	25.8%
<i>Total</i>	Count	11	19	1	31
	%	100.0%	100.0%	100.0%	100.0%

SUPPL. TABLE 17.8. The distribution of the stone vases across excavated contexts and ceramic phases (% within Building, excluding material from topsoil / modern / mixed context).

<i>Ceramic Date</i>		<i>AM1</i>	<i>AM1 out of building contexts</i>	<i>AP1</i>	<i>AP1 out of building contexts</i>	<i>MP1</i>	<i>MP1 out of building contexts</i>	<i>Context A3.1</i>	<i>Total</i>
LM I	Count	14	2	3	1	3	2	0	25
	%	60.9%	50.0%	30.0%	100.0%	100.0%	100.0%	0.0%	55.6%
LM III	Count	9	2	5	0	0	0	0	16
	%	39.1%	50.0%	50.0%	0.0%	0.0%	0.0%	0.0%	35.6%
LM	Count	0	0	2	0	0	0	2	4
	%	0.0%	0.0%	20.0%	0.0%	0.0%	0.0%	100.0%	8.9%
<i>Total</i>	Count	23	4	10	1	3	2	2	45
	%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

SUPPL. TABLE 17.9. The distribution of stone objects and stone vases in Building AP1 during the LM IA period (excluding natural and indeterminate cases).

<i>Object Category</i>	<i>Context</i>					<i>Total</i>
	<i>AP1 - 4.3</i>	<i>AP1 - 4.4</i>	<i>AP1 - 5.1</i>	<i>AP1 - 5.2</i>	<i>AP1 - 7.1</i>	
Grinding /abrasive – polisher / smoothed stone	0	0	1	0	0	1
Grinding /abrasive – quern	0	0	0	1	0	1
Grinding /abrasive – two hand grinder	1	0	0	0	0	1
Miscellaneous – indeterminate	0	1	0	0	0	1
Multiple use – grinder / pounder	0	0	0	0	1	1
Container – stone bowl	0	1	0	0	0	1
<i>Total</i>	1	2	1	1	1	6

SUPPL. TABLE 17.10. The distribution of stone objects and stone vases in Building AP1 during the LM IB period (excluding natural and indeterminate cases).

<i>Object Category</i>	<i>Context</i>		<i>Total</i>
	<i>AP1 – 3b.1</i>	<i>AP1 – 6.2</i>	
Percussive – hammerstone	0	2	2
Percussive – pounder	0	1	1
Grinding /abrasive – abrader	0	1	1
Grinding /abrasive – polisher / smoothed stone	0	1	1
Grinding /abrasive – abraded polisher	0	1	1
Grinding /abrasive – grind. slab	0	1	1
Multiple use – drill guide / grinder	1	0	1
grinder / hammerstone	0	1	1
Container – vase	1	0	1
Container – stone lid	0	1	1
<i>Total</i>	2	9	11

SUPPL. TABLE 17.11. The distribution of stone objects and stone vases in Building AP1 during the LM III period (excluding natural and indeterminate cases).

<i>Object Category</i>	<i>Context</i>												<i>Total</i>
	<i>AP1 – 1.3</i>	<i>AP1 – 3b.3</i>	<i>AP1 – 3c.2</i>	<i>AP1 – 2.1</i>	<i>AP1 – 3a.3</i>	<i>AP1 – 3a.5</i>	<i>AP1 – 3a.6</i>	<i>AP1 – 3a.7</i>	<i>AP1 – 3b.2</i>	<i>AP1 – 4.6</i>	<i>AP1 – 5.3</i>	<i>AP1 – 6.3</i>	
Percussive – indeterminate	0	0	0	0	1	0	0	0	0	0	0	0	1
Percussive – hammerstone	0	0	0	0	0	0	1	1	0	0	0	0	2
Percussive – pounder	0	1	0	0	0	1	1	0	0	1	0	0	4
Grinding /abrasive – abrader	0	0	0	0	0	1	0	0	0	0	0	0	1
Grinding /abrasive – polisher / smoothed stone	0	1	0	0	0	0	0	0	0	0	0	0	1
Grinding /abrasive – whetstone	0	0	0	0	0	0	0	0	0	0	1	0	1
Grinding /abrasive – pestle	0	0	0	0	0	0	0	1	0	0	0	0	1
Grinding /abrasive – quern	1	1	1	0	0	1	0	3	0	0	0	0	7
Grinding /abrasive – quern or grinder	0	0	0	0	0	0	0	1	0	0	0	0	1
Grinding /abrasive – two hand grinder	0	0	0	0	0	0	1	0	0	0	1	0	2
Grinding /abrasive – basin	0	0	1	0	0	0	0	0	0	0	0	0	1
Grinding /abrasive – working surface	0	0	0	0	0	0	1	0	0	0	0	0	1
Miscellaneous – indeterminate	0	0	0	0	0	0	0	1	0	0	0	0	1
Miscellaneous – rocks with natural holes	0	0	0	0	0	0	0	1	0	0	0	0	1
Miscellaneous – pitted / cupped stone	0	0	0	0	0	1	0	0	0	0	0	0	1
Multiple use – polisher / hammerstone	0	0	0	0	0	0	0	1	0	0	0	0	1
Multiple use – polisher / pounder	0	0	0	1	0	0	0	0	0	0	0	0	1
Container – indeterminate	0	0	0	0	0	0	0	0	0	0	1	0	1
Container – vase	0	0	0	0	0	0	1	1	0	0	0	0	2
Container – stone bowl	0	0	0	0	0	0	0	0	1	0	0	1	2
Unworked nodule	0	0	0	0	0	0	1	0	0	0	0	0	1
<i>Total</i>	1	3	2	1	1	4	6	10	1	1	3	1	34

SUPPL. TABLE 17.12. The distribution of stone objects and stone vases in Building MP1 during the LM IA period (excluding natural and indeterminate cases).

<i>Object Category</i>	<i>Context</i>				<i>Total</i>
	<i>MP1 – 1.1</i>	<i>MP1 – 3.1</i>	<i>MP1 – 3.2</i>	<i>MP1 – 5.1</i>	
Grinding /abrasive – abrader	0	1	0	0	1
Grinding /abrasive – quern	1	0	0	2	3
Grinding /abrasive – quern or grinder	1	0	0	0	1
Miscellaneous – rocks with natural holes	0	0	1	0	1
Multiple use tool – indeterminate	0	0	0	1	1
Stone lid	0	0	1	0	1
Bird's nest bowl	1	0	0	0	1
Bowl with carinated or curved profile and everted rim	0	1	0	0	1
<i>Total</i>	3	2	2	3	10

SUPPL. TABLE 17.13. The distribution of stone objects and stone vases in Building AM₁ during the LM IB period (excluding natural and indeterminate cases).

<i>Object Category</i>	<i>Context</i>												<i>Total</i>
	<i>AM₁ – 1.1</i>	<i>AM₁ – 2.1</i>	<i>AM₁ – 3.1</i>	<i>AM₁ – 3.2</i>	<i>AM₁ – 6.1</i>	<i>AM₁ – 8.1</i>	<i>AM₁ – 10.1</i>	<i>AM₁ – 11.1</i>	<i>AM₁ – 12.1</i>	<i>AM₁ – 13.1</i>	<i>AM₁ – 13.2</i>	<i>AM₁ – 14.1</i>	
Edge tool – axe	0	0	0	0	0	0	0	0	1	0	0	0	1
Percussive – hammerstone	0	0	0	1	0	0	1	0	0	0	1	1	4
Percussive – pounder	1	0	0	1	2	0	0	0	1	0	0	0	5
Grinding /abrasive – abrader	0	0	0	0	1	0	0	0	0	0	0	0	1
Grinding /abrasive – whetstone	0	0	0	0	2	0	0	0	0	0	0	0	2
Grinding /abrasive – pestle	0	0	0	1	0	0	0	0	0	0	0	0	1
Grinding /abrasive – one hand grinder	0	0	0	0	0	0	0	0	0	0	0	1	1
Grinding /abrasive – two hand grinder	0	0	0	1	0	0	0	1	1	0	0	1	4
Grinding /abrasive – quern	0	0	0	0	0	0	0	0	1	0	0	0	1
Grinding /abrasive – quern or grinder	0	0	0	0	0	0	0	0	0	1	0	0	1
Grinding /abrasive – basin	0	0	0	1	0	0	0	0	0	0	0	0	1
Grinding /abrasive – mortar	0	0	1	0	0	0	0	1	1	0	0	0	3
Miscellaneous – indeterminate	0	0	0	0	0	0	0	0	0	0	0	1	1
Miscellaneous – weights	0	0	0	0	1	0	0	1	0	0	0	0	2
Miscellaneous – rocks with natural holes	0	2	0	0	1	1	0	3	0	0	0	1	8
Miscellaneous – Stone pot lids	0	0	1	0	0	0	0	0	0	0	0	0	1
Multiple use – polisher / hammerstone	0	1	0	0	2	0	1	0	0	0	0	0	4
Multiple use – polisher / pounder	0	0	0	1	0	0	1	0	0	0	0	0	2
Multiple use – grinder / pounder	0	0	0	1	0	0	0	0	0	0	0	0	1
Multiple use – grinder / hammerstone	0	0	0	0	1	0	0	0	0	0	0	0	1

SUPPL. TABLE 17.13. The distribution of stone objects and stone vases in Building AM₁ during the LM IB period. *Cont'd.*

<i>Object Category</i>	<i>Context</i>												<i>Total</i>
	<i>AM₁ – 1.1</i>	<i>AM₁ – 2.1</i>	<i>AM₁ – 3.1</i>	<i>AM₁ – 3.2</i>	<i>AM₁ – 6.1</i>	<i>AM₁ – 8.1</i>	<i>AM₁ – 10.1</i>	<i>AM₁ – 11.1</i>	<i>AM₁ – 12.1</i>	<i>AM₁ – 13.1</i>	<i>AM₁ – 13.2</i>	<i>AM₁ – 14.1</i>	
Container – vase (indet. shape)	0	0	0	0	0	0	1	0	0	1	0	0	2
Container – stone lid	0	0	0	0	0	0	0	2	0	0	0	2	4
Container – Bird's nest bowl	0	0	0	0	0	0	1	1	0	0	0	0	2
Container – Bowl with carinated profile / shoulder lugs	0	0	0	1	0	1	0	0	0	0	0	0	2
Container – Bowl with rim lugs or handles	0	0	0	1	0	0	0	0	0	0	0	0	1
Container – stand / base	0	0	0	0	0	0	0	0	0	0	0	1	1
Container – palette	0	0	0	0	0	0	0	0	1	0	0	0	1
Container – bowl with rim spout	0	0	0	0	0	0	0	0	1	0	0	0	1
Debitage – indeterminate	0	1	0	0	0	0	0	0	0	0	0	0	1
Indeterminate – formal tools	0	0	0	0	0	0	1	0	0	0	0	0	1
<i>Total</i>	1	4	2	9	10	2	6	9	7	2	1	8	61

SUPPL. TABLE 17.14. The distribution of stone objects and stone vases in Building AM1 during the LM III period (excluding natural and indeterminate cases).

<i>Object Category</i>	<i>Context</i>							<i>Total</i>
	<i>AM1 – 3.3</i>	<i>AM1 – 15.1</i>	<i>AM1 – 16.1</i>	<i>AM1 – 16.1</i> <i>AM1 – 6.1</i>	<i>AM1 – 17.1</i>	<i>AM1 – 18.1</i>	<i>AM1 – 19.1</i>	
Percussive – hammerstone	0	0	3	0	1	0	0	4
Percussive – pounder	0	1	0	0	0	0	0	1
Grinding /abrasive – abrader	1	0	0	0	0	0	1	2
Grinding /abrasive – polisher / smoothed stone	1	0	0	0	0	0	0	1
Grinding /abrasive – pestle	0	0	0	0	0	1	0	1
Grinding /abrasive – one hand grinder	0	0	0	0	0	0	1	1
Grinding /abrasive – two hand grinder	1	0	0	0	0	0	0	1
Grinding /abrasive – quern	0	0	1	0	0	1	0	2
Miscellaneous – indeterminate	0	0	1	0	0	0	0	1
Miscellaneous – weights	0	2	0	0	0	0	0	2
Multiple use – polisher / hammerstone	0	1	0	0	0	0	0	1
Multiple use – grinder / pounder	0	1	0	0	0	0	0	1
Multiple use – pestle / pounder	0	2	0	0	0	0	0	2
Container – vase (indet. shape)	0	2	0	0	1	0	0	3
Container – stone bowl	1	1	0	0	0	0	0	2
Container – Bowl with carinated or curved profile and everted rim	0	0	1	0	0	0	0	1
Container – lamp	0	1	1	0	1	0	0	3
Indeterminate – formal tools	0	0	0	1	0	1	0	2
<i>Total</i>	4	11	7	1	3	3	2	31

Chapter 21

Loom weights

by E. Zografinski, C. Knappett, *and* P. Gheorghide

See pp. 427–41 in the printed Volume, with FIGS. 21.1–21.7 and PLATES 35–38.

SUPPLEMENTARY MATERIAL

SUPPL. TABLE 21.1	Loom weight types, quantities, and building find spots.	S125
SUPPL. TABLE 21.2	Loom weight shapes and number of perforations.	S125
SUPPL. TABLE 21.3	Weight ranges for each loom weight type, with recorded quantities.	S126

SUPPL. TABLE 21.1. Loom weight types, quantities, and building find spots.

<i>Building</i>	<i>Shape</i>	<i>Quantity</i>
AM 1	Conical	13
	Discoid	10
	Cuboid	6
	Spherical	2
	Cylindrical	3
	Pyramidal	4
	Total for AM1	38
AP1	Conical	1
	Discoid	11
	Cuboid	2
	Spherical	2
	Cylindrical	2
	Pyramidal	3
	Total for AP1	21
MP1	Discoid	4
	Cylindrical	1
	Total for MP1	5
Topsoil	Discoid	2
<i>Total</i>		66

SUPPL. TABLE 21.2. Loom weight shapes and number of perforations.

<i>Loom weight Shape</i>	<i>Number of Drilled Holes</i>	<i>Quantity</i>
Conical	1	14
Discoid	1	18
	2	9
Cuboid	1	1
	4	7
Spherical	1	4
Cylindrical	1	6
Pyramidal	1	7

SUPPL. TABLE 21.3. Weight ranges for each loom weight type, with recorded quantities.

<i>Loom weight shape</i>	<i>Weight range (grams)</i>	<i>Number recorded</i>
Conical	0–20	
	21–40	
	41–60	1
	61–80	10
	81–100	1
	101–120	2
	121–140	
Discoid	0–20	1
	21–40	1
	41–60	5
	61–80	4
	81–100	4
	101–120	4
	121–140	1
	141–160	3
	161–180	1
	181–200	2
	201–220	
	221–240	
	241–260	
	261–280	
	281–300	1
Cuboid	0–20	
	21–40	
	41–60	3
	61–80	
	81–100	1
	101–120	
	121–140	1
	141–160	
	161–180	
	181–200	1
	201–220	
	221–240	
	241–260	
	261–280	
	281–300	1
	301–320	
	321–340	
	341–360	1

SUPPL. TABLE 21.3. Weight ranges for each loom weight type, with recorded quantities. *Cont'd.*

<i>Loom weight shape</i>	<i>Weight range (grams)</i>	<i>Number recorded</i>
Spherical	0-20	
	21-40	
	41-60	
	61-80	
	81-100	1
	101-120	1
	121-140	
	141-160	1
	161-180	
	181-200	
	201-220	
	221-240	1
Cylindrical	0-20	
	21-40	
	41-60	1
	61-80	1
	81-100	1
	101-120	2
	121-140	1
Pyramidal	0-20	
	21-40	1
	41-60	1
	61-80	1
	81-100	
	101-120	1
	121-140	3
<i>Total</i>		66

Appendix 1

The ‘Palaikastro Educational Project’ (PEP) (2013–2016): accessing archaeology – constructing meanings of the past

by Kostas Kasvikis

TABLE A1.1	Participants in the educational project per implementation season.	S135
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PLATE A1.1	(a) Volunteers reconstructing a fragmented modern plate; (b) volunteers creating an artefact timeline; (c) volunteers presenting their examination of Minoan material culture; (d) volunteers reconstructing the Kouros figurine from pieces in the domestic shrine; (e) volunteers experiencing the excavation process; (f) volunteers participating in the flotation.	S147
PLATE A1.2	(a) Student reflecting on room function; (b) volunteers examining microscopically the botanical evidence; (c) volunteers restoring the design of their own finding; (d) volunteers interpreting an original Palaikastro artefact.	S148

Appendix 1

The ‘Palaikastro Educational Project’ (PEP) (2013–2016): accessing archaeology – constructing meanings of the past¹

by Kostas Kasvikis

From its inception, the PALAP project planned for its research activities to create benefits for the general public, especially by enhancing awareness of cultural heritage and environmental issues at various community levels. This Appendix focuses on the educational activities involving school children that were carried out during the fieldwork seasons.

In Greece, the educational role of archaeology emerged as early as the mid-19th century, with school visits to archaeological sites and museums encapsulating the romantic vision of that time and the perception of antiquities as a national patrimony and emblems of Greek national identity.² Since the 1980s, archaeological education has acquired a more systematic character as a formal and informal mode of learning, in contexts that range from history curricula and textbooks to educational activities at archaeological sites and museums to popular culture.³ Today, archaeological museums, archaeological sites and other cultural institutions in the country provide a variety of educational possibilities to different target groups for connecting with archaeological knowledge and interpreting the past. For school groups in particular, these learning opportunities are manifold and have enriched teachers’ practices related to archaeological education. Notwithstanding the rich experience in the implementation of educational activities at archaeological sites and museums, there are few other attempts to focus on issues of archaeological research, excavation and archaeology as a science.⁴ Even rarer are educational activities implemented at ongoing rescue excavations or broader excavation projects corresponding to the principles of public archaeology and community archaeology.⁵

The aim of this Appendix is to present and analyse an educational project addressed to primary education pupils who voluntarily participated in archaeology-based activities that took place in the context of the PALAP project, 2012–16. It also discusses the contribution of these activities in promoting the scientific, social and educational values of archaeological heritage to the participants as members of the broader local community.

THE PALAIKASTRO EDUCATIONAL PROJECT (PEP)

DEFINING DIFFERENT AGENDAS

Many researchers working in Greece have underlined the problem of the conceptual or physical disconnection between local communities and the numerous archaeological projects being implemented in the country by the Greek Archaeological Service or foreign institutions, particularly in the countryside. They have also stressed the need for various types of participatory and inclusive public involvement to make local archaeological heritage relevant to a public that is often bewildered, indifferent, or even hostile towards the work of archaeologists and the past itself.⁶ In the context of Palaikastro, on the one

¹ I would like to thank Carl Knappett, Nicoletta Momigliano and Alexandra Livarda (Directors of PALAP) for inviting me to participate, plan, and implement the educational policy targeting local school children. Special thanks are due to Rena Veropoulidou, PALAP’s archaeomalacologist, for her support and to the archaeologist-museologist Eva Furliga for her valuable contribution to the 2016 implementation of the project. Eleftheria Katsikalaki, President of the Palaikastro Parents Association during the implementation period, was very supportive in widely promoting the educational project. Finally, I owe my deep gratitude to Manolis Kontogiannakis, director of the Palaikastro Primary School, for his collaboration and support every year by informing students about the educational project and for making all of the school’s facilities available to PEP during the summer vacation.

² Hamilakis 2007, 57–123; Kotsakis 1991; Tziolas 2014.

³ Kasvikis 2015; Kasvikis and Kouser 2019.

⁴ For some cases and their descriptions see Ministry of Culture 2002, https://www.culture.gov.gr/el/service/SitePages/education_archive.aspx.

⁵ For some notable exceptions, see the cases of the Minoan Palace of Zakros (Chrysoulaki and Vokotopoulos 2000) and the Paliambela excavation project (Kasvikis *et al.* 2007; Nikonanou *et al.* 2008).

⁶ Carter 2017; Dakouri-Hild 2017; Kyriakidis 2020; Kyriakidis and Anagnostopoulos 2017; Papadaki and Dakouri-Hild 2017; Sakellariadi 2010; Sakellariadi 2011; Stroulia and Buck Sutton 2009; chapters in Stroulia and Buck Sutton 2010. For the Greek case see also papers in *Conservation and Management of Archaeological Sites*, vol. 15(1), 2013.

hand, archaeologists have given talks to local community and guided tours to teachers and the public in many circumstances; and, on the other hand, the local primary and secondary schools occasionally visited the archaeological museum of Siteia where the finds from previous Palaikastro excavations are on display. To achieve a better understanding of the local educational needs, one of the first aims of the Palaikastro Education Project (PEP henceforth) was to assess the agendas of different local community groups and stakeholders. In April 2013 members of the research team (Carl Knappett, Alexandra Livarda) and the archaeological educator (Kostas Kasvikis) organised a series of meetings with the heads of the local Primary School and High School, the members of the local 'Cultural-Folklore Association of Palaikastro–Itanos' and the local folklore museum, along with representatives from the local administrative authorities. Through these meetings we aimed to identify attitudes and conceptions about the discipline of archaeology, to specify priorities and expectations concerning the educational project and to explore the educational needs of the local community in relation to the new excavation, which began in July 2013, in order to develop specific communication strategies and to implement PEP.

As a result of these discussions a number of different agendas were identified. Among PALAP's aims was the development of a dialogue between the archaeologists and the local community, to encourage interest and raise awareness about the excavation of the Minoan town and the management of the archaeological site, and to disseminate archaeological knowledge to the public. For the local authorities, cultural society and members of the folk museum archaeology was both a tool and an obstacle to economic development. They appeared quite sensitive to the history and past of Palaikastro, but also very concerned about the economic and developmental impact of the archaeological work at the local level, due to the existing mixed relationship between the village inhabitants and the Greek Archaeological Service. This relationship is often conflictual, because the Greek Archaeological Service denies permits for developments on protected land. Despite this, the inhabitants regarded their (Minoan) past as an important element of local pride and expressed a desire for reinforcing tourism based on local cultural heritage. It is important to stress that north-eastern Crete is considerably more moderate in its touristic development when compared to the rest of the island and the traditional economy is based mostly on agriculture.

In addition to this, local teachers from the Primary and Secondary school stressed their wish for school children to participate in creative and meaningful activities during their summer vacation. They highlighted the importance of archaeological finds for understanding and learning local history and pinpointed the lack of educational material about Minoan Palaikastro (e.g. the absence of a teacher's pack). Finally, it was apparent that education and outreach about Palaikastro could provide useful insights and opportunities for examining the potential of archaeology as a tool for improving the historical understanding of young people.⁷

THE THEORETICAL FRAMEWORK

In order to develop PEP, a number of priorities were defined, the scope and aims were delineated and specific educational activities were designed. The educational rationale that underpinned PEP drew upon a combination of tenets and principles set by archaeological theory and pedagogy and their possible merging. A coherent archaeological theory regarding the disciplinary nature of archaeology and the framework for studying and interpreting material culture is indispensable for archaeological education. Researchers suggest that a broad range of practical approaches and a blend of different or contradictory theories are often applied in archaeological education, including processual and post-processual archaeological perspectives. On the one hand, programmes based on the principles of processual archaeology emphasise scientific methods and data derived from artefacts through inquiry-based approaches that focus on archaeological skills (for example measuring and recording), while, on the other hand, the influence of post-processual archaeology is traced in archaeological education activities that treat material culture as a subjective text that participants can 'read' in their own right; focus on agency and the role of the individual in the past; highlight empathy as a tool of understanding; stress the values of the past and the importance of context for interpretation; and supports different and/or alternative interpretations by the learners.⁸

Some archaeology, museum studies and history sub-disciplines, namely public archaeology, museum education and history didactics, provide sufficient theoretical premises and practical strategies for archaeological education. As an interdisciplinary field, archaeological education aims to enable different types of audience to access knowledge and share experiences concerning archaeological

⁷ Kasvikis 2020.

⁸ See Cole 2015, 126–29.

heritage in formal and informal learning settings.⁹ The sub-disciplines mentioned above share different, but supplementary, perspectives on the possibilities, affordances and educational significance of archaeological heritage as a means for different target groups to acquire knowledge and meaning about the past, improve understanding of the present and promote the values of cultural heritage management and protection.¹⁰

In particular, *public archaeology* envisages formal and informal learning about archaeology and the past, both inside and outside school as well as in museums and heritage sites, as an important aspect of the public responsibilities of the profession.¹¹ It is important to stress that a number of different theoretical conceptualisations and overlapping classification schemes have been proposed by researchers with the purpose of describing diverse strategies of public engagement with archaeology.¹² These models indicate a shift from a practice-oriented to a more theory-orientated approach. Practice-oriented approaches to public archaeology (e.g. the deficit model, education model, public relation model) are related to the predisposition of archaeologists to inform and educate people considered as being an unaware or lay public, with the aim of improving the image of archaeology and attracting social, economic and political support.¹³ On the other hand, theory-oriented approaches (e.g. the multi-perspective model, democratic model, along with critical and multi-vocal approaches) propose that the archaeological profession should not only provide opportunities for everyone to participate and be engaged in archaeological projects, especially locals or indigenous peoples, but should also go further in supporting multivocality and enabling people to articulate different and/or alternative voices and interpretations of archaeological heritage, instead of offering up certain meanings about the past, based on their personal identity and social context.¹⁴ Within this perspective the rationale behind PEP was not aimed solely at providing knowledge about the past and creating awareness on the importance of management of the archaeological resources, but mostly its focus was to emphasise the diverse perspectives involved in making sense of the past and critically engaging with local heritage according to the local community's needs, prospects and perceptions of the past, while also taking into account the conditions under which Cretans consume their Minoan heritage and construct their local identity.¹⁵

The field of *museum education* provided equally substantial input in terms of the design and implementation of the various activities of PEP. Museums are conceived as important educational environments and museum education adapts various pedagogical and psychological theories for reinforcing and developing rich learning experiences and opportunities for visitors to interpret objects and museum collections. The learning outcomes arising from educational practice in cultural organisations for different target groups range from knowledge and skills to values, creativity and future behaviour and progression.¹⁶ PEP involved multiple learning contexts, such as the archaeological site, the excavation laboratory and the excavation itself, and as a consequence it adopted the museum educational theories of 'learning styles and experiential learning cycle',¹⁷ 'multiple intelligences',¹⁸ and constructivist learning¹⁹ as being valid for archaeological education in the context of heritage sites and archaeological museums.²⁰ All these theories recognise the existence of different types of learners and the broad spectrum of possibilities that individuals have to process in their minds and learn, based on their differentiated intelligences; the fact that meanings are personal and dependent on existing ideas and values; and also that knowledge is constructed either by the individual's prior knowledge, which affects or modifies new knowledge when they are involved in new learning experiences, and/or through social interactions that reinforce knowledge acquisition.

It becomes apparent that constructivist learning is essential for archaeological education as all types of public are involved in various physical, emotional, and cognitive activities.²¹ When it comes to practice, archaeological education exploits *constructivism* (e.g. discovery learning, identification of learners' prior constructions and free-choices of learning), *social constructivism* (with a focus on big concepts, group discussion and collaborative problem solving, on-site programmes, active questioning and role-play, artefacts and ideas through experimental archaeology); *experiential learning* (hands-on experience outside the classroom, impact of experiences on future actions); *learning styles* (varied engagement with

⁹ Bender and Smith 2000; Corbishley 2011; Davis 2005; Erdman 2019; Henson *et al.* 2004; Jameson and Baugher 2007; Malone *et al.* 2000; Smardz and Smith 2000; Stone and MacKenzie 1990; Stone and Molyneux 1994; Stone and Planel 1999; Trškan and Bezjak 2020.

¹⁰ Kasvikis 2019.

¹¹ Moshenska 2017, 8.

¹² Merriman 2004; Holtorf 2007, 105–29; Matsuda and Okamura 2011.

¹³ Merriman 2004, 5–6; Holtorf 2007, 107, 114–19.

¹⁴ Matsuda and Okamura 2011, 6–7.

¹⁵ Hamilakis 2002; Hamilakis and Momigliano 2006.

¹⁶ Hooper-Greenhill 2007.

¹⁷ Kolb 1984.

¹⁸ Gardner 1999.

¹⁹ Hein 1998.

²⁰ Copeland 2004, 134; Henson 2004, 9–11; Henson *et al.* 2006, 37; Henson 2017, 46–48, 57.

²¹ Bartoy 2012, 553–56, 560–63; Davis 2005, 22–25; Henson 2017, 57.

visual, tactile or physical exploration, sound, language, direct or active experience, reflection, problem solving, experimentation) and of *multiple intelligences*, as well as, though more rarely, the traditional *didactic approach* (lectures for delivering information and testing of knowledge, focus on facts and figures, little input from learner).²²

At the core of museum education is object-based learning, which involves the active integration of objects into the learning process and learners' active engagement with material culture.²³ The multisensory character of the educational use of objects constitutes a model of learning, usually known as somatic or embodied learning, contributing to experiential knowledge.²⁴ In this light, an interesting relationship exists between multisensory experiences and somatic learning in archaeological and museum education, with the archaeological focus being on the multisensory properties of materiality in the past²⁵ and the embodied experiences inherently involved in archaeological research and excavation in the present.²⁶

Finally, *history education* provides a number of theoretical tools for developing archaeological education. Recently, many researchers have pointed out the importance of archaeological knowledge and methods for improving the students' historical thinking and understanding, both in the classroom and in other learning environments (archaeological museums, heritage sites, excavations); developing skills of historical inquiry and interpretation; enhancing different historical thinking concepts; building perceptions of the past and the ability to attribute meanings to artefacts; evolving synthetic skills of spatial and temporal contextualisation; gaining a deeper understanding of the complexities and depth of human experience; and for developing archaeological heritage awareness, among others.²⁷

THE EDUCATIONAL FRAMEWORK

As indicated above, PALAP's education and outreach activities aimed to create mutual understanding and communication as well as strengthen the bonds between the local community and the archaeological excavation of Palaikastro by providing physical and intellectual access to archaeological research and knowledge. More specifically, PEP aspired to mobilise knowledge concerning the archaeological research at Palaikastro for different target groups of the local community, providing learning opportunities and experiences for primary education pupils in order to operate as messengers; to create public awareness and understanding of archaeology as a social practice; and to highlight Minoan material culture as part of local history.

PEP's specific aims for the young volunteer participants were:

- to appreciate the value of archaeological heritage as historical evidence and the contribution of archaeology to the understanding of the past and its relevance to the present;
- to engage with and interpret various forms of archaeological data based on their own interests, values, existing knowledge, abilities and means of understanding;
- to become familiar with archaeology as a science and to experience the various stages of archaeological practice;
- to understand and appreciate the interdisciplinary character of archaeology and the contribution of different specialties to the reconstruction of the past;
- to raise their awareness concerning the protection and management of archaeological heritage;
- to discover aspects of local history concerning the Minoan past in an active, creative and pleasant way;
- to appreciate archaeological heritage as part of their local past;
- to improve their critical thinking skills, to make inferences and express personal opinions through their involvement in interpretive procedures in response to archaeological data; and
- to develop their historical thinking through participating in the experiential activities of discovering, inquiring and interpreting authentic and replica artefacts.

The initial intention of the educational project was for it to be addressed to two different target groups, applying specific archaeology-based activities for primary education pupils and educational guided tours for secondary school children. The latter, however, did not respond to the call for a number of reasons, such as the difficulty of bringing them together and their prior engagements, including informal forms

²² See Cole 2015 for a review and analysis of pedagogical theories and methods in archaeological education, especially table 1.

²³ Durbin *et al.* 1990; Paris 2002.

²⁴ Chatterjee *et al.* 2015, 1–8.

²⁵ E.g. Day 2013a; Hamilakis 2013; Skeates and Day 2020.

²⁶ Day 2013b, 21; Hamilakis 2013, 53.

²⁷ Arias-Ferrer and Egea-Vivancos 2017; Henderson and Levstik 2016; Kasvikis 2020; Levstik *et al.* 2014; Levstik *et al.* 2005.

TABLE A1.1. Participants in the educational project per implementation season.

<i>Implementation years</i>	<i>Number of participants (total)</i>	<i>Male</i>	<i>Female</i>
2013	10	6	4
2014	18	13	5
2016	12	6	6
	40	25	15

TABLE A1.2. Activities, years and areas of implementation.

<i>At the School</i>	<i>Research Season</i>		
	<i>2013</i>	<i>2014</i>	<i>2016</i>
1. Introductory session with Power Point presentation	+	+	+
2. Activity involving the reconstruction of modern pottery fragments and their contextual interpretation		+	
3. School yard dig activity and study of the finds	+	+	
4. Card discovery game about Minoan artefacts followed by participants' presentation			+
<i>At the Archaeological Site and Excavation Area</i>			
5. Visit to and observation of the excavation process	+		
6. On-site interpretation game: 'The Palaikastro Kouros'	+		+
7. Simulation of real dig at the excavation area		+	
8. On-site research activity and data interpretation in a Minoan house complex			+
<i>At the Excavation Laboratory</i>			
9. Guided tour and presentations at the excavation laboratory	+	+	+
10. Study and interpretation of a storage vessel from simulation of real dig		+	
11. Study and interpretation of original excavation findings			+

of education (foreign languages, basketball training, etc.) and/or part-time employment in local tourism businesses and enterprises. By contrast, the head of the Primary School and the President of the Parents Association successfully promoted the Palaikastro educational project to primary schoolchildren and their families within the framework of the PALAP summer excavation programme.

PEP's activities with local children were implemented during the 2013, 2014 and 2016 research periods, for three days each year. Forty different 10–12 year old children in total (TABLE A1.1) participated voluntarily in a variety of activities that had been designed for them and were implemented in different learning environments that included the Palaikastro Primary School, the archaeological site and excavation area (Roussolakkos) and the excavation study centre (Ayios Antonios). In addition, parents of younger children (8–10 years old) expressed an interest in those children also being able to participate and the latter were allowed to join the main group of volunteers occasionally and to participate informally and randomly in some of the educational activities.

Eleven different activities (TABLE A1.2), adopting a variety of learning methods and teaching strategies (TABLE A1.3), took place across these three years, ranging from children studying replica or authentic archaeological material to observing or participating in real excavation work. Some of these activities

TABLE A1.3. Methods and learning outcomes of PEP.

