Konnos (Crete)
Excavations of the University of Toronto and the Royal Ontario Museum, under the auspices of the American School of Classical Studies at Athens

Trench Reports
Trench 7 1977

<table>
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<th>Trench 124</th>
<th>No. of pp.</th>
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<td>Trench Report</td>
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<td>Drawing</td>
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Report on Chipped Stone | 6
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Final Report: Trench 17A

John McEnroe
10 August 1977
General Description

Trench 17A is a 10 by 10 foot trench immediately east of Trench 2A (see plan for grid coordinates). By digging here we hoped to find the eastern limit of the LM II A building in Trench 2A.

Most of the surface sand had been removed by the tractor-digger during the sand-clearing operation this spring. Before the excavation, the ground sloped from north to south. A small palm tree stood near the southwest corner of the trench.

Process of excavation

The excavation began with Level 1. This consisted of hard sand and small rubble. The rubble may have been thrown here by someone clearing fields to the east. The pottery from the upper fill is LM III A/B.

We soon were able to trace the eastern extension of wall 8. South of the wall, and only about 10-15 cm. below the surface, we came to the top surface of the small rubble packing that had been placed against the south side of wall 8, over the MM structures. (cf. EB 2, page 104 f.). On the surface of the packing we found several nearly complete vessels of the LM III A period. (pail 2, level 2; see below)

Excavation continued north of wall 8. After removing
level 2 we found a layer of brown soil that continued with no change down to the floor level. There were five areas in the fill. Most units, however, appear to be LM III. When walls 30 and 31 appeared it became clear that we were dealing with a single room.

The floor level was marked by several slabs set against the walls, a built-in enclosure against the west end of wall 31, and large stones lying on a hard earth surface. The pottery on the floor is LM III B. Large fragments of an octopus krater join with sherd from the same vessel found last season in Room A' (153). Three stone tiles were also found on the floor.

After excavating the floor deposit, we lifted the slabs in the N.E. and S.W. corners of the room. Under the slab in the S.W. corner we found an LM III B krater (3815) which shows that at least this slab was laid in place in LM III A.

Structures

Trench 17A consists of a single room, I, defined by walls 9, 8, 30, and 31. The west face and north end of wall 9 were excavated last season. The second course in the north end of the wall is a T-shaped cut jamb base (MB 2, page 65). No threshold was found in association with the jamb base, so it appears that, in its present position, it is reused. Wall 9 is butted against wall 8.

Wall 8 is butted against wall 6, and revealed to only 2-3 courses in trench 17 A.
Wall 1 is mostly covered by the soil today.

Further excavation in this direction is needed before the wall can be described.

Wall 1 has a flat top. At the south end of the wall, there is an indentation. At the south end of the wall, there is a built-in enclosure with a large vessel (kouropalite) inside.

Room 1 was, in part, used for some industries (e.g., by the stone tools) as was room B immediately to the west. The stone slabs arranged along the walls are also similar to the slabs in rooms B and A'. The built-in enclosure is more nicely built, but still generally similar to the brazier enclosure in Room A (LM II, page 32). The fact that a slab of the octopus krater was found in Room 1 and another slab was found in Room A' suggests some relation between the two rooms in LM III B.

Pottery

Comparatively little pottery was found in Room 1B. The two most important units are Fail 7 level 2 and Fail 9 level 3.

Fail 2 level 2: This unit is from the surface of the rubble packing south of wall 8. Several nearly complete vessels were found, including kyllikes, cups, and bowls. There is little decorated pottery. All of the material appears to be LM III A B. Catalogued objects:

C798 small kylix
C799 bowl
C800 conical cup
C801 goblet
C802 cup
C803 conical cup
Level 3: This is the floor deposit of Room L.
The latest pottery is LH I 3, an octopus krater (32a).
There were many earlier pieces in the unit (e.g. cooking sherds, etc.). The deposit is small - ca. 150 sherds.

Cataloged objects:
<table>
<thead>
<tr>
<th>Catalogued objects</th>
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</thead>
<tbody>
<tr>
<td>Trench 17A</td>
</tr>
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**Clay**