<i>Activities</i>	<i>Methods</i>	<i>Knowledge of archaeology</i>	<i>Knowledge from archaeology</i>
1. Introductory session with Powerpoint presentation	lecture, active observation, brainstorming, questioning and discussion	archaeological scientific methods and practice, archaeological thinking, material culture, types of archaeological evidence, excavation, archaeological specialties, management of archaeological sites and material culture	Minoan material culture, concepts of time, prehistory, the Minoan period, cultural variety, the nature of humanity, cultural heritage awareness, values of the past and significance for the present
2. Activity involving the reconstruction of modern pottery segments and their contextual interpretation	problem solving, hands on/minds on, discovery learning, inquiry-based learning, group work/ collaborative learning, presentation and group discussion	archaeological deposits, archaeological record, archaeological thinking, contextual interpretation of material evidence, communicating results to others	different categories of material culture, fragmentary nature of evidence of the past, making analogies between past and present, appreciating contingency and multi-perspectivity
3. School yard 'dig' activity and study of finds at the excavation study centre	discovery learning, experiential learning, problem solving, hands on/ minds on, worksheet-based guided inquiry, group work/ collaborative learning, presentation and group discussion	excavation, archaeological stratigraphy, discovering, recording, analysis and interpretation of archaeological evidence, evidential reasoning	concepts of time, chronology and periodisation (prehistory, antiquity, medieval, modern and contemporary period), cultural diversity, fragmentary nature of evidence of the past, the nature of humanity, making analogies between past and present
4. Card discovery game about Minoan artefacts followed by participants' presentation	discovery learning, problem solving, experiential learning, group work/ collaborative learning, tactile and physical exploration, presentation and group discussion	archaeological thinking, defining and categorising types of archaeological evidence, evidential reasoning	Minoan material culture, concepts of time, prehistory, the Minoan period, economy and administration, storage, writing, religion, trade, society, cultural diversity, making analogies between past and present (continuity and change, similarities and differences), values of the past and significance for the present

TABLE A1.3. Methods and learning outcomes of PEP. *Cont'd.*

<i>Activities</i>	<i>Methods</i>	<i>Knowledge of archaeology</i>	<i>Knowledge from archaeology</i>
5. Visit and observation of the excavation process	fieldwork, guiding, active observation, demonstration, questioning and conversation, tactile and physical exploration	archaeological fieldwork methods, excavation techniques, archaeological stratigraphy, identifying, sampling and recording the archaeological record, archaeological specialties, management of archaeological sites and material culture, values of archaeological practice	Minoan material culture, pottery, architecture, organic remains, fragmentary nature of evidence, cultural heritage awareness, values of the past and significance for the present, people and the environment
6. On-site interpretation game: ‘The Palaikastro Kouros’	fieldwork, tactile and physical exploration, discovery learning, problem solving, experiential learning, presentation and group discussion	archaeological thinking, recording, analysis and contextual interpretation of archaeological evidence, archaeological restoration, communicating archaeological interpretations	Minoan material culture, Minoan society, figurines, religion, social conflict, fragmentary nature of evidence, cultural diversity, the nature of humanity, appreciating multi-perspectivity, agency and contingency
7. Simulation of real dig at the excavation area	fieldwork, experiential learning, hands on/mind on, inquiry-based learning, group work/ collaborative learning, presentation and group discussion	archaeological fieldwork methods, excavation techniques, sampling, recording, documentation, sieving, flotation, stratigraphy, archaeological specialties, archaeological thinking, discovering, defining and recording of archaeological evidence, evidential reasoning, values of archaeological practice	Minoan material culture, pottery, architecture, organic remains, cultural variety, people and environment, fragmentary nature of evidence, cultural heritage awareness
8. On-site research activity and data interpretation in a Minoan house complex	fieldwork, discovery learning, worksheet-based guided inquiry, problem solving, hands on/minds on, group work/ collaborative learning, presentation and group discussion	archaeological thinking, analysis and contextual interpretation of archaeological evidence, evidential reasoning, communicating results to others	Minoan material culture, urban planning, housing, construction materials, society, household activities, making analogies between past and present (continuity and change, similarities and differences), people and environment, fragmentary nature of evidence, cultural heritage awareness, appreciating multi-perspectivity

TABLE A1.3. Methods and learning outcomes of PEP. *Cont'd*

<i>Activities</i>	<i>Methods</i>	<i>Knowledge of archaeology</i>	<i>Knowledge from archaeology</i>
9. Guided tour and presentations at the excavation study centre	fieldwork, guiding, demonstration, active observation, tactile and physical exploration, questioning and conversation, hands on/mind on, experiential learning, drama (pantomime), role play	archaeological laboratory work, archaeological conservation and restoration, archaeological specialties, study of organic remains, macro/microanalysis, documentation of finds, analysing and managing the archaeological record, values of archaeological practice	Minoan material culture, natural resources, organic remains, pottery, storage, food consumption, cooking, the Minoan economy, technology, cultural diversity, people and environment, making analogies between past and present (continuity and change, similarities and differences), cultural heritage awareness
10. Study and interpretation of a storage vessel from simulation of real dig	observation, discovery learning, inquiry-based learning, hands on/minds on, group work/collaborative learning, creative writing, presentation and group discussion	recording, documentation and interpretation of archaeological finds, archaeological thinking, evidential reasoning, communicating archaeological interpretations	pottery, technology, storage, nutrition, economy, everyday life, fragmentary nature of evidence, people and the environment, cultural heritage awareness, appreciating multi-perspectivity and agency
11. Study and interpretation of original excavation findings	active observation, hands on/minds on, worksheet-based guided inquiry, group work/collaborative learning, presentation and group discussion	recording, analysis and interpretation of archaeological evidence, archaeological thinking, evidential reasoning, communicating archaeological interpretations	Minoan material culture, figurines, pottery, technology, religion, economy, everyday life, cultural diversity, fragmentary nature of evidence, making analogies between past and present (continuity and change, similarities and differences), people and environment, values of the past and significance for the present

were only implemented during a single research period, such as the ‘Card discovery game’ for example. Others were repeated for a second time, such as the on-site interpretation games with the Palaikastro ‘Kouros’, or occurred every year, for example the ‘Introductory session with PowerPoint presentation’ and the ‘Guided tour and presentations at the excavation laboratory’.

Every year, via announcement notices, volunteers were called to participate in sets of educational activities under headings, such as ‘Minoan Palaikastro. An excavation in my area’ (2013), ‘Discovering the secrets of archaeology’ (2014), ‘Searching for Minoan Palaikastro’ (2016), which also revealed the different topics and aims of each year’s educational project. All activities were implemented by the author of this Appendix, in collaboration with the PALAP team. In 2016 Eva Fourliga, doctoral student at the University of Western Macedonia, contributed to PEP’s implementation.

As is displayed in TABLE A1.3, on the one hand all activities were planned and implemented to enable children to understand the disciplinary character of archaeology through examining different aspects

of the discipline (methods, excavation techniques, recording, conservation and restoration, laboratory work, interpretation of finds, archaeological values) and to acquire the skills of archaeological inquiry through examining different aspects of archaeological practice (knowledge of archaeology); on the other hand, the activities helped to promote knowledge concerning the past, mainly Minoan prehistory, to provide opportunities to understand the relevance of the past for the present (knowledge from archaeology), and to raise awareness of heritage care.²⁸ In addition, the archaeology-based activities were intended to enhance children's historical thinking skills and understanding.²⁹

BRIEF DESCRIPTION OF THE EDUCATIONAL ACTIVITIES

INTRODUCTORY SESSION WITH POWERPOINT PRESENTATION (2013, 2014, 2016)

Initially, at the Palaikastro Primary School, participants were informed about archaeology, its nature, research methodology and the ways of studying and interpreting the past, Minoan Crete and the excavation of Palaikastro. The teaching process was based on a PowerPoint presentation and a discussion of photographic material with the aim to provide for the children's initial introduction, cognitive preparation and encouragement in advance of their participation in the various subsequent activities for each year of the educational project implementation.

ACTIVITY OF RECONSTRUCTING MODERN POTTERY FRAGMENTS AND THEIR CONTEXTUAL INTERPRETATION (2014)

Participants were subdivided into four groups which were each given a bag with broken modern porcelain potsherds of different decoration and texture, along with a research worksheet containing a floor plan of a modern house where the locations of the findings were marked as well as their year of discovery (PLATE A1.1 *a*). The children attempted to join together as many broken pieces as they could, and then they were asked to discern which objects they had created; to figure out if some parts were still missing and why; to interpret the possible function of the area where the artefacts under study were found; and to suppose the objects' usages. Each group then presented their research results to the others and they all discovered that pieces of their objects were included in the material of the other teams, deriving from different house contexts. Participants proceeded to produce sometimes similar and sometimes different interpretations concerning the function of their 'excavated site' and how it came to be destroyed (e.g. fire, earthquake, and collapse due to abandonment). Through this activity participants were introduced to and discussed the fragmentary nature of archaeological data as well as the divergence of interpretations about the past.

'SCHOOL YARD DIG' AND STUDY OF THE FINDS (2013, 2014)

In this activity, children were urged to observe any traces of the past in their school's sandbox where an archaeological deposit had been created and they were intrigued to discover what was buried there, including artefacts dating from prehistory to modern times: in 2013, we used four replicas (a Byzantine icon, a Hellenistic/Roman lamp, a Mycenaean 'Psi' type figurine, and a Neolithic arrowhead) and a semi-buried metal tobacco tin (*c.* 1940s) at the top of the deposit, placed as a more recent indication of human activity. In 2014, the arrowhead was replaced by authentic obsidian flakes. Children, after identifying the first surface object, gradually removed layers of soil and uncovered the other four artefacts at different depths, which they cleaned, numbered and bagged.

Then at the excavation study centre (Ayios Antonios) the children were given a modern object (a UNICEF mug in 2013 and a typical old-fashioned gas lamp in 2014) along with the scenario that it had been discovered in an excavation in the future, a few hundred years after its use. They were asked to imagine what sort of information these objects of study could give to a future archaeologist about its uses, who owned them, how it had come into the archaeologist's hands etc. This activity served as a cognitive preparation for an object study activity³⁰ of their five finds in the 'school yard dig'. Working in groups, the children created a cardboard stratigraphy, arranging the artefacts they found in a chronological sequence from most recent to oldest. Then, using research worksheets, they examined, analysed and interpreted them as being characteristic of their time, examining external features; functions; possible manufacturers and users; places of discovery; their values for people in the past and for their discoverers now in the present; and the chronology and dating, based on their examinations and the sequence of discovery, which they depicted on their constructed cardboard stratigraphy. The children's analysis

²⁸ See also Henson 2011, table 16.4; 2017, 53–55.

²⁹ For a detailed analysis of this aspect, see Kasvikis 2020.

³⁰ Corbishley 2011, 236–250; Durbin *et al.* 1990.

and interpretation of their finds was based on their pre-existing knowledge, the type of the artefact and the detailed object study carried out using worksheets, enabling them to conclude, for example, that the oil lamp is dated to the Hellenistic/Roman era because 'it was buried below the Byzantine icon' (2013) or through its decorative motifs (2014), while the arrow was attributed to the Neolithic pointing out its stratigraphic position at the bottom of the deposit or because 'it seemed to be very old'. Finally, participants presented and commented on their research results and argued in favour of their interpretations (PLATE A1.1 b).

Through this activity, participants were experientially introduced to the work and techniques of archaeology (excavation, stratigraphy, recording, artefacts documentation and interpretation) and prepared for the subsequent activities at the excavation and the laboratory. Additionally, they elaborated on concepts of time and chronology and developed other archaeological and historical skills through studying and interpreting historical evidence and understanding its nature.

CARD DISCOVERY GAME OF MINOAN ARTEFACTS AND THEIR PRESENTATION BY THE CHILDREN (2016)

Under the title 'Looking for Minoan Crete in my school', this activity required participants, in small groups, to solve six different riddles which guided them to discover six different (single or double-sided) photo cards with images of Minoan archaeological material (architectural remains and artefacts) at various locations around their school building and schoolyard. All the depicted archaeological material was familiar to them from the 3rd Grade Primary history textbook: a view and a representation of the palace of Knossos, the Phaistos Disc and Linear B tablets, a Minoan vase with Marine Style decoration, golden double axes and a bull's head rhyton, the 'Prince of Lilies' fresco and the 'Snake Goddess' figurine, and a Minoan seal.³¹ The riddles asked the children, for example, to 'Search the library for Minoan letters' directing them to school library or 'Search for a Minoan seal in the office with the seals...' guiding them towards the office of the school director, who has the office seals at his desk.

After solving the riddles and the subsequent enthusiastic discovery of the cards, participants were asked to consider what sort of information all these artefacts and buildings might reveal about the Minoan period, with the aim being to use discussion and interaction to infer how many different aspects of life in the past are illuminated by the archaeological evidence. Working in pairs, they presented a number of very interesting ideas to the group about what these objects mean and what information they convey (PLATE A1.1 d), avoiding conventional responses. For example, they stressed that 'the study of the architecture of a palace like that of Knossos, reveals, also, the mentality of the people' or that the examination of wall paintings and figurines – such as the 'Prince of Lilies' and the 'Snake goddess' – 'can inform us about the fashion and uniformity of appearance that may have been imposed in those days'.

VISIT AND OBSERVATION OF THE EXCAVATION PROCESS (2013)

In the first year of the implementation of the educational project the children visited the excavation area and observed the archaeological process in the excavation trenches and the function of various working groups including digging, excavation documentation (sampling, excavation diary, photography), dry sieving and flotation. Participants were guided by the archaeologists, workers, specialists and the directors of the excavation and were very active in formulating questions, understanding the working conditions, the strict methodology of archaeological research and the detailed recording of archaeological data. In addition, they observed and participated in the flotation procedure, experiencing the methodology of sampling organic remains.

ON-SITE INTERPRETATION GAME: 'THE PALAIKASTRO KOUROS' (2013, 2016)

Activity 6 was an interpretation game implemented in the sector of the Palaikastro archaeological site which was accessible to visitors, where the Palaikastro Kouros had been discovered in the area of an urban shrine, part of a larger residential complex.³² The children were introduced to the archaeological context of the discovery of the Kouros and supplied with the basic archaeological information (about the house complex and the possible urban shrine; the discovery of the figurine which had been burned and broken into hundreds of pieces; the figurine's manufacture using the precious materials of ivory and gold), but not provided with the excavators' interpretation concerning the destruction and dispersion of the artefact. Then, they were encouraged to search the ground for 'fragments' of the Palaikastro Kouros that had originally been discovered in the same place. This led to the participants discovering a

³¹ Maistrellis *et al.* 2006.

³² *PK Kouros*.

number of cardboard pieces of the Kouros, scattered around different spots, inside and in the broader area of the building, 10 metres apart, as had actually happened during the excavation. They then put them together to create a half-metre replica figurine, almost the same size as the original (PLATE A1.1 *d*). Finally, they were encouraged to reflect and hypothesise about why and how that figurine had been destroyed, shattered and discarded over such an extensive area.

The children formulated various theories that either overlooked or incorporated all or much of the archaeological data presented to them to varying degrees and gave several imaginative – but mostly plausible – ideas, providing explanations that included destruction, earthquakes, conflagrations, accidents, and raids. Participants were reminded of the excavation data or provided with additional information to elaborate upon their inferences and finally were given the archaeologists' interpretation which they evaluated and discussed. In both years of its implementation, the children commented on the difficulty in reaching a final, definitive conclusion.

SIMULATION OF REAL DIG AT THE EXCAVATION AREA (2014)

At the site of the real PALAP excavations, in a trench that had not yet yielded any archaeological deposits, an artificial archaeological layer was created which included a large part of a traditional Cretan pithos imitating those of the Minoan period, the stone foundations of a wall, a pestle and mortar, and scattered pottery sherds, which were unstratified. First, the children were guided through the real excavation and were informed about the results of the archaeological research so far (findings, houses, dating). At the same time, they observed the archaeological process (digging, sampling, excavation diary, photographing, dry sieving, and archaeological flotation) and the tools used by the archaeologists.

Children were then divided into two groups and alternately participated in: a. the excavation process in their own trench and b. the flotation process to recover organic remains. They experienced the excavation process through participating in digging, writing the excavation diary, sampling and recording their finds, mapping the architectural remains, photographing their data, and interpreting their results (PLATE A1.1 *e*). In a similar way, they were informed about, observed and participated in the systematic collection of bioarchaeological remains through the process of archaeological flotation (PLATE A1.1 *f*). Overall, in this activity participants experienced and realised the scientific conditions, the strict methodology of archaeological research and the detailed recording of archaeological data, acting as field archaeologists.

ON-SITE RESEARCH ACTIVITY AND DATA INTERPRETATION IN A MINOAN HOUSE COMPLEX (2016)

Activity 8 was implemented in the visitable sector of the Palaikastro archaeological site, where excavations before PALAP were conducted in previous campaigns. Firstly, participants were introduced to the archaeological site and guided around a well-preserved Minoan house complex using the archaeological plan. Children practised some basic geographic orientation and studied the floor plan of Building 5 to familiarise themselves with the archaeological context. Then, the volunteers were divided into four groups, received an archaeological plan and research worksheets, and subsequently undertook different research tasks in that particular area. Team A, using tape measures, estimated the total area of Building 5. Then, using the plan, group members were asked to observe the rooms of the house complex and to discuss their size, possible numbers of inhabitants and house construction. The tasks of Teams B and C were to identify different coloured areas from the house complex on the given ground map in order to discover a number of cards with photos of artefacts – related to seed processing, cooking and food consumption – that had been discovered in the excavation and then to consider the card captions and to reflect on the functions that the given area served (PLATE A1.2 *a*). Finally, Team D undertook the search for and identification of the step indicating the beginning of a staircase in the building and marked its position on the plan. Then they were asked to speculate on what their discovery may imply about the state of the building. Each group presented their research results to the rest of the children, using all the research material and plan, arguing for their interpretations and commenting on all of the results.

Through the above activities and tasks, young participants developed a number of archaeological and historical thinking skills, experienced and inquired about archaeological remains, discovered and analysed aspects of Minoan life, and appreciated the evidentiary character of material culture.

GUIDED TOUR AND PRESENTATIONS AT THE EXCAVATION STUDY CENTRE (2013, 2014, 2016)

Each year of PEP the participants visited and were guided around the premises of the excavation study centre (Ayios Antonios). In groups, the participants observed, attended presentations by specialists and/or experienced the various stages of archaeological research after the excavation, including the

conservation, recording, documenting and studying of the various collected archaeological finds (artefacts, organic remains). Participants, divided into groups, experienced: a) the process of cleaning, analysing and interpreting pottery and other finds by specialists (conservators, archaeologists); b) the process of plant, animal bone and shell analysis (PLATE A1.2 *b*).

The activity was aimed at encouraging children to appreciate post-excavation work and analysis and to realise the interdisciplinary character of archaeology and the various scientific methodologies used for the reconstruction of the past. At the end, the participants discussed their experience. In 2016, the children, after their guided tour, were divided into four groups and played a guessing game, representing kinetically, through pantomime, the work of the archaeologist, the conservator, the archaeobotanist, the archaeomalacologist and the pottery specialist.

STUDY AND INTERPRETATION OF A STORAGE VESSEL FROM SIMULATION OF REAL DIG (2014)

In 2014, participants undertook the task of studying and interpreting a fragment of a large storage vessel (a modern Minoan-like pithos) that they discovered in their own simulated real dig (Activity 7) knowing the context of the vessel's discovery. Through examining archaeological artefacts, the activity encouraged the children to make inferences, build hypotheses, and draw conclusions through observation, classification, analysis, reflection and interpretation of cultural material as evidence of the past. It also sought to advance their skills of historical contextualisation and argumentation utilising experience and data gained from the simulated excavation. Participants were asked to consider what they would like to discover about their finding and proposed a number of questions regarding the dating, use, and construction of the object and were curious with regards to its real dimensions, which they attempted to estimate by examining the pithos' features. The children were then intrigued to learn that they would play a game where they would make up questions arising from their own assumptions, knowledge or observations about the artefact which would be formulated in such a way that the archaeological educator could answer them with a simple positive or negative response. The educator explained, when possible, why some things could not have happened or provided additional archaeological information to guide the children's thinking for subsequent questions and arguments. Through this process the children were compelled to reconsider some of the archaeological evidence (the fragmentation of the pithos, the fact that no seeds or shells were found in the excavated content but only small ceramic sherds) and they managed to decipher the finding to a great extent and suggest different contextual interpretations, which range from the explanation that it was a storage vessel placed in the ground floor of a house to the assumption/hypothesis that, because only a fragment of the pithos was found without any content, it might have had some other function or collapsed from the second floor.

This educational activity was completed by assigning children three different creative activities that could be carried out individually or in groups: a) to think as archaeologists and write a text that presented the particular artefact; b) to act as conservators and create a drawing of the whole pithos restored to its full dimensions (PLATE A1.2 *d*); and c) to play the role of museologists and design the exhibition of their restored find in the archaeological museum of Siteia and write an exhibition caption. Through this task children managed to construct different and/or alternative written and visual accounts about the pithos fragment (fictional stories, reports, pictures, short captions) and commented on the multiple interpretations they had derived from the artefact. For example, the first group ('the archaeologists'), among others, produced a story entitled 'The Cursed Pithos', with fictional characters, events and facts related to the artefact. It was an imaginative alternative narrative of the pithos' biography that it was smashed in order to break the curse that had been wrought upon it by the clay digger over a payment dispute and since then had affected the lives of the people associated with it. In another story created by the second group ('the conservators') the narrator is the pithos itself, who decided to tell its story and recalls its creation by a Minoan craftsman, around 1500 BC, its destruction by an earthquake and its partial discovery by child-volunteers at the excavations of Palaikastro 2014.

STUDY AND INTERPRETATION OF ORIGINAL EXCAVATION FINDINGS (2016)

This activity was implemented in 2016 as an alternative to Activities 5 and 7 in previous years, as there was no opportunity for observing or participating in the excavation process (as this was a study season for the excavation project). Instead, the children, working in groups, investigated three authentic archaeological artefacts (an incomplete vessel, a clay figurine, probably of a male worshipper, and the head of a clay pig figurine). They were given the scenario that these artefacts were representative finds of the Palaikastro excavation and that they should examine them like archaeologists, in order to understand, interpret and draw conclusions about material aspects of Minoan life, such as economy, ideology, technology, and religion. Their object-study task was based on research worksheets that

firstly required them to make descriptions of the external features (shape, size, weight, colours, etc.) of the objects and to record their dimensions, materials and decorations (PLATE A1.2 *d*). They were then asked to deduce and suggest the possible functions, contexts of manufacture, usages and users of the objects and to define the artefacts' values and significance for people in the past and present. The three different groups interacted with each other, presenting their inquiry results, commenting, discussing and elaborating on their inferences and interpretations.

Through this activity, participants not only became familiar with modes of archaeological thinking and developed historical inquiry skills, but were also exposed to the interpretation of aspects of the Minoan past through collaboration and interaction with their peers, through the archaeological data represented by the artefacts and their own perspectives and assumptions.

EVALUATION

The evaluation of PEP focused on the assessment of the children's appreciation of their participation in the project; on measuring the impact of the Palaikastro archaeological project on their perceptions towards the Minoan past and archaeology, both as a science and social practice; and on the appraisal of their experience, knowledge and attitudes towards local history.

To fulfil these evaluation aims, different methodological tools were applied:

- a) Evaluation sheets and pre- and post-tests, with closed-ended questions, distributed at the beginning and end of each implementation year for the identification of the participants initial and final perceptions, opinion and attitudes on the aforementioned issues. The post-test included additional questions focusing on the assessment of their experience and their satisfaction with their participation in the different educational activities, as well as asking about their favourite activity and the difficulties they faced.
- b) Semi-structured discussions at the end of each year concerning their opinions, appraisal and impressions of their participation in the various educational activities of the project.
- c) Analysis of the available data and of the children's products and responses, including written and oral accounts and outcomes produced during PEP (e.g. answers on research worksheets, the excavation diary, other texts, paintings).
- d) Participatory observation by the educator throughout the whole process of implementation.

In regards to their experiences of PEP, based on the responses to the questionnaire, discussions and observation, the participants for all the years (2013, 2014, 2016) felt very satisfied with their involvement and enjoyed all activities, even the initial introductory activity (activity 1), which was the closest to formal education. It is worth noting that the children stated that observing (2013) and experiencing (2014) the real excavation (activities 5 and 7 respectively) and participating in the two discovery and interpretation activities at the archaeological site (activities 6 and 8) were the most fascinating. In addition, they mentioned activities 10 and 11 as being engaging and inspiring as they were exposed to real archaeological objects. These findings suggest the importance of involving various types of experiences, somatic learning, problem-solving, discovery learning, and opportunities for cognitive activities and interpretation as tools for archaeological education. Participation in the excavation in particular, according to their answers, was the activity that they enjoyed and found most appealing. Concerning the excavation as a teaching tool in archaeological education, the evaluation of PEP confirms other related research evidence about the educational benefits of schoolchildren's participation in real or simulated excavation³³ and their descriptions of their experiences of excavating and interpreting findings as motivating them to explore more open questions, through on-going inquiry, instead of learning a 'non-negotiable narrative' in the context of school history.³⁴

With regards to their perceptions of archaeology and the Minoan period, based on comparisons of the pre- and post-test answers and the final semi-structured discussions, it would appear that local pupils maintained an ethnocentric and localistic conception of the values and uniqueness of Minoan culture and the importance of archaeological excavations in their area. In general, at the beginning of each year's implementation views, such as the 'Minoan civilisation is the most important civilisation of Greece', 'archaeology discovers valuable objects and studies the great works of art of the past' and excavations are important because 'they show the significance of our area (Palaikastro) in the past' were prevalent. However, it was found that after their PEP experience the children slightly modified their previous stereotypical view of archaeology as being mostly concerned with history of art, which –

³³ Arias-Ferrer and Egea-Vivancos 2017, 102.

³⁴ Levstik et al. 2005, 43.

despite the paradigm shift witnessed abroad at the turn of the century – is still quite a dominant narrative in the public, academic,³⁵ and educational domain in Greece.³⁶ They recognised both the economic parameters of the excavations in their area and the broader 'cognitive' importance of archaeological science as a mode of producing valuable knowledge about people and their lives in the past, through systematically examining all aspects of their material culture. It appears that their familiarisation with archaeological research and excavation had an influential impact on modifying their views, as this change was more evident in the evaluation of the 2013 and 2014 activities, when the children observed or participated in the excavation process. By contrast, in 2016 (a PALAP study season), the children appeared to be more attached to the idea of archaeology as treasure hunting both before and after taking part in the educational activities, despite the fact that this year was the most successful one in terms of pedagogical interaction between educators and participants. In addition, the participants still felt very proud of the Minoan culture because 'it is famous and recognisable all over the world', although it was more moderate than before the implementation as many of them began to acknowledge that 'Minoan culture is one of many that flourished in Greece'. Finally, they considered the excavations in their area as being important because it could bring tourists and development but also for making them proud as Greeks and as Cretans.

It was not the intention of the educational project to modify the above views or consider them as wrong or false, but it is interesting to note that the evaluation process clearly revealed these perspectives and afforded younger members of the local community the opportunity to express their perceptions. Needless to say, many of them were influenced by the local conceptualisations and the broader national attitudes about the Minoan past. Minoan civilisation has long been listed in Greece's national narrative as Europe's first 'real' civilisation,³⁷ a perception that was vividly depicted, for example, in the 2004 Olympics Opening Ceremony where Minoan Crete was proclaimed as the birthplace and origin of the Olympic Games.³⁸ In general, Minoan culture is invested with a number of symbolic, aesthetic and associative values; and the local Cretan communities, in particular, have appropriated and incorporated this Minoan heritage at the economic, intellectual, touristic and educational level and blended it with the local Cretan identity.³⁹ Finally, Greek formal education is also a domain where perceptions are created about the Minoan past. For example, in primary history textbooks from the 1980s onwards, Minoan culture has been gradually Hellenised and incorporated into the narrative of the historical continuity of the Greek nation that defines its origins in Aegean prehistory.⁴⁰

It has been suggested that the 'Minoan experiences' of the Cretan schoolchildren are defined by a number of material and temporal palimpsests to which they are exposed.⁴¹ The material palimpsest involves the archaeological remains of the Minoan period themselves, including the archaeological restorations (e.g. the palace of Knossos), the exhibitions in the local museums, the aesthetic reproduction of Minoan features (in architecture, advertising, souvenirs), their representations in art and in experimental archaeology (e.g. the reconstruction of the 'Minoan' ship), and the conflicts concerning material manifestations of Minoan heritage in society, science and education (e.g. textbooks). In contrast, the temporal palimpsests refer to the different temporalities of the original Minoan artefacts, of their imitations, representations and exhibitions in the past or present, the temporality of the students themselves when interacting with material culture, in terms of their age or the time of interaction, and the varied temporality of the management of the Minoan heritage (e.g. the restoration of Knossos, the approach of a museum exhibition, etc.). These experiences are mental but also material, embodied and sensory, as happened in the framework of PEP.

In terms of historical understanding, the empirical study and analysis of the young participants' outputs (written answers in worksheets, oral and written accounts and interpretations, the excavation diary, reports, stories and drawings) and their answers in the context of the evaluation, imply the significant contribution of PEP to the development of their historical thinking skills, as they managed to explore and learn about the past through handling and studying material culture; to examine concepts of time, causality, continuity and change, significance, agency, and differences and similarities in certain archaeological situations; to make inferences from historical evidence and to create their own accounts of the past; to appreciate different points of view and multi-perspectivity; and to realise the nature of evidence and the fragmented nature of history.⁴²

³⁵ See Nevett 2017, 1; Plantzos 2014, esp. chapter 3.

³⁶ Kasvikis and Eleftheriadou 2020.

³⁷ Andreou 2005, 78–9.

³⁸ Simandiraki 2005, 167–69.

³⁹ Hamilakis 2002, 3; Hamilakis and Momigliano 2006;

Papadopoulos 2005, 119–22; Simandiraki 2004; 2006; 2011; Solomon 2003.

⁴⁰ Kasvikis 2012; Kasvikis and Eleftheriadou 2020.

⁴¹ Simandiraki 2006.

⁴² Kasvikis 2020.

Finally, the broader impact of PEP on the local community appears to be equally important, as parents in many instances asked for their children to participate, no matter the age limitations that had been set by the archaeological educator. In addition, participants noted that every day they were telling their family and relatives about their experiences in the educational activities and that they were willing to participate again next year.

DISCUSSION

PEP contributed to the promotion of PALAP's new research program at Palaikastro, making it accessible to voluntary 10–12-year old participants, with the aim of increasing knowledge, providing experience and raising awareness of archaeological research and Minoan archaeological heritage more generally, at a local level. Within the context of PALAP there were also other initiatives to inform the public and disseminate research among the local community, but through the educational project under discussion further opportunities for public engagement and interpretation were introduced. The planning and implementation of PEP was based on a series of complex and interdisciplinary theoretical principles and empirical aspects of archaeological education aiming to involve children mentally, physically, and emotionally in a process of constructing knowledge and meaning related to their local history, and to promote reflection about the relevance of the past to the present through archaeological heritage.

The examination of local interests, perceptions and attitudes towards the Minoan past and the expectations of the different local groups and stakeholders concerning archaeology were crucial prerequisites for the construction of meanings by the educational project's participants in the framework of social constructivism in education and post-processual theory in archaeology. In practice, these requirements were modified into inquiry-based teaching methods and experiential learning activities that were meaningful to the participants.

The outcomes of PEP were varied. Through its activities the volunteers examining and experiencing archaeological heritage did not simply extract information about their local history but rather actively constructed knowledge and meanings about the past, on the basis of the affordances and restrictions of archaeological remains as historical evidence and their nature to reflect the entanglement between 'things' and humans.⁴³ Through the various activities implemented over three years, the young participants advanced their competences of contextual understanding, argumentation and interpretation, developed a critical understanding of archaeology, and made sense of their locality in a multifaceted way. It was also evident that material culture can contribute fundamentally to children's development of historical thinking skills and concepts (time, evidence, significance, agency, accounts, empathy, continuity and change, similarity and difference, causation, multi-perspectivity), if certain theoretical perspectives concerning archaeological education are applied.⁴⁴

Many of the archaeological-based activities within PEP's framework supported local children in responding to and collaboratively solving archaeological problems and enabled them to recognise the nature of archaeological evidence, appreciate different perspectives on explaining events, situations or conditions of the past based on archaeological data, construct their own interpretations and accounts examining – in many instances – the archaeological context, and to realise agency and contingency when analysing and interpreting material culture. Multi-perspectivity, agency, contingency, and contextual meanings and interpretations are equally valid for post-processual archaeology⁴⁵ and for archaeological education in the broader context of the social-constructivism approach of learning in authentic environments, such as archaeological excavations, museums and heritage sites.⁴⁶

Nevertheless, we were aware of the socio-cultural conditions of learning and although the young volunteers were very competent in constructing new meanings and making inferences working with archaeological evidence, it was apparent that their interpretations in many instances were influenced by their micro-theories and own personal perceptions of the past. They were also affected by gender, presentism, localism, and even anachronisms, as well as their historical knowledge from formal education. For example in the activity 3 (School yard 'dig' and study of finds) a group of male and female pupils examining the Mycenaean 'Psi' type figurine concluded that it was made by a woman 'because only a woman would know how to make some elements in the statuette, but she was not a craftswoman because there were some imperfections' (2014), while in activity 11 (Study and interpretation of original excavation findings – 2016) a group of male participants studying an incomplete Minoan vessel attributed its manufacture to a craftsman because 'a woman would make it more elaborate'. In the same activities

⁴³ Hodder 2012.

⁴⁴ Kasvikis 2020

⁴⁵ E.g. Hodder and Hutson 2003; Trigger 1989.

⁴⁶ Cole 2015, 120–22.

many participants recognised the evidentiary significance and informative values of the studied artefacts (replicas or authentic) concerning the past in general and the Minoan period in particular; however, a group of participants asked the same research question attributed the importance of the Hellenistic/Roman lamp in the present 'as a means to have light if the electricity is cut off' (2013). In the context of history education theory and research, the importance of the socio-cultural context in which learning occurs⁴⁷ and the role of social identity and culture as factors in the development of a learner's historical ideas and understanding is widely recognised.⁴⁸ As a result, in the case of the Palaikastro educational project the interpretations articulated by participants during the activities, and their ideas on the values and significance of material culture, identified in the activities and the final evaluation, appear to be affected by their collective memory as members of the local community and the broader modes of consuming the Minoan past in formal and informal education, as already discussed.

To sum up, the PALAP project responded to the public and social responsibilities of archaeology and, through the development of the education and outreach programme, local children acquired access to the production of archaeological knowledge, participating in engaging archaeological-based activities that enabled their own means of making sense of the past as members of their memory culture. Through experiencing the archaeological process, examining artefacts and identifying their meanings and being involved in learning and interpretive situations of archaeological data, the young participants became aware and realised the significance of archaeological heritage, including the scientific, educational, associative, social, economic and historical values of archaeological sites, monuments and artefacts,⁴⁹ as well as re-negotiating their identities and articulating their personal views and opinions in terms of their reception of archaeology as a discipline⁵⁰ and the Minoan past as local heritage.

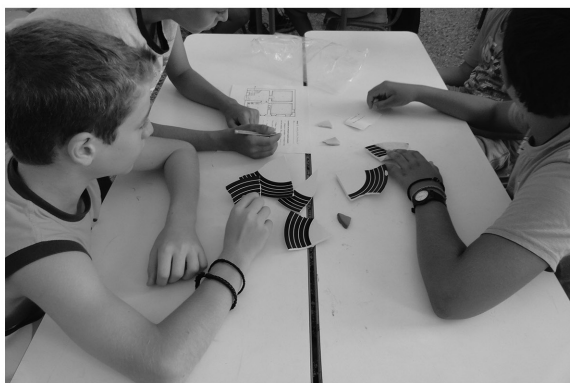
The complete Bibliography for titles used in the print Volume and Appendix 1 appears on pp. S195–S226.

⁴⁷ Barton and Levstik 2004, 1–24.

⁴⁸ Epstein and Salinas 2018, 63, 65, 73–74.

⁴⁹ De la Torre 2002; Klamer 2014; Little 2012.

⁵⁰ Erdman 2019; Jameson and Baugher 2007; Little and Shackel 2007; 2014; Thomas and Lea 2014.



(a)



(b)



(c)



(d)



(e)



(f)

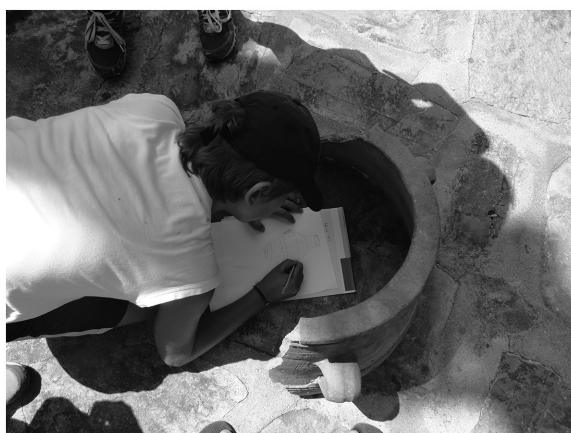
PLATE A1.1. (a) Volunteers reconstructing a fragmented modern plate; (b) volunteers creating an artefact timeline; (c) volunteers presenting their examination of Minoan material culture; (d) volunteers reconstructing the Kouros figurine from pieces in the domestic shrine; (e) volunteers experiencing the excavation process; (f) volunteers participating in the flotation.



(a)



(b)



(c)



(d)

PLATE A1.2. (a) Student reflecting on room function; (b) volunteers examining microscopically the botanical evidence; (c) volunteers restoring the design of their own finding; (d) volunteers interpreting an original Palaikastro artefact.

Appendix 2

The peak sanctuary of Petsophas: a reappraisal

by Leonidas Vokotopoulos

FIGS. A2.1–A2.6

FIG. A2.1	Relief map of the NE end of Crete: Petsophas, the other sanctuaries on peaks, and the urban and administrative centres of the second millennium BC. Scale 1:250,000 (Anavasi editions, with additions by the author).	S154
FIG. A2.2	Relief map of Petsophas and its surroundings. The solid circle marks the location of the peak sanctuary, the plain circles the other two peaks of the mountain. Scale 1:50,000 (Anavasi editions, with additions by the author).	S155
FIG. A2.3	Petsophas: the central part of the site according to (a) J. L. Myres, (b) B. Rutkowski, and (c) the present study. Scale 1:250 (a and b: after the plans published in <i>PK II</i> and Rutkowski 1991, respectively).	S158
FIG. A2.4	Petsophas. Central part of the site: state plan. Scale 1:150.	S164
FIG. A2.5	Petsophas. Central part of the site: architectural phases. Scale 1:150.	S165
FIG. A2.6	Petsophas. The building complex of the first architectural phase: Linear plan, superimposed on the stone-by-stone plan. Scale 1:150.	S179

PLATES A2.1–A2.2

PLATE A2.1	(a) Petsophas: the site in relation to the area of the Minoan town (lower right), the basin of Palaikastro, the hilly land to the N and Cape Sidero (top right). Aerial view from S/SE; (b) Petsophas: orthophotograph of the central part of the site. Scale 1:150; (c) Petsophas: the Minoan building (Structure I), the SE corner of the enclosure (Structure II) and, in between, the entrance to the sanctuary, from W; (d) Petsophas. Structure I: the inner face of Wall 1, from S/SE; (e) Petsophas. Structure I: the W façade (Wall 2), from W/SW; (f) Petsophas. Structure I: the S façade (Wall 3), from S/SE; (g) Petsophas. Structure I: vertical joints at the S façade, from S/SE; (h) Petsophas. Structure I: the SE corner of the building and the later Wall 12, from E. According to Rutkowski the slab at the N end of the wall (far right) belonged to a stepped ascent.	S193
PLATE A2.2	(a) Petsophas. Structure I: the W half of the interior of the building from E/NE, showing the <i>krepidoma</i> of Wall 3 (left), the protruding rocks upon which Wall 1 was founded and the preserved part of the stylobate of the entrance (at right). In the background are visible the other peaks of Petsophas; beyond are the conical peaks Simodi (left) and Modi (right); (b) Petsophas. Structure I: the inner face and broad <i>krepidoma</i> of Wall 3 from NE; (c) Petsophas. Structure I: the E part of Wall 3 and the overlying Wall 12 from S/SE, showing the difference in the masonry and quality of their construction; (d) Petsophas. Level area at the summit: the W part of the pavement, from N/NW. The oblong rock to the right separated the area from the enclosure; (e) Petsophas. Level area at the summit: the end of the pavement to the protruding rocks of the summit, from SE; (f) Petsophas. Structure II: Wall 6 and the protruding rocks within the enclosed area, from SE. To the right is the only preserved stone of Wall 8, which blocked the entrance to the sanctuary.	S194

Appendix 2

The peak sanctuary of Petsophas: a reappraisal*

by Leonidas Vokotopoulos

Peak sanctuaries are particularly significant for our understanding of Minoan religion and feature prominently in debates on the mechanisms that led to the rise of the palaces and the emergence of socio-political complexity on Crete during the first half of the second millennium BC. Among these sites, the one that crowned the low mountain of Petsophas, overlooking the Minoan settlement of Palaikastro, was surely of particular importance (PLATE A2.1 *a*); it was also the first to be systematically investigated. For these reasons, Petsophas occupies a central position in the study of peak sanctuaries and the broader phenomenon of Minoan extra-urban cult places.

Petsophas was first excavated in 1903 by the British School at Athens, in the context of the investigation of Palaikastro and its wider area.¹ The work was supervised by J. L. Myres and resulted in a wealth of finds, representative of the various categories of votives and cult equipment from peak sanctuaries. Many of those finds were retrieved from a burnt deposit, which was interpreted as having originated in a large bonfire. The Bronze Age architectural remains uncovered by the excavation (PLATE A2.1 *b*) were attributed to two structures: a robust retaining wall delineating a wide terrace, and a building that was constructed on its footprint at a second stage.

The site was re-investigated in the 1970s by the Archaeological Service, under the direction of K. Davaras. It was then that the Minoan building was excavated anew;² otherwise, work focused on surrounding areas that were not previously trialled by Myres.³ The excavation was extensive but did not result in the completion of the investigation, as indicated by the unexcavated deposits identified in all areas where trials were made. This research is known only through brief reports that mainly list the major categories of portable finds, with no substantial reference to stratigraphy and architecture.⁴ Nevertheless, some important artefacts were discussed in more detail, namely the inscribed libation tables,⁵ and an idiosyncratic set of horns of consecration made of plaster.⁶

After the investigations by Davaras, the site was examined by B. Rutkowski in the context of his overall study on the peak sanctuaries and other cult places of Minoan Crete.⁷ The same scholar published the figurines from Myres's excavation.⁸ Although differing on some points, Rutkowski's suggestions on the form and character of the buildings at Petsophas were based on Myres's interpretations of the evidence. In fact, these two scholars shaped the current picture of Petsophas, given that most of their views are accepted and reproduced both in studies on peak sanctuaries and synthetic overviews on the Minoan world.⁹ Petsophas was also visited by G. Henriksson and M. Blomberg in the 1990s, during their wider study of peak sanctuaries that aimed at clarifying whether these sites accommodated the systematic observation of celestial bodies – a function considered to have complemented that of worship.¹⁰ In addition, P. E. Blomberg examined a substantial number of figurines and other votives from Petsophas to test if they could be interpreted in the same light.¹¹ Finally, the site was visited in 2004 by G. Vavouranakis in order to document the architectural remains and produce photorealistic reconstructions of the Neopalatial phase of the sanctuary.¹²

* Many thanks go to Irene Nikolakopoulou for the translation of the Greek text; to Tina Kalantzopoulou, for the aerial photographs of Petsophas, and for preparing the plan of the sanctuary; and to Spilios Pistas, for the final processing of the drawings and photographs.

¹ *PK II*, 275–76, 356–87.

² Davaras 1972*a*, 102. See also Rutkowski 1988, 86 (on the E part of the building, as defined in the present study).

³ Davaras 1972*b*, 652; 1976, 380.

⁴ Davaras 1972*b*, 652; 1976, 380–81.

⁵ Davaras 1972*a*; 1972*b*, 652–53.

⁶ Davaras 1980. This object has been considered as an architectural model, in which only the features bearing a symbolic significance are rendered (Marinatos 1993, 121). It has also been

interpreted as a minimalistic depiction of the peaks of Petsophas and/or the built structures of the sanctuary (Soetens 2003; Vavouranakis 2011, 382–83). According to Davaras (*op. cit.*, 92–93), the complex form of the set expressed piety; later, he thought that it aimed at focusing attention during the observation of heavenly bodies (Davaras 2010, 75).

⁷ Rutkowski 1988, 85–86; 1991, 17–21.

⁸ Rutkowski 1991.

⁹ See Pendlebury 1939, 103; Platon 1951, 144; Nilsson 1950, 68–69, 70, 75–76; Widenor in Watrous 1996, 64–65; Kyriakidis 2005, 167; McEnroe 2010, 112; Davis 2014, 18–20, 23, 41.

¹⁰ Henriksson and Blomberg 1996, 103–14; 1997–98.

¹¹ Blomberg 2006.

¹² Vavouranakis 2011.

Myres did not designate the cult site he discovered as a peak sanctuary,¹³ and he obviously did not perceive it as part of a wider phenomenon, as no other such sites were known at that time. The existence of a coherent group of Minoan sanctuaries that lay on peaks was only acknowledged much later.¹⁴ However, once the peak sanctuaries were identified as a discrete class, Myres's views on the finds from Petsophas exerted a decisive influence on how the phenomenon was approached. Thus, the extensive architectural remains corroborated the claim that the presence of built structures was common at peak sanctuaries, constituting a basic characteristic of this class in the Neopalatial period. Similarly, the distinction between two main periods in the historical trajectory of the peak sanctuaries, largely corresponding to the Protopalatial and Neopalatial periods, can be traced to the two Bronze Age horizons identified by Myres at Petsophas. In addition, Myres was the first scholar to hypothesise the ritual breakage of figurines, an issue that continues to preoccupy research. Finally, the burnt layer at Petsophas offered the most convincing argument in favour of the once widely accepted view that ritual bonfires were lit on peak sanctuaries. The treatment of Petsophas as the archetypal peak sanctuary is due to the fact that it was the first such site to be excavated, as well as to Myres's in-depth study of the figurines and discussion of the architecture and stratigraphy.¹⁵ By the standards of the period, Myres's account was remarkably detailed – indeed, exemplary. In fact, Petsophas has long constituted the sole peak sanctuary with excavation data published in any detail, given that the numerous investigations of the 1960s and early 1970s at such sites are only known through brief reports.

According to modern standards and research questions, however, the studies of Petsophas by Myres and later scholars are selective and insufficiently documented. Moreover, any on-site examination of the remains indicates significant gaps and inconsistencies in their approach, thereby casting doubt on the validity of current assumptions on the sanctuary. In fact, a more thorough assessment of the evidence suggests that Petsophas is not a typical peak sanctuary; instead, in many respects the site deviates significantly from the norm for these cult places. Therefore, the present study aimed at the re-examination of the architecture and stratigraphy of Petsophas in order to test previous assertions and present a more analytical and documented picture of the form, function, and history of the sanctuary. This undertaking was triggered by the conviction that a new approach to this important site could significantly contribute to the current debate on Minoan extra-urban sanctuaries; moreover, it may enhance our understanding of social and political organisation at neighbouring Palaikastro, of the relations between the town and its hinterland and, eventually, of the historical trajectory of this centre, to which Petsophas evidently belonged, thus resonating with many of the aims of the Palace and Landscape at Palaikastro project.

A major obstacle this study had to overcome is that some of the evidence mentioned by Myres no longer exists.¹⁶ The excavator's views on these specific finds cannot always be taken at face value, as they do not accord with the current picture of the site. Yet these finds cannot be ignored; without taking them into account, any attempt to reconstruct the site's form and history would remain incomplete. For these reasons, here some of Myres's interpretations are accepted as they are, while others are put into doubt. This approach may appear selective and methodologically dubious; however, the interpretation of the missing elements is based on contextual evidence, as well as on comparisons with similar sites – an option not available to Myres. It is certain that if this pioneer of Minoan archaeology had access to the evidence accumulated ever since, the present study would have little to add to his work.

Myres named the walls he uncovered with letters of the Latin alphabet¹⁷ and the rooms with Roman numerals, but not consistently. Thus, some walls and areas were identified on the basis of their orientation or in conjunction with adjacent structures. Researchers after Myres adopted his designations for the walls; however, they did not always agree on the identification of the extant remains with those described by the excavator. Furthermore, each scholar employed a different numbering for the rooms and open areas. Given that the combination of these versions is not possible, and in order to avoid misunderstanding, the present study does not follow the nomenclature of previous research. Instead, here walls and built structures are identified by Arabic and Roman numerals, respectively.

¹³ See Sphakianakis 2011, 850. Inadvertently, the term is occasionally attributed to Myres: see Watrous 1996, 25; Kyriakidis 2005, 13; Adams 2017, 143; Carter *et al.* 2021, 60.

¹⁴ The term *peak sanctuary* was coined by Evans (*PM I*, 151, 154, 156, 158–59) with reference to Juktas, whose sanctuary he regarded as being of the same kind as that at Petsophas. As noted by Peatfield (2009, 251), Evans articulated the concept of a peak sanctuary; however, the picture of these sites was at first rather vague. Thus, in his synthesis on the archaeology of Crete, Pendlebury (1939, 102, 184) stated that in MM I appeared 'a new type of building, the sanctuary on a peak', while elsewhere he labelled Juktas and Petsophas as 'hill sanctuaries'. In fact, the first to provide a

substantiated definition of peak sanctuaries as a distinct category of cult site was N. Platon (1951). Subsequently, Rutkowski (1986, 73–98; 1988; 1991) and Peatfield (1983; 1987; 1990; 1994a; 2009) clarified the characteristics of the sites in their thorough studies, while their views on cult practices and the development of the phenomenon shaped both the basic assumptions and directions of current research.

¹⁵ See Zois 1996, 378–79; Sphakianakis 2011, 849–50.

¹⁶ This mainly relates to the upper layers, which have been completely removed, and also to certain walls.

¹⁷ In particular, characteristic features, such as corners or ends, were used for the walls, so that each was labelled by a minimum of two letters.

TOPOGRAPHY AND FUNCTION

THE LOCATION OF THE SANCTUARY (FIGS. A2.1–A2.2)

The basin of Palaikastro is bordered to the s by an almost continuous front, formed by the low mountain of Petsophas at the e and the foothills of Mt Simodi to the w.¹⁸ These are separated by a deep valley leading to the small cultivable basin of Ayios Spyridon. To the e, the mass of Petsophas gradually lowers and breaks into the sea, thus forming the Plako peninsula. The latter extends vertically to the shore, dividing the e coast of Crete into two parts. The n slope of Petsophas falls abruptly towards the valley and bay of Palaikastro. By contrast, its s side has the characteristic stepped morphology of the mountainous masses of Crete's easternmost part, i.e. it is articulated in consecutive plateaus or gentle slopes separated by precipices.¹⁹ Hence, the upper part of Petsophas has the form of an oblong plateau, extending NE–SW. Along its end over the n slope three rocky outcrops are formed, which constitute the peaks of the mountain. The one at the NE, where the sanctuary was located, is 254.69 m high, while the middle peak and that at the SW have an altitude of 258.10 m and 263.20 m, respectively.

The mass of Petsophas is formed by dolomites of the Triassic period, a rock susceptible to karstic and wind erosion.²⁰ Its surface is usually covered by a thin layer of *terra rossa*. The earth retains limited humidity because of the dry and strongly seasonal climatic conditions, and because rainwater is channelled to the underground water table through cracks in the bedrock. For the above reasons, the vegetation is xerophilic and limited mainly to garigue. The area is only suited to animal husbandry; cultivable land is solely found in the depressions formed on the plateaus of Plako, where the dominant type of bedrock is marly limestone and the earth deposits are thicker. These small enclaves were exploited until the first decades after WW II.²¹

At present, the sanctuary is accessed by a trail that ascends the n slope of Petsophas.²² The area was previously approached through the path that starts from the s edge of the Minoan town and crosses the NE side of the mountain, leading to the cultivable enclaves of Plako. In order to reach the sanctuary from there one has to leave the pathway, turn w and ascend the slope.²³ This particular route is longer than the one used nowadays, but gentler. For this reason, and because of its proximity to the Bronze Age town, it may reasonably be assumed that it was the customary choice for pilgrimage to the sanctuary.

The site overlooks a substantial part of the surrounding landscape. Thus, it offers a wide vista of the entire Palaikastro basin, the fertile area that formed the immediate hinterland of the Minoan town (PLATE A2.1 a). To the n, the view beyond the basin encompasses the chain of hills bordering the valley of Stephanes and the coastal plain of Erimoupoli, as well as Cape Sidero, which forms the NE extremity of Crete;²⁴ the group of the Dionysades islands is also visible, but only in part. To the w rises the compact front of the highlands that extend over the eastern half of the region of Siteia, while to the sw the viewshed includes the plateau crowning Simodi and the conical peak of this mountain. The view to the s is more limited, being obstructed by the upper plateau of Petsophas. Thus, neither the coastal zone of Skoinias nor the cultivable valley that ends there are visible; in fact, only the cape separating this area from the bay of Karoumes is seen from the site.²⁵ Farther away, Mt Traostalos dominates the view. Also visible is its peak, which was occupied by the main extra-urban sanctuary of the neighbouring urban and administrative centre of Kato Zakros during the Protopalatial and early stages of the Neopalatial period.²⁶ To the e, the site overlooks the peninsula of Plako (PLATE A2.1 c, in the background).²⁷ Finally, the islet Elasa is visible to the NE, while on clear days the islands of Kasos and Karpathos appear on the horizon. In fact, the site overlooks most of the land belonging to the modern commune of Palaikastro – or the respective district of the municipality of Siteia, according to current administrative divisions.²⁸ This area largely corresponds to the *chora* of the *polis* of Itanos,²⁹ as is indicated by the epigraphic

¹⁸ On the topography and morphology of the site, see also *PK II*, 356.

¹⁹ See Mourtzas 1990, 220.

²⁰ At the end of the Plako peninsula there are also Jurassic limestones: see *Geological Map of Greece: Sitia*. Institute for Geology and Subsurface Research (1959).

²¹ Vokotopoulos 2007, 17; Orengo and Knappett 2018, 492.

²² This route was arranged in 2001 (Cunningham and Sackett 2009, 83, n. 16).

²³ Rutkowski 1991, 17. See also MacGillivray and Driessen 1990, 400, fig. 2. The path continues to the s, reaching the coves of Skoinias; it then extends along the coast, leading to the bay of Karoumes and eventually to that of Kato Zakros. For the use of this route in Minoan times, see Tzedakis *et al.* 1989, 53, 55, 75, fig. 3.

²⁴ On the occupation and use of these areas in the Neopalatial

period, see Greco *et al.* 2002, 580–81; Schnapp-Gourbeillon *et al.* 2009, 218; D'Agata *et al.* 2018, 81.

²⁵ On the occupation of the second millennium BC at Skoinias and Karoumes, see Vokotopoulos 2007, esp. 71–86; 2011.

²⁶ On the relations between Zakros and Palaikastro, see Cunningham 2001, 84. See also Agouridis and Vokotopoulos 2018, 117–19; Vokotopoulos 2022a, 61–62, 67 (for evidence on rivalry between the two centres in the Neopalatial period).

²⁷ On the habitation and exploitation of this area in Minoan times, see Sofianou and Thanos 2015; Orengo and Knappett 2018, 492–96, 498–504.

²⁸ On the boundaries of the commune, see map sheet Νομός Λασιθίου. Κλίμαξ 1:200.000. Εθνική Στατιστική Υπηρεσία της Ελλάδος (1984).

²⁹ See Viviers and Tsigarida 2014, 166, fig. 8.1.



FIG. A2.1. Relief map of the NE end of Crete: Petsophas, the other sanctuaries on peaks, and the urban and administrative centres of the second millennium BC. Scale 1:250,000 (Anavasi editions, with additions by the author).

evidence of the Hellenistic period,³⁰ if not to the territory of its precursor, i.e. the Minoan centre of Palaikastro³¹ – assuming that the latter was the seat of a distinct, autonomous polity at certain stages, or even during the larger part of its historical trajectory.³²

The commanding view of the surrounding area and the proximity to Palaikastro must have contributed significantly to the establishment of the sanctuary at Petsophas.³³ In particular, the selection of the NE peak for this use, despite the fact that the other two are higher, can be attributed to a combination of factors. Thus, this outcrop is closer to the area of the Minoan town, which extended immediately to the N, at the level land between the foot of the mountain and the coast (PLATE A2.1 *a*).³⁴ Moreover, visibility between the two sites is optimal: the NE peak overlooks the entire settlement, while it would have dominated the visual field of the inhabitants.³⁵ By contrast, only a part of the Minoan town can be seen from the other two outcrops that are themselves barely distinguishable from the latter.³⁶ Furthermore, since the NE peak is at the end of the main mass of Petsophas, it is easily distinguished from afar, thereby

³⁰ On the borders of Itanos, see e.g. Xanthoudides 1908, 215–16; Guarducci 1942, 104; Vokotopoulos 2007, 96.

³¹ See Vokotopoulos 2022a, 67–68.

³² See Bosanquet 1939–40, 66; Cunningham 2001, esp. 83–84; *PK Block M*, 319, 321; Vokotopoulos 2022a, 61. The recent attempts to reconstruct the political geography of Minoan Crete followed the same assumption: see Soetens *et al.* 2003, pls. CVb, CVIa–b; Bevan 2010, 36, fig. 6. These views presuppose that during the early stages of state formation, and perhaps in the following phases as well, Crete was divided into many polities; based on their small scale, these should be considered as city-states: see Driessen 2001,

61, 63–64; Bevan 2010, 44; Poursat 2010, 263–64; Whitelaw 2018, 216, fig. 11.2, 231–33 and *passim*.

³³ On the topography of peak sanctuaries, see Peatfield 1983, esp. 275–76; 1992, 60; 2009, 253.

³⁴ See Sackett *et al.* 1965, pl. 64; MacGillivray and Driessen 1990, esp. 410, fig. 6.

³⁵ Visual contact with the neighbouring centres, and in general with the areas inhabited by the worshippers, was particularly significant for the choice of the exact location of peak sanctuaries: see Peatfield 1983, 275–76; Nowicki 2016–17, 17.

³⁶ As noted by Peatfield (1983, 275).

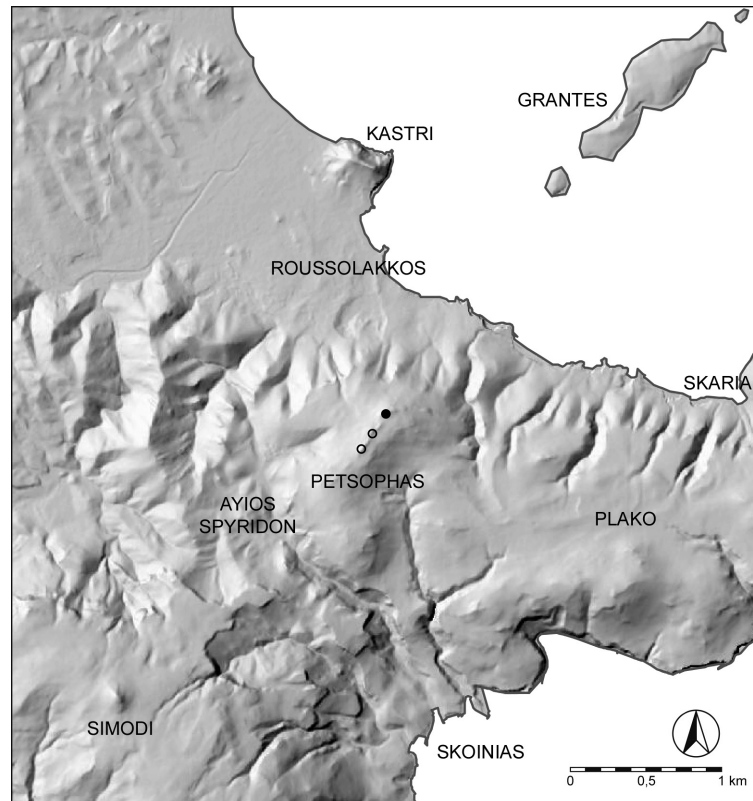


FIG. A2.2. Relief map of Petsophas and its surroundings. The solid circle marks the location of the peak sanctuary, the plain circles the other two peaks of the mountain. Scale 1:50,000 (Anavasi editions, with additions by the author).

serving as a landmark.³⁷ Accordingly, the wider view towards the open sea afforded by the NE outcrop, and the fact that this side of the mountain is more visible to passing ships, likely contributed to its selection. The view to the sea would have been particularly important if the prosperity of Palaikastro was indeed largely due to its function as a port on the trade route connecting Crete with the East Mediterranean: in such a case the sea would have been regarded as an integral part of the domain of this centre, of equal significance to its *chora*. Finally, the selection of the NE peak was also dictated by its configuration. Thus, its S side is relatively gentle (PLATE A2.1 c, top right), thereby facilitating the access to the summit, while the level area at the top would have offered substantial space for conducting the rites. In contrast, the other outcrops are much steeper, possess no level areas at their upper part, and their surface is studded with protruding rocks. In other words, they were not suited for the gathering of the worshippers and therefore did not provide an appropriate setting for the cult.

THE CHARACTER OF THE SITE

Apart from Petsophas, two more peak sanctuaries were situated in the wider area of Palaikastro: the sanctuary at Modi, the distinctive conical outcrop crowning the NE end of the Siteian highlands,³⁸ and that at Kephala near Kalamaki, which rises over the steep W coast overlooking the bay of Siteia and the entire hilly zone extending to the E as far as the bays at Vai and Erimoupoli (FIG. A2.1).³⁹ All these sites were intervisible, while the triangle they formed roughly corresponds to the hinterland of Palaikastro.⁴⁰ Consequently, it may be inferred that the three sanctuaries defined the perimeter of the

³⁷ Significantly, this is relevant mainly for the areas to the N, i.e. for the core of the territory of Palaikastro. In contrast, the other two peaks of Petsophas are hardly distinguishable from there.

³⁸ See Davaras 1972b, 652; Rutkowski 1988, 84–85 with references.

³⁹ See Davaras 1972b, 651; Rutkowski 1988, 82; Nowicki 2012, 145, 147, fig. 16.6. The site is also known as Atzikiari, a toponym that primarily designates the nearby cove: see <https://prospektion-itanos.efa.gr/?action=view&objectdefid=5&instid=89>.

⁴⁰ Petsophas was also intervisible with the small sanctuary of

Kephala near Lydia, at the inner part of the basin of Palaikastro (FIG. A2.1). This site was defined as a peak sanctuary by Nowicki (2013, 160), though its topography does not entirely conform to the rule for these cult places. Specifically, the sanctuary was established on a hill offering a wide view of the surroundings, but is dwarfed by the compact mass of the Siteian plateau that rises to the W. Consequently, it likely represents an example of the broader category of hilltop shrines rather than a proper peak sanctuary (on the former class, see Watrous 1995, 394; Vokotopoulos 2020, 525–26).

land administered by this centre, thus unifying and consecrating the landscape.⁴¹ According to Peatfield, peak sanctuaries were clearly distinguished from all other Minoan extra-urban cult places in that they shared a consistent set of topographic features and finds; this is interpreted as an expression of a single, pan-Cretan cult that was specific to this class.⁴² In this respect, it might be assumed that the three sanctuaries under consideration were of a similar character and satisfied the same needs. However, the sites differ regarding their placement in relation to Palaikastro, given that, unlike Petsophas, the other two were situated far from the town. Besides, only the sanctuary of Petsophas was furnished with built structures,⁴³ and the quantity of votives and other artefacts accumulated at this site was apparently much larger.⁴⁴ Finally, it is probable that the sanctuaries also differed with regard to the duration of their use.⁴⁵ The above suggest that, in the context of the sacred landscape⁴⁶ they delineated, the sites addressed different audiences, and served distinct social and political functions.

In the case that Palaikastro controlled the NE end of the Siteian highlands or provided the settlements of that area with an outlet to the wider Aegean world, then Modi would have served as a wayside sanctuary, overlooking the route between the town and the mountainous inland. In any event, its main function must have been the delineation of the territory of Palaikastro in relation to that of the palatial centre at Petras, serving as a border sanctuary,⁴⁷ as is suggested by its location mid-way between them (FIG. A2.1). As regards Kalamaki, from the standpoint of the inhabitants of Palaikastro the site would have been perceived as a sanctuary of the *eschatiai*, i.e. of the furthest reaches towards the wild, untamed part of the landscape. Indeed, it is probable that Kalamaki did have this character in the Protopalatial period, given that the N part of the territory of Palaikastro was apparently uninhabited at that time.⁴⁸ Yet if the site was in use during the first phases of the Neopalatial, when the same area was densely settled, it would have constituted a local ritual centre. Specifically, the sanctuary would have served the scattered farmsteads that appeared in the surroundings, providing a common point of reference and a meeting place for their occupants.⁴⁹ Finally, in the case of Petsophas the enormous quantity and wide variety of the finds denote a sanctuary that was frequented by the inhabitants of the entire area and served all the categories of the populace. The massive participation at the rites, their broad appeal, the increased investment in wealth and labour signified by the existence of built structures, and the close proximity to Palaikastro indicate that the site was more important than the other two; in other words, it was the main extra-urban sanctuary of this particular centre. The sanctuary would have been regarded as the navel of the territory of Palaikastro, as it bonded the town with its hinterland at the symbolic level, both through the cult *per se* and by its prominence over the surroundings. Thus, the intervisibility between the sanctuary and the areas inhabited by the worshippers would have led the latter to perceive the landscape as a single spatial and political entity – and themselves as a part of a wider community embedded within this land.

The significant presence at Petsophas of Protopalatial figurines that represent young males wearing daggers,⁵⁰ the use of the same iconographic type in the late Neopalatial chryselephantine cult statuette of the Palaikastro Kouros,⁵¹ and the cult of Diktaean Zeus in the archaising form of a beardless god of vegetation at the sanctuary established on the ruins of the Minoan town in the early first millennium BC,⁵²

⁴¹ Nevertheless, during the late Neopalatial the territory of Palaikastro must have extended to the south much further than Petsophas, including the area of Karoumes: see Vokotopoulos 2022a, 67–68.

⁴² Peatfield 1992, 61; 1994a, 21, 27.

⁴³ The building remains at Kalamaki apparently post-date the sanctuary: see Davaras 1972b, 651; *contra* <https://prospection-itanos.efa.gr/?action=view&objectdefid=5&instid=89>. The structures at Modi cannot be compared to those of Petsophas, since they are inferior in terms of extent and quality of construction; besides, they are most probably later in date: see Rutkowski 1988, 84–85.

⁴⁴ On the quantity and the variety of mobile finds from Petsophas, see *PK II*, 276, 360–80; Platon 1951, 120–21; Rutkowski 1991; Cunningham and Sackett 2009, 83; Morris 2017, 665. According to Davaras (1972b, 651), the sanctuary at Kalamaki was small and it was associated with minor settlements, a view that was probably based on the finds. However, Modi yielded a wealth of finds (*ibid.*, 652). Consequently, the assessment of this sanctuary's significance in comparison to that of Petsophas must await the publication of the excavation.

⁴⁵ The exact date of the sites is currently unclear. According to the available reports, the sanctuary at Petsophas may have been particularly long-lived (see Peatfield 1987, 90; Cunningham and Sackett 2009, 83 n. 14). By contrast, the sanctuary at Modi was probably abandoned soon after the end of the Protopalatial period, or else it was only sporadically visited, given that Neopalatial pottery appears to be rare (Peatfield 1990, 127; Adams 2017, 264 n. 62). Finally,

Kalamaki has been attributed both to the Protopalatial and the Neopalatial periods (see respectively D'Agata *et al.* 2018, 81; <https://prospection-itanos.efa.gr/?action=view&objectdefid=5&instid=89>).

⁴⁶ On this concept, see Scheid and Polignac 2010. See also Nixon 2009.

⁴⁷ Vokotopoulos 2022a, 68. The substantial presence of miniature bronze blades (Davaras 1972b, 652) corroborates this view, given that these votives allude to the performance of rites of passage for young males, i.e. to practices that during the first millennium BC were associated with border sanctuaries, or with those situated in the no man's land between neighbouring states (Vokotopoulos *op. cit.*, 70, n. 60).

⁴⁸ For the history of occupation and use of this area in the second millennium BC, see Greco *et al.* 2002, 580–81; D'Agata *et al.* 2018, 81. A similar role may be ascribed to the sanctuary of Lydia, given its placement at the confines of the basin of Palaikastro, i.e. it probably demarcated the agricultural heartland of this centre from the SW. Alternatively, the sanctuary may have served rural installations lying in the surroundings.

⁴⁹ On the dating of Kalamaki, see n. 45.

⁵⁰ *PK II*, 365; Cunningham and Sackett 2009, 97.

⁵¹ Koehl 2000, 131; Prent 2003, 96–97. On this statuette and the shrine where it was found: see *PK Kouros*.

⁵² Nilsson 1950, 546–54; Prent 2003, 96. For the sanctuary of Diktaean Zeus, see e.g. Bosanquet 1939–1940, 66–68; MacVeagh Thorne and Prent 2000; Prent *op. cit.*, 85–86.

are all elements suggesting a strong continuity in the religious traditions of the region.⁵³ Consequently, it can be inferred that the cult at Petsophas focused on a young god,⁵⁴ associated with the annual cycle and the fertility of the land, and by extension with the perpetuation of the community of worshippers through the initiation of its young members. As such, this divinity would have constituted the equivalent of the mortals who devoted their effigies at the sanctuary at their entry into adolescence or adulthood. Accordingly, it may be surmised that the myths about this youthful figure were mirrored in the ritual acts which were performed during these rites of passage.⁵⁵

The modern name of the mountain, Petsophas, literally means a land that devours (i.e. destroys) shoe leather — a reference to the rough terrain.⁵⁶ In the first millennium BC Petsophas was most probably called Dikta, as is indicated by the presence of the sanctuary of Diktaean Zeus at its foot, the inscribed hymn to Zeus found at the remains of the temple where the god is summoned to return to Dikta, and the relevant references in other ancient sources.⁵⁷ Therefore, and in accordance with the evidence for cult continuity in the area, it can be presumed that the name dates back to the Bronze Age.⁵⁸ After all, of the five known Linear A inscriptions with groups of signs that apparently refer to this toponym, four were found at Petsophas.⁵⁹ However, the name 'Dikte' could have been a generic oronym, in which case it was probably also attributed to other mountains.⁶⁰ Consequently, the later narratives on the birth of Zeus and his upbringing at Dikte did not necessarily refer to Petsophas; nevertheless, the rituals of the Minoan sanctuary and the myths that were associated with the cult may have contributed significantly to the shaping of this tradition.