<table>
<thead>
<tr>
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<th>Type</th>
<th>Description</th>
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<tbody>
<tr>
<td>C798</td>
<td>vessel</td>
<td>kylix</td>
<td>17A/2:2</td>
</tr>
<tr>
<td>C799</td>
<td>vessel</td>
<td>bowl</td>
<td>17A/2:2</td>
</tr>
<tr>
<td>C800</td>
<td>vessel</td>
<td>conical cup</td>
<td>17A/2:2</td>
</tr>
<tr>
<td>C801</td>
<td>vessel</td>
<td>goblet</td>
<td>17A/2:2</td>
</tr>
<tr>
<td>C802</td>
<td>vessel</td>
<td>cup</td>
<td>17A/2:2</td>
</tr>
<tr>
<td>C803</td>
<td>vessel</td>
<td>conical cup</td>
<td>17A/2:2</td>
</tr>
<tr>
<td>C811</td>
<td>vessel</td>
<td>goblet bowl LM III</td>
<td>17A/3:8</td>
</tr>
<tr>
<td>C812</td>
<td>vessel</td>
<td>semiglobular cup fr.</td>
<td>17A/3:8</td>
</tr>
<tr>
<td>C813</td>
<td>vessel</td>
<td>goblet</td>
<td>17A/3:9</td>
</tr>
<tr>
<td>C815</td>
<td>vessel</td>
<td>cup or bowl</td>
<td>17A/3:10</td>
</tr>
</tbody>
</table>

*August 14, 977*
<table>
<thead>
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<th>Find(s)</th>
<th>Pottery Description</th>
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<tbody>
<tr>
<td>6-8 Aug 72</td>
<td>447A/19A/2</td>
<td>1</td>
<td>Conical red fabric 25 sherds/1.110 gr.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Medium, coarse 40 sherds/2.260 gr.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Fine 100 sherds/1.10 gr.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Comments: Latest date EM III A-B</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(goblet, bowl, cup or bowl)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Practically nothing in this unit; very</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>scrapped</td>
</tr>
<tr>
<td>6-8 Aug 72</td>
<td>447A/19A/2</td>
<td>2</td>
<td>Coarse red 25 sherds/1.110 gr.</td>
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<tr>
<td></td>
<td></td>
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<td>Medium, coarse 40 sherds/2.260 gr.</td>
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<td></td>
<td>Fine 100 sherds/1.10 gr.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Comments: Nothing later than</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>EM III A-M 2</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- many plain kylxes cups</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>- only a few decorated sherds</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>- Probably all III A-M 2</td>
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<tr>
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<td></td>
<td></td>
<td>Very few survivals in this</td>
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<td></td>
<td></td>
<td></td>
<td>consistent unit (scrap of barbotine</td>
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<td></td>
<td></td>
<td></td>
<td>etc.)</td>
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<td></td>
<td></td>
<td></td>
<td>Med. Coarse, pitted fabric is...</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>Very uniform also</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Many of the sherds are large, and the</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>unit should be studied further for</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>joins &amp; mendable pieces</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>[Note that the cups have strap</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>handles (EM III A usually, each</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>handle)</td>
</tr>
<tr>
<td></td>
<td>447A/19A/2</td>
<td>3</td>
<td>Coarse red 25 sherds/1.110 gr.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Medium, coarse 40 sherds/2.260 gr.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Fine 100 sherds/1.10 gr.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1 sherds EM III A (?), but unit too</td>
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<td></td>
<td></td>
<td></td>
<td>small, to be definitive.</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>Nothing really here.</td>
</tr>
</tbody>
</table>

Catalogue:
- C 798 - small kylx
- C 799 - bowl
- C 800 - conical cup
- C 801 - goblet
- C 802 - cup
- C 803 - conical cup
<table>
<thead>
<tr>
<th>Date</th>
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<th>Feature</th>
<th>Pottery, Description</th>
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<td>80 sherds, 10 sherds, 520 gr.</td>
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<tr>
<td></td>
<td></td>
<td>5</td>
<td>Coarse Red, 15 sherds, 250 gr.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>6</td>
<td>Coarse Red, 20 sherds, 15 sherds, 95 gr.</td>
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<td></td>
<td></td>
<td>Medium, 15 sherds, 250 gr.</td>
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<td></td>
<td>Fine, 95 sherds, 250 gr.</td>
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<tr>
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<td></td>
<td></td>
<td>Coarse Red, 15 sherds, 250 gr.</td>
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<td></td>
<td>Medium, 15 sherds, 250 gr.</td>
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<td></td>
<td>Fine, 95 sherds, 250 gr.</td>
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<td>Coarse Red, 15 sherds, 250 gr.</td>
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<td></td>
<td>Fine, 95 sherds, 250 gr.</td>
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<td>Medium, 15 sherds, 250 gr.</td>
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<td>Fine, 95 sherds, 250 gr.</td>
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<td>Coarse Red, 15 sherds, 250 gr.</td>
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<td>Medium, 15 sherds, 250 gr.</td>
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<td>Fine, 95 sherds, 250 gr.</td>
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<td>Coarse Red, 15 sherds, 250 gr.</td>
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<td>Medium, 15 sherds, 250 gr.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Fine, 95 sherds, 250 gr.</td>
</tr>
</tbody>
</table>
Poignant notes on French 2A, 2A1, 2A2, 2A3, 9A, 9A1, 9A2, 17A

John McEnroe
15 August 1977
The area excavated in trenches A, B, C, D, E, F, G, H, I, J, K, L, and M is shown in the attached plan. Most of the area is occupied by a single LM I house. The house was reused, or rebuilt, during the LM III period when it was partially abandoned. On the north, south, and west sides of the LM I building, at a lower level were found LM walls and floors.