PREVIOUS STUDIES ON SITE ARCHITECTURE AND STRATIGRAPHY: AN OVERVIEW

J. L. MYRES (FIG. A2.3*a*)

Even before the start of the excavation, all the walls delineating the central part of the site to the s and e were showing on the surface. According to Myres, these constituted the segments of a terrace wall following a zigzag course, which was labelled Wall ABCDE.⁶¹ Some partition walls were visible on the footprint of the terrace, whilst its e end was crossed by Wall DF, which extended obliquely to the others. The excavation covered the entire e side of that area; in effect, and according to the interpretation of the evidence by the excavator, this corresponds to the part of the terrace later occupied by the Minoan building.⁶²

Work started from an oblong rock cleft at the e end of the area (point H) and proceeded towards the face of Wall DF, in parallel with the excavation along the back of the latter. According to Myres, this wall was founded on bedrock following the removal of the pre-existing deposits, namely of the terrace's fill;⁶³ hence a foundation trench had been dug for laying the wall. Consequently, the excavator deduced that Wall DF represents a later addition; he did not, however, specify its date in more detail. Upslope and beyond the foundation trench of the wall three successive layers were identified. According to Myres, these extended over the remainder of the site.⁶⁴ The uppermost, 'surface' layer was 0.40–0.60 m thick and contained many small stones, sherds and figurine fragments. There then followed an almost horizontal deposit of black earth that became slate-grey when dry. This was 0.17–0.20 m thick, full of ash and charcoal fragments, and yielded a plethora of figurines. The excavator argued that this layer was formed by a bonfire, into which the figurines were thrown. Underneath and down to the bedrock came a thick clayey deposit of a reddish colour. According to Myres, this was devoid of finds, and it constituted the levelling fill of the terrace. However, the excavator also stated that the same deposit was traced downslope, extending beneath the foundation of the terrace wall. It appears, therefore, that Myres's fill corresponded to two layers, the lower of which was formed before the construction of the wall. The excavation continued to the w, revealing a partially preserved pavement made of schist slabs, while to the sw a plastered earthen floor extended at the same level. Myres stated that the latter was laid over the aforementioned deposits, and belonged to a later structure — namely, a room that occupied

⁵³ Crowther 1988, 42; Prent 2003, 96–97; Cunningham and Sackett 2009, 97.

⁵⁴ MacGillivray and Driessen 1990, 404; MacGillivray and Sackett 2000, 168–69. See also Valério 2007, 3, 10–11.

⁵⁵ See Koehl 2000, 131.

⁵⁶ Spanakis n.d., 435.

⁵⁷ Crowther 1988; 2000, 145–47.

⁵⁸ Crowther 2000, 147–48; MacGillivray and Sackett 2000, 167.

⁵⁹ The fifth inscription comes from Juktas. They are all carved on

stone libation tables: see Crowther 1988, 42; Owens 1993, 157–58; Crowther 2000, 148; Valério 2007, 8–9. See also Davis 2014, 347–48, 351–54, 356.

⁶⁰ Owens 1993, 159–60; *contra* Crowther 2000, 147–48.

⁶¹ *PK II*, 356.

⁶² *PK II*, pl. VII.

⁶³ *PK II*, 357.

⁶⁴ *PK II*, 357–58.



FIG. A2.3. Petsophas: the central part of the site according to (a) J. L. Myres, (b) B. Rutkowski, and (c) the present study. Scale 1:250 (a and b: after the plans published in *PK II* and Rutkowski 1991, respectively).

the s corner of the terrace (Room I).⁶⁵ A rough bench ran along the walls of the room. Both the bench and the walls were plastered.⁶⁶ To the NW of Room I and at a higher level extended Room II, only a part of which was preserved. The two spaces communicated through doorway LM. According to Myres, apart from Rooms I and II the building possibly comprised one more space, which would have extended towards the summit of the outcrop.

Based on the evidence from the excavation, Myres identified two Bronze Age strata that corresponded to two successive periods of use. To the earlier of these he assigned the black layer and terrace Wall ABCDE.⁶⁷ The excavation report implies that the construction of the latter was contemporary with the establishment of the sanctuary, since it is stated that the fill it retained was sterile. The remains of bonfires suggest that the area defined by the wall was open to the sky. Myres's first period should be dated to the Protopalatial, given that the fabric of most figurines from the black layer resembled that of 'the local Minôan (Kamáres) pottery of Roussolakkos'.⁶⁸ Nevertheless, continuity into the Neopalatial period is suggested by the presence in the same deposit of figurines that are more advanced in terms of their fabric and morphology.⁶⁹ The paved area and the plaster floor of Room I, as well as the whole building to which the latter belonged, were attributed to the second period of use,⁷⁰ within which two architectural phases were identified.⁷¹ Initially, the southernmost Room I was open at its NE side, facing a courtyard to which the schist-paved floor belonged. Assuming Room II or even the conjectured space to the NW had a similar form, then the building could be reconstructed as an oblong structure extending across the slope that consisted of a series of aligned rooms *in antis*. The linear layout and the form of the rooms would have rendered this building rather unusual, as would its placement, given that it did not face the summit – the natural point of reference – but extended vertically to it. During the second period of use, Wall MN was built as an extension to the partition wall between Rooms I and II. According to Myres, this indicates that Room II was enlarged to the NE;⁷² however, given that only a part of Wall MN was preserved, he could not specify the area occupied by the room at that stage, or whether Room I was also extended in the same direction. The building was dated to the 'Late Minôan or Early Mycenaean period', i.e. to the Neopalatial.⁷³ The excavator was led to this conclusion by the resemblance of the bench and the plastered floor with those found in the houses of Palaikastro.

Myres's report was accompanied by a ground plan of the excavated area and its immediate surroundings, and by a stratigraphic section on a NNW–SSE axis, passing through the suggested entrance between the two rooms of the building.⁷⁴ The plan is essentially a sketch that only provides a rough picture of the form of the building complex (cf. FIG. A2.3*a* and PLATE A2.1 *b*). Thus, the length and width of the walls are usually indicated correctly, but this is not the case for their masonry or orientation – nor, in consequence, for the position of the walls in relation to each other. This suggests that the measurements for the plan did not involve triangulations. The section presents the individual features more faithfully, although inaccuracies and deviations from the excavator's report are attested here too. For example, according to the report Wall CD – the main segment of the terrace's riser – was preserved to a maximum height of 2.50 m, while in the section this is limited to 2.20 m. The latter measurement is closer to the height of the wall as preserved today (1.92 m), so it is plausible to suggest that the section is more accurate than the report. On the other hand, the wall between Rooms I and II is shown as if it was founded on deposits of a substantial thickness (0.60–0.75 m), which does not correspond to reality. Finally, the section depicts a dense concentration of stones abutting onto the inner side of Wall CD, a layer that is not mentioned in the excavation report. Its position under the floor and the small size of the stones indicate that this deposit was not formed by a collapse; rather, it was a packing of stone chips, which was placed along the wall in order to fill the gap between this latter and the pre-existing deposits extending upslope⁷⁵ – a practice that was fairly common in Minoan times.

The upper part of the stone packing surely extended at the same level as Myres's black layer, since both these deposits were sealed by the floor of the Minoan building, as inferred from the stratigraphic section and the report, respectively. This is clearly at odds with the reconstruction of the history of the site proposed by the excavator: according to Myres, the black layer extended immediately above the

⁶⁵ PK II, 358–59.

⁶⁶ PK II, 359.

⁶⁷ PK II, 358–60.

⁶⁸ PK II, 360.

⁶⁹ These remarks were made by Bosanquet: see PK II, 361. See also Haysom 2018, 20.

⁷⁰ PK II, 358–59.

⁷¹ PK II, 359.

⁷² PK II, 359.

⁷³ PK II, 360. In the account on the second year of investigation

at Palaikastro and its wider area, which included Myres's study, the term *Early Mycenaean Period* was used for the stretch of time now designated as the Neopalatial period: see PK II, 281 and *passim*. The chronological scheme of Evans was adopted for the first time in the report of the following year: see PK III, 192–96.

⁷⁴ PK II, pl. VII.

⁷⁵ The form of the fill is not depicted correctly: its width would have diminished downwards following the inclination of the underlying deposits of the slope, whereas the section shows the opposite.

fill of the terrace, i.e. on its surface, and was formed in the first period of the site's use; however, given that the construction of the retaining wall was by definition contemporary with the deposition of the packing it retained, we have to posit that the burnt deposit extending upslope accumulated before the arrangement of the terrace – or was laid there secondarily, as part of its levelling fill.⁷⁶

B. RUTKOWSKI (FIG. A2.3*b*)

Unlike Myres, who focused on the analysis of the surviving architectural remains, Rutkowski attempted to provide a comprehensive picture of the form and function of the structures at Petsophas.⁷⁷ His conclusions were encapsulated in the ground plan and the vivid axonometric drawings prepared by his student, K. Nowicki.⁷⁸ Rutkowski's approach contributed significantly to the understanding of the site. Nevertheless, the reasoning behind his conclusions is often presented in a summary form – if at all. Besides, his hypotheses were often founded not on the evidence from the site itself, but rather on the potential parallels provided by the sanctuary of Juktas and the iconography.⁷⁹

Based on Myres's identification of two main periods of use, Rutkowski opined that all structures uncovered at the site fall into two architectural phases, which he dated to MM I and MM III–LM I or LM I,⁸⁰ in accordance with his wider views on the historical trajectory of peak sanctuaries.⁸¹ As a matter of fact, Rutkowski's understanding of the building sequence differs from that of the excavator, given that Myres's report supports the identification of at least four phases (see FIG. A2.3*a*).⁸² As regards the way the central part of the sanctuary was accessed, an issue not addressed by Myres, Rutkowski argued that this was via a stairway extending along the E side of the complex.⁸³

Rutkowski accepted that the site had initially the form of an open-air terrace. However, whereas Myres thought that its footprint formed a single space, Rutkowski argued that a distinct area was arranged at the w part – a 'sacred screen' enclosing two rock outcrops that may have been significant for the cult.⁸⁴ Rutkowski also surmised that in the central part of the terrace were two altars: one in the form of a low rectangular structure, and another created by the accumulation of ash.⁸⁵ He was led to this assumption by the altar at Juktas and the remains of the bonfires identified by Myres, respectively.

According to Rutkowski, at the beginning of the second period of use the E end of the terrace's riser was dismantled and two walls were built immediately upslope, which he identified with Myres's Walls DF and DE (cf. FIGS. A2.3*a* and A2.3*b*).⁸⁶ Of these, the first constituted the E wall of the building that was erected on the terrace at that time, while the second delineated a triangular space on the downhill side. This space was bounded by the building to the NW, and extended upslope up to the protruding rocks of the E part of the outcrop. Rutkowski considered that a cavity was formed in this area, which he identified with Myres's oblong cleft H, and maintained that it was of great importance since it was partly enclosed by walls. Myres, however, stated that cavity H was a natural trough,⁸⁷ and such rock formations are not visible in this area, but at the upper part of the slope to the N (cf. FIG. A2.3*b* and FIG. A2.3*a*, PLATE A2.1 *b*). According to Rutkowski, the building of the second architectural phase was rectangular in plan and its interior was divided into two or possibly three oblong spaces extending on a NE–SW axis.⁸⁸ Consequently, in the solid form of its shell, this structure would have resembled the usual rural buildings of the first half of the second millennium BC,⁸⁹ though not in the simple and linear arrangement of its interior. Rutkowski was not certain if the wall that divided the two rooms⁹⁰ extended along the entire length of the building; in any case, he assumed that the entrance between them had the form of a wide passage, and that the E part of the oblong northern room was unroofed.⁹¹

⁷⁶ These remarks are based on Myres's account *per se*. In fact, the re-examination of the evidence from the site indicated that the black layer post-dated the other features, a point that will be elaborated in the next section of this study (p. S171).

⁷⁷ Rutkowski 1986, 79–80; 1988, 85–86; 1991, 14, 17–21.

⁷⁸ Rutkowski 1991, 18–19, figs. 1–3.

⁷⁹ See the critique by Peatfield (1994*b*).

⁸⁰ Rutkowski 1986, 80; 1991, 17, 20.

⁸¹ Rutkowski 1986, 76, 94–95.

⁸² As explained above, the first three phases correspond to the arrangement of the terrace, the construction of the building on its footprint, and the expansion of the latter to the NE. Myres noted that the little enclosure lying against the outer face of his terrace wall is 'wholly modern'; it therefore belongs to a fourth, or final, architectural phase. According to his account, Wall DF post-dates the terrace. However, it is not clarified whether this wall was constructed together with the building or the later enclosure, or whether it represents a distinct architectural phase. In the latter

case, there would have been five such phases.

⁸³ Rutkowski 1988, 85; 1991, 17–19.

⁸⁴ Rutkowski 1988, 86; 1991, 20. This reconstruction implies that the wall delineating the area to the NE dates to the first architectural phase. According to Myres (*PK II*, 360), though, this was an extension of Wall BC, i.e. of the w wall of the Minoan building; consequently, it belonged to the second phase.

⁸⁵ Rutkowski 1991, 18–19, fig. 2.

⁸⁶ Rutkowski 1991, 20.

⁸⁷ *PK II*, 357.

⁸⁸ Rutkowski 1991, 20. The probable third room would have extended upslope, close to the rocks of the summit.

⁸⁹ Namely, the farmhouses and guard houses of the Protopalatial and Neopalatial periods: see e.g. Chrysosoulaki 1999, 78; Vokotopoulos 2007, 75, 81 and *passim*; 2011, 139.

⁹⁰ Or those at the s, in case there was a third such space.

⁹¹ Rutkowski 1988, 85; 1991, 20.

Rutkowski was tempted to believe that the s façade of the building was tripartite.⁹² Accordingly, it was rendered as a tripartite shrine in the relevant axonometric drawing, following north-central Cretan iconography. Thus, the façade bears chequered decoration, has large windows with columns, and is crowned by rows of horns of consecration.⁹³ Nevertheless, this reconstruction was not based on available evidence, but rather on the conviction that iconography faithfully rendered reality,⁹⁴ which is far from certain.⁹⁵ In any case, the reconstruction of both the façade and the entire building complex of the Neopalatial period does not fully correspond either to the plan or to Rutkowski's analysis. In particular, in the axonometric drawing the building extends along the entire length of the earlier retaining wall up to the stepped ascent, i.e. it also includes the triangular space. Moreover, the tripartite façade is represented as forming a continuous, rectilinear front, whereas its eastern part – the s wall of Rutkowski's triangular space – would have extended obliquely to the adjoining wall of the building. Finally, the plan does not picture the architectural phases as these are defined in the text, given that the building's interior walls are attributed to the first and not to the second phase.⁹⁶

RECENT RESEARCH

K. NOWICKI

Views on the phasing of the sanctuary at Petsophas and the nature of its structures were also put forward by Nowicki, in the form of comments included in his studies on Minoan peak sanctuaries. Contrary to Myres and Rutkowski, who argued for two periods of use during the second millennium BC, Nowicki considered the site's history to be more complex. Thus, he suggested that the terrace of the first architectural phase was arranged at the end of the EM III/MM I period, and presumed that the structure took the form of a more elaborated building in MM II and MM III/LM I.⁹⁷ Nowicki did not provide specific evidence to support these hypotheses, which are nonetheless consistent with his proposals on the trajectory of the peak sanctuary phenomenon.⁹⁸ In any case, he has recently reconsidered those views, stating that the stratigraphic evidence does not confirm Rutkowski's proposal – and, it may be added, his own initial thoughts – for a development of the building complex in two stages; instead, he suggested that the latter was built in MM II or even in MM III, at which time it enclosed or covered the area near the summit where the core of the sanctuary was located.⁹⁹ In addition, Nowicki suggested that the spatial arrangement at Petsophas followed, in part, that at the sanctuary of Juktas.¹⁰⁰ He did not, however, expand on the reasoning behind this conclusion. In any event, the evidence suggests that Petsophas did indeed follow the example of Juktas, as the present study aims to demonstrate.

Nowicki's main contribution to the study of the site concerns the black layer with the figurines. According to Myres, these were thrown onto the bonfires lit during the rituals.¹⁰¹ Nowicki, however, stressed that the specimens he examined did not appear to be burnt,¹⁰² an observation subsequently confirmed by P. E. Blomberg.¹⁰³ Consequently, Nowicki argued that the hypothesis on the lighting of bonfires at peak sanctuaries should be reconsidered, at least for the earlier part of the development of the phenomenon. Peatfield had already expressed similar views, namely, that ritual fires were introduced at a late stage, i.e. in the Neopalatial period, as a reflection of the enhanced ritual and social function of these sites.¹⁰⁴ Nonetheless, in the case of Petsophas such a re-dating of the bonfires would not be without problems, since the construction of the building that covered the black layer took place in this very period. Moreover, it would not resolve the issue of the absence of traces of fire on the figurines either.

G. HENRIKSSON AND M. BLOMBERG

According to Henriksson and Blomberg, the results of their investigations at Petsophas as well as at other peak sanctuaries confirmed that a primary function of these sites was to enable astronomical

⁹² Rutkowski 1991, 20.

⁹³ Rutkowski 1991, 19, fig. 3.

⁹⁴ See Rutkowski 1986, 81–82; 1991, 20 n. 11. Cf. N. Platon 1951, 159.

⁹⁵ According to Marinatos (1993, 119), tripartite façades represent an iconographic convention that signalled the sacred character of the depicted buildings.

⁹⁶ See Rutkowski 1991, 18, fig. 1.

⁹⁷ Nowicki 1994, 31, 40; 2012, 145.

⁹⁸ Nowicki 1994, 40–41.

⁹⁹ Nowicki 2016–17, 15.

¹⁰⁰ Nowicki 2012, 145; 2016–17, 10, 15. In the same vein, Davis (2014, 30–32) claimed that the E side of the terrace of Petsophas was similar to Terrace I of Juktas, i.e. to the upslope part of the platform that extended in front of the altar. However, this conclusion was

reached by ascribing to the terrace of Petsophas walls that according to Myres were later in date, and by adopting the views of Rutkowski on the location of cavity H, which is regarded by Davis as the equivalent of the chasm at Juktas.

¹⁰¹ *PK II*, 358.

¹⁰² Nowicki 1994, 31–32.

¹⁰³ According to Blomberg (2006, 335, 339), dark fabrics or blackened surfaces were only noted in 1% of the published and 2.9% of the unpublished figurines. In reality, the percentage of those that may have been subjected to secondary burning is even smaller since the aforementioned estimates included pieces of a grey fabric – a hue certainly due to a reducing atmosphere in the kiln where they were fired.

¹⁰⁴ Peatfield 1992, 66.

observations aimed at determining the calendar year and the timing of seasonal activities such as seafaring and agriculture. Thus, the placement and the orientation of built structures were determined with reference to the rising or setting of the sun and moon, as well as the position of certain significant stars in the sky at turning points of the year.¹⁰⁵ Similarly, the examination of the votives by P. E. Blomberg, carried out as part of the same project, concluded that they represented constellations or parts thereof.¹⁰⁶

In the case of Petsophas, Henriksson and Blomberg maintained that the choice of the site was determined by the fact that from there the sun could be observed to set behind the prominent peak of Modi at the equinoxes; furthermore, they argued that the southernmost part of the retaining wall was oriented toward sunrise at the summer solstice, with the sun appearing at that particular moment above the highest peak of Karpathos, and illuminating the sw wall of the building.¹⁰⁷ According to the two scholars, the placement of the building on the slope rather than at the most convenient place, i.e. the level area to the s, reflects the desire to achieve the alignment mentioned above. As regards the walls of Rutkowski's 'sacred screen', Henriksson and Blomberg argued that their joining at an acute angle and their different orientation in relation to the rest of the complex were due to the fact that they served the observation of Arcturus.¹⁰⁸ Based on the position this star had in the past at its risings and settings, the two scholars reckoned that the walls were built in the 19th century BC, most probably in 1827 BC $\pm$ 77 years.¹⁰⁹

Henriksson and Blomberg's astronomical interpretations of peak sanctuaries, Petsophas included, have not always been favourably received. E. J. W. Barber and B. Davis agreed that these sites were indeed used for the observation of the heavenly bodies.¹¹⁰ Peatfield accepted the association between peak sanctuaries and the observation of the movement of the sun on the basis of the alignment of many such sites with characteristic features of the surrounding landscape on solstices or equinoxes, but he considered their link to constellations as speculative.¹¹¹ Nowicki rejected the views of Henriksson and Blomberg in their entirety, arguing that the use of a mountain peak as a cult place was determined not by its alignment to celestial bodies, but by its intervisibility with neighbouring settlements. Moreover, he pointed out that their hypotheses on the significance of the orientation of built structures are unfounded, since the measurements concern crudely constructed and poorly preserved walls of uncertain date.¹¹² Indeed, in the case of the built structures at Petsophas, Henriksson and Blomberg's dating in the 19th century BC is improbable, as will be argued below (pp. S180, S183, S185). Besides, the exact date they proposed was based on the assertion that the walls at the w end of the site were contemporary with others at Traostalos also considered to have been aligned to Arcturus, whereas in reality these latter belong to a much later building.¹¹³ In any case, the joining of the walls of the 'sacred screen' at an acute angle was not particularly unusual and therefore does not imply that they served a special function: the walls defined an enclosure, and the individual segments of such structures did not necessarily meet at right angles.

G. VAVOURANAKIS

Vavouranakis's photorealistic reconstructions of Neopalatial Petsophas were based on the conclusions of previous researchers — especially Rutkowski, whose views on the dating and arrangement of the complex were consistently followed.¹¹⁴ Of particular interest is Vavouranakis's choice to present a series of different reconstructions — essentially, alternative interpretations of the evidence. This was deemed necessary because of the poor preservation of the remains and the concomitant lack of evidence on the superstructure of the buildings.¹¹⁵

Vavouranakis pointed out that Rutkowski's decision to reconstruct the building at Petsophas in accordance with the standards of the elite art and architecture of north-central Crete both presupposes

¹⁰⁵ Henriksson and Blomberg 1996, 114 and *passim*; 1997–98, 151; Henriksson and Blomberg 2011, *passim*.

¹⁰⁶ Blomberg 2006, 341–47.

¹⁰⁷ Henriksson and Blomberg 1996, 104–06; 1997–98, 147–50; Blomberg and Henriksson 2006, 321. Apparently, the two scholars conflated the successive architectural phases of the complex, since they refer to the s room of Myres's building while simultaneously arguing that this was not roofed, on the basis of the evidence for bonfires. In any case, their views would only be relevant to Myres's second architectural phase, when the building was supposedly open to the NE.

¹⁰⁸ Henriksson and Blomberg 1996, 107, 109.

¹⁰⁹ Henriksson and Blomberg 1996, 109, 111–12. The same walls are dated to 1876 BC $\pm$ 47 years in Henriksson and Blomberg 1997–98, 147.

¹¹⁰ Barber 2010, 13–14, 18, 21; Davis 2014, 403–19. According to Davis (*ibid.*, 22–23), though, only the appropriately situated sanctuaries served this role, the primary factor for the choice of the sites being intervisibility between them and the neighbouring settlements. Regarding Petsophas, similar views to those of Henriksson and Blomberg have been expressed by MacGillivray and Sackett (2000, 169), Goodison (2004, 348) and Davaras (2010, 75).

¹¹¹ Peatfield 2009, 259; 2013, 480.

¹¹² Nowicki 2007, 15.

¹¹³ The available evidence provides a *terminus post quem* for its construction in MM III; actually, a dating as late as the Venetian period is likely: see Vokotopoulos 2019a, 12.

¹¹⁴ Vavouranakis 2011, 381, fig. 1. Cf. Rutkowski 1991, 28, fig. 1.

¹¹⁵ Vavouranakis 2011, 386–87.

and reproduces the assumption that in the Neopalatial period peak sanctuaries were controlled by the palaces, if not solely by Knossos.¹¹⁶ Vavouranakis himself accepted this view and consequently assumed that the building would have incorporated at least some elements of elite architecture. Thus, in his reconstructions the building is crowned by a carved corner cornice and, more often than not, with horns of consecration.¹¹⁷ Nevertheless, the reconstructions do not include those features of Nowicki's drawing that recall tripartite shrines, i.e. the columns and the painted decoration. This, because in Vavouranakis's view Petsophas was not part of the sophisticated world of Knossos, and also because he considered that the inclusion of such attractive features would obscure the political dimension of cult, i.e. its use to reinforce central authority.¹¹⁸

Vavouranakis's reconstructions start from the assumption that peak sanctuaries were controlled by a central authority operating independently from and in opposition to the populace, which is doubtful.¹¹⁹ Be that as it may, they are also based on interpretations of the evidence that are not always convincing.¹²⁰ Thus, in some reconstructions a tripartite arrangement is applied not only to the s façade but to the entire building. Given that there were no partition walls to support the raised central part of the roof, this is problematic — as is also the case for the relevant drawing by Nowicki (see FIG. A2.3*b*). Moreover, no windows are depicted on the s wall, even though this would have provided a perfect vantage point for overlooking the surroundings. However, architectural models and iconography suggest that the Neopalatial buildings were generally furnished with a considerable number of windows, as is confirmed by the excavated examples preserved to a sufficient height. Vavouranakis accepted Rutkowski's hypothesis for the existence of a triangular space to the NE of the building, while also assuming that this was roofed.¹²¹ This, however, could not have been the case, since the area was not delimited by a wall on its upslope side. Finally, at the sw corner of the building the superstructure of the w wall is depicted as if it were set back *c.* 1.00 m from the lower courses — which is not the case.

SITE ARCHITECTURE AND STRATIGRAPHY: A RE-EXAMINATION OF THE EVIDENCE

In previous studies on Petsophas, references to the actual remains were frequently incomplete. Therefore, the boundaries between description and interpretation were often blurred, and the hypotheses on the nature and date of the individual deposits and structures were not always sufficiently substantiated. This section seeks to fill these gaps as far as possible through a detailed documentation of the current state of the site, which will subsequently constitute the basis for the re-examination of the configuration of the sanctuary and the character of the cult. To this end, where necessary the evidence will be compared with the accounts of earlier scholars. In order to avoid repetition, it is stated at the outset that almost all the architectural remains of the second millennium BC belonged to two structures: Structure I, a building, and Structure II, which was a partially enclosed open-air space (FIG. A2.4). Structure III, a small enclosure or hut, is possibly Venetian in date.

THE FORM OF THE OUTCROP (PLATE A2.1 *a*)

The oblong outcrop on which the site is situated extends ENE–WSW. Its s slope gently tapers into the extensive plateau formed on the upper part of Petsophas (PLATE A2.1 *c*). By contrast, the N side of the outcrop is much steeper, being part of the escarpment that is formed along the edge of the mountain towards the valley of Palaikastro. At the upper part of the outcrop, approximately at the middle of its length, extends a small rocky terrace. At the end of this level area towards the precipitous N slope, and on either side of it, rise the rocks that form the crest of the outcrop.

THE CENTRAL PART OF THE SANCTUARY (FIG. A2.4; PLATE A2.1 *b*)

The central part of the site consists of the rocky terrace at the summit, Structures I and II that delineated this level area to the SE and NW, and the declivity between them. In front of the s façade of Structure I extends Structure III — a building that post-dates the Bronze Age, as mentioned above.¹²²

¹¹⁶ Vavouranakis 2011, 385.

¹¹⁷ Vavouranakis 2011, 387 and 389–91, figs. 5–8.

¹¹⁸ Vavouranakis 2011, 387–88 and *passim*.

¹¹⁹ See Vokotopoulos 2019*a*, 13, 15–16 (on the peak sanctuary at Traostalos and its relation to the centre of Kato Zakros).

¹²⁰ For the following comments, see Vavouranakis 2011, 388–91, figs. 4–8.

¹²¹ Vavouranakis 2011, 381.

¹²² For simplicity's sake, the walls and the individual parts of the built structures are labelled in accordance with the conventional north used by Myres; thus, the NW wall of Structure I is designated as the N wall, the NE part of the same building is referred to as the E part, its ssw corner as sw and so on. In all other cases, orientation is stated with reference to magnetic north.

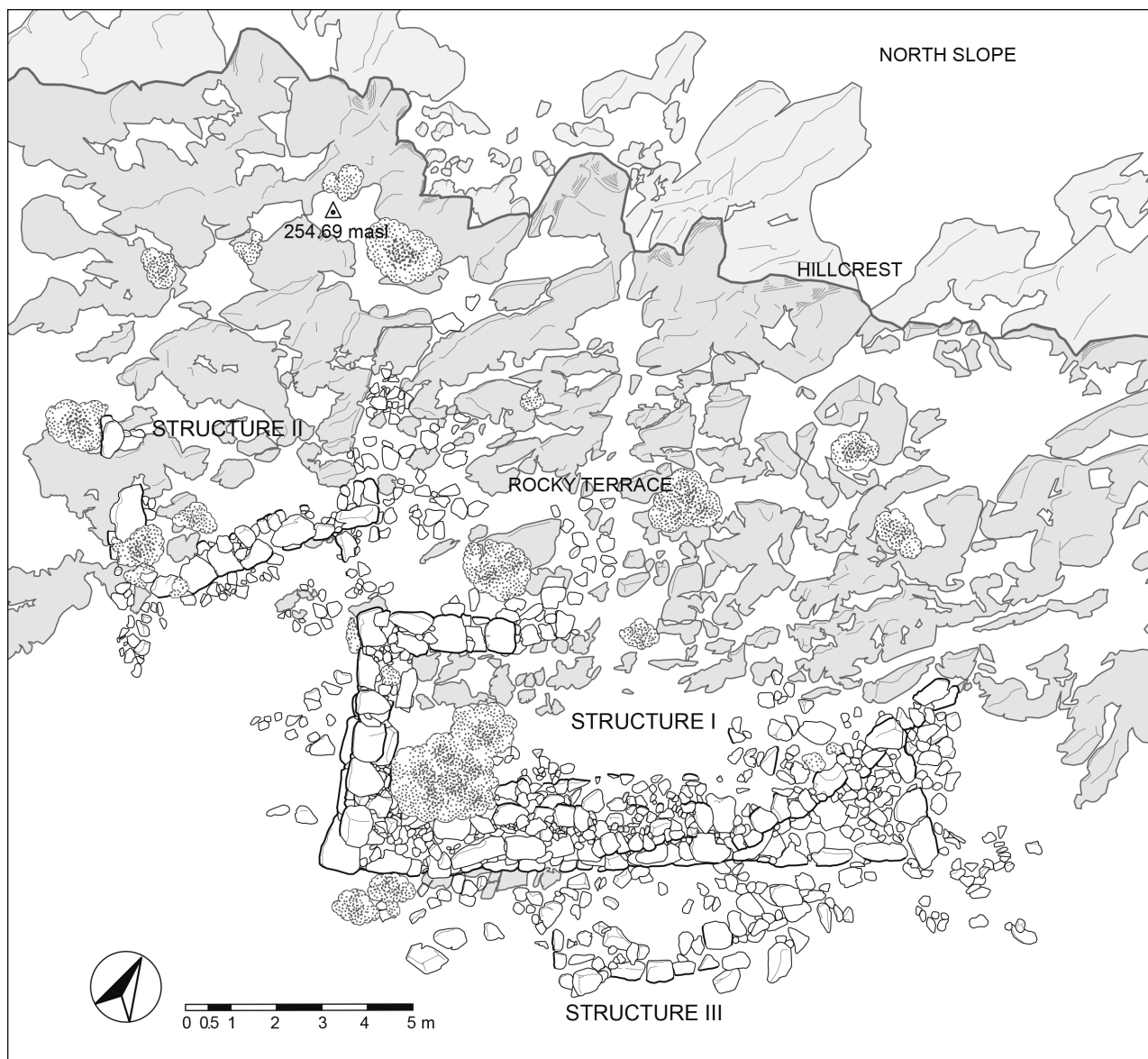


FIG. A2.4. Petsophas. Central part of the site: state plan. Scale 1:150.

Structures I and II were built in the megalithic technique.¹²³ Thus, the façades were constructed of *sidheropetra* limestone boulders, the largest of which span the entire width of the walls; otherwise, smaller stones were used for the inner faces.¹²⁴ There are, however, some differences in the masonry of the walls. These do not represent distinct building phases but are related to the quality of construction, having resulted from the effort to give the complex a monumental appearance. In other words, and according to the norm for that period, the walls that stood out prominently in the landscape – namely, the s and w façades of Structure I – were built with greater care, using larger and more regular boulders to impress the visitors to the sanctuary.

STRUCTURE I: THE MINOAN BUILDING (FIGS. A2.3c, A2.4; PLATE A2.1 b)

Structure I corresponds to the e part of the terrace of the first building phase and Room I of the overlying Minoan building, as these were defined by Myres (cf. FIGS. A2.3a and A2.3c). Accordingly, it aligns with the se part of Rutkowski's and Vavouranakis's building, as also with the area immediately to

¹²³ On megalithic masonry and its probable social and symbolic implications, see e.g. Zielinski 1998; Vokotopoulos 2007, 207–09; Shaw 2009, 57–58; Vokotopoulos 2011, 144–45.

¹²⁴ Dimensions of stones are hereafter stated in the order length × width × height.

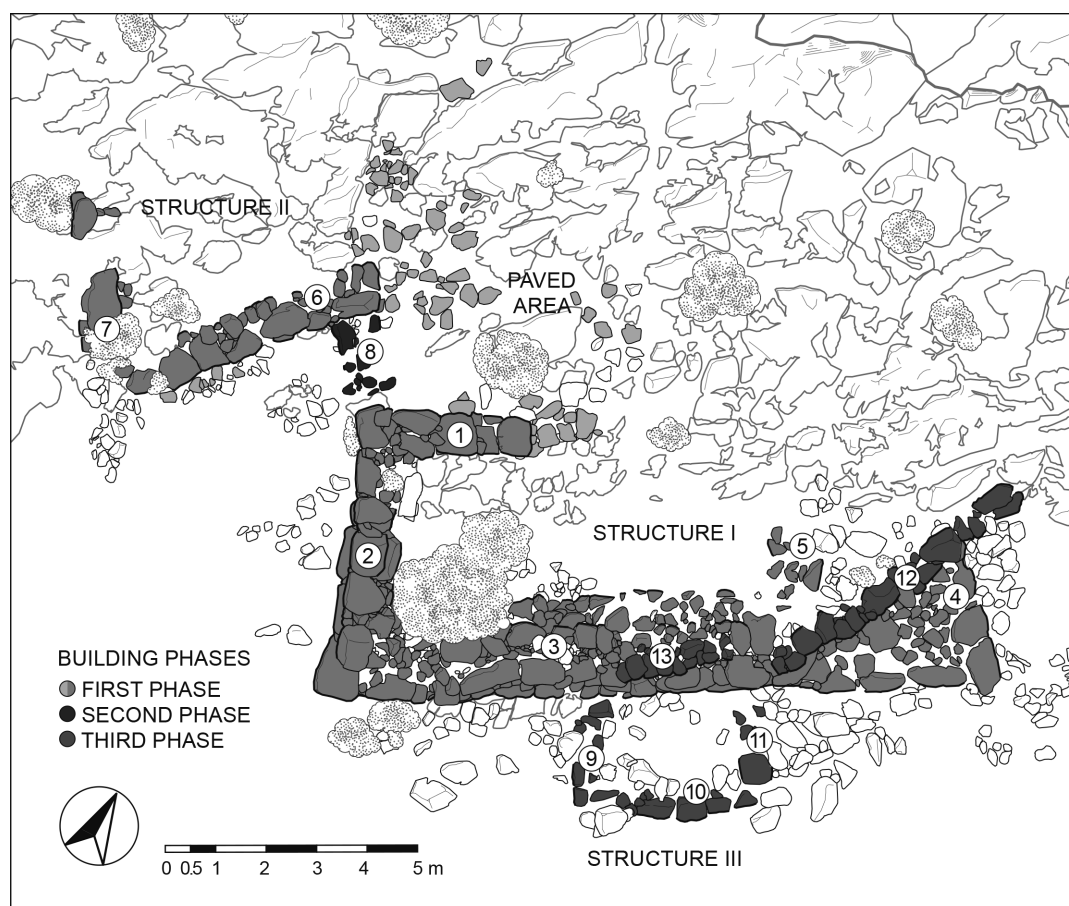


FIG. A2.5. Petsophas. Central part of the site: architectural phases. Scale 1:150.

its E (cf. FIGS. A2.3*b* and A2.3*d*). This structure, extending NE–SW, was situated on the S slope of the outcrop, immediately below the level area of the summit (PLATE A2.1 *a, d*). Its N wall followed the edge of the rocky terrace towards the slope, while the remaining outer walls were founded on the inclined surface of the bedrock. As a result, at the S side of the building the walls were much higher than at the N.¹²⁵

The walls of the shell (FIGS. A2.3*c*, A2.5; PLATE A2.1 *b*)

Of the N wall of the building (hereafter Wall 1) only the westernmost part is preserved, i.e. Myres's segment KL (FIG. A2.3*a*). This is formed by a line of boulders with a maximum height of 0.48 m (PLATE A2.1 *c*, at the middle).¹²⁶ The foundation level of the wall is only visible along its S side; this rests partly on bedrock and partly on the soil filling the interstices (PLATE A2.1 *d*). These reddish-brown deposits, 0.07–0.13 m thick, contain pottery and pebbles. At the E end of the extant part of Wall 1 is a rectangular block measuring 0.67 × 0.70 × 0.42 m. The regular form of this boulder, and the fact that it extends across the entire width of the wall, suggest that it constituted the base of a jamb. The stout masonry and the substantial thickness of Wall 1, which ranges from 0.70 to 0.80 m, indicate that this was an exterior wall, i.e. it was built from the outset to form part of the building's shell. This contrasts with the views of previous researchers, according to whom the building extended further upslope to the NE.¹²⁷

The W wall of the building (Wall 2) is 0.75–0.80 m thick at its upper, freestanding part, and is visible to a maximum height of 0.90 m. Its exterior face is particularly impressive, as it is largely constructed

¹²⁵ The difference between the foundation levels of the NW and SW corners is estimated at 1.35 m, while it would have been much greater at the E side of the building.