Phase Plan: Notes on Construction Dates

A. Middle Minoan Walls

Walls 24, 27, and 28 are all bonded. They are associated with an MM III II floor deposit in space H, which means that they must have been built before or during this period.

Walls 10, 11, and 13, 16 are associated with MM III floor deposits in spaces G and K. They must be MM III or earlier.

Sections of MM pavement were found in the north and south parts of the street. In the south part of the street, the walk west of the street is associated with a small MM III pavement cut into the bedrock to the west and with the MM III street level. In the north section of the street, threshold is related to the MM street level and partially covered by the LM I phase of wall S.
Several walls in the central area are built up against walls 17 and 18, which were probably the base of a platform or terrace. Later, wall 6 was built over the platform and against walls 17 and 18. These walls were obviously in place when the tomb was inhabited, which dates them specifically to LM IA or IIIA₂.

In the northeastern part of the trench, a LM IA extension layer which runs over the MB walls and under wall 5 may be derived from the construction of wall 6. Wall 6 is covered with wall 10.

Also in the eastern part of the trench is a 3.5 m street paving that is preserved. It is at approximately the level of trench II (plan) which should also belong to LM IA.

Other walls shown in the plan probably belong to the LM IA period. Wall 6 was built against with trenches II (LM IA) and is covered by an LM III floor. Some parts of wall 6's surface certainly belong to LM I, though later rebuilding makes it difficult to distinguish exactly which parts. Wall 9 (and related walls 30, 31, and 31) is a continuation of LM I wall 6. I would place the construction of these walls in the LM IA period, even though nothing so early was found in Room L. The wall found in the south side of the tomb in room A was covered by an LM III floor. It belongs to either LM IA or LM I.
A. Middle Minoan

No MM room in this area has been excavated, however it is clear that an important MM mandible lies under the LH I constructions. This very clear change in occupation levels and the fact that every LH space excavated so far contained several complete vessels suggests to me that there was a major destruction in this area in LH III.

Interior dimensions: X, 07; Y, 1, 17; Z, 1, 15

Objected objects from floors:

UC 5 jkr
UC 54 jkr
UC 53 bowl
UC 666 canister cup
UC 667 canister cup
UC 682 jug
UC 697 bowl
UC 698 bowl
UC 699 bowl
UC 696 loom
UC 691 loom

2002 cooking dish
2033 bowl
2034 cup
2068 krater bowl
2067 tripod cooking dish
2066 straight-sided cup
2067 tripod cooking dish
interior dimensions: H: 1.16; W: 1.16; D: 1.16

catalogued objects from floor:

wall: 111
C211 conical cup
C212 conical cup
C213 conical cup

wall: 362
C362 conical cup
C363 conical cup

wall: 550
C550 conical cup
C551 conical cup
C552 conical cup

wall: 850
C850 small jar
C851 small jar

date: MI III
function of room: unknown, but number of rhytons suggests ceremonial function.

G

interior dimensions: H: 1.16; W: 1.16; D: 1.16

catalogued objects from floor:

wall: 111
C211 conical cup
C212 conical cup
C213 conical cup

wall: 362
C362 conical cup
C363 conical cup

wall: 550
C550 conical cup
C551 conical cup
C552 conical cup

wall: 850
C850 small jar
C851 small jar

date: MI III
function of room: unknown

H

interior dimensions: H: 1.16; W: 1.16; D: 1.16
A. Late Minoan I-II

18.0.1. The W rooms are covered over by a large house-wall built over the top. The house has not been completely excavated; it extends to the east and possibly to the north. While much of the house's architecture can be dated to LM II, most of the final floor deposits are LM III. The only major LM I-II deposit in the dump between walls 14 and 16, the "platform" and wall 7.

B._dump: Date: 1470; 1460; 1450

Catalogue objects
3.1. vessel
304
2A 305 grooved cup
771 bowl
372 cup
374 cup
375 cup
377 cup
0255 cup
0257 cup
0263 cup
8245 perforated pendant
9A 2275 cup
2276 bowl
2277 loomweight
3158 bronze cover
Date: stylistically LM II
Function: dump
Late Minoan II-I

During LM II-I east of TM-11 there either continued to be a eq or was reoccupied. Several new walls (A, B, L, M, N, and 13) and at least 1 room (A) were added. Several walls, built in LM I seem to have some use in LM II-I (A, B, and 13). Most, or all, of the built-in structures (pithoi, jars, column bases, etc.) in rooms A, A', and B, probably belong to this period.

A

interior dimensions: H ca. 4.50; W ca. 4.50; D ca. 1.00;

Catalogued objects from floor:

C1 cup from C3
C2 snake tube
C5 brazier
C45 tripod

Date: LM III A273

Function: in part, a household shrine

A'

interior dimensions: H ca. 4.00; W ca. 4.50; D ca. 1.00;

Catalogued objects from floor:

C53 'octopus' statuette (also found from room L)
C74 cup-bowl
C326 ridged bowl (also found from space K)

Date: LM III B

Function: used partly for cooking. CA. During LM III B, space A and B should be considered as a unit.

K

interior dimensions: H ca. 2.25; W 4.25; D ca. 2.00;

Catalogued object from floor: U625 basin

Date: LM III A2"A

Function: unknown
Interior dimensions: A 1.81; B 1.61; C 1.35; D 1.12

Logged objects:

<table>
<thead>
<tr>
<th>Object</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conical cup</td>
<td>2.44</td>
</tr>
<tr>
<td>Tall cup</td>
<td>2.46</td>
</tr>
<tr>
<td>Pitcher</td>
<td>2.47</td>
</tr>
<tr>
<td>Exedra</td>
<td>2.49</td>
</tr>
</tbody>
</table>

A 1.81

Function of room: unknown

Interior dimensions: A 1.61; B 1.41; C 1.11; D 0.80; E 0.56

Logged objects:

<table>
<thead>
<tr>
<th>Object</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conical Palace</td>
<td>1.43</td>
</tr>
<tr>
<td>Short cup</td>
<td>0.54</td>
</tr>
<tr>
<td>Tall cup</td>
<td>2.47</td>
</tr>
<tr>
<td>Pitcher</td>
<td>2.46</td>
</tr>
<tr>
<td>Exedra</td>
<td>2.49</td>
</tr>
<tr>
<td>Conical cup</td>
<td>2.44</td>
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<tr>
<td>Tall cup</td>
<td>2.46</td>
</tr>
<tr>
<td>Exedra</td>
<td>2.49</td>
</tr>
<tr>
<td>Tall cup</td>
<td>2.46</td>
</tr>
<tr>
<td>Exedra</td>
<td>2.49</td>
</tr>
<tr>
<td>Conical cup</td>
<td>2.44</td>
</tr>
</tbody>
</table>

A 1.81

Function: central decorative area

Space 2 is completely excavated.

Interior dimensions: A 1.05; B 0.44; C 1.15; D 1.43

The function and date are not yet known.
interior disturbance: 14.50; 24.50; 1.75; 2.3

catalogued objects from floor:
3713 tablet
560 octagonal altar (joins with 3714a from room A)

date: II. II. 3

function of room: in part the room was used for domestic chores (stone tools, pull 2, fr. 174).

---

catalogued objects:
3763 small kylix
3779 bowl
3360 conical cup
3361 bowl
3362 cup
3363 conical cup

date: II. III. 12

function of space: exterior area

---

Street
possible L. III surface at north end of street.
catalogued objects:
506 S. Cypriot sherds
1 sherd with Liv. 9 inscription
Excavation at Kommos in 1976 and 1977 produced a total of 41 fragments of chert and obsidian, of which 23 may definitely be described as “worked”. The additional 18 fragments are pieces of chert common to the Kommos locale which may simply have been mixed in fill.

These 23 fragments (listed in numerical order on the following page) consist of the following:
- obsidian blade segments: 9
- obsidian flakes: 7
- obsidian chunks: 2
- obsidian core: 1
- chert blade: 1
- chert flakes: 3

Method of Retrieval: A majority of the pieces were recovered during excavation. Several fragments, however, were found in the dry sieving of excavated deposits.

Condition: All of the chipped stone appears quite fresh, with no severely worn surfaces and edges as one would expect in objects from a secondary context. All objects have been washed in water.

Recording and Cataloguing: The 23 worked fragments of chipped stone are described individually on sheets in the brown folder marked Kommos-Worked Bone, Chipped Stone. The number written on the upper right hand corner of the sheet corresponds to the number on a tag in the plastic bag with the object, and it is in this consecutive number order that the objects are stored. In the photographic records the objects are referred to with these numbers.

None of the objects in this category has been entered into the official Kommos catalogue.

Materials: Two types of material exist in the Kommos collection.