¹²⁶ Indicative dimensions: 0.82 × 0.84 × max. 0.45 m. This

specific stone extends across the full width of the wall.

¹²⁷ See *PK II*, 359–60; Rutkowski 1988, 85–86; 1991, 20; Vavouranakis 2011, 381.

of blocks with a roughly rectangular face, laid in horizontal courses (PLATE A2.1 *c, d*).¹²⁸ Evidently, in this case, the builders sought to imitate the aesthetics of ashlar masonry. The *n* part of the wall extends vertically to Wall 1, whereas downslope it turns to the *w*; as a result, the wall joins the *s* façade of the building at an acute angle. Moreover, at this junction the lower part of Wall 2 widens on both the exterior and interior sides. These idiosyncratic structural features certainly aimed to tackle the inclined surface of the bedrock upon which the building was founded. In other words, this specific part of Wall 2 functioned as a buttress.

The *s* wall of the building (Wall 3) is unevenly preserved. At mid-length, the wall is visible to a height of 1.92 m, but the uppermost part is a later or modern addition (Wall 13). In fact, the original construction is preserved to a maximum height of 1.62 m to the *sw*, while on the *e* side – where the collapse was more extensive – only one course of stones is visible. At the upper part of the wall, there are some slab-like, roughly rectangular blocks; otherwise, and in contrast to the *w* wall, the boulders of the outer face are rather irregular in shape (PLATE A2.1 *f*).¹²⁹ The *s* wall comprises two sections. The upper, freestanding part is 1.35 m thick, while the lower widens on the upslope side, resulting in a wall thickness of 1.85–1.90 m. The upper surface of this broad *krepidoma* forms a roughly horizontal ledge. The exceptional thickness of both sections of the wall apparently aimed at supporting a particularly heavy and/or tall superstructure; besides, it would have countered the lateral thrusts from the massive levelling fill of the building. The closest parallel to this unusual construction is provided by the *se* exterior wall of the guard house at Choiromandres, Zakros, which is dated to MM IIA.¹³⁰ like Wall 3, this was founded on sloping bedrock, lies at a lower level than the rest of the building's shell and comprises two superimposed parts; in fact, the footing gradually widens, thus forming an inclined inner face.¹³¹

Two vertical joints run the full height of the *s* façade, at distances of 4.85 m and 6.15 m from the building's *sw* corner (PLATE A2.1 *f, g*). At first glance, this picture would suggest a blocked entrance, 1.30 m wide. However, such an opening would have led to a staircase or ramp, given that the floor of the building was at a higher level; in this case, some of the blocks of its jambs would have been laid as headers so as to bond Wall 3 with those of the entranceway, which is apparently not the case. Consequently, it may be surmised that the joints are the result of an oversight during construction.

The *e* exterior wall of the building (Wall 4) is only preserved at the downhill side, where a row of boulders is visible on the surface (PLATE A2.1 *h*).¹³² This section of the wall extends obliquely to the *s* façade of the building. As in the case of the opposite *w* wall, the purpose of this arrangement was probably aimed at reinforcing the *se* corner and ultimately to secure the stability of the edifice. The *n* end of Wall 4 was founded at a much higher level, on protruding rocks. Apparently, this spot was never covered by soil deposits, a factor that must have contributed to the complete collapse or stone-robbing of this section of the wall.

The *w* and the *e* walls are almost symmetrically arranged, as indicated by the angles formed at their junction with the *s* façade, which measure 78° and 75°, respectively. This feature suggests that the building's shell was distinguished by regularity and overall symmetry. Consequently, it can be hypothesised that the missing *ne* corner of the building had the same form as the *nw* one, hence the *e* section of Wall 1 would have also ended in a jamb. How then could the intermediate part of the *n* side of the building be reconstructed? According to Myres, the jamb of Wall KL, that is the *w* section of Wall 1, defined a doorway with two steps (FIG. A2.3 *a*).¹³³ At this location there are today two slabs that correspond to the lower step, while the upper one is not preserved. As indicated in the plan, the latter was situated upslope from the wall and beyond the line of its exterior face;¹³⁴ such a placement would be unusual, hence it is likely that Myres assigned this interpretation to stones that belonged, in fact, to the collapse of the building. The presumed lower step would then have formed the threshold of the entrance. Given the supposed symmetrical form of the building, it could also be suggested that a second opening of a similar form existed to the *ne*. The distance of this latter from the now lost *ne* corner of the building would have been the same as that of the preserved entrance from the *nw* corner. According to Myres, though, the middle segment (MN) of the *n* wall, that is the part extending between the suggested entrances, most probably represents a reconstruction or a later addition. This conclusion was based on

¹²⁸ Indicative dimensions: a) 1.30 × 0.90 × 0.49 m (lowest boulder at the *sw* corner of the building); b) 0.83 × 0.55 × 0.43 m (*nw* corner); c) 0.86 × 0.80 × max. 0.38 m.

¹²⁹ Indicative dimensions of stones: a) 1.18 × visible 0.20 × max. 0.64 m; b) 0.95 × 0.66 × max. 0.60 m; c) 1.31 × max. 0.40 × visible 0.53 m; d) 1.03 × 0.58 × max. 0.70 m. Dimensions of stones of the inner face: a) 0.75 × 0.46 × 0.30 m; b) 0.38 × 0.30 × 0.30 m.

¹³⁰ Vokotopoulos 2022*b*, 80–81.

¹³¹ Chrysosoulaki 1997, 1051; Tzedakis *et al.* 1999, 321.

¹³² Indicative dimensions: 1.00 × max. 0.60 × visible 0.40 m (the stone at the *se* corner). The preserved height of the wall remains unclear, given that the excavation did not reach the bedrock.

¹³³ PK II, 359.

¹³⁴ PK II, pl. VII.

the wall's narrow width and on the presence, at its E preserved end, of a column base with a diameter of 0.355 m, which according to the excavator was placed there secondarily (FIG. A2.3*a*).¹³⁵ Only the westernmost stone is nowadays preserved from this particular part of the wall, i.e. jamb M of Myres's entrance. It is interesting to note that in the ground plan the base is located 5.80 m from the NW corner of the building, i.e. at the middle of the original length of the N façade (cf. FIGS. A2.3*a* and A2.3*d*). Therefore, given that the existence of earlier building phases is not plausible – as argued below in this study (pp. S183–S184) – the placement of the column base suggests a very different reconstruction of the N side of the building.¹³⁶ Specifically, it can be proposed that a broad opening existed here, the lintel of which was supported by the said column. In particular, the substantial width of the opening – estimated at c. 4.70 m – indicates the presence of two more supports on either side of the column, in the form of other columns or piers.¹³⁷ According to this hypothesis, Myres's lower step and later wall constituted in fact the (then) preserved part of the opening's stylobate, an interpretation that accounts for the smaller width of these features in relation to Wall 1. The form of the entrance thus indicates that the area to the NW was an outdoor space, as is also confirmed by the megalithic masonry of the W part of the N façade, which is characteristic of an exterior wall.

The interior of the building (FIGS. A2.3*c*, A2.4–A2.5; PLATE A2.1 *b*)

The current picture of the interior of the building differs significantly from that recorded by Myres. Thus, no trace of the paved floor that extended along the stylobate is preserved, i.e. of the rebuilt part or the extension of the N wall, according to the excavator's interpretation. This is also the case for the earthen floor at the W side of the building; besides, it is probable that this was removed during the 1903 excavation, given that the underlying levelling fill was also uncovered at that time. Nonetheless, the floor level can be determined on the basis of the foundation of the jamb of Wall 1 and the preserved part of the stylobate, given that the latter rested on the pavement (PLATE A2.2 *a*, right).¹³⁸ According to Myres, this part of the floor was plastered,¹³⁹ but this should not be taken for granted: in the analogous case at Juktas, where Evans identified a floor of whitish plaster during the excavation he conducted soon after the end of the dig at Petsophas,¹⁴⁰ modern research has shown that packed *kouskourochoma* – i.e. soil derived from marly limestone – was in fact used for this purpose.¹⁴¹ It is then possible that such was also the case for the floor of the building at Petsophas.

The available evidence does not confirm the existence of a bench along the walls of the W side of the building. Myres evidently attributed this function to the upper part of the broad *krepidoma* of the S and W walls (cf. FIGS. A2.3*a* and A2.3*d*). However, such an arrangement is not attested at the N wall; consequently, it is possible that the bench of this side corresponds to the rocks that were rising over the floor surface. Apparently, the solid face they form on the downslope side and their level upper surface contributed to their misinterpretation (PLATE A2.2 *a*).¹⁴² The ledge formed by the upper surface of the *krepidoma* of the S Wall 3 has an average width of 0.50 m, so it could indeed have been used as a seat (FIG. A2.5; PLATE A2.2 *b*). Nevertheless, this does not apply also to that of Wall 2, whose width is limited to 0.15 m. Moreover, the ledges of both walls extend at a lower level than the foundation of Wall 1 and of its stylobate, hence also from the floor at the N side of the building (see PLATE A2.2 *b*). Thus, in the case of Wall 3, the upper surface of the best-preserved part of its *krepidoma* is situated at least 0.14 m lower than the top of the bedrock rising in front of the jamb of Wall 1, which corresponds to the level of the floor. It is certainly true that the beaten earth floors of Minoan buildings were occasionally inclined.¹⁴³ However, if we assume that the average height of the bench was 0.25 m, as argued by Myres,¹⁴⁴ then the floor level at the S side of the building would have been 0.39 m lower than at its N side, i.e. the floor would have had an inclination of eight degrees, which does not appear plausible. What seems to be most likely, therefore, is that the floor extended immediately on top of the *krepidoma* of both walls; hence, the latter was not visible – in which case its use as a bench must be rejected.

¹³⁵ PK II, 359.

¹³⁶ If we accept Myres's report on the form and the location of this specific stone.

¹³⁷ The first version is substantiated by the stone attributed by Myres to the E jamb M of the entrance: its upper surface is slightly raised in relation to the stones to its W and forms a roughly curved outline, therefore it is possible that it served as a makeshift column base (FIG. A2.6; PLATE A2.2 *a*, right side, middle).

¹³⁸ PK II, 359.

¹³⁹ PK II, 358.

¹⁴⁰ PM I, 157, fig. 114.

¹⁴¹ Karetsou 1981, 145.

¹⁴² It is of interest that in Myres's plan (PK II, pl. VII) the outline of the 'bench' of the N side is rendered by a continuous line, while that of the S side with a dashed line, so as to declare that at the latter side the structure was partially preserved or missing in its entirety. In fact, the opposite is true, since only the S wall features a broad *krepidoma*. This inversion corroborates the suspicion that the drawing was largely prepared not on-site but from memory, following the end of the excavation.

¹⁴³ See e.g. Sackett *et al.* 1965, 264; Pelon 1966, 558; Vokotopoulos 2007, 179.

¹⁴⁴ PK II, 359.

The stones of the *krepidoma* of the s and the w wall bear in some places a smooth whitish crust (see PLATE A2.2 *b*, left), which could be identified with the plaster that according to Myres covered the ‘bench’ and the surfaces of the walls. However, the same picture is attested on stones situated at the interior of the walls, as well as on rocks at the summit of the outcrop – both within fissures, and on bedrock surfaces that were covered until recently by earth. This observation suggests that the whitish crusts constitute natural calcite concretions. If then they do correspond to the material observed by Myres on the ‘bench’ and the walls, their interpretation as plaster should be abandoned.

The description of the stratigraphic sequence in Myres’s account and its depiction in the accompanying section create the impression that the excavation had reached bedrock across a substantial part of the building, and certainly over its entire width.¹⁴⁵ However, the bedrock is visible nowadays only at the N part of the building, that is on its upslope side, while the rest of its interior is covered by earth (PLATE A2.2 *a*). The features of these deposits suggest that they are unexcavated, i.e. they are not the result of backfilling after the end of the excavations. Specifically, at the central and w part of the building extends a reddish-brown deposit that most probably represents the downhill continuation of the layer upon which Wall 1 and its stylobate were founded. Along Wall 3, the deposits retain the same hue; they are however distinct in that they include a larger quantity of angular limestone chips, whose maximum length reaches 0.05–0.07 m (PLATE A2.2 *a*). It is reasonable to assume that these emanated from the flaking of the rock outcrops of the surrounding area and/or were the by-products of the processing of the stones used in the building’s masonry. As mentioned above, this specific layer was uncovered during the 1903 excavation and its largest part must have been removed. The presence of stone chips suggests that this is a fill, which was most certainly deposited during the erection of the building in order to level its interior. The fill sealed the pre-existing deposits, i.e. the aforementioned reddish-brown layer. This latter accumulated after the inception of the cult, as suggested by the presence of pebbles, a characteristic feature of peak sanctuaries.¹⁴⁶

The picture is quite different at the E part of the building: the surface of this area is inclined; specifically, it descends to the ENE. Furthermore, it is covered by stones of various sizes, among which are some boulders. The stones may have come from the collapse of the shell of the building or from the later Wall 12, which extends immediately to the E. The first hypothesis is more likely, given that some of the stones apparently penetrate into the unexcavated deposits, which must antedate the construction of Wall 12 since they extend at a lower level. At the w border of the same area, the arrangement of the stones is denser, and they appear to define two faces, a picture that indicates the existence of a poorly preserved wall extending on a NNW–SSE axis (Wall 5). Based on its location and orientation, this can be identified as Wall DF of Myres’s plan (cf. FIGS. A2.3*a* and A2.3*c*),¹⁴⁷ and with Rutkowski’s Wall D–F, i.e. with the E wall of the Neopalatial building, according to the latter scholar (cf. FIGS. A2.3*b* and A2.3*c*).¹⁴⁸ However, this interpretation is not valid: no boulders are included in the masonry, therefore this could not have been an exterior wall. Moreover, the wall apparently did not rise above the level of the floor, as there is no relevant mention by Myres.¹⁴⁹ Therefore, if this is indeed a wall, it would have retained the levelling fill that extended to the sw, thereby delineating a low underground space on the opposite, downslope side. This cell would have occupied the easternmost part of the building, i.e. about a fourth of its surface (FIG. A2.6). After all, and in accordance with the general inclination of the slope, the surface of the bedrock in this area apparently extends at a lower level than in the rest of the building, a feature that corroborates the aforementioned hypothesis.

The existence of two superimposed floors at the E end of the building explains the presence of the presumed destruction layer at a lower level than that of the floor of the w side, given that the superstructure must have fallen inside the underground cell, filling the empty space. In turn, the poor preservation of the SE corner of the building can be attributed to the fact that the walls were free-standing at their entire height, which must have been substantial, given the low level of their foundation. Alternatively, if the above hypothesis is not accepted, then it can be assumed that the presence of the destruction layer at a low level is the result of the total collapse of the SE corner: this would have resulted in the erosion of the levelling fill and eventually in the formation of a cavity, which was subsequently filled with stones from the gradual collapse of the remaining superstructure. Similarly, the complete obliteration of the E part of Wall 1 must be attributed to the hollowing of its foundation by erosion.

¹⁴⁵ *PK II*, 358 and pl. VII.

¹⁴⁶ Peatfield 1992, 76, 80; Nowicki 1994, 35, 39; Peatfield 2009, 253.

¹⁴⁷ As will be explained below (pp. S170–S171), it is not certain that Wall DF of the plan corresponds to the homonymous wall in Myres’s

text. The latter may well identify with Wall 12 of the present study.

¹⁴⁸ Rutkowski 1991, 18, fig. 1 and 20.

¹⁴⁹ If we accept that Wall DF in Myres’s text – which was preserved at a substantial height – is not identified with the one discussed here but with Wall 12.

Later structures (FIGS. A2.3*c*, A2.4–A2.5)

A wall extending on a N/NE–S/SW axis, i.e. obliquely to those of the shell, runs through the SE part of the building (Wall 12). The location of this wall suggests that it should be identified with segment DE in Myres's plan,¹⁵⁰ and with Rutkowski's Wall D–E (cf. FIGS. A2.3*a*–A2.3*b* and A2.3*d*). The wall, preserved to a maximum height of 0.82 m at the uphill side, was mostly constructed with small and medium-sized stones (PLATES A2.1 *h*, A2.2 *d*). There is no pattern in the arrangement of the building material, given that the few boulders were placed at the upper part of the wall, while the stones are not well bonded and form a rather irregular face. Moreover, the course of the wall shifts twice, thus resulting in a slightly arched course. The poor construction of the wall suggests that its original height cannot have been much more than what is preserved; in other words, it did not belong to a building.¹⁵¹ Hence, Wall 12 most probably retained a terrace,¹⁵² or formed a low enclosure that delineated the area extending uphill to the W. Rutkowski and Vavouranakis suggested that the wall belongs to Myres's second building phase; as a result, they placed its construction in the Neopalatial period.¹⁵³ However, Wall 12 rests on the upper preserved surfaces of the S and E walls of Structure I (PLATE A2.1 *h*). Consequently, it was constructed after the final collapse of that building. After all, it is doubtful whether the wall could stand the test of time because of its makeshift construction, considering also that most of its exterior face was apparently visible – hence exposed to the elements – before the launch of the dig.¹⁵⁴ Therefore, we must assume that Wall 12 was built in recent centuries.¹⁵⁵

As was mentioned earlier, Rutkowski argued that along the E façade of the building was a staircase leading to the interior of the complex. He came to this conclusion due to the presence of two oblong slabs of *sidheropetra* and aeolianite, which he interpreted as steps (FIG. A2.3*a*; PLATE A2.1 *h*).¹⁵⁶ However, the stones were not placed in contact with the E wall – as would be expected in such a case – but at a distance of 0.50–0.70 m from the wall. Moreover, the upper surface of the lower slab is inclined, while the sole straight long side of the other is facing uphill; if the latter stone was a step, the opposite arrangement would be expected. Finally, immediately after the stones there is a rock 0.40 m high and then more protruding rocks, the presence of which would have necessitated an inconvenient turn to the SW for those ascending to the top. Consequently, the existence of a staircase in this specific area does not seem probable. Given also that the two slabs are situated at the extension of Wall 12 and at the same level as its lower course, we must presume that they belong to this wall – specifically, they formed its end at the rock face rising to the N.

The middle part of the S façade of the building is crowned by a row of small and medium-sized stones (Wall 13). The irregular face formed by the stones (see PLATE A2.1 *g*, top right) extends NE–SW, i.e. it is lateral to the façade of the building and forms a recess. It is possible that this low small wall formed the extension of Wall 12 to the SW. However, the poor joining of the stones and the absence of an inner face rather suggests a modern structure. It could be surmised that the stones were placed there during the excavation, possibly in order to complete the height of the S wall; in this case, they must originate in the destruction layer of the building.

The stratigraphic sequence: a reappraisal of Myres's views

The evidence discussed above suggests that Myres's account on the stratigraphy only provides a schematic picture; in reality, the sequence must have been much more complex. Thus, there is no mention of the stone packing along the S wall, although as mentioned this was depicted in the stratigraphic section that accompanied the report. Moreover, Myres's 'surface' layer must have been limited to the E side of the building, i.e. to the part where the N wall is not preserved, since its description possibly indicates a gradual accumulation from the erosion of the deposits initially

¹⁵⁰ This is because in the plan segment DE extends aslant to the remaining part of the S wall of the building complex, thereby forming an obtuse angle at their juncture: exactly the same case as that between Wall 12 and the W part of Wall 1.

¹⁵¹ As a result, Vavouranakis's reconstructions (2011, 381 and 388–91, figs. 4–8) must be rejected, where the wall is rendered at a substantial height or even as a supporting element, i.e. as if it belonged to a roofed area, since beams are rendered for the ceiling.

¹⁵² This hypothesis would account for the lack of an interior face. Alternatively, the latter is perhaps not preserved precisely because of the poor quality of the masonry.

¹⁵³ Rutkowski 1988, 85; 1991, 18, 20, fig. 1; Vavouranakis 2011, 381, fig. 1.

¹⁵⁴ The walls of the SE corner of Structure I are not preserved

higher than the foundation of Wall 12 (PLATE A2.1 *h*). Consequently, there was not a boundary downhill which would allow for the accumulation of deposits resulting in the backfill of the face of the wall.

¹⁵⁵ According to Soetens, the preserved long wall of the building was rebuilt at a new angle in the last century, i.e. after the launch of investigations at the site (see Cunningham and Sackett 2009, 83 n. 17). The reference to a change in orientation obviously refers to Wall 12. We are not aware of the reasoning which led to this specific view; however, it is clear that this wall pre-dates the excavations, since it corresponds to the segment DE of the plan published by Myres in terms of its orientation, length and relation to the S wall of the building. Therefore, it is not a modern structure.

¹⁵⁶ Rutkowski 1991, 17–19.

extending uphill.¹⁵⁷ In contrast, at the w half of the building the upper part of the deposits must have been of a different nature, given that the walls of the shell were preserved to a substantial height. Specifically, it may be presumed that the deposits extending over the floor in this area were formed from the collapse of the superstructure.

According to M. Haysom, Myres was an inexperienced excavator when he undertook the investigation of Petsophas.¹⁵⁸ However, this is not true, given that he had already excavated in Cyprus.¹⁵⁹ Furthermore, the account on Petsophas shows a keen eye for stratigraphy; in fact, Myres's interest in the observation and documentation of the stratigraphic sequence was fairly unusual – and in this, he was well ahead of his time. Consequently, the gaps in Myres's report and the flaws in the interpretation of the evidence should rather be ascribed to the fact that he did not supervise the work throughout. In effect, the report appears to result from a combination of the initial impression formed on site with the evidence provided by C. T. Currelly, who continued the excavation after Myres's departure.¹⁶⁰ It could then be surmised that the inclusion of Currelly's views was at times selective, and that in the end the evidence which Myres had seen in person carried more weight in his account.

In any case, the current state of the building's interior contradicts some of the basic points in Myres's report. Therefore, the lower part of the deposits inside the building, which Myres interpreted as a levelling fill,¹⁶¹ was not devoid of finds, as suggested by the picture of the deposits on which the n wall was founded. Accordingly, with reference to the 'later' Wall DF, the opening of a trench for its foundation is hardly credible: this practice was not at all common in Minoan Crete, all the more so for walls representing later additions or repairs to any given building, which as a rule were founded on earlier deposits and/or on the walls of previous building phases; obviously enough, the same was valid for the simple structures of the countryside during early modern times – if we assume that the designation of Wall DF as later entails such a dating. It could then be surmised that, at least with reference to the uphill side, Myres interpreted as a foundation trench the cavity that was formed during the erection of the wall between this latter and the inclined surface of the earlier deposits.

Proper understanding of the stratigraphic sequence is significantly hindered by the uncertainty in the identification of the aforementioned wall with one of those visible today at the site. Thus, to Rutkowski Wall DF is the one here designated as Wall 5;¹⁶² however, according to Henriksson and Blomberg it corresponds to Wall 12 of the present study.¹⁶³ Rutkowski's view is apparently confirmed by the location of Wall 5, which more or less coincides with that of Wall DF in Myres's plan (cf. FIGS. A2.3*a*–A2.3*b* and A2.3*d*). The excavation account leads to the same conclusion, given that the area between Wall DF and cavity H is designated as 'space DFH':¹⁶⁴ indeed, the area to the NE of Wall 5 gives the impression of a distinct space, as it is bordered sideways by Wall 12, while this cannot be argued for the declivity extending in front of the wall. On the other hand, in the ground plan the length of Wall DF is similar to that of Wall 12 and not to that of Wall 5 (cf. FIGS. A2.3*a* and A2.3*d*). Moreover, Myres explicitly states that Wall DF extended obliquely to the other walls and that it ended on a low crag to the NNE.¹⁶⁵ This description is consistent with Wall 12, which does actually have such an orientation¹⁶⁶ and ends at the protruding rocks of the E part of the outcrop; in contrast, Wall 5 apparently extends vertically to the s wall of Structure I, while the rather gentle inclination of the bedrock on the upslope side does not resemble a crag (FIGS. A2.3*c*, A2.5). Moreover, Wall 12 is evidently later than the rest, whereas the masonry of Wall 5 is Minoan. In addition, the latter is situated inside the cavity formed during the erection of Structure I between the s Wall 3 and the bedrock extending uphill; if then we reject the version of the opening of a trench for its foundation, it would be unrealistic for the wall to be a later addition. According to Myres again, the paved floor was detected 4 m to the w of Wall DF,¹⁶⁷ a distance that corroborates its identification with Wall 12 (cf. FIGS. A2.3*a* and A2.3*d*). Finally, Wall DF was visible at the ground surface before the beginning of the excavation. This was certainly the case for Wall 12, but does not appear probable for Wall 5 which today at least extends at a much lower level. In conclusion, the available evidence most probably suggests the identification of Wall DF in Myres's text with Wall 12. How is this then related to his plan, where Wall DF is shown at the location of Wall 5? It could be surmised that Wall 5 was uncovered after Myres's departure; the wall was included in the plan, but the excavator was not informed about the find,

¹⁵⁷ See *PK II*, 357.

¹⁵⁸ Haysom 2018, 20.

¹⁵⁹ See e.g. Dunbabin 1954, 311.

¹⁶⁰ See *PK II* 276 and 357, n. 1.

¹⁶¹ *PK II*, 358.

¹⁶² Rutkowski 1991, 18, 20, fig. 1.

¹⁶³ Henriksson and Blomberg 1996, 105, fig. 1.

¹⁶⁴ *PK II*, 357.

¹⁶⁵ *PK II*, 357.

¹⁶⁶ This, with reference to the magnetic north and not the conventional orientation normally used in Myres's report. The precise definition of the orientation of this wall – in contrast to what applies for the others – indicates that in this case a compass was used.

¹⁶⁷ *PK II*, 358.

resulting in its misidentification with the later wall he had investigated himself.¹⁶⁸ If then we consider the above scenario as too far-fetched, it must be accepted that Wall DF of Myres's text *and* plan indeed identifies with Wall 5 – or rather with a later, crude and now completely destroyed structure that was partly founded upon the Minoan wall. This hypothesis would account for the substantial length assigned to the wall in the plan, where it is rendered as if it extended beyond the N façade of Structure I, as well as for its slightly different orientation in relation to the facade of the latter.

If we accept the identification of Wall DF with Wall 12, then a radical re-appraisal of the current view on the character and date of the black layer with the figurines is imperative.¹⁶⁹ This is because one part of this deposit would have extended over Wall 5 and the possible collapse covering the E side of the building;¹⁷⁰ consequently, the association of the burnt layer and the bonfire that produced them with the first period of use of the site cannot be accepted. On the contrary, the deposition of this layer must have actually followed the end of the use of the building, i.e. also the abandonment of the sanctuary itself. Furthermore, the black layer was not sealed by the floor of the building, as Myres ascertained, but must have simply extended to a lower level in relation to the floor.¹⁷¹ In fact, the end of the black layer to the SW must be identified with the end of the preserved part of the floor and the underlying deposits, i.e. the relation of these to the black layer was that of a horizontal, not vertical succession. Even if we accept that Wall DF did not correspond to Wall 12 but extended over Wall 5, the dating of the black layer to the initial stages of use of the site must not be taken for granted. And this is because in this particular case the layer may have been at the same level as the later structure and stratigraphically associated with that and not with the underlying Minoan wall.

To summarise, the deposition processes that took place in the E and the W halves of the building most probably were not identical; and this is because of the differences in the bedrock's morphology, in the original height and the degree of preservation of the walls, and perhaps also in arrangement of the building's interior.¹⁷² Therefore, at its E end the collapsed superstructure apparently formed the lower part of the deposits, while the opposite was obviously the case at the W part. It must then be surmised that Myres's stratigraphic sequence did not apply to the entire building, but only to the area between the then preserved part of the floor and Wall 12 – or the upper part of Wall 5, if we accept that this corresponds to Wall DF.

THE LEVEL AREA AT THE SUMMIT: THE CORE OF THE SANCTUARY (FIG. A2.4; PLATE A2.1 *b*)

The rocky terrace extending upslope from Structure I and at about the middle of the length of the outcrop has a trapezoidal outline. It is bordered to the NE by low rocks forming a rather irregular front, while to the NW rise the protruding rocks of the crest of the summit. In between the latter there is the rock that forms the very summit of the outcrop.¹⁷³ Finally, an oblong rock extending NNW–SSE separates the main part of the rocky terrace from its W end, i.e. from the area of Structure II (PLATE A2.2 *d*).¹⁷⁴ At the interior of the area, the bedrock extends at a lower level than at its perimeter and forms smooth or even flat surfaces sloping gently downhill to the SE. The rocky terrace is 9.50 m long to Structure I to the SE but it is confined to 6.00 m uphill, while its maximum width is 7.50 m along Structure II and until the rocks of the summit, where it is limited to 3.50 m at the NE side.

Myres only investigated the SE side of the area, where he excavated a zone c 3.00 m wide, i.e. the area where he thought that the narrow oblong Room II of the Minoan building extended.¹⁷⁵ According to Myres, the soil cover on the remaining part of the area was not very substantial, having a maximum thickness of 0.30 m on the downhill side. Erosion must have since washed away a part of these deposits, while the area was apparently excavated by Davaras.¹⁷⁶ The surface of the bedrock is now visible at the largest part; unexcavated deposits remain only in front of Structure I, and also in between the rock crevices extending upslope.

¹⁶⁸ To this mistake must have contributed the attribution of Wall 5 in the plan: the wall is rendered as extending laterally in relation to the other walls and runs NNE, in accordance with the conventional orientation used by Myres in his report (see FIG. A2.3*a*); Wall DF followed the same direction, but according to the magnetic north. The above hypothesis presupposes that the names of the walls were not included in the plan, thus resulting in the erroneous identification of the walls.

¹⁶⁹ This specific layer was entirely removed, a fact that hinders its attribution to the successive use horizons of the site.

¹⁷⁰ According to Myres's report (*PK II*, 357), the black layer appeared at a distance of c. 1.00 m from Wall DF.

¹⁷¹ Moreover, this is exactly what is shown in the plan: see *PK II*, pl. VII.

¹⁷² This last point is valid, if we accept the presence of two levels of use at the easternmost part of the building, the upper one being a continuation of the floor of the rest of the structure, and the lower representing the floor of the underlying cell.

¹⁷³ This rock is situated immediately next to and to the NE of the geodesic point.

¹⁷⁴ The rock rises 0.40 m from the current earth surface, i.e. it is relatively low; however, it forms a continuous front. Therefore, it is possible that it was perceived as a boundary between the two areas.

¹⁷⁵ *PK II*, pl. VII.

¹⁷⁶ Works included the 'NE side of the small sacred building' (Davaras 1976, 380), a description which must refer to Structure II, but also to the level area at the summit.

The pavement (FIGS. A2.3c, A2.5)

On the w side of the area under consideration and along the rock that separates it from Structure II there is a concentration of slabs and stones with relatively large and level upper sides (PLATE A2.2 d–e). These vary in terms of size and shape, while some are broken into smaller pieces or have been disturbed, and are now at an inclined position. It is clear, however, that they were initially arranged so as to fill the gaps between the low protrusions of the bedrock, and that they extended at the same level with the latter, thereby forming a continuous surface, i.e. they defined a paved area that apparently led to the rocks at the summit and the cliff (PLATE A2.2 e). The paved area followed the gentle incline of the bedrock, while downhill it formed two steps, with fronts at NE–SW direction and along the extension of the faces of the s wall of Structure II. Two more slabs are identified in the oblong cavity formed in front of the rocks on the summit, while parts of a pavement are also preserved downhill to the E and along the façade of Structure I. Consequently, the paved area must originally have had a substantial extent. Specifically, it was not limited to the inclined passage along Structure II, but it would have covered the level area in front of Structure I as well: perhaps also the largest of the cavities formed uphill between the rocks. It appears that the pavement was ignored or not identified as such by previous scholars, since there is no mention of it in the relevant publications. This paradox is possibly explained by simply considering that a paved area was not anticipated: with the exception of Juktas, such arrangements have not been identified in peak sanctuaries to the present day.¹⁷⁷

The problem of the extent of Structure I and the arrangement of the area near the summit

Myres, as well as the scholars who followed in his footsteps, concluded that the building of the second millennium BC extended into the SE part of the area under consideration, if not over its entire surface.¹⁷⁸ This view was based on the presence of two rows of stones that were attributed to partially preserved walls. Of these, one formed the uphill extension of the w wall of the building, while the other (Wall BP) extended to the NE of Wall AB, i.e. the s wall of Structure II, at approximately the same line (FIG. A2.3a). No trace of the above survives today.

According to Davaras, between the two seasons he excavated at the site the wall of the ‘nw edge of the sacred building’ was destroyed by looters: in fact, under the wall human and animal figurines were found in successive layers.¹⁷⁹ If we assume that Davaras followed the conventional orientation used by Myres, then he probably refers not to Wall BP, but to segment BK of the w wall of the building or its extension to the NW (FIG. A2.3a). The latter case is the most plausible, as the deposits underneath segment BK (hereafter Wall 8) were quite thin, as is visible in a photograph published by Peatfield;¹⁸⁰ therefore they could not have contained figurines in successive layers. In any case, the existence of a wall beyond point B – i.e. of a wall that would delineate Structure II at the NE – is doubtful. Myres mentions that two stones were preserved of that wall, while only one is depicted in the plan. Interestingly, that stone is depicted at the location of the oblong rock that separates the paved area from Structure II.¹⁸¹ The upper surface of this rock is cracked, while its sides are more or less upright (FIG. A2.4; PLATES A2.1 b, A2.2 d). It is then possible that Myres took the upper part of the rock for a row of boulders, given that this was in all probability barely protruding from the surface at that time. Besides, the pavement continues into the gap between the rock and the s wall of Structure II, i.e. within the course of the presumed wall (FIGS. A2.3c, A2.5; PLATE A2.2 a), a fact that negates the existence of the latter. Consequently, the stones removed by the looters must have been part of the deposits that extended between the rock and the s wall of Structure II, and possibly came from the collapse of the latter. However, we cannot preclude the possibility that they did indeed belong to a built structure, namely, to a later barrier inhibiting access to Structure II, founded on deposits already accumulated upon the pavement.