1) obsidian - occurs from dark grey to black, varies in light transmission, and is generally vitreous in luster. One presumes that the source of this material is Melos, although the possibility of other sources may not be ruled out. If possible, it might be helpful to submit a sample to Renfrew’s team for analysis.
<table>
<thead>
<tr>
<th>Obj. No.</th>
<th>Trench</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>K 76A 5B level 3</td>
<td>obsidian blade segment (2 frags.)</td>
</tr>
<tr>
<td>2</td>
<td>K 76A 2A level 3</td>
<td>obsidian blade segment</td>
</tr>
<tr>
<td>3</td>
<td>K 76A 4A level 2</td>
<td>obsidian blade segment</td>
</tr>
<tr>
<td>4</td>
<td>K 76A 1B level 3a</td>
<td>obsidian flake</td>
</tr>
<tr>
<td>5</td>
<td>K 76A 2A level 4</td>
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<td>K 76A 5A level 2</td>
<td>obsidian chunk</td>
</tr>
<tr>
<td>7</td>
<td>K 77A 9A level 3</td>
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<tr>
<td>8</td>
<td>K 76A 1B level 5A</td>
<td>obsidian flake</td>
</tr>
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<td>9</td>
<td>K 76A 4A level 1</td>
<td>obsidian flake</td>
</tr>
<tr>
<td>10</td>
<td>K 76A 4A level 2</td>
<td>obsidian blade segment</td>
</tr>
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<td>11</td>
<td>K 77A 9A level 3</td>
<td>a. obsidian blade segment</td>
</tr>
<tr>
<td></td>
<td></td>
<td>b. obsidian flake</td>
</tr>
<tr>
<td>12</td>
<td>K 77A 9A level 3</td>
<td>a. obsidian created blade segment</td>
</tr>
<tr>
<td></td>
<td></td>
<td>b. retouched chert flake</td>
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<td>13</td>
<td>K 76A 4A level</td>
<td>chert flake</td>
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<tr>
<td>14</td>
<td>K 76A 5A level 2</td>
<td>chert blade segment</td>
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<tr>
<td>15</td>
<td>K 77A 11B1 level 3</td>
<td>obsidian core</td>
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<td>16</td>
<td>K 77A 9A level 3</td>
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<td>17</td>
<td>K 76A 5B level 3</td>
<td>chert flake</td>
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<td>K 77A 12A(5B) level 4</td>
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<td>K 77A 15A level 4</td>
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<td>20</td>
<td>K 77A 15A level 4</td>
<td>no pail obsidian blade segment</td>
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<td>21</td>
<td>K 77A 15A level 2</td>
<td>no pail obsidian blade segment</td>
</tr>
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<td>22</td>
<td>K 77A 16A level 3</td>
<td>obsidian flake</td>
</tr>
<tr>
<td>23</td>
<td>K 77A 16A level 3</td>
<td>obsidian flake</td>
</tr>
</tbody>
</table>

plus 18 additional fragments of cherty stone which appear to have been either flaked, or are simply large useful fragments which could be flaked.

PHOTOGRAPHY
K 77 A Roll 41 B/W

Frames 2 - 5 Row 1 tool 7,8,5,11b,4 Row 2)2,10,11a,18,1,12a,3 group
Row 3) 14,12b,17,16,13 Row 4) 15,6,9
Frames 6-7 tool 2,10,11a,18,1,12a,3
Frame 8 tool 15,6,9 Frame 9 tool 7,8,5,11b,4
Frame 10 tool 16,14,12b,17,13 Frame 11 tool 12a,3 Frame 12 tool 15
Frame 13 tool 12b
PLUS colour shots as in Frames 2-5, 11, 6-7, 8,9
2) Chert occurs in two varieties, one being a dark red opaque material and the other being a yellow-beige clear chert with calcium carbonate cortex. This material occurs in the Kommos locale (the small hill north of Kommos has a good bit of this type). The dark red chert occurs around Pitsidia, in various fields southwest of the village. As Chert plays a very small role in this collection as it exists now, one may not say very much about the Kommos inhabitants and their movements in the locale in search of raw materials.

Techniques: The following techniques are visible in the Kommos collection:

1) Percussion: The percussion manufacture of both obsidian and chert flakes. The obsidian flakes were struck from the exterior of cobbles (chunks of which were recovered). They may therefore simply be waste flakes rather than intentionally created objects. The chert flakes were struck from the small pieces of yellow-beige chert which occurs locally, and in only one instance is there any sign of retouch on the edge of a chert flake (object no. 12b).

2) Percussion retouch: the use of direct blows in creating a worked edge may be seen in objects 12b (as mentioned above) and 3 (obsidian blade segment).

3) Pressure or indirect percussion: This technique (the application of pressure rather than force) is visible in the parallel-sided blade segments from the site, none of which are complete. It is to be expected that complete blades will not survive (in most cases) as the distal end of parallel-sided blades is the most fragile of all parts.

The Kommos blades are characterized by small platforms, diffuse bulbs of force, very few undulations on the ventral surface, and occur with both triangular and trapezoidal cross-sections. The very parallel sides would seem to indicate a pressure industry (they compare well with Cycladic types, and with the kind of blade found at sites such as Agios Kosmas in Attica). One example (12a) is a significant illustration of the fact that blades were being produced at Kommos; this is a crested blade, in this case, the second blade removed from a core.