In the photograph by Peatfield, mentioned above, two stones are also visible that correspond to Myres’ Wall BP, or at least to the part that was still extant. According to the photograph, the presumed wall was founded on a layer containing small stones that rested at about the same level as the pavement extending to the NW. These features are not preserved nowadays. At the same place – therefore, at a lower level than the above – there are today densely arranged stones extending SW–NE, i.e. on the same axis as Myres’s wall (cf. FIGS. A2.3a and A2.3c). However, the stones are clearly smaller than those of the extant Minoan walls of the site, and they form a flat surface. Consequently, they do not belong to the foundation course of a now destroyed wall, but they constitute a part of the pavement.

¹⁷⁷ A partly-preserved pavement was identified at the core of the sanctuary at Juktas, specifically at the NW part of the open area extending just before the cliff: see Karetsou 1985, 288.

¹⁷⁸ *PK II*, 357, 359–60.

¹⁷⁹ Davaras 1976, 380.

¹⁸⁰ Peatfield 1990, 123, fig. 11.

¹⁸¹ Cf. *PK II*, pl. VII and here FIG. A2.3c.

In particular their compact arrangement most probably implies that they formed a step, given that the area to the SE is at a lower level. Therefore, the stones attributed to Wall BP possibly belonged to the collapse of neighbouring Structures I and II. However, the regular faces they formed do suggest a built structure. In such a case, though, this would not have been a load-bearing wall but most probably a parapet approximately 0.50 m wide¹⁸² and 1.40 m long, i.e. not longer than that preserved at the start of the excavation, which would have aimed at regulating circulation in the area of the summit. Thus the parapet would have deterred access to the cliff directly from the entrance of the sanctuary, which was in the area of later Wall 8, as will be discussed below; instead, it would have directed worshippers towards Structure I.

In summary, the available evidence does not testify to the presence of load-bearing walls in the area under examination; if built structures ever existed, these would have been low, and added secondarily. In other words, this picture conclusively confirms that Structure I did not extend into the level area near the summit. Consequently, this was an outdoor space, as is also suggested by the pavement's considerable extent. In parallel, the very presence of the latter confirms the significance the rocky terrace had for the cult. It would then be reasonable to assume that the core of the sanctuary was situated in this very area.

STRUCTURE II: THE MINOAN ENCLOSURE (FIGS. A2.3c, A2.4–A2.5; PLATE A2.1 b)

Structure II occupied the w end of the level area on the summit; it corresponds to the w part of Myres's terrace, and to Rutkowski's 'sacred screen' (cf. FIGS. A2.3a–A2.3b and A2.3d). This area was investigated by Davaras,¹⁸³ who only removed the upper part of the deposits. Structure II was not roofed, as it consisted of only two walls. These were founded at the border between the level area and the declivity extending to the SE and SW. The walls delineated an area extending N and NW to the summit rocks, while its E end was formed by the oblong rock corresponding to the presumed extension of Wall BC. Between the rock and the wall to the S there is an opening 0.70 m wide; it is possible that this formed the main entrance to the area of Structure II, as it gave to the paved area on the summit. Likewise, the presence of the opening entails that the enclosure constituted an integral part of the core of the sanctuary. The interior of the area, in particular its N part, is occupied by protruding rocks extending E–W.

The S wall of Structure II (Wall 6) is 6.05 m long and 0.80–0.85 m wide (PLATE A2.2 f). It extends obliquely to the contours and preserves a single course of large stones, with a maximum height of 0.58 m.¹⁸⁴ The W Wall 7, 0.85 m wide, was founded on an oblong protrusion of the bedrock. Consequently, it was apparently never covered by earth, which explains its poor state. Today, Wall 7 preserves at places two courses with a maximum height of 0.73 m, and extends to a length of 4.30 m. Its last stone to the NW is rather regular, therefore it could belong to the end of the wall.¹⁸⁵ Nevertheless, it is also possible that Wall 7 continued until the cliff in order to block access to the core of the sanctuary from the W. The masonry of the two walls includes boulders of *sidheropetra*. As a rule, these are smaller than those of Structure I, with the exception of a particularly large stone in the W wall, measuring 1.30 × 0.75 × 0.52 m.

The inner faces of Walls 6 and 7 are founded on deposits containing pottery. Consequently, the arrangement of Structure II post-dates the initial use of the site, a picture that was also attested in neighbouring Structure I. The foundation level of the inner faces largely coincides with the current surface of the soil, which must correspond to the ancient use level.¹⁸⁶ This means that the deposits retained by the walls were not particularly thick, and that the rocks extending uphill remained visible after the construction of Structure II. Consequently, Structure II cannot be interpreted as a terrace, a conclusion further substantiated by the absence of a wall to the E. Thus, it was most probably an enclosure, as envisaged by Rutkowski.¹⁸⁷ In accordance with this view, the two walls delineating this area may have been relatively low. Specifically, if we assume that their upper surfaces were at the same level, then, based on the highest preserved boulder, they must have had a minimum height of three or four stone courses at their juncture, while their ends on the upslope side to the NE and NW would have been about two courses high.

¹⁸² The width of the presumed structure was estimated by comparing the stones visible in Peatfield's photograph with those still *in situ*.

¹⁸³ See Davaras 1976, 380. The excavation of Structure II is confirmed by the earth and calcite crusts visible on the rocks and on the stones of the inner face of the walls. Myres did not investigate the area, as he thought that the deposits were not of substantial thickness (see *PK II*, pl. XII).

¹⁸⁴ Indicative dimensions of the stones: a) 0.90 × 0.40 × 0.35 m

(the last stone to the E); b) 0.60 × 0.67 × visible 0.42 m; c) 0.70 × 0.65 × 0.40 m.

¹⁸⁵ Dimensions of the stone: 0.85 × 0.52 × 0.35 m.

¹⁸⁶ In Minoan architecture, occasionally only the upper, free-standing part of the walls had an inner face, while under the level of the floor the levelling fill extended up to the boulders of the façade. This was the case for low structures, such as the risers of terraces or the enclosures, but often also for load-bearing walls.

¹⁸⁷ Rutkowski 1991, 20.

AREA BETWEEN THE BUILDING AND THE ENCLOSURE: THE ENTRANCE TO THE SANCTUARY
(FIGS. A2.4–A2.5; PLATE A2.1 *b*)

From the wall extending between Structures I and II (Wall 8) only the stone of its NW corner is preserved,¹⁸⁸ as well as some small stones that possibly belonged to its foundation, or perhaps to the underlying layer (PLATE A2.2 *f*). Nonetheless, the wall is visible in the photograph, mentioned above, published by Peatfield.¹⁸⁹ From this it follows that its interior face, of which only a single course was preserved at that time, was built of small and medium-sized stones. According to Myres, the wall – his segment BK – formed part of the riser of the terrace of the first building phase.¹⁹⁰ However, its presumed extension to the SE, i.e. Wall 2 of Structure I, is clearly differentiated in its masonry; specifically, the interior face of the latter consists not of small stones but of the façade boulders that extend throughout the width of the wall. Moreover, Wall 8 was neither bonded into Wall 2, nor into Wall 6 of Structure II, which extends to the NW. The blocks at the end of the latter are distinguished by their large size, rectangular shape and even surfaces (PLATE A2.1 *d*) – features which suggest that the stones were meant to be visible, and that they marked the ending of those walls. The above indicates that Wall 8 was a later addition interposed between Structures I and II (FIG. A2.3*d*). Consequently, an opening 1.80 m wide was originally formed between the two structures, which gave to the level area on the summit; this would have constituted the main or even the only entrance to the core of the sanctuary (PLATE A2.1 *d*).

The inclined area extending to the S, that is between Structures I and II, would have served the passage to the entrance of the sanctuary. This area was investigated by Davaras,¹⁹¹ although work must have been limited. As a result, it is still covered by deposits (PLATE A2.1 *e*), while the protrusions of the bedrock are only visible on the upslope side, specifically in front of the entrance and along the two structures. Consequently, a clear picture of the arrangement of the area during the period of the use of the sanctuary is not possible for now. Some stones are visible in places, which most probably come from the collapse of the neighbouring walls (PLATES A2.1 *c*, A2.2 *f*). Nevertheless, the largest of those is probably *in situ*, given that the side facing downslope is upright. This particular stone is situated at a distance of 2.70 m from the SW corner of Structure I, next to the W façade. If the stone is indeed in its original position, then it may have belonged to a ramp or stepped ascent leading to the entrance of the building complex. At the W end of the area is a concentration of small and medium-sized stones. These extend to a length of 1.50 m, on the same line as Wall 7 of the enclosure. Rutkowski and Vavouranakis thought that the stones may represent a wall (FIG. A2.3*b*).¹⁹² This hypothesis cannot be excluded. However, the absence of clearly defined faces would rather suggest that these stones came from the collapse of the SW corner of the enclosure. Another concentration is visible immediately to the NE, along Wall 6 of the enclosure. The stones, which include several slabs, are densely arranged and form a more or less even surface. This picture then suggests the existence of a bench c. 2.15 m long and 0.35 m wide (FIGS. A2.3*c*, A2.6). This may have served as a seat, providing a resting place for those awaiting entry to the core of the sanctuary; alternatively, it could have been used for the deposition of votives, as in the case of the bench extending along the E side of the building complex at the summit of Juktas.¹⁹³ In any case, the presence of such a structure cannot be confirmed without further excavation.

STRUCTURE III: THE VENETIAN BUILDING (FIGS. A2.3*c*, A2.4–A2.5)

Relatively thick deposits and sparse large stones (PLATE A2.1 *b*, *f*) are found along the S façade of Structure I, which came from the collapse of the superstructure of the building and particularly Wall 3, as possibly also from the erosion of the uppermost part of the outcrop. Part of the fallen building material was incorporated into Walls 9, 10 and 11 of Structure III – a one-roomed building c. 3.90 m long, of average width 2.40 m, extending along the façade of the Minoan building, which served as its N side. The walls of Structure III barely rise above ground surface and its outline is not clearly visible everywhere. As a result, it cannot be determined whether this structure was roofed or merely constituted an enclosure, i.e. a pen serving as a stable for a small number of animals or even as a shelter for shepherds in case of bad weather. Myres thought this building to be a modern structure;¹⁹⁴ however, its poor preservation could suggest it dates to a period before the launch of investigations at the site, probably in Venetian times, as will be argued below (p. S188).

¹⁸⁸ Dimensions: c. 0.65 × 0.40 × 0.32 m.

¹⁸⁹ Peatfield 1990, 123, fig. 11.

¹⁹⁰ *PK II*, 356 and pl. VII.

¹⁹¹ Davaras 1976, 380.

¹⁹² Rutkowski 1991, 18, fig. 1; Vavouranakis 2011, 381, fig. 1 and

388–91, figs. 4–8 (where the wall is rendered as having a substantial height).

¹⁹³ See Karetsou 1980, 341–43; 1981, 145.

¹⁹⁴ *PK II*, 356.

THE IMMEDIATE SURROUNDINGS OF THE SANCTUARY

THE SOUTH SLOPE (PLATE A2.1 *a*)

The gentle slope extending immediately to the s and SE of the building complex is covered by scatters and piles of stones. The density of the stones is higher in front of Structure I up to a distance of 10–12 m from it (PLATE A2.1 *f*), where it then drops off dramatically. The stones include some boulders, but most are small and medium-sized. Moreover, stone chips also abound. Most blocks are from limestone, but there are also several pieces of aeolianite. These latter apparently originate from the coastal zone, since it is only there that this type of rock occurs, and presumably once belonged to hewn architectural elements. According to Rutkowski, this particular area was arranged in at least three consecutive terraces, and the scattered stones came from the collapse of their risers.¹⁹⁵ However, this hypothesis is implausible, given that the surface of the slope does not seem to form distinct levels. In fact, the distribution of the stones indicates that these came from the collapse of Structure I and the subsequent dispersal of the building material downhill.

Part of this area was excavated by Davaras, who mentions the presence of many finds.¹⁹⁶ Indeed, at the upper part of the slope there are a lot of sherds between the stones; however, their density is apparently less than that attested at the E side of the outcrop, while at the end of the slope towards the plateau the finds are very few. It seems, therefore, that the area was not used in a particularly intense or systematic way, but mainly served the passage to the summit, if it did not also function as a congregation area for the worshippers while they awaited entry to the core of the sanctuary.

THE AREA TO THE NE AND E OF THE MINOAN BUILDING (PLATE A2.1 *a*)

Limestone layers to the NE of the level area on the summit and the entire E part of the outcrop ridge extend across the earth surface, in such a way that their eroded ends form serrated protrusions. Apparently, this rocky, rugged terrain was never used systematically for the rituals; moreover, no traces of built structures were identified there. However, the deep fissures and cavities between the rocks could have been used for discarding votives, similar to what apparently happened in other peak sanctuaries. This hypothesis needs testing by excavation. It seems, however, that such was the use of the cavities at the SW end of the area, given that there — at Myres's cleft H — was found the concentration of figurines that instigated the investigation of the site (see PLATE A2.1 *b* right and FIG. A2.3*d*).¹⁹⁷

The declivity extending along the foot of the outcrop and to the E of Structure I is mostly covered by concentrations of gravel from bedrock flaking. Nevertheless, at places medium-sized and large stones are also visible, some of which appear to form rows. It is possible that the latter represent walls, which would have delineated small terraces or enclosures.¹⁹⁸ Given that the presumed walls barely protrude from the surface, they are not recent structures; on the contrary, a date in the period of use of the sanctuary should not be excluded.

The E slope — or at least the part nearer to Structure I — was excavated by Davaras and yielded a wealth of finds.¹⁹⁹ Accordingly, the amount of pottery visible today on the surface is particularly large.²⁰⁰ The area is situated at a lower level than Structure I but not directly downslope; therefore, it is possible that a substantial part of the finds did not tumble from the central part of the site but results from primary deposition. The E slope has no visual contact with the level area at the summit because of the difference in elevation and the interference of Structure I; however, the view to the sea is quite extensive, and the paths leading to the site arrive at this very spot. It could then be surmised that the boundaries of the sanctuary's *temenos* were there: in other words, the area constituted an intermediate zone between the mundane and the supernatural. As such, it would have been suitable for the collective gatherings and feasts that must have accompanied the rituals,²⁰¹ activities which would account for the large quantity of mobile finds identified in this area.

THE NORTH SLOPE

The N slope of Petsophas is steep but accessible, in contrast with other peak sanctuaries, where the vantage area overlooking the surroundings drops to a sheer cliff. Thus, between the rocks on the crest of the summit are gaps which allow downhill passage (PLATE A2.1 *b*). The base of this crag

¹⁹⁵ Rutkowski 1991, 18–19, figs. 1–3 and 20–21.

¹⁹⁶ Davaras 1972*a*, 102; 1972*b*, 652. See also Rutkowski 1988, 86.

¹⁹⁷ *PK II*, 357 and pl. XII.

¹⁹⁸ Similar views are expressed by Rutkowski (1988, 86).

¹⁹⁹ Davaras 1972*b*, 652; 1976, 380.

²⁰⁰ See also Rutkowski 1991, 21.

²⁰¹ For the consumption of food and drink at peak sanctuaries, see e.g. Peatfield 1992, 70 (Atsipades); Rethemiotakis 2009, 195 (Gournos); Wallace 2012, 74–75 (Kaphi); Karetsou and Mathioudaki 2012, 99–100; Karetsou 2013, 85, 89–90 (Alonaki, Juktas); Sakellarakis 2013, 69 (Ayios Georgios); Tzachili 2016, 49–52 (Vrysinas); Vokotopoulos 2019*a*, 8, 12 (Traostalos).

is covered by slumped deposits and extensive piles of stones, obviously dumped there during the excavation of the site. At a lower level, the rock forms protruding veins and oblong fronts; these fragment the upper part of the slope into successive rocky terraces and distinct inclined surfaces. In this area, T. Cunningham and S. Soetens identified fragments of human and animal figurines in concentrations inside the crevices and cavities of the bedrock.²⁰² The distribution of the finds suggests that these had not tumbled down from the sanctuary, but represent primary deposits. This scenario would differentiate Petsophas from other sanctuaries at peaks or hilltops, for example from those at Traostalos and Choiromandres,²⁰³ where the finds on the slopes extending diametrically opposite from the side where the worshippers arrived are minimal and most probably come from uphill. It seems that those arriving to the sanctuaries avoided these specific areas not only because of the steep terrain but also because they were beyond the zone demarcating the boundary with the supernatural, i.e. the summit and/or the edge of the cliffs, which were apparently considered to be within the domain of the supernatural.

THE MIDDLE SUMMIT

A small scatter of Minoan pottery extends over the middle summit of Petsophas (FIG. A2.2; PLATE A2.2 a), in particular by its ENE foot.²⁰⁴ Its presence is certainly associated with the sanctuary, given that the absence of architectural remains, the remote location and the rocky terrain do not suggest a habitation or any use related to agriculture or animal husbandry. Some of the peak sanctuaries and hilltop shrines were arranged in two parts, which were at a distance from each other and had distinct functions; specifically, one of these was the centre of ritual activity, while the other served the deposition of offerings²⁰⁵ or the collective consumption of food and drink.²⁰⁶ According to Rutkowski, this was the case for Petsophas.²⁰⁷ However, the limited amount of Minoan pottery from the middle summit does not argue in favour of a systematic use of this particular area. It is more likely then that these finds represent a few, occasional visits that occurred in the context of pilgrimage to the neighbouring sanctuary,²⁰⁸ and were perhaps instigated by the earlier habitation remains located at the same outcrop.²⁰⁹

SYNTHESIS

The critical review of the existing studies on Petsophas and the examination of the extant remains call for a reappraisal of many of the commonly accepted views on the stratigraphic sequence, the building phases and the form of the individual structures, eventually also on the character and historical trajectory of the site.

THE PROBLEM OF RITUAL BONFIRES

THE BURNT LAYER AND THE VENETIAN BEACON

One of the main areas in which the present study diverges from previous research concerns is in the dating of the black layer with the figurines, and the character of the bonfires that created this deposit. As discussed in the previous section, if we accept that Wall 12 coincides with Wall DF of the first excavations, to the uphill side of which extended the black layer, then the deposition of the latter must post-date the cultic use of the site; the same can be argued if Wall DF was built on top of Wall 5 (FIGS. A2.3a, A2.3d). In any event, the lighting of ritual bonfires at the site can no longer be taken for granted, given that the recent investigations at other peak sanctuaries do not corroborate such a practice, as will be discussed below (pp. S177–S178). If we then consider that the black deposit did indeed contain charcoal and ash, as Myres had seen, then it would be more reasonable to attribute them to the Venetian period, when a coastal guard was based at Petsophas – part of a network of garrisons encircling the Kingdom of Crete, tasked with providing early warning of pirate raids or a potential Ottoman landing.²¹⁰ This is because the lighting of bonfires was inherent to the function of these specific sites, since the notification of the

²⁰² Cunningham and Sackett 2009, 83.

²⁰³ For these sanctuaries, see Chrysoulaki 2001; Vokotopoulos 2019a (Traostalos). Vokotopoulos 2019b, 464, 467–68; 2020 (Choiromandres).

²⁰⁴ See Rutkowski 1988, 86, pl. XVIIa.

²⁰⁵ Vokotopoulos 2020, esp. 521 (Choiromandres).

²⁰⁶ Rethemiotakis 2009, 190–91, 195 (Gournos); Wallace 2012, 74–75 (Kaphi). The sanctuary at Pyrgos was also organised in two parts: see Alexiou 1964a, 440; Rutkowski 1988, 87–88.

²⁰⁷ Rutkowski 1988, 86; 1991, 21.

²⁰⁸ Such must have been also the nature of a concentration of pottery and figurines identified at the SE peak of Traostalos, since this specific area was not used systematically for cult purposes (see Vokotopoulos 2019a, 3–4).

²⁰⁹ These comprise wall remains, a concentration of pottery, and obsidian blades and flakes, which probably represent an isolated building or small building complex of the Final Neolithic period: see Nowicki 2002, 20–21.

²¹⁰ Arakadaki 1997, 67, 76 fig. 2, 80 fig. 2d. On the Venetian network of coastguards, see *ibid.*, 50–52 and *passim*.

authorities regarding the situation at sea was made through smoke or fire signals, during day and night-time respectively.²¹¹

This beacon, mentioned as Monte Pezzoffà, was certainly placed on the outcrop previously occupied by the sanctuary and not one of the other peaks of the same mountain, given that it provides the best view to the open sea and is closer to Kastri – the coastal hill where the immediately preceding watch of the same network was placed (FIG. A2.2).²¹² Moreover, the relatively gentle relief of the outcrop was well suited for such a use, in contrast to the other two peaks, which are rockier and steeper. Indeed, the designation of Structure III as a look-out by Myres's workmen was evidently due to the memory of this specific function of the site.²¹³

If we assume that Wall DF was a retaining wall, then the burnt layer extending upslope was most probably deposited secondarily, as part of its levelling fill.²¹⁴ However, the arrangement of a terrace at this barren and windswept place does not seem plausible. Therefore, it is possible that Wall DF constituted a parapet that defined the area of the bonfire. In other words, the beacon's bonfire was lit in the cavity that was formed on the upslope side of the wall, that is between this latter and the pre-existing deposits. This location would have provided some shelter from the fierce winds that blow in the area during a large part of the year, thereby facilitating the control of the fire during the transmission of signals. Consequently, the presence of figurines among the ashes and charred matter must be due to the disturbance and gradual erosion of the deposits that flanked the sides of the cavity. Alternatively, the figurines may have been originally at the interior of deposits from the surrounding area which were thrown there whenever there was a need to extinguish the fire or regulate its intensity.

BONFIRES AND CULT AT PEAK SANCTUARIES

The lighting of ritual bonfires was considered in the past as a constituent element of cult at the peak sanctuaries,²¹⁵ a view formed largely on the basis of the finds at Petsophas. The possible social and political implications of this specific practice were assessed by Peatfield.²¹⁶ According to him, the bonfires were probably lit in the context of feasts, which were common all over Crete; given that intervisibility is a characteristic feature of peak sanctuaries, the bonfires would symbolically connect the cult participants, thus overcoming the barriers formed by the fragmented landscape of the island and the concomitant settlement dispersal. Consequently, peak sanctuaries must have functioned as a network that led to the consolidation of common religious practices and ideologies. In this sense, they paved the way for the integration of individual communities and regions in wider polities, i.e. in the first states.

Peatfield's views on ritual bonfires were formed during the initial stage of his engagement with peak sanctuaries. Later investigations conducted by the same scholar on the Protopalatial sanctuary at Atsipades, where no burnt remains were found, required a partial reappraisal of his conclusions, leading to the hypothesis that the bonfire phenomenon was limited to the Neopalatial period.²¹⁷ However, at the peak sanctuaries of Ayios Georgios sto Vouno and Vrysinas, which were investigated after the end of the excavation at Atsipades, the lighting of bonfires was not attested, although the *floruit* of these sites is dated to the Neopalatial period.²¹⁸ Consequently, even the prospect of a late appearance of this practice is now in doubt. The number of peak sanctuaries where evidence of burning has been reported is indeed quite large; however, the description and documentation of the relevant data is usually incomplete. Thus, the lighting of bonfires is occasionally deduced from the identification of dark layers with a sticky or fatty texture. Yet in the absence of analyses, it cannot be confirmed that these features are indeed the result of burning and not of other factors;²¹⁹ for example, they may have resulted from libations or from the deposition of edible offerings, and in general from the decomposition of organic matter.²²⁰ In any event, many of these sites were used anew as sanctuaries during the first millennium BC,²²¹ so the

²¹¹ Arakadaki 1997, 51. The absence of a systematic contestation of Myres's views on the character and dating of the burnt deposit, even though these were increasingly incompatible with the evidence from other peak sanctuaries, is largely due to the fact that the succeeding scholars associated all the structures at Petsophas with the sanctuary. This simplistic approach condensed the history of the site into the first half of the second millennium BC and did not enable the consideration of the possibility of later periods of use.

²¹² See Boschini 1979, pl. 40; Arakadaki 1997, 67, 70.

²¹³ *PK II*, 356.

²¹⁴ In this case, the wall must post-date the beacon and the bonfire would have been lit elsewhere in the vicinity, for example at the level area of the summit.

²¹⁵ Nilsson 1950, 75–76; Platon 1951, 151–52, 157; Alexiou 1964b, 89–90; Rutkowski 1986, 91; Marinatos 1993, 116, 118–19; Dickinson

1994, 269. For a more recent example, see Davis 2014, 19, 412, 418. For a review of these ideas, see Sakellarakis 2013, 92–94.

²¹⁶ Peatfield 1983, 277.

²¹⁷ Peatfield 1992, 66, 70.

²¹⁸ Indications for the use of fire during Minoan times were identified at Ayios Georgios, which, however, do not point to bonfires (Tournavitou 2009, 21 n. 25; Sakellarakis 2013, 95–100). At Vrysinas, relevant evidence is completely absent (Papadopoulou and Tzachili 2010, 453).

²¹⁹ Peatfield 1992, 66.

²²⁰ Vokotopoulos 2019a, 6–7 (for Traostalos).

²²¹ Korphi tis Kerias: Alexiou 1967, 485; Vasilakis 2001–04. Modi: Rutkowski 1988, 85. Pyrgos: Alexiou 1964a, 440; Rutkowski 1988, 88. Vourvoulitis: Kontopodi and Spiliotopoulou 2019.

burnt matter may well be linked to ritual practices that only appeared after the revival of the cult.²²² Finally, in the case of ash concentrations attested at peak sanctuaries where beacons were established in Venetian times,²²³ a date in this specific horizon would be reasonable, as argued for Petsophas. After all, the study of the finds from the bonfires at Traostalos led exactly to this conclusion.²²⁴ In fact, among the peak sanctuaries that have been systematically investigated and are known through relatively detailed reports, it is only at Juktas where deposits of Minoan times with solid evidence for burning have been identified.²²⁵ However, the use of fire does not necessarily pertain to the lighting of festive bonfires: the relevant remains may have resulted from burnt sacrifices or from the preparation of the collective meals that accompanied the rites.

The observations just mentioned mean that the practice of lighting ritual bonfires was not a fundamental feature of cult at peak sanctuaries, but in the best case scenario was limited to specific sites; and this concerns not only the Protopalatial period, but also the Neopalatial phase of the phenomenon. This has wider implications, since it suggests that the peak sanctuaries did not constitute a uniform pan-Cretan network, as Peatfield had argued. Moreover, recent investigations point to the same conclusion, as they demonstrate significant differences between sites regarding their historical trajectories and individual aspects of cult practices.²²⁶ It is certainly true that, despite local differences, peak sanctuaries are thought to have numerous common features, thus constituting one of the main expressions of cultural identity on Crete during the first half of the second millennium BC. However, at the social and political level, the integrative role played by each of these sites only concerned a limited geographical unit – i.e. their immediate surroundings – during the initial stages of the phenomenon, and, from the mature Protopalatial onwards, the areas that constituted the territory of the newly-formed polities. Thus, the peak sanctuaries contributed decisively to the consolidation of those small rival states by integrating the inhabitants of the urban and administrative centres and their hinterland into a single cultic and, by extension, political community.²²⁷ However, it is more probable that this purpose was served not by the presumed bonfires, but by the initiation rites for the future members of the relevant communities, which were apparently conducted at these sites.²²⁸

THE SANCTUARY: FORM AND FUNCTION OF THE INDIVIDUAL PARTS

The re-dating of the burnt layer produces a chain reaction, which requires the rejection of some of the most prominent arguments about the sanctuary of Petsophas. Although not clearly stated, it is obvious that Myres considered that the site was used in the Bronze Age during two successive but distinct periods on the basis of the existence of two levels of use: the one where the burnt matter accumulated and the other higher level with the paved and plastered floor. This view can no longer be sustained: since the burnt layer is later, there is only one use level left to consider. Moreover, the architectural remains of the second millennium BC do not provide evidence for reconstructions or later additions, Wall 8 being the only exception. Consequently, it is most likely that they were built at the same time.

THE BUILDING (FIGS. A2.3c, A2.6)

Form and arrangement

According to evidence presented above, the Minoan building – Structure I in the present study – did not extend into the level area at the summit but was limited to Myres's Room I and the area to

²²² This is certain in the case of Gournos: the black layer with burnt remains identified at the s part of the peak sanctuary contained exclusively Hellenistic pottery and extended above the deposits of Minoan times (Rethemiotakis 2009, 190). The same seems to be true of Kophinas, given that the layers of ash excavated in the second period of investigation at this site yielded not only Neopalatial sherds but also pottery of the later periods of use (Karetsou 2014, 127; Spiliotopoulou 2015, 282; Karetsou and Hughes-Brock 2022, 77). In addition, apart from a few fragments the pottery and the figurines from the sanctuary do not bear traces of burning (Spiliotopoulou 2018, 186; Karetsou and Hughes-Brock *op. cit.*, 77). The lack of clarity on the date of the burnt deposits from the other sites is due to the fact that these are only known through brief reports.

²²³ See Rutkowski 1988, 90 (Vigla, Zakros); Chrysosoulaki 2001, 60 (Traostalos).

²²⁴ Vokotopoulos 2019a, 6–7.

²²⁵ Evans 1921, 157–58; Karetsou 1981, 146. A recently excavated site where the lighting of bonfires appears probable is Gyristi Korifi, given that there burnt deposits of substantial thickness were

identified, with figurines and pottery dated exclusively to Minoan times (Kontopodi *et al.* 2015, 253, 258). However, the deposits were disturbed by looters, while the site was reused as a sanctuary during the first millennium BC. Consequently, the inclusion of this significant peak sanctuary in the discussion on bonfires presupposes the publication of the relevant excavation data.

²²⁶ See Watrous 1995, 399–400, 402; Tournavitou 2009, 214; Vokotopoulos 2019a, 2, 6–7, 13–14.

²²⁷ On recent views regarding the number and scale of polities in Minoan Crete, arguing in favour of their identification as city-states – in the case of those of the Protopalatial, or even of the Neopalatial period at certain parts of the island – see Driessen 2001, 61, 63–64; Bevan 2010, 44; Poursat 2010, 263–64; Whitelaw 2018, 216, 231–33, 236, 238, fig. 11.2.

²²⁸ On the enactment of rites of passage at peak sanctuaries and generally at the extra-urban sanctuaries of Minoan Crete, see Faure 1964, 150–51, 165, 193, 196; Marinatos 1993, 123, 125; Watrous 1996, 89–91; Rethemiotakis 2014, 150, 155; Morris 2017, 667; Spiliotopoulou 2018, 220; Vokotopoulos 2019a, 13. On their political dimension, see Watrous *op. cit.*, 96.

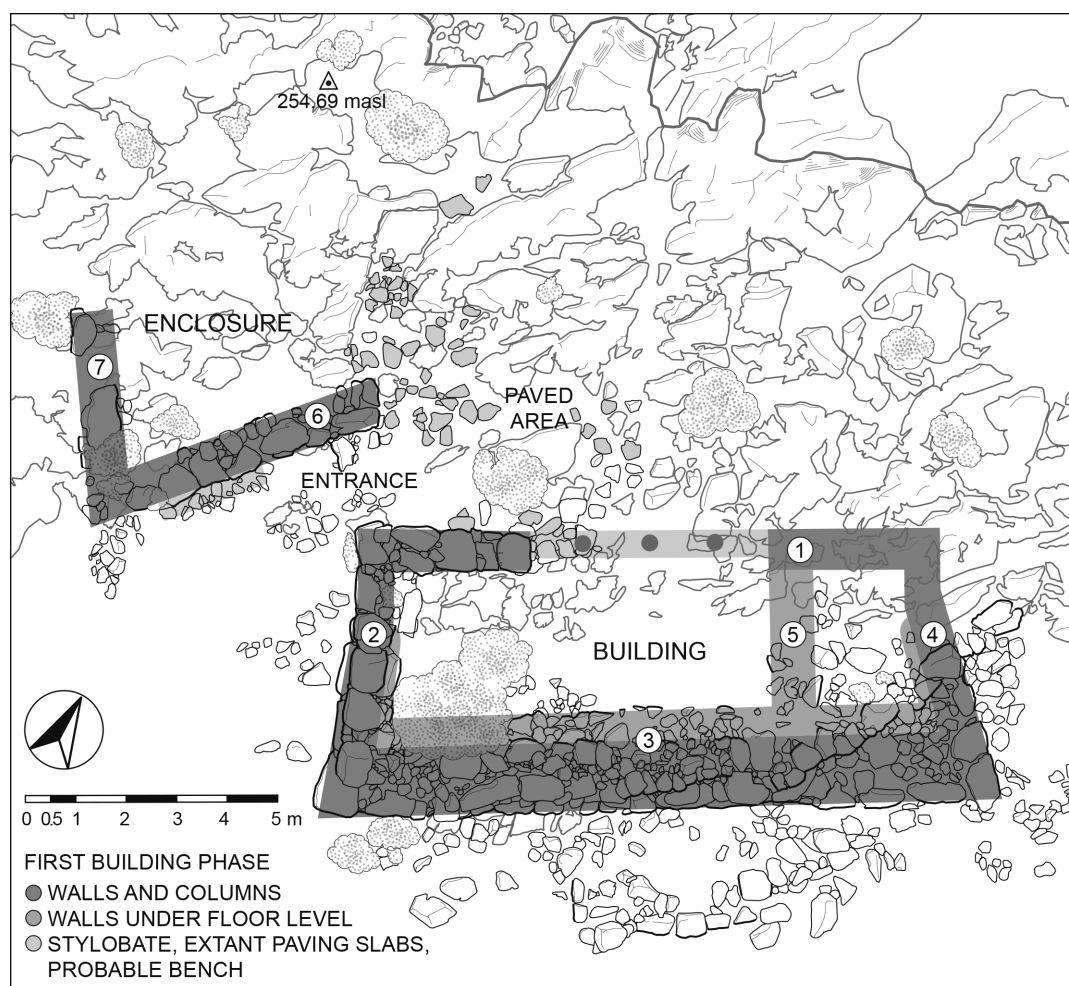


FIG. A2.6. Petsophas. The building complex of the first architectural phase: Linear plan, superimposed on the stone-by-stone plan. Scale 1:150.

its NE. Consequently, it did not extend across, as the excavator suggested, but laterally in relation to the contours, and did not feature an almost square plan, as suggested by Rutkowski. In fact, it was an oblong edifice, notable for its unusual trapezoid plan. The building was ≈ 11.50 m long at its N side and 13.50 m at the S side, and had an average width of 5.50 m, while its total extent is estimated at 68.33 m², with usable space amounting to 36.62 m². The building was roofed, i.e. it was not a terrace or a raised platform. This is indicated by the earthen floor, as it would be eroded were the area open, by the substantial width of the walls and certainly by the columned entrance, which confirms beyond doubt the existence of a roof. The unusually thick shell does not preclude the existence of an upper floor. However, the absence of partition walls does not argue in favour of this, as there would be a structural stability issue for the superstructure. In any case, because the building was situated on sloping ground, it would have been sufficiently tall on the downhill side and certainly sharply projecting in the landscape, while the megalithic masonry would have rendered its façade even more impressive.