Suggested Function: One may assume that the obsidian blade segments were used for cutting (obsidian having the finest natural cutting edge known to man). The nicking on the edges seems to indicate such use. The chert flake with unifacial retouch appears to have been used as a scraper of some sort. The obsidian flakes show some nicking on the margins, and may have been subjected to limited use.

Size of the Collection: As elsewhere in the Aegean, the limited occurrence of chipped stone at Kommos in the later part of the Bronze Age appears to indicate a slackening off in the use of such implements. It is worthy of note, however, that although the number of examples is limited, the technological understanding so common in the EB age.
In the Aegean, does persist into the later periods. It would be of great interest to compare the Kommos collection with examples from Chania, where an "obsidian workshop" is said to have been found.

Conclusions: The following statements may be made about the Kommos chipped stone:

1) The Kommos inhabitants made use of imported obsidian and local chert in the manufacture of tools.

2) The obsidian reached the site in the form of cobbles (which appear to have been fairly small in size) and was then worked into cores, from which were struck flakes (as in example 15), and blades (as in example 3).

3) The small size of the obsidian cobbles and the limited evidence at the site ties in with the general theory (presently being toyed with) that the greater distance from the source area, the smaller the amount of obsidian which will have been traded to that site.

4) As a good portion of the excavated area of Kommos may presently be interpreted as domestic or industrial in nature, it may be that this small collection does indicate a slackening off in the use of such materials.

4) The context of these objects covers the full range in time at Kommos, and only further detailed examination of context will place these objects in relation to other artefactual remains.

E. Blitzer
Kommos 1977
Chipped Stone - Kommos 1977

Type Sheet

OBSIDIAN
1. Cobble fragment with flake scars
2. Percussion struck flake
3. Pressure or indirect percussion blade segment
4. Core
5. Crested blade segment

CHERT
6. Percussion struck flake with retouch
The manufacture of ground stone implements such as occur at Kommos may happen by two means. First, a stone may be purposely worked so as to create a particular shape which is then used. Second, a stone may simply be used continuously, and in the same manner, a series of actions which result in a definable wear pattern. This wear pattern then alters the shape of the original piece. Both of these means are the result of learned behaviour—patterns acquired and transmitted through time.

In attempting to isolate objects in archaeological categories, one is obliged to consider both of the above possibilities as capable of producing objects similar in form, but resulting from different actions and intent. The categories of ground stone objects discussed below must therefore be considered preliminary (at best) divisions among this inventory of immensely variable objects.

Kommos has provided a very large collection of such implements; indeed, the collection required much more time than was available to spend. No actual number count was made. All of the objects collected from 1976 and 1977 were washed and examined. Those objects which were obviously not implements (and whose context did not indicate any form of special significance) were recorded on a list by trench, and were then thrown. This list is given here on the following three pages.

Those objects which were obviously artifacts were recorded on individual description sheets (a task not completed this season) and filed by trench in a brown folder marked "ground stone". An incomplete type sheet is appended to this report, giving a visual review of some of the types contained in the Kommos ground stone collection. All of the objects have been examined for the following characteristics: shape, weight, hardness, grain size (where applicable), material type, colour, method of manufacture, signs of use or wear. The following terms have been used in the description of the objects:

packed: an object which has been subjected to percussion blows resulting in depressions on the surface (the material having been crushed) is described as packed. This may happen as a result of purposeful manufacture or in use.
STONE OBJECTS COLLECTED FROM KOMMOS WHICH ARE NOT ARTIFACTS

Unless otherwise noted all of these objects have been thrown.

K 76A

1B35   level 3   pail 19   sea-pebbles
1B3W   level 3   pail 25   space N pebble with differential weathering (saved)
1B3N   level 3   pail 27   space N pebble with differential weathering
1B1   level 3   pail 5a   mudstone fragment
1B2   level 4   pail 23   sea pebbles
1B2N   level 3   pail 27   space N sea pebble
1B1   level 2   pail 2a, 2b, 2d   sea pebbles
1B1   level 3   pail 3j   beach rock
1B1A   level 3   pail 3b and 3c   talc and marl (local)
1B3N   level 3   pail 27   space N sea pebbles

2A2   level 2   pail 51   differential weathering pebble (saved)
2A2   level 3   pail 27   natural perforated sea pebble
2A   level 3   pail 13   sea pebbles
2A   level 3   pail 26   sea pebbles
2A   level 3   pail 3   sea pebbles
2A2   level 4   pail 29   limestone flake
2A   level 6   pail 14   sea pebbles

3B1   level 3   pail 3   page 5 differential weathering pebble (saved)