Given the limited width of the building, it is possible that the lower part of the shell – i.e. the part built in the megalithic technique – delineated a uniform platform on which the superstructure was based. Therefore, and in accordance with the difference in height between the upper preserved surfaces of the N and the S wall, it can be surmised that the lower part of the latter possessed at least one more row of boulders, i.e. it would have a minimum height of ≈ 2.40 m. The abundance of tumbled stones on the declivity to the S and the fact that these are mostly of a small or medium size suggest that the superstructure of the shell was not built of mudbricks, as was the norm in Minoan architecture, but of rubble.²²⁹

²²⁹ This is the way the superstructure was represented by Vavouranakis (2011, 388–91, figs. 4–8). The difficulty in carrying

water in amounts needed for mudbrick production was perhaps a contributing factor in favour of this specific option.

The interior of Structure I constituted a single continuous space, which was nonetheless articulated in three distinct parts. Thus, its ends, bordered to the N by a wall, were in the form of two compartments, or rather bays *in antis*, while the middle part was semi-open, as it gave on to the rocky terrace at the summit through the wide columned entrance. As a result, Structure I gave the impression of a stoa rather than of a regular building comprising clearly demarcated rooms. Apparently, the layout of the floor was also tripartite. Specifically, the middle part of the building must have been entirely paved,²³⁰ while at the edges the floor was made of beaten earth.²³¹ In any event, at the NW and NE corners, the tips of the rock would slightly protrude above the floor surface, which was not unusual in Minoan architecture. It is possible that at the E end of the building a blind subterranean space was arranged (FIGS. A2.3c, A2.6); this would have been accessed through a trapdoor. It can be assumed that the S wall of the building featured a series of windows, given that they would afford substantial views to the surroundings, while it cannot be precluded that there was one more opening in the E wall – if we at least accept that the structure was orientated towards the rising sun, as argued by Henriksson and Blomberg.²³²

Elements of elite architecture were incorporated in the layout and morphology of the building, though possibly on a limited scale and carried out using poor materials. Refined features included the pseudo-isodomic masonry of the W façade (PLATE A2.1 e), the columned entrance, the tripartite arrangement of the floor and finally the hewn architectural elements whose presence is deduced from the worn fragments of aeolianite found scattered at the S part of the site. It can be surmised that these came from features of the superstructure, for example from a cornice and/or from horns of consecration crowning the façade of the building.²³³

The closest parallel to the building of Petsophas is the edifice at the peak sanctuary of Pyrgos, Tylissos – if we accept that it is indeed a Bronze Age structure.²³⁴ The two buildings are identical in their oblong shape and dimensions.²³⁵ In this regard, the presence at Pyrgos of a fragment from a large pair of horns of consecration is particularly interesting,²³⁶ given that such architectural elements may have also existed at Petsophas. With reference to its oblong form, the building at Petsophas also resembles the two edifices successively constructed downhill from the core of the sanctuary at Juktas – specifically that of the Protopalatial period,²³⁷ given that the building of the early Neopalatial period was part of a wider complex.²³⁸ Nevertheless, the structures at Juktas were much larger and, in contrast to that at Petsophas, they were divided at the interior into a series of rooms, at least at the ground floor level.

Dating and use

The building is commonly dated to the Neopalatial period. However, Cunningham and Sackett did not exclude a later date, or even a construction in Venetian times.²³⁹ It is obvious that the latter must be ruled out, given that the megalithic masonry of the shell certainly places the building in the second millennium BC. Specifically, the pseudo-isodomic masonry of the W façade argues in favour of its construction during the Neopalatial period,²⁴⁰ in accordance with the view of most scholars.

Myres held that the building at Petsophas was indistinguishable from the residences of the neighbouring town at Roussolakkos, a feature considered as ‘not a little peculiar’. Consequently, he deduced that its erection denotes a drastic change in the character of the site, which would have by then

²³⁰ The above hypothesis is also sustained by the depiction of the preserved part of the pavement in Myres’s plan (see FIG. A2.3a): its irregular outline to the S indicates that it was not limited to the zone along the stylobate, but probably extended all along the width of the building.

²³¹ This is certain for the W part, i.e. Myres’s Room I. Given that the building had a symmetrical layout, the same may be valid also for its E side.

²³² See n. 107.

²³³ At Palaikastro, double horns of this material have been identified, the size of which argues in favour of their interpretation as architectural elements: see MacGillivray 2007; Driessen 2019a, 7.

²³⁴ This partially-excavated building is generally attributed to the Minoan sanctuary. However, the presence of roof tiles suggests a reconstruction in the Classical period or in early Hellenistic times, the extent of which remains unclear. For the building and its dating, see Alexiou 1964a, 440; Rutkowski 1988, 87–88; Kyriakidis 2011, 419–20. For the tiles and the other finds of the first millennium BC, see *ibid.*, esp. 414, 416.

²³⁵ In contrast to Petsophas, a partition wall is identified in the building at Pyrgos; however, this has been attributed to the first millennium BC reconstruction (Kyriakidis 2011, 420). The common

features of the two buildings do not include their placement in the landscape. Thus, the building of Pyrgos was not situated at the opposite side of the rocks of the peak, as was that at Petsophas, but extended along and almost in contact with their front; and also an open-air level area was formed in front of the building, not between the building and the summit, as in the case of Petsophas: see Rutkowski 1988, 88, pl. XXII.b.

²³⁶ Alexiou 1964a, 440; Peatfield 1990, 127.

²³⁷ For this building, see Karetso 1980, 341, 347; 1985, pl. II’; Watrous 1996, 70.

²³⁸ See Karetso and Koehl 2014, pl. XCV. For this building, see e.g., Karetso 1981, 141, 142, fig. 5; Watrous 1996, 71.

²³⁹ Cunningham and Sackett 2009, 83.

²⁴⁰ The dissemination of this specific variant of the megalithic type of masonry during that time was the result of the influence from the ashlar masonry of elite architecture. At Pseira, for example, the pseudo-isodomic walls are dated in LM IA, if not specifically in the transitional stage to LM IB (McEnroe 2001, 37; Betancourt 2009, 165), while masonry in horizontal rows is attested already from MM III at Karoumes, specifically, at the South Building of the Sea Guard-House (Vokotopoulos 2007, 189–90).

lost its sanctity.²⁴¹ This view was not accepted by Evans, who referred to the building as a ‘sanctuary chamber’,²⁴² nor by M. P. Nilsson, who stated that it would be improbable for the site to have been abandoned and its character forgotten during Minoan times;²⁴³ in other words, he did not accept the possibility of a discontinuity in use within the same period. However, Myres’s view should not be rejected *a priori*. A case of a secular building installed on top of an earlier sanctuary was recently documented at Choiromandres, Zakros: the guard house at this site was built in the course of the Protopalatial – specifically, during MM IIA – between the two parts of an open-air sanctuary dated to the early stages of the same period.²⁴⁴ It is true, however, that such a radical change did not apparently take place at Petsophas. Although the site would have been suitable for the establishment of a guard house, the form and layout of Structure I do not comply with the typology of these edifices.²⁴⁵ The same reasons exclude the interpretation of the building as a farm house,²⁴⁶ all the more so as it is situated amid a barren area. Consequently, the association of the building with the sanctuary appears as the only reasonable option, a hypothesis corroborated by the refined features of the architecture.²⁴⁷

Although the building resembles a stoa, it is unlikely to have functioned as a gathering space or as a shelter from the weather, given that it was facing N. Because of both its semi-open form and the absence of rooms with controlled access, it would not have been particularly suitable for the storage of foodstuffs destined for collective feasts. Nonetheless, votives may have been placed inside it,²⁴⁸ if not the presumed cult statue itself, a fragment of which was found during Myres’s excavation.²⁴⁹ In any case, of particular significance for the determination of the function of the building is the fact that it faced the level area of the summit, with which it was in effect united through its wide entrance. This suggests that the building did not merely constitute an ancillary space; on the contrary, it must have been essential to the cult. In other words, it is fairly probable that some of the rituals were enacted at its interior.

THE LEVEL AREA AT THE SUMMIT AND THE RITES AT THE CENTRAL PART OF THE SANCTUARY (FIGS. A2.3c, A2.4, A2.6)

The level area at the summit of Petsophas, like the highest part of all peak sanctuaries, constituted by definition the area where the cult was conducted; in other words it would have been the core of the sanctuary throughout its existence. The morphology of this specific area certainly contributed to its consideration as an intermediate zone between the earthly and the celestial world, as its liminal character is doubly emphasised: at the vertical axis, given that this is the highest part of the outcrop, and horizontally, because of the steep declivity to the N.²⁵⁰ Most of the symbolic significance was certainly attributed to the row of protruding rocks extending along the cliff, given that it defines the highest part of the outcrop and is visually dominant; consequently, it would be the main point of reference during the performance of the rites. From this point of view, the placement of the building opposite the rocks along the crest of the summit (PLATE A2.1 a) suggests that the two elements were juxtaposed intentionally, as spaces belonging to the realm of humans and the gods, respectively. It is then reasonable to assume that these two poles determined the circulation in the area during the rituals. It can then be surmised that those with priestly duties first gathered at the building, where the introductory stage of the cult would take place. The wide opening of the entrance suggests that the participants faced the summit while they performed the rituals, where they would then head to at a second stage, possibly at the

²⁴¹ *PK II*, 360.

²⁴² *PM I*, 151.

²⁴³ Nilsson 1950, 70. Rutkowski (1991, 14 and *passim*) also accepted the association of the building with the cult. Myres’s views were essentially ignored by modern research, which considers the attribution of the building to the sanctuary as being self-evident.

²⁴⁴ Vokotopoulos 2019b, 464, 467–68; 2020, esp. 522; 2022b, 77, 80.

²⁴⁵ On Minoan guard houses, see Chrysoulaki 1999.

²⁴⁶ On Minoan farmsteads, see e.g. Soles 2003, 127–31; Haggis 2005, 70–74; Betancourt 2006, 268–70; Vokotopoulos 2011, 143–46 and *passim*.

²⁴⁷ In any event, the use of the site as a sanctuary definitely continued into the Neopalatial period, as is indicated by the presence of figurines with a naturalistic modelling or dark-on-light decoration (see Rethemiotakis 1998, 59, 118); moreover, this is also confirmed by the stone libation tables with dedicatory inscriptions in Linear A (MacGillivray and Driessen 1990, 412), all the more so, by the substantial number of these latter (see Del Frio *et al.* 2022, 128).

²⁴⁸ Rutkowski (1986, 80) assumed that this function was served by Myres’s bench.

²⁴⁹ From this object, only part of the face was preserved,

identified to the NE of the building, inside cavity H (*PK II*, 375). Therefore, the findspot and the fragmentary preservation argue for a secondary deposition. The fragment was attributed by Myres to a large figure of advanced style, that is of the Neopalatial period (*ibid.*, 375–76; for the same view, see Rethemiotakis 1998, 59), although Rutkowski (1991, 80) did not exclude the case that it belonged to a relief vase. The original height of the figure is estimated at c. 1.00 m (Platon 1951, 121–22; Rethemiotakis 2014, 148, n. 2), while it is possible that it was almost life-size (Warren in Peatfield 1992, 80). It is generally accepted that peak sanctuary figurines represent the votaries themselves (e.g. Peatfield 1990, 121–22), while the existence *per se* of cult figures in Minoan Crete is not unanimously accepted (see Driessen 2000, 92–93). However, given that effigies of such dimensions are extremely rare (*ibid.*, 92; Rethemiotakis 2014, 148; Spiliotopoulou 2018, 193), it would be reasonable to assume that the Petsophas figure was particularly significant and served a special function, as suggested by P. Warren (*op. cit.*, 80) – if it were not a cult statue, as claimed by N. Platon (*op. cit.*, 121).

²⁵⁰ Cliffs were a characteristic feature of many sanctuaries on peaks. On their probable significance for the cult, see Soetens 2009, 261, 263; Sphakianakis 2019, 6; Vokotopoulos 2020, 516, 521.

moment when the epiphany of the divinity was anticipated or re-enacted — provided that the cult did indeed include this element— or immediately thereafter, to deposit offerings.²⁵¹ In any event, it is certain that the participants approached the cliff, i.e. the liminal zone to the supernatural, given that the pavement extends almost to the rocks of the crest of the summit.

The above observations suggest that the use of the level area at the summit did not remain exactly the same throughout the sanctuary's life. During the enactment of the rites at peak sanctuaries, the crowd apparently gathered in the immediate surroundings, i.e. in front of or around the peak, as is deduced by the absence of enclosures for the separation of the highest area of the sites from the surroundings, and by the substantial quantities of finds retrieved from there. This would have also been true of Petsophas: in other words, the level area in front of the summit would have served both the rites, and the assembling of the pilgrims. This must have changed with the construction of the building complex, the arrangement of which suggests that the level area at the summit was by then perceived as an intermediate zone between the two poles of the cult, i.e. the building and the rocks on the crest; as such, it would have probably served as a transitional space rather than as a congregation area. In any case, the delineation of the area through the construction of the building and the enclosure significantly limited the number of people who could have attended the rites. Consequently, it is possible that during their enactment, access was restricted to the select few who actively participated in them.²⁵²

The cult at peak sanctuaries was by no means relevant only to the celestial realm; it also had a chthonic aspect,²⁵³ as deduced by the tendency to deposit figurines and other offerings inside the fissures and cavities of the bedrock,²⁵⁴ and also by the chasm at Juktas, on top of which the altar of this sanctuary was constructed.²⁵⁵ In the case of Petsophas, the presumed underground space at the E side of the building could have been associated with that chthonic dimension.²⁵⁶ It may thus be assumed that this area served for the performance of rituals re-enacting the relevant mythological narratives, and/or for libations and the deposition of votive offerings.

THE ENCLOSURE (FIGS. A2.3c, A2.4, A2.6)

The enclosure delineated the protruding rocks extending at the w end of the level area on the summit. Therefore, it would be reasonable to assume that they were of particular significance for the cult, exactly as Rutkowski had argued. From this perspective, it is interesting that the walls did not follow closely the outline of the rocks, as would perhaps be expected, but were placed at a distance from them (PLATE A2.1 b); consequently, at the s side of the enclosure the earth surface was level. It could then be surmised that this part of the enclosed area was used for the deposition of offerings, or that those who performed the rituals associated with the rocks stood there. According to Henriksson and Blomberg, the exact location and orientation of the walls had been determined by the position of Arcturus in the sky. However, this view does not seem convincing: if the observation of this specific star or any other celestial body was indeed so important, it would be expected that a well-built and centrally-located structure would serve this purpose — not two robust but rather roughly built walls extending at the periphery of the sanctuary's core.

The rocks at the interior of the enclosure are certainly among the highest of the outcrop, but are not any different from those extending to the NE in their size or shape; moreover, they are not clearly distinguishable from the surroundings (PLATE A2.2 f). The above suggests that the primary function of the enclosure was not so much to delineate the rocks to draw attention to them and signal their importance, but to delimit the sanctuary. Thus, its w wall obstructed or blocked access from this specific side — the latter, in case it extended until the escarpment. Moreover, the positioning of its s wall in relation to the building converted the intermediate inclined area into a funnel-shaped space that directed the pilgrims towards the entrance of the complex, while the limited width of the latter enabled the control of access, i.e. it facilitated the designation of those who were eligible to enter during the successive stages of the

²⁵¹ On epiphany rituals at peak sanctuaries, see Peatfield 1990, 120–21; Rethemiotakis 2009, 198–99; Vokotopoulos 2019a, 13–14.

²⁵² On the issue of accessibility to peak sanctuaries with reference to preconditions imposed by the landscape and the social requirements or by the cult itself, see Sphakianakis 2019, 4, 6–7.

²⁵³ The juxtaposition and, ultimately, conjunction of the chthonic and celestial elements may have been of special significance for peak sanctuaries, given that the cult, or at least one of its most significant aspects, was associated with fertility, i.e. with the cycle of death and regeneration of nature, and with relevant mythical narratives on the worshipped divinity, as suggested by the later myth on the tomb of Zeus, in the case of Juktas (see Karetsou 1978, 252).

²⁵⁴ On the problem of intentional or accidental deposition in such locations, see e.g., Peatfield 1992, 67–68.

²⁵⁵ See Karetsou 1974, 233–34; 1978, 251–52; 1981, 141, 142–43, figs. 5–6; Karetsou *et al.* 2023, esp. 387–88. Another chasm is situated at the peak of Kophinas; however, it has not been investigated systematically: see Soetens 2009, 262; Karetsou 2014, 136.

²⁵⁶ The same could be valid for the blocked chasm located, according to Soetens (2009, 263, n. 12), at the beginning of the N slope and at a distance of c. 10 m from the building, provided of course that this is indeed such a formation and not a deep fissure in the rock.

rituals. Finally, the walls of the enclosure created a screen which hindered the view to the core of the sanctuary – and to the rites themselves – from those who were standing downhill to the s and sw. Therefore, if we accept that the main function of the enclosure was to arrange access, this structure would have constituted the equivalent of the oblong wall that lined the rock to the s of the building complex on the peak of Juktas, thereby delineating from the side the monumental inclined passage to the core of that sanctuary.²⁵⁷

THE ACCESS TO THE INTERIOR OF THE SANCTUARY (FIG. A2.6)

In theory, access to the core of the sanctuary would not necessarily be via its entrance. Access would be possible by climbing over the protruding rocks of the e side of the outcrop, or, with a little more effort, through the steep n side. However, such routes were probably deemed inappropriate for entering such a sacred place, and certainly did not enable the orderly arrival of the worshippers, if they did indeed arrive in procession. Consequently, the only permitted passage would be the one between the two buildings.

Once they had arrived at the site, worshippers would have to follow a specific route in order to reach the core of the sanctuary: when in front of the s façade of the building, they would make a 90-degree turn to the right, ascend the inclined area between the building and the enclosure, and then pass through the entrance of the complex by another right turn – and at a right angle, if we assume that the ascent was in the form of a ramp or staircase extending along the w façade of the building. Then, they would turn to the left and go up the paved area to reach the summit, or they would move ahead and then turn right to enter the building: the latter is more plausible, in accordance with the reconstruction of the sequence of ritual acts previously suggested. Therefore, the route of the worshippers was marked by successive changes in orientation and visual perception, whereas their final destination – the rocks above the cliff, which marked the boundary to the supernatural – was only visible towards the end, i.e. once they entered the level area at the summit. Consequently, the approach followed a bent axis, according to a model widely applied in Crete during the Protopalatial and Neopalatial periods for the arrangement of spaces and buildings of ritual and ceremonial character.²⁵⁸ As regards other extra-urban cult places, in the second Neopalatial phase of Symi Viannou the processional way leading to the enclosure and the podium of the sanctuary was arranged along this line, i.e. as a series of dog-leg turns,²⁵⁹ with the same also true of the access to the sanctuary of Juktas, as will be discussed below (p. S185).

BUILDING PHASES (FIGS. A2.3c, A2.5)

In accordance with the evidence presented in the preceding sections, at least three building phases are identified at the site. The earliest phase includes almost all the architectural remains, and certainly those associated with the cult, namely the building (Structure I), the enclosure (Structure II), and the pavement at the level area in front of the summit. Their construction followed the initial use of the site, i.e. the establishment of the sanctuary, given that the building and the enclosure were partially founded on deposits with pottery – and also pebbles, in the case of the former – while the same is apparently also valid for the substratum of the paved area at the summit. These features were most probably constructed simultaneously, given that they served distinct and therefore complementary functions. The layout of Structures I and II leads to the same conclusion, for it enabled the delineation of the core of the sanctuary. In this regard, the structures complemented each other, so it would be reasonable to assume that they were arranged at the same time. Thus, the entire picture suggests that the building complex on the summit was the outcome of a single building project. This was obviously based on a predetermined plan aiming radically to reorganise the sanctuary and essentially redefine the character of the cult itself.

To the second building phase belongs only the wall that blocked the entrance to the complex (Wall 8), and perhaps also the wall which obstructed access to the enclosure, provided that there was indeed such a structure, which is highly doubtful. It is obvious that the blocking of the entrance of the sanctuary took place at a time when the surrounding walls were still standing to a substantial height. Consequently, this must have happened shortly after the definitive cessation of cult activities, possibly following a time of decline and sporadic use of the site that resulted in the neglect and abandonment of the structures, in which case the barrier would have deterred access not only because of the sacred character of the area but also because this may have been dangerous to those attempting to enter. In any case, the blocking of the entranceway marks the end of the use of the sanctuary.

²⁵⁷ See Karetsoy 1981, 141, 142, fig. 5.

²⁵⁸ See Marinatos and Hägg 1986, 73 and *passim*; Betancourt

2007, 81–82; Letesson 2013, 309.

²⁵⁹ See Lebessi and Muhly 1990, 318, 321, fig. 3.

The third phase is associated with the use of the site as a beacon. To this belongs the wall that delineated the area of the bonfire, namely Wall 12, or the one presumed to have extended over the earlier Wall 5.²⁶⁰ Moreover, it was probably at this time that the small structure abutting the s façade of the Minoan building (Structure III) was built. The same is possibly valid for the parapet crowning the façade (Wall 13) – in the case this is not a modern structure.

PERIODS OF USE

The architectural remains and the stratigraphic sequence argue for the identification of three periods of systematic use of the NE peak of Petsophas. Of those, the two earliest correspond to the Minoan sanctuary, and the last to the Venetian beacon.

PERIOD I

The first period of use corresponds to the initial stages of cult activity. From the excavated or visible deposits, only the layer on which the N wall of the building was founded can be attributed with certainty to this period. Moreover, it is this period that saw the accumulation at the level area of the summit of the deposits that were used as the substratum of the later pavement. Apparently, a substantial part of the deposits of this period and the finds they contained were secondarily incorporated in the levelling fills of the structures of the first building phase. None of the visible architectural remains appears to belong to the first period. Therefore, it seems that the cult was conducted outdoors at that time, a picture that was typical of peak sanctuaries, all the more so in the early stages of the phenomenon.²⁶¹

The use of the area for cult may have started already in the Prepalatial period, given that the pottery and figurines include some decorated examples attributed to the EM III white-on-dark ware.²⁶² Therefore, it is possible that Petsophas was one of the earliest peak sanctuaries. In any case, it is clear that the site emerged as a peak sanctuary of major significance and the main ritual centre of Palaikastro already from the Protopalatial period, as indicated by the substantial presence of figurines dating to this period.²⁶³

PERIOD II (FIGS. A2.3c, A2.6)

At the beginning of the second period of use, the central part of the sanctuary took the form of a tightly articulated, inward-looking complex, which comprised three units, different in form but complementary in function. These were the building, the enclosure and, in between, the area – now paved – that ended by the rocks above the cliff, where the focus of worship was located over time. Apparently, this arrangement was anything but typical of peak sanctuaries: in fact, the only known parallel is found at the sanctuary of Psili Korfi at Juktas.

Petsophas and the prototype of Juktas

Despite the current lack of a synthetic study on the periodisation of the sanctuary at Juktas and the form and function of the buildings successively erected at the peak, a rough picture of the trajectory of the site can be put together from the extensive excavation reports. Thus, according to the available evidence the earliest building at Juktas was erected in the Protopalatial period. This edifice was similar to that at Petsophas in its oblong plan, but also regarding its placement opposite the core of the sanctuary: namely, the zone in-between the cavernous chasm and the sheer cliff that defines the w side of the peak.²⁶⁴ However, with reference to the organisation of space, the building complex at Petsophas resembled more the building of the second phase of construction at Juktas, which was in use during the Neopalatial period. The core of the sanctuary at Juktas remained open to the sky, but it was now delineated downhill by two successive retaining walls of a II-shaped plan; these supported a platform that extended in front of the stepped altar built over the chasm.²⁶⁵ It could be surmised that this surface functioned as a congregation area, constituting the equivalent of the paved area in front of the summit at

²⁶⁰ Obviously, we should not rule out the case that the two walls co-existed.

²⁶¹ Peatfield 1987, 90; 1992, 66. From the systematically excavated and fully documented sites, it is only at Juktas that building remains of the Protopalatial period have been identified (Karetsoy 1978, 239, 241). The MM IA circular structure uncovered at Sklaverochori pre-dates the beginning of cult activities: see Rethemiotakis 2012, 340–41.

²⁶² Peatfield 1987, 90. See also Warren 1973, 144.

²⁶³ See *PK II*, 360.

²⁶⁴ See Karetsoy 1985, pl. II (where the walls of the building are visible under Rooms I–V of the Neopalatial edifice).

²⁶⁵ See Karetsoy 1978, 233, fig. 1 section Γ–Γ'; 1985, 288; Watrous 1996, 71. It has been maintained that the two retaining walls date to MM IB, in which case they would be the earliest structures at the site (see Karetsoy and Knappett 2024, 40, 49–50). However, since the relevant pottery comes from levelling fills, it only provides a *terminus post quem* for these structures. Besides, it includes pieces that may well date to MM II or the transitional MM IIIA period: see *ibid.*, 44–46, 48, 50, figs. 3.11 (P134), 3.13 (P15, P51).

Petsophas. The area of the earlier building was similarly taken over by an oblong edifice.²⁶⁶ However, in contrast to Petsophas, this was not an independent structure, but belonged to a building complex expanding on the upslope side to the NW up to the cliff, thereby defining the centre of the cult from two sides.²⁶⁷ As was the case at Petsophas, following the reorganisation of the sanctuary there was only one entrance to its core, placed opposite the end of the path that led to the site starting from the building at Alonaki.²⁶⁸ Specifically, the route to the sanctuary followed the downslope side of the complex,²⁶⁹ and then turned at a right angle, ending at the entrance through the ramp that extended along the s façade. Consequently, access was arranged in accordance with the principle of the bent-axis approach, as also at Petsophas.

The complex at Petsophas was therefore smaller in extent than the one at Juktas and was clearly inferior in the quality and refinement of its construction; however, it was identical to Juktas in its layout. In fact, Petsophas constitutes a simplified, minimalist version of Juktas: at both sites, the same principles were applied for the organisation of space, which ultimately resulted in similar plans – the difference being that the one of Petsophas was abridged to its essential features.

The sanctuary at Juktas must have been highly esteemed because of its association with the leading centre of Knossos, while the site was also distinguished by the early appearance of built structures. Consequently, it would be reasonable to suggest that the building complex at Petsophas was later, and that it was arranged in accordance with the model set by Juktas. The study of the pottery of the site is expected to clarify the date of the complex at Petsophas. For now, we should not exclude the establishment of the complex already in the late Protopalatial period, given that the *terminus post quem* for the construction of the earliest building of Juktas is set in MM IIA.²⁷⁰ However, more plausible is a dating in the early or middle Neopalatial, i.e. after the arrangement of the complex of the second architectural phase at Juktas, which took place at the end of MM II or in MM IIIA.²⁷¹ This is because this specific phase is characterised by the expansion of Knossian influence, which was dominant across much of Crete.²⁷²

The character of the cult

The building complexes at Juktas and Petsophas were constructed at pre-existing sanctuaries, drastically altering their form and organisation. Initially, the peaks' morphology provided the setting for cult practice;²⁷³ at Petsophas, for example, the distinct levels and the sub-areas formed by the relief would have determined where activities were located. Similarly, the rituals would focus on natural formations with symbolic significance, such as the rocks on the crest of Petsophas or the chasm of Juktas. Otherwise, there were no other restrictions in movement other than those imposed by the cliffs, suggesting that access to the centre of the cult was unrestricted.²⁷⁴ Neither were there obstacles to the attendance of rituals performed at the core of the sanctuaries. These features were characteristic of all peak sanctuaries and fully complied with the massive participation and collective character of the cult at these specific sites, and ultimately with the function it accomplished in promoting equality and homogeneity during the process of early state consolidation.²⁷⁵

The erection of the building complexes at Juktas and Petsophas converted the central part of these two sanctuaries into an enclosed area, which only allowed a limited number of individuals to be present simultaneously. Access was now controllable, while the possibility of observing or hearing the rituals

²⁶⁶ According to the excavator, the building as well as the oblong terrace extending along its downslope side belonged to the same building programme with the two retaining walls that framed the core of the sanctuary (see Karetso 1980, 342; 1981, 145; 1984, 602, 614; Petrakos 1988, 162; also above n. 265). But the lower (i.e. Terrace II) appears to be founded on the partition walls of the building and on the deposits that covered its floors (see Karetso 1981, 147, fig. 12; 1985, 287, fig. 1); thus, this structure probably represents a later extension of the platform at the summit. Cf. Zeimbekis 1998, 21–66.

²⁶⁷ See Petrakos 1988, 161–62; Karetso and Koehl 2014, pl. XCV. At Petsophas the corresponding area (of the protruding rocks to the E of the rocky terrace) was not built over.

²⁶⁸ To the latter ended the path leading to the site from the N: see Karetso 1981, 140, fig. 3; Karetso and Mathioudaki 2012, 102.

²⁶⁹ The bench that extended along the façade argues in favour of this idea, where those approaching the sanctuary deposited votives: see Karetso 1980, 342–43; 1981, 145.

²⁷⁰ Karetso 1978, 239, 241.

²⁷¹ Karetso 1980, 342; 1981, 145; 1984, 612, 614; 1985, 288.

²⁷² See *PK Block M*, 321; Macdonald and Knappett 2013, 2; Driessen 2019b, 198. For the state of affairs at the eastern end of

Crete during that time, see Cadogan 2013, 180.

²⁷³ See Peatfield 1990, 122; 1994a, 22; Sphakianakis 2019, 4–6, 12–13. See also Peatfield 1992, 76, 79–80 (on the sanctuary at Atsipades). For Traostalos, see Chrysoulaki 2001, 60, 64; Vokotopoulos 2019a, 4, 12.

²⁷⁴ Entrance to specific parts of the sanctuaries was perhaps not allowed to certain groups of the worshippers or/and during specific parts of the rites. However, compliance with any prohibitions dictated by tradition would have been the responsibility of the worshippers and was not imposed through built arrangements.

²⁷⁵ See Vokotopoulos 2019a, 15; See also Haysom's remarks (2018, 24–25) on the relatively understated presence of the leading groups at peak sanctuaries. The currently prevailing views on the social and political dimensions of the cult at these sites are certainly quite divergent. Thus, according to Cherry (1986, 30–31) the peak sanctuaries were used from the outset as a vehicle for the consolidation of palatial authority and the leading groups in control of them. According to Rutkowski (1986, 94–95) and Peatfield (1990, 126–31; 1994a, 21–23), though, this happened solely during the Neopalatial period, whereas earlier the cult met the needs of the rural populations.

from outside the complexes was limited at Petsophas and non-existent at Juktas.²⁷⁶ It has to be noted that this specific arrangement was not a forced choice dictated by the configuration of the outcrops. Indeed, instead of forming a unified complex, the structures at each site could well have been placed at a distance from each other and from the focal point of the rituals, thus resulting in more space for the congregation and preserving the open character of the cult. This is obvious in the case of Petsophas, where immediately below the sanctuary there is the extensive plateau. Erecting Structure I in this area would not have posed significant problems; instead, the building was founded on the rocky slope towards the summit, which required specific adaptations in its form and an increased investment in labour for its construction. Therefore, it can be considered that the placement of Structure I at this specific location aimed at delimiting the core of the sanctuary from its surroundings through the arrangement of a continuous front – in effect, a barrier – consisting of the building itself at the centre, the enclosure and the rocks to the E (PLATE A2.1 *a*).

According to the above, the erection of the building complexes at Petsophas and Juktas did not simply set out to create a degree of monumentality and designate the area where the rituals were performed. Nor did their construction merely satisfy the increased need for storing votives and cult equipment, or the accommodation of the multiple functions these sites came to provide because of their development into cult sites of major significance. In fact, the main purpose of the two complexes was to establish clear spatial boundaries and restrictions in circulation. In other words, the buildings intervened between the worshippers and the supernatural with the aim of differentiating the former on the basis of their potential to access the core of the sanctuaries and the degree of their ritual involvement.²⁷⁷ It would be reasonable to surmise that such a distinction between those actively participating in the rituals or attending close at hand and those who remained at a distance reflected broader segregations in the body of the worshippers on the basis of social status and power.²⁷⁸ Consequently, it must be assumed that the establishment of the two complexes signalled a radical change in the character of the cult: this remained communal, as indicated by the quantity and diversity of the votives, yet it was now expressing a clearly stratified social and political reality, contributing to the consolidation of the relevant ideologies.²⁷⁹ In the case of Palaikastro, this trajectory culminated at the end of the Neopalatial period, as is indicated by the town shrine of Building 5 – a (semi)-public cult place established in an edifice whose inhabitants obviously belonged to the upper echelons of the social hierarchy.²⁸⁰ Significantly, in its stance, gesture and hairstyle the chryselephantine statuette from this shrine followed the iconography of the terracotta figurines from Petsophas, specifically the type of the ‘belted warrior’.²⁸¹ Thus, the evidence suggests that the elite of Palaikastro or one of its segments appropriated the tradition of the peak sanctuary by transplanting certain elements of the earlier cult – presumably, those that were deemed relevant to its ideology – into the urban centre.

The distribution of ritual activities at the site

Apparently, cult in peak sanctuaries was mainly in the form of mass pilgrimages taking place periodically, possibly during annual events, i.e. at specific times with symbolic meaning and perhaps significance for the agricultural work cycle.²⁸² Therefore, in accordance with evidence presented in the previous sections, the rituals conducted during the second period of the sanctuary at Petsophas must have unfolded in the area as follows:

²⁷⁶ This is due to the strong downhill inclination of the slope, but also because the complex fully defined the core of this sanctuary, cutting it off from its surroundings.

²⁷⁷ See Sphakianakis 2019, 7 – where similar views are expressed on the layout of the peak sanctuaries, with special mention of Juktas.

²⁷⁸ See Davis 2014, 97 and 134 n. 733, where it is surmised that the successive terraces claimed by Rutkowski to have extended to the s/e of the building complex aimed at emphasising social or political hierarchies; that is, the terraces would have served as gathering places where the participants were allocated according to their standing. On the social and political organisation of Palaikastro in the Protopalatial and Neopalatial periods, see Cunningham 2001, 75–76, 79–84; Whitelaw 2001a, 21; Driessen 2022, 139–44. Regarding the latter, the differences in size and elaboration among the buildings of the individual town blocks indicates the emergence of inequalities between the households. However, the even distribution of the objects of prestige and value would rather suggest the opposite. It seems, therefore, that the outcome of the process of differentiation was not a neatly stratified society. This was probably due to the existence of strong unifying bonds – namely, a social

organisation based on large kinship groups, as argued by Driessen (*ibid.*, 139–40): these would have both balanced and masked the increasing disparity in power and wealth.

²⁷⁹ In the case of the sanctuary at Kophinas, similar tendencies are expressed by the increased presence of votives made of imported or semi-precious raw materials, and by the frequently large size of the figurines and the groups rendering boxers, if we accept that these indicate initiation rites associated with elites. These suggest that the leading groups of the eastern Mesara displayed their presence in a rather emphatic way, in contrast to what tradition dictated. For the finds from this site and their connotations, see Karetsou 2014, 131–33; Rethemiotakis 2014, 148–49, 152, 155–57; Spiliotopoulou 2018, 220; Karetsou and Hughes-Brock 2022, esp. 78, 89.