4A   pail 4   page 19   northern half sea pebbles
4A1  level 4   pail 54   differential weathering pebble (saved)
4A   level 3   pail 9   hard whitish fill sea pebbles
4A1  level 2   level 2   N half of extension hard sand sea pebbles
4A1  level 2   pail 19   sea pebbles and sandstone fragments
4A   pail 6   page... fill east of wall 1 sea pebbles
4A1  pail 34  level 3   page 95 from cleaning of wall 1 sea pebbles
4A   level 3   pail 14   sea pebbles
4A1  level 2   pail 23   S 1/4 quarter of trench hard sand sea pebbles
4A   east of wall 1 above level of pebble pail 16 sea pebbles
4A   pail 9   level 3   page 33 sea pebbles
4A1  level 2   pail 17   sea pebbles
4A   pail 7   west of wall 1 page 25 sea pebbles
4A   pail 3   page 17   whitish hard fill sea pebbles
4A   pail 11   room A to floor sea pebbles
4A   level 3   pail 13   page 47 room B sea pebbles
4A   level 3   pail 18   0.60 cm below wall Room B p. 59 sea pebbles

5B   pail 32   differential weathering pebble (saved)
5A   pail 10  level 2   p. 27 stone fragments
5A   level 2   pail 12   p. 27 sea pebbles
5A   level 2   pail 8   sea pebbles
5B   level 2   pail 13   page 29 sea pebbles
5B   pail 25 level 3 sea pebbles
5B   pail 27   limestone flake
5B   level 3   pail 17   natural stone fragment

6A   level 9   pail 19   natural stone fragment
9A  level 3  pail 11  quartz fragment.
9A  level 2  pail 9  large cobble fragment
9A2 level 2  pail 65  hematite pigment

10A  level 3  pail 55  sea pebble

11A level 3  pail 10  differential weathering pebble (saved)
11A level 3  pail 25  sea pebbles
11A level 3  pail 38  pebble fragments (of sea pebbles)
11A level 3  pail 22  sandstone, limestone cobbles
11A level 3  pail 21  sea pebbles and cobbles
11A level 3  pail 23  large sea cobble
11A level 3  pail 26  limestone fragment
11A level 3  pail 24  sea pebbles
11A level 3  pail 26  sea pebbles
11A level 3  pail 39  NE quarter of trench  sea pebbles
11A level 3  pail 18  natural limestone fragment
11B1 level 3  pail 16  pebble with differential weathering (saved)
11B1 level 3  pail 36  sea pebble
12A  pail 2  page 13  mudstone fragment
12A  pail 3  level 3  quartzite fragment and fossil mold
12A1 level 4  pail 71  sea pebbles
12A3 level 3  pail 43  sea pebbles
12A4 west of wall 26  pail 59  level 3  cement
12A1 level 4  pail 77  sea pebble.
12A3 level 3  pail 48  natural limestone pebble fragment
12A1 level 3  pail 31  limestone fragment
12A3 level 3  pail 55  limestone pebbles
12A1 (SB) level 3  pail 65  large sea pebble
12A4 level 3  pail 59  west of wall 26  cement fragment (modern)
12A1 level 3  pail 27  "foot shaped pebbles" are in fact pebbles with differential weathering (saved)

13A level 3  pail 29  sea pebble
13A level 2  pail 3  sea pebbles
13A level 3  pail 14  sea pebbles
13A level 3  pail 29  sandstone fragment
13A level 3  pail 26  limestone fragment
13A level 3  pail 32  sea pebbles
13A level 3  pail 20  sand blasted pebble which may be Frankish cannonball
15A  level 3  pail 5  differentially weathered pebble (saved)
    fragment of sea pebble (thrown)

OBJECTS NEWLY CATALOGUED AS TYPE SAMPLES:

568  groundstone implement with flanged ends  Kitt 44A/room A - tool 1
69   WHEATSTONE  Kitt 57A 8A/3:41
90   WHEATSTONE  Kitt 54A/3:43
14   HANDSTONE  Kitt 57A 8A/3:14
92   COBBLE WITH FINE GRINDING / BEVEL  Kitt 57A 8A/3:47
73   COBBLE WITH PECKED / ROUNDED ENDS  Kitt 54A/3:46
74   PESTLE  Kitt 54A/3:64
battered: an object which in use has been subjected to heavy blows resulting in crushing and irregular step and hinge fractures on the surface is described as battered.

abraded: an object which has very coarse signs of grinding on its surface is described as abraded.

ground: a ground object is one which has been consistently abraded in the same place and which has begun to wear down in that place, but which is not smooth.

polished: the final stage in the grinding process results in polish, which may vary from very smooth and lustrous to a simple smooth surface with no luster.

crushed: raw material subjected to consistent blows crushes and very often pulverizes. Crushing occurs when an object is pecked or battered.

percussion-flaked: direct blows made on a stone with another hammer result in the removal of flakes, and the object is thus described as percussion-flaked. This technique, which is so common in pre-Bronze Age Greece is an unusual facet of the Kommos inventory.

drilled: perforations in objects which have been made with obvious use of an abrasive material used in a circular motion are described as drilled.

carved: objects which are soft enough to have been worked by means of cutting and scraping, as well as abrading, are described as carved.

grounded: pounding as a general activity in use results in crushed materials, signs of pecking, batter, and abrasion.