²⁸⁰ Driessen 2000; Cunningham and Sackett 2009, 88.

²⁸¹ MacGillivray and Sackett 2000, 168; Cunningham and Sackett 2009, 97.

²⁸² Platon 1951, 157–58; Rutkowski 1986, 91; Peatfield 1992, 79; Watrous 1996, 91–92; Chryssoulaki 2001, 64–65; Sakellarakis 2013, 49–51. See also Vokotopoulos 2019a, 8, 13 (for Traostalos).

The pilgrims from Palaikastro and the northern part of its hinterland must have approached the sanctuary in procession,²⁸³ following the paths leading to the site from the E; along the way or at the end of this route, they would be joined by those arriving from the scattered habitations in the neighbouring areas of Plaka, Skoinias and Ayios Spyridon. Then, the gathered crowd would ascend to the sanctuary moving along the foot of the S side of the outcrop crest and eventually would have assembled in front of Structure I and the ascent to the entrance of the complex at the peak (see PLATE A2.1 a).

From there, only those who served as priests and/or as the leaders of the community would have moved on to the central part of the sanctuary to perform the cult rites. During this time, most of the worshippers would remain in the area outside the building complex, i.e. they were merely bystanders and did not participate in the cult; moreover, the attendance itself at the rituals must have been difficult, due to the morphology of the terrain and the continuous front formed by the complex. However, because of the intensely theatrical and representational character of Minoan cult,²⁸⁴ it would be reasonable to suggest that at specific times the priesthood – or, in a wider sense, those performing the rites – would address the crowd assembled downhill from the windows in the S façade of Structure I; it could be even assumed that the windows functioned as the stage set where some of the acts took place. Therefore, those inside the building were differentiated from the majority on the basis of their position between the latter and the supernatural, if not also by the assigned role as intermediary between the community of worshippers and the divine. From this point of view, the layout of the sanctuary at Petsophas during its second period is perhaps indicative of the position that the leading groups of the Neopalatial period attributed to themselves, and certainly of the decisive significance the cult had for the consolidation of their authority.²⁸⁵ Following the completion of the main body of the rituals, the rest of the worshippers would enter the central part of the sanctuary, in order to place their offerings and votives; given the limited area of the rocky terrace at the summit, they would have only entered gradually and in groups.

Finally, if we accept that the conclusion of the rituals was marked by a large feast sealing the unification of worshippers by communal consumption of food and drink,²⁸⁶ this would have taken place downhill to the E of the building complex (PLATE A2.1 a, below right). Thus, the worshippers would leave the core of the sanctuary to celebrate at the liminal area between the world of gods and humans, near the path which would then lead them back to their residences and everyday activities.²⁸⁷

The abandonment of the sanctuary

Petsophas is included in the so-called palatial peak sanctuaries, i.e. in the few sites of this group that survived after the end of the Protopalatial period and the transitional stage represented by MM IIIA, and subsequently evolved into major ritual centres – developments attributed to the submission of the specific extra-urban sanctuaries to the nearby administrative centres.²⁸⁸ It is nowadays accepted that these sites survived until the end of the Neopalatial period, when they were all abandoned with the exception of Juktas, following the fate of the palaces with which they were associated.²⁸⁹ However, recent studies on the significant sanctuaries of Kophinas, Vrysinas and Traostalos do not confirm this scheme. These sites were abandoned or fell into irreversible decline in the mature Neopalatial period,²⁹⁰ and it is possible that the other sanctuaries in the same category followed a similar trajectory.²⁹¹ Therefore, it seems that the end of the phenomenon of peak sanctuaries came early, and several factors must have contributed to this.²⁹² These may have included: the impact of the Theran eruption, which may have led to a turn towards the chthonic cults of the sacred caves; the changes in the distribution of the settlements, in particular the near desertion of the countryside, for the communities of which the peak sanctuaries previously functioned as common places of reference; finally, the emergence of more

²⁸³ On the processions carried out at Minoan extra-urban sanctuaries, see Lebesse and Muhly 1990, 328–29; Marinatos 1993, 122; Sakellarakis 2013, 79–80, 82–83; Rethemiotakis 2014, 153.

²⁸⁴ See Marinatos 1993, 243 and *passim*; Rehak and Younger 2001, 439. See also Chountasi 2015, 306–07.

²⁸⁵ See e.g., Rehak and Younger 2001, 439–40. See also Marinatos 1993, 127, 141, 146 (where a theocratic political structure is suggested for Minoan Crete).

²⁸⁶ On feasting at the extra-urban sanctuaries of the Neopalatial period, see Girella 2007, 149–51. For its social and political dimension, see Girella 2008, 176.

²⁸⁷ For a different reconstruction of the circulatory pattern and the spatial arrangement of the rites, which is based on the views of Myres and Rutkowski, see Davis 2014, 134–36.

²⁸⁸ On these sites, see Peatfield 1987, 92–93; 1990, 127–31; 1992, 61; 1994a, 23, 25.

²⁸⁹ Peatfield 1990, 131; Nowicki 1994, 41.

²⁹⁰ See Spiliotopoulou 2014, 168 (Kophinas); Tzachili 2016, 41–42 (Vrysinas); Vokotopoulos 2019a, 12, 14 (Traostalos). An abandonment of peak sanctuaries before LM IB had already been suggested by N. Platon (1951, 159), as well as by Driessen and Macdonald (1997, 55–56).

²⁹¹ See Adams 2017, 148 (Pyrgos), 264 n. 28 (Prinias and Modi), 266 n.62 (Philiorimos). On present evidence, a continuation in the late Neopalatial has been attested in only two peak sanctuaries, Juktas and Ayios Georgios sto Vouno, i.e. in sites which are not representative of this group, given that the first had achieved a wider significance due to its submission to Knossos, while the second was associated with an off-island colony. For the dating of these two sanctuaries, see Watrous 1996, 70–72 (Juktas); Tournavitou 2014, 4–22 (Ayios Georgios).

²⁹² See Rutkowski 1986, 95; Vokotopoulos 2019a, 14–16.

hierarchical social and political formations, as well as of the relevant ideologies, which were surely incompatible with the collective character of the cult at peak sanctuaries.

Given that the pottery from Petsophas remains unpublished, it is not currently possible to establish exactly when the sanctuary was abandoned. However, if it follows the pattern seen elsewhere, it should be placed at the end of LM IA at the latest. In this case, the pottery of the immediately subsequent periods, mentioned by Cunningham and Sackett,²⁹³ may represent occasional visits, or short-lived and fruitless attempts to revive a revered but by then obsolete cult place. However, the possibility that the sanctuary continued to function after the mature phase of the Neopalatial period should not be ruled out. In favour of this is the topography of the site itself. In contrast to most peak sanctuaries, around which lay only scattered rural installations, i.e. sites that were mostly abandoned during the late Neopalatial, Petsophas was in the immediate vicinity of the thriving town of Palaikastro. In other words it was a peri-urban, rather than a typical extra-urban sanctuary. The unobstructed view to the sanctuary and its relative ease of access possibly resulted in more frequent visits, which would not necessarily have followed the formality of the large periodic festivities carried out at peak sanctuaries.²⁹⁴ That is, it is possible that the sanctuary at Petsophas was tightly integrated into the life and everyday activities of the inhabitants of the neighbouring town, and this may have contributed to the continuation of its use. Moreover, if we consider that the abandonment of peak sanctuaries was partly due to the egalitarian aspects of the cult, which stood in contrast to the dominant ideologies of the late Neopalatial, then this would not have been the case for Petsophas, where the cult etiquette had already adapted to the new realities, as it emphasised social hierarchies rather than concealing them, as is indicated by the organisation of its building complex. If then we accept that the site survived beyond the watershed of LM IA, then the blocking of the entrance and the subsequent abandonment of the site must be dated to the end of the Neopalatial or to the Final Palatial period.²⁹⁵

PERIOD III

Following an apparently long period of abandonment, the site was used anew in the period of Venetian rule. As in Minoan times, the use of the outcrop was dictated by its qualities as a vantage point overlooking its surroundings. However, the character of the installation was rather different: the site of the sanctuary was now taken by a beacon. According to the 1633 report on the coastguards of the Kingdom of Crete, the one at Petsophas belonged to the safety network covering the perimeter of the entire island; therefore it functioned on a continuous basis and not only in cases of increased alert.²⁹⁶ Hence, the systematic use of the site argues in favour of the construction of Structure III at this very time, in order to be used as lodgings for the guard of the beacon.²⁹⁷ Evidently, this does not exclude the possibility that it was used as an animal pen in modern times, as suggested by Myres.²⁹⁸

Apart from Petsophas, Venetian beacons are also identified at several other sites that were used as peak sanctuaries in Minoan times.²⁹⁹ We could surmise that this pattern confirms that these cult places also functioned as beacons. However, the conditions prevalent at sea during the first half of the second millennium BC differed significantly from those of Venetian times, as is implied by later references to a Minoan thalassocracy and certainly by the pivotal influence then exerted by Crete over the entire southern Aegean. Consequently, a function of the peak sanctuaries as watch posts cannot be excluded, though this would have only been in exceptional circumstances, whereas the few and controversial indications for the lighting of bonfires do not argue in favour of their use as lighthouses or for the transmission of signals.³⁰⁰ The peak sanctuaries neighbouring the coast and those clearly visible from afar would certainly be closely associated with the sea – not as coastguards, but rather as reference points for sailors travelling along the rocky coasts and calling at the harbours of the island.³⁰¹

²⁹³ Cunningham and Sackett 2009, 83 n. 14. The latest sherds are dated to LM IIIA2–B.

²⁹⁴ See Nowicki 2016–17, 26.

²⁹⁵ The first case is more probable, given rough and ready barriers and buttresses are often identified at the sites struck by the LM IB destructions: see Driessen and Macdonald 1997, 43 (where, however, the discussion refers to LM IB as a whole). See also Platon 2011, for the characteristic example of Kato Zakros. These interventions must have been considered as temporary solutions, as they aimed at the stabilisation of disturbed or ready to collapse buildings, if not to deter plundering or squatting. For a general discussion of such structures, see Driessen 1995, 65, 69.

²⁹⁶ Arakadaki 1997, 53, 67, 70, 74–75, figs. 1a–b. For the primary network of coastguards and its *modus operandi*, see *ibid.*, 52, 68–72.

²⁹⁷ This function was possibly also served by Building A at Traostalos: see Vokotopoulos 2019a, 12.

²⁹⁸ PK II, 356.

²⁹⁹ In the case of the eastern end of Crete, this is relevant to Traostalos and Vigla, Zakros (FIG. A2.1): see Arakadaki 1997, 66–67, 80. It is not clear whether this was also valid for the peak sanctuary at Xerokampos: the outcrop on which this site is situated is known as Vigla, but it is located further to the N of the area where the beacon is set in the report of 1633 AD: see *ibid.*, 66, 80 (site of Xeropsoli); Nowicki 2007, 15–16.

³⁰⁰ Briault 2007, 135. *Contra* Soetens *et al.* 2006, 320; Barber 2010, esp. 14, 18, 21, 23. See also Nowicki 2016–17, 27.

³⁰¹ See Sakellarakis 1996, 91; Chrysoulaki 2005, 87; Soetens *et al.* 2006, 320; Kourkoumelis 2011, 98–99; Rethemiotakis 2014, 147.

DISCUSSION

THE BUILT STRUCTURES OF NEOPALATIAL PEAK SANCTUARIES AND THEIR CHARACTER

In the context of the synthetic studies he conducted on peak sanctuaries, Peatfield argued that building remains are identified only at the sites that continued operating after the initial stage of the Neopalatial period, and evolved into ritual centres of major significance. The same scholar noted that the stratigraphic evidence of the excavated sites indicates that architectural interventions post-date the establishment of cult. Based on the above, Peatfield concluded that the buildings actually represent a phenomenon of the Neopalatial period.³⁰² Specifically, he argued that the erection of built structures together with the appearance of prestige artefacts and stone vessels with Linear A inscriptions signal an escalating refinement of both the sanctuaries and their rituals, which must have required a substantial investment in labour and wealth; these features suggest that peak sanctuaries were placed under palatial control, and that they were transformed into institutions serving the enforcement of centralised power over palatial territories.³⁰³ Therefore, in accordance with this line of argument, the appearance of buildings is indicative of a radical transformation of the peak sanctuary phenomenon, which converted a cult of rural origins and popular character into a privileged field for the expression of elite ideology.³⁰⁴ Nonetheless, Peatfield drew attention to the fact that, with the obvious exception of Juktas, the buildings at peak sanctuaries mostly represent simple structures of dry masonry, the majority of which must have constituted open-air enclosures.³⁰⁵ However, he apparently did not consider this picture as incompatible with his interpretative scheme on the palatial character of the sanctuaries of the Neopalatial period.

These views are nowadays widely accepted. Thus, in studies on Minoan religion and in synthetic works on Bronze Age Crete, the presence of buildings is considered as one of the essential features of the late phase of the peak sanctuary phenomenon;³⁰⁶ actually, it has even been claimed that these structures signal an enormous wealth investment,³⁰⁷ and that they monumentalised the cult.³⁰⁸ In fact, among the scholars who worked in this specific field, only Nowicki adopted a different approach: in accordance with Rutkowski's earlier views,³⁰⁹ he suggested that built structures appeared earlier, possibly already in the Prepalatial period.³¹⁰ In any event, the available evidence does not appear to fall in line with the established views on the spread and implications of these structures.

Traces of architectural interventions have not been identified in many of the peak sanctuaries of the Neopalatial period; and this applies not only to the small sites surviving into the transitional MM IIIA period or to those which were in use exclusively during that stage,³¹¹ but also to some of the large, 'palatial' sanctuaries.³¹² In theory, the absence of structures could be attributed to the scavenging of building materials or/and to their concealment under the later structures that are attested at most of these sites; however, this cannot apply to all cases, and certainly cannot be argued for sanctuaries where later interventions are absent, such as Prinias or Gournos. In addition, the structures of some sites are attributed to later periods of use.³¹³ Moreover, in some of the sanctuaries where built structures are identified, a revival of cult during the first millennium BC is attested.³¹⁴ Thus, until we have a more complete picture of the stratigraphic sequence of these sites, the erection of structures at these sites in Minoan times cannot be taken for granted.³¹⁵

As regards the form and function of the structures, the available evidence confirms that most represent open-air buildings or arrangements. Specifically, the largest and most regular structures constituted enclosures or platforms delineating the core of the sanctuaries or/and the congregation area for the

³⁰² Peatfield 1990, 127; 1992, 66, 78.

³⁰³ Peatfield 1987, 92; 1990, 127–28. On this issue, Peatfield discussed views previously put forward by Rutkowski (1986, 95).

³⁰⁴ Peatfield 1994a, 22–23.

³⁰⁵ Peatfield 1990, 122; 1994a, 22. Bloedow (1990, 62) reached similar conclusions.

³⁰⁶ See Marinatos 1993, 116; Soetens 2009, 261; Lupack 2010, 252–53; Bintliff 2012, 146–47; Adams 2017, 144–45, 157.

³⁰⁷ Kyriakidis 2005, 105.

³⁰⁸ McEnroe 2010, 112; Banou 2012, 412.

³⁰⁹ Rutkowski (1986, 76, 95) assumed that the earliest buildings at peak sanctuaries date to the MM I period. Accordingly, N. Platon (1951, 158) dated their appearance in the late Protopalatial period; however, this view was based on sites no longer considered as peak sanctuaries.

³¹⁰ Nowicki 1994, 40.

³¹¹ On Gournos, see Rethemiotakis 2009, 199. The sanctuary on Kephala Lilianou did not apparently feature any structures,

as may be deduced from the absence of any such mentions in the relevant publications: see Rethemiotakis 2012, 342; Rethemiotakis and Christakis 2011a, 212. The same is valid for Afendis Stavromenos, which, however, is dated mainly or exclusively to a later time, i.e. to LM IA (Watrous *et al.* 2012, 57, 130–31).

³¹² Davaras 1972b, 651 (Prinias); Papadopoulou and Tzachili 2010, 453 (Vrysinas); Sakellarakis 2013, 12–13 (Ayios Georgios sto Vouno). The same is valid for Stavromenos (Yiannis Papadatos, pers. comm.; on this site, see Papadatos and Chalikias 2019, 92).

³¹³ On Modi and Kalamaki, see n. 43. For Traostalos Structure A, see n. 113.

³¹⁴ Gyristi Korifi: Kontopodi *et al.* 2015, 252, 258, 260. Pyrgos: Alexiou 1964a, 440; Rutkowski 1988, 87–88. Vourvoulitis: Kontopodi and Spiliotopoulou 2019. Modi may also belong in the same category: see Rutkowski 1988, 85.

³¹⁵ However, in the case of Kophinas, the study of the finds suggested that the enclosure dates to MM IIIB: see Karetsou 2014, 127.

worshippers,³¹⁶ while the smaller and those of poor construction would correspond to podiums and little enclosures or terraces defining specific areas; these may have been used for particular rituals, for the deposition and display of votives, or finally as bases supporting emblems and lightweight structures.³¹⁷ In fact, roofed buildings or monumental architectural complexes are only attested at Juktas, Petsophas and Pyrgos.³¹⁸ The very small number of these sites therefore suggests that they should not be considered simply as the richer or more refined variants of the peak sanctuary phenomenon, but as exceptions or rather as deviations from the rule.

In summary, the presence of built structures can only be substantiated for *some* of the peak sanctuaries of the Neopalatial period. Moreover, most of these do not represent undertakings at a scale larger than the usual farmhouses that dotted the landscapes around the sanctuaries;³¹⁹ accordingly, the quality of their masonry was not necessarily higher than that of the auxiliary structures – such as courtyards, cultivation terraces, dams and enclosures – that surrounded the habitations of the countryside.³²⁰ In other words, the evidence is not compatible with a significant investment in wealth and labour or with the view that peak sanctuaries were under the sway of the palaces, especially if we take into account that the administrative centres of the Neopalatial period and the groups that controlled them had evidently ample resources to construct monumental building complexes whenever they wished.³²¹ The stone-built structures of peak sanctuaries were therefore indeed characteristic for the Neopalatial period, yet they cannot be regarded as a fundamental feature of this specific, mature phase of the phenomenon: even if we accept the presence of light structures that did not leave any traces precisely because they were made of perishable materials,³²² the overall picture suggests that the cult remained essentially hypaethral, retaining until the end the open and collective character inherent to its egalitarian ethos. In this respect, the three peak sanctuaries with roofed buildings and extensive complexes would have differed substantially from the others in terms of the social and political implications of the cult, as argued in the previous section of this study (pp. S182–S183, S185–S188). Nonetheless, it is significant that even though the buildings became the dominant element of these sanctuaries, they did not supersede the original open-air core of the cult: the rock outcrops that constituted the focal points of the rituals were not incorporated into the buildings, but were surrounded by them.

THE BUILDINGS OF PEAK SANCTUARIES IN ICONOGRAPHY

The three sites mentioned above confirm that the few depictions of sanctuaries on peaks attested in Neopalatial elite art³²³ do indeed represent proper roofed buildings, and not light temporary structures erected on the eve of the large seasonal festivals so as to provide the setting for the rites, as argued by Shaw for that on the Sanctuary Rhyton from Zakros.³²⁴ This is surely of relevance for stone rhyta, possibly also for the inherently minimalistic scenes on signet rings. Specifically, the fact that most of the relevant finds come from the area of Knossos or were produced in its workshops suggests that the iconography actually refers to Juktas.³²⁵

The latter hypothesis is especially pertinent for the Zakros rhyton, given that only the building complex at the peak of Juktas was equal to that represented on this vessel in terms of its size and elaborate form.³²⁶ Obviously, this scene followed the principles of Minoan art, and so did not seek to faithfully

³¹⁶ Kophinas: Karetsoy 2014, 126–27. Vourvoulitis: Kontopodi and Spiliotopoulou 2019. The above are probably also valid for the two relatively large outdoor areas that adjoined the small building at Filiorimos, if we accept that this complex was indeed contemporary with the peak sanctuary: see Alexiou 1967, 484.

³¹⁷ For the relevant structures at Traostalos, see Chrysoulaki 2001, 60–61; Vokotopoulos 2019a, 4–5.

³¹⁸ As discussed above (p. S180), the building at Pyrgos is very similar to Structure I of Petsophas, which argues in favour of its erection in Minoan times. The westernmost space of the small building complex at Filiorimos may also have been roofed, as deduced from the excavation report (see Alexiou 1967, 485). The construction of this structure followed the establishment of the sanctuary; however, its exact date is currently not known.

³¹⁹ On Minoan farmhouses, see e.g. Soles 2003, esp. 127–28; Betancourt 2006, 269–70; Vokotopoulos 2007, 75–76, 80–81 and *passim*; 2011, 139, 144–46.

³²⁰ On these structures, see Betancourt *et al.* 2005, 287 and *passim* (Pseira); Vokotopoulos *et al.* 2014, esp. 254–55 (Choiromandres); Orengo and Knappett 2018, 498–500 and *passim* (Palaikastro); Kalantzopoulou 2022, 43, 76–78, 97 and *passim* (Gaidourophas and Lavrakia).

³²¹ See the relevant remarks by Haysom (2018, 24).

³²² This hypothesis was put forward by N. Platon (1951, 158) for MM I sites, while Rethemiotakis (2009, 199) suggested the same for the sanctuary at Gournos. Besides, the existence of such structures is corroborated by the mudbrick fragments identified at the peak sanctuary of Sklaverochori (Rethemiotakis 2012, 341).

³²³ For a discussion of the iconography, see Sakellarakis 2013, 33–37, 40.

³²⁴ Shaw 1978, 436, fig. 9, 438, 448. Façades of such a substantial scale apparently never existed on peak sanctuaries, as deduced from the absence of extensive platforms or terraces at the other excavated sites of this class, i.e. of arrangements necessary for the erection of those structures.

³²⁵ This view has been put forward by Karetsoy (1980, 343; 1984, 601), van Leuven (in Karetsoy 1981, 153), and Peatfield (2013, 478).

³²⁶ The above presuppose that it is indeed a peak sanctuary represented on the rhyton, as proposed by N. Platon (1974, 153) and Marinatos (1993, 119), and not the palace of Zakros or the Temple Tomb at Knossos, as suggested by Bloedow (1990, esp. 67–68) and L. Platon (2003, 349–52, 362), respectively.

reproduce reality.³²⁷ Hence, the tripartite form of the structure at the peak was dictated by the established iconographic conventions used for the depiction of sacred buildings,³²⁸ and did not correspond to that on Juktas. Similarly, the complex is identical to that on the peak of Juktas in terms of its constituent parts – the altar, the surrounding courtyard, and the building; however, its arrangement differs substantially from that of its prototype. Specifically, the building does not enclose the open-air area with the altar, and does not extend downslope but occupies the summit itself. The placement of the altar in front of the building required the addition of an enclosure in the scene – a feature that did not exist at Juktas – in order to delineate the surrounding open area as a distinct space. Therefore, the organisation of space on the Zakros rhyton is axial, while at Juktas it was concentric. Accordingly, access to the highest part is rendered as if it passed through the interior of the complex and the building itself – provided that this was meant to depict a proper building rather than a mere façade – following a linear course. In contrast, at Juktas the route to the core of the sanctuary extended along the perimeter of the building complex.

The arrangement of the complex on the Zakros rhyton creates an escalating tension and, most significantly, assigns a distinct hierarchic character to the composition. This specific feature, the very placement of the building at the liminal zone of the summit, the lack of worshippers³²⁹ – which clearly differentiates this scene from its parallels – and finally the pervasive sense of the presence of the supernatural imposed by the wild goats as companions of divinities,³³⁰ create grounds for suspecting that this masterpiece deliberately confounded the cult site with the seat of the gods, if it did not seek to render exactly the latter, i.e. a version of Olympus *avant la lettre*. Thus, in case this hypothesis contains a grain of truth, and if indeed Juktas is depicted, the composition as a whole would have carried very specific political connotations regarding the role of the centre that controlled this sanctuary, namely Knossos, but also the wider affiliations of the Zakros palace, where the rhyton was found.

THE SANCTUARY AT PETSOPHAS AND THE RELATIONS BETWEEN PALAIKASTRO AND KNOSSOS

Given that substantial buildings and architectural complexes were anything but typical of peak sanctuaries, the erection of such structures with common features at Juktas, Petsophas and Pyrgos must have been the outcome of particular historical circumstances. Specifically, it is probable that their existence was linked to the hegemonic aspirations of Knossos, to the relations of alliance, dominance or rivalry it developed with the other Cretan centres, and to the significant prestige engrained in its high culture, which set the standards for the rest of the island.

In the case of Juktas, the presence of a building already since the Protopalatial period and the audacious building programme materialised at the transition to the Neopalatial – which included the buildings at Anemospilia and Alonaki, the processional road connecting these edifices, and of course the large complex on the summit³³¹ – must be attributed to the location of this sanctuary, that is to its proximity to Knossos as well as to the smaller but important centres of Archanes and Lykastos.³³² Specifically, the early flourishing of Juktas was probably due to its function as a meeting and rallying point for the inhabitants of the neighbouring centres, if not as a venue for ritualised competition between their leading groups. The subsequent rearrangement of the sanctuary was contemporary with the emergence of Knossos as a dominant force to the detriment of the other centres of central Crete.³³³ Therefore, it would make sense to attribute the works to a Knossian initiative. It is therefore possible that this major undertaking sealed the submission of Juktas to the exclusive control of Knossos, while its monumental character aimed to display the power of that centre.

The peak sanctuary at Pyrgos was certainly linked to Tylissos,³³⁴ a minor centre that was situated at the perimeter of the immediate hinterland of Knossos. This may suggest that by the Neopalatial period Tylissos was under Knossian rule, if not incorporated into its territory.³³⁵ Consequently, it can be surmised that the erection of the building at Pyrgos signalled the advent of this new reality.

The above cannot be easily argued for the building complex at Petsophas, because of the large size of the town of Palaikastro and the distance between this centre and Knossos, unless we accept

³²⁷ See Platon 1974, 155–56; Marinatos 1993, 119, 121 (where, however, the discussion does not pertain to the relation of the depicted complex with that at Juktas). Actually, N. Platon (*op. cit.*, 153) considered that the rhyton scene most probably referred to the main sanctuary of the palatial centre of Zakros.

³²⁸ See n. 95.

³²⁹ On the absence of action in the scene and its interpretation, see Marinatos 1993, 120–21.

³³⁰ See Platon 1974, 155.

³³¹ See Tzedakis *et al.* 1989, 52, 55, n. 35; Tzedakis *et al.* 1990, 409–10 (built road); Sakellarakis and Sapouna-Sakellarakis 1997, 269–311

(Anemospilia); Karetsoy 2013 (Alonaki).

³³² On the problem of the relation of Juktas with these centres, see Zois 1996, 377.

³³³ See Driessen 2001, 63; 2019b, 198; Cadogan 2013, 180; Macdonald and Knappett 2013, 2.

³³⁴ Peatfield 1992, 78.

³³⁵ See Whitelaw 2018, 235–36. Also, see Warren 2004, 160, 167 (where it is suggested that all of central Crete was under Knossian yoke). According to Kyriakidis (2012, 135–36), Tylissos remained autonomous during the Neopalatial period; however, he did not expand on the rationale behind this assertion.

that the power of the latter extended all over Crete, or at least over its largest part. This is debatable, but does not seem probable in light of the state of the island during the first millennium BC, namely, its fragmentation into a multitude of rival city-states with fluid relations, which did not allow any one of them to rise to a predominant position.³³⁶ Moreover, the available evidence suggests that relations between Palaikastro and Knossos were not the same throughout the Neopalatial period. With reference to MM III, the incorporation of certain features of the ‘Great Tradition’ of north-central Crete in the architecture of the Southeast Building of Block M – an important edifice that most probably had a public character, since it served mass gatherings and ceremonies – suggests that Palaikastro was then attached to Knossos.³³⁷ By contrast, the abandonment of this building in LM IA and the appearance of the Palaikastro Hall – a local version of elite architecture – in LM IB, i.e. in a period characterised by the dominance of Knossian prototypes all over Crete, argue for a detachment of Palaikastro from the sphere of influence of Knossos.³³⁸ To the same conclusion lead the close relations developed at the same time between Knossos and Zakros, which crucially contributed to the transformation of the latter into a palatial centre.³³⁹ Apparently, Zakros secured Knossian access to the maritime route into the eastern Mediterranean. However, because of its location, Palaikastro would have been more suitable to serve as the eastern harbour of Knossos; moreover, it can be surmised that it functioned as such in the previous period.³⁴⁰ Consequently, the special relation between Knossos and Zakros indirectly confirms that the ties between the former and Palaikastro had broken.

In accordance with the above, if we accept that the erection of the building complex at Petsophas dates to the first phases of the Neopalatial period, then its common features with Juktas possibly suggest that this undertaking was carried out under Knossian guidance or patronage. Alternatively, it can be surmised that the rearrangement of the sanctuary did indeed occur in the context of intense contacts with Knossos, but was not due to Knossian intervention; instead, it may primarily represent an initiative by the leading groups of Palaikastro, who imitated the model of Juktas because of the prestige it conferred, so as to differentiate themselves from the rest of the populace as well as from the rival elites of neighbouring centres.³⁴¹ However, if we accept that the complex at Petsophas was erected in the mature or late Neopalatial, then it probably expressed the confidence of the neighbouring centre and its elite, and at the same time its autonomy in relation to Knossos. In other words, in that case the similarities with Juktas would represent an expression of the wider phenomenon of convergence through competition between peer polities.³⁴²

In summary, determining the exact historical context of the erection of the building complex at Petsophas is not possible for now, given that its date remains unclear. For a fuller understanding of its political and social correlates, a more detailed study of the finds from the excavations is necessary, if not also further investigation of the site. However, the adoption of the model of Juktas possibly favours a date for the rearrangement of the sanctuary in the early stages of the Neopalatial, given that the evidence from Palaikastro indicates a conscious rejection of Knossian prototypes in the later stages of that period, if not an open rivalry between the two centres. In any event, the building complex at Petsophas is indicative of the immediate involvement of Palaikastro in the events and processes that shaped the character of the Neopalatial period, and also of the significance the study of this important centre holds for our understanding of the political geography of Minoan Crete.

³³⁶ See Bennet 1990, 198–203, 207; 2013, 240–41.

³³⁷ *PK Block M*, 50, 60, 318–19, 321.

³³⁸ Driessen 1999, 231–33, 235; *PK Block M*, 319, 321.

³³⁹ See e.g. Platon 1974, 228; Wiener 1987, 265–66; Warren 2002, 204–05; 2004, 164; Platon 2004, esp. 381–82, 390; Wiener 2007, 234–35; Agouridis and Vokotopoulos 2018, 116–17; Vokotopoulos 2022a, 62.

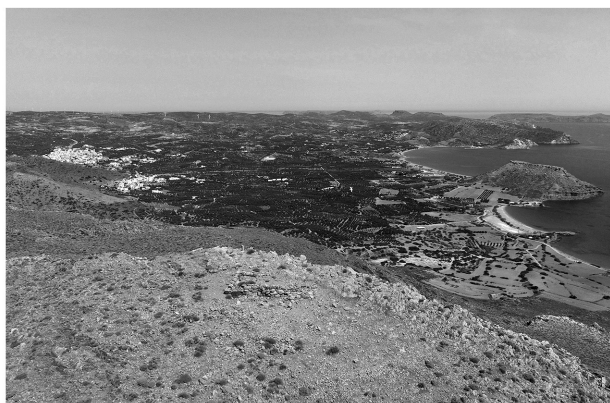
³⁴⁰ See Cadogan 2013, 180 (for the eastern end of Crete as a whole).

³⁴¹ This would constitute a manifestation of the ‘Versailles Effect’. On this concept, see Wiener 1984, 17. For the inherent difficulty in determining the political implications of the dissemination of the high culture of north-central Crete, see Wiener 1987, 266; Warren 2002, 204; Whitelaw 2018, 223–24.

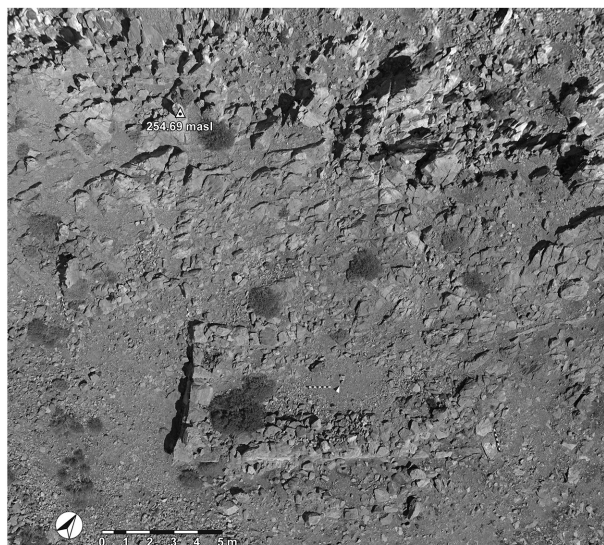
³⁴² See Renfrew 1986, esp. 8–9.

The complete Bibliography for titles used in the print Volume and Appendix 2 appears on pp. S195–S226.

PLATE A2.1 (*opposite*). (a) Petsophas: the site in relation to the area of the Minoan town (lower right), the basin of Palaikastro, the hilly land to the N and Cape Sidero (top right). Aerial view from S/SE; (b) Petsophas: orthophotograph of the central part of the site. Scale 1:150; (c) Petsophas: the Minoan building (Structure I), the SE corner of the enclosure (Structure II) and, in between, the entrance to the sanctuary, from W; (d) Petsophas. Structure I: the inner face of Wall 1, from S/SE; (e) Petsophas. Structure I: the W façade (Wall 2), from W/SW; (f) Petsophas. Structure I: the S façade (Wall 3), from S/SE; (g) Petsophas. Structure I: vertical joints at the S façade, from S/SE; (h) Petsophas. Structure I: the SE corner of the building and the later Wall 12, from E. According to Rutkowski the slab at the N end of the wall (far right) belonged to a stepped ascent.



(a)



(b)



(c)



(d)



(e)



(f)



(g)



(h)



(a)



(b)



(c)



(d)



(e)



(f)

PLATE A2.2. (a) Petsophas. Structure I: the w half of the interior of the building from E/NE, showing the *krepidoma* of Wall 3 (left), the protruding rocks upon which Wall 1 was founded and the preserved part of the stylobate of the entrance (at right). In the background are visible the other peaks of Petsophas; beyond are the conical peaks Simodi (left) and Modi (right);

(b) Petsophas. Structure I: the inner face and broad *krepidoma* of Wall 3 from NE; (c) Petsophas. Structure I: the E part of Wall 3 and the overlying Wall 12 from S/SE, showing the difference in the masonry and quality of their construction;

(d) Petsophas. Level area at the summit: the w part of the pavement, from N/NW. The oblong rock to the right separated the area from the enclosure; (e) Petsophas. Level area at the summit: the end of the pavement to the protruding rocks of the summit, from SE; (f) Petsophas. Structure II: Wall 6 and the protruding rocks within the enclosed area, from SE. To the right is the only preserved stone of Wall 8, which blocked the entrance to the sanctuary.

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