Raw Materials Used at Kommos

1) Sedimentary rocks:
The full range of sedimentary rocks available in the Kommos locale was used in the manufacture of ground stone implements. This range included siltstone, all varieties of sandstone (from finest-grained to coarse), sandy limestone, and several varieties of conglomerate. Fossiliferous limestone of a well-cemented type is also found. A form of schist, a slate type, and a form of shale exist in the inventory, these being in the metamorphic to sedimentary rock category.

2) Igneous rocks:
The sea pebbles and cobbles so commonly found on the Kommos shore were used for various purposes and were in rarer instances worked
into particular shapes. The materials in this category are not easily definable, except by laboratory means, but may be included in the category known as phaneritic igneous rocks. These are all quite hard, and respond well to force resulting from heavy use, whether percussive or abrasive.

All of the materials were found locally by this writer, perhaps indicating that the Kommos inhabitant did not have far to go in searching for useful stones. In the carved stone category, the toolstone of some of the conical whorls (buttons) was not found by this writer, although a fragment of the raw material unworked, and unfinished pieces and complete whorls have all been found in the course of excavation at Kommos.

Techniques

In general, pecking, percussion-flaking, and grinding were the basic techniques used by the Kommos inhabitants when a tool was purposely fashioned. Objects meant to be shaped were on occasion percussion-flaked (creating a rough shape), then pecked (crushing the raw material), then ground. These last two steps would be repeated many, many times, resulting in a particular shape which would then be used.

In the use of tools, a pounding action would result in the types of wear mentioned on pages 1 and 2, as would chopping, grinding, and cutting (in some cases).

The Types

Querns: Examples 1 - 5, 8 - 11 on the type sheet illustrate the kinds of querns which are fairly representative of the Kommos inventory. A wide choice of materials is visible, with grey-green sandstone (a very common local occurrence) being the most frequent. The querns have in some places been worked on the margins, thus creating a particular shape, and in other examples have simply been worn down through use. The range in grain sizes of the sedimentary rocks chosen for these objects might give some indication of the types of grinding being carried out (from coarse grinding, i.e. simply breaking up large particles into smaller ones) to fine grinding (actual pulverization of materials). In this instance, the location of querns plays an important role, as one might be able to discern stages in daily activities in food preparation on the basis of
context. The actual weight of a quern is helpful to the archaeologist, as in most cases it might be considered a non-portable object whose location through time could remain constant.

Rounded, oval, rectangular and squared querns are visible in the Kommos inventory. The grinding surfaces vary from totally flat to slightly concave. It is worthy of note that the "saddle-quern" should be considered a quern, shape resulting from use rather than intentional working, as the back-and-forth motion of grinding with a handstone would necessarily create a trough between the two ends of a cobble. The saddle is thus an indication of this particular motion in grinding. Slight depressions or concavities on the grinding surface also would indicate motion, specifically grinding in a circular pattern, perhaps with a slightly different handstone type. The relationship of querns and materials used in querns to the types of handstone visible in the Kommos collection would be worthy of study.

An additional factor in the examination of querns involves the location of these implements throughout a site, or throughout complexes of rooms. These objects, when described in terms of technology and context, may provide some indication of indoor versus outdoor activities, of group versus individual activities, and of room groupings, as they were perceived in antiquity. As most rooms of a household must necessarily be considered multiple-purpose areas of habitation, the function of a quern provides an immediate guideline for inquiry into specific room use.

Mortars: Examples 10 and 11 on the type sheet are selected as representative of another activity which involves grinding in a limited way, but which is more commonly a pounding action. A mortar would involve a depression into which a heavy "pounder" would fall, thus crushing the materials within. The mortars at Kommos are composed mainly of fossiliferous limestone and sandy limestone, and are thick, sturdy implements which would have responded well to heavy use. Modern parallels exist in the salt mortars of Greece, in frequent use till recently. The resulting wear on the surface of the object would consist of crushing, and limited grinding. These objects, too must be considered as "non-portable", for the most part, and included in this category may be the rounded concave objects imbedded in the floors of Maria's and Lucia's areas.
Handstones: this label is given to stones which may have been used (in the hand) in a grinding process as opposed to pounding. The resulting wear on the surface would consist of various grades of abrasion, grinding, and polishing. It is worthy of note that these objects, presumably used in conjunction with querns, would require (just as querns) roughening after consistent use in order to remain functional. Indeed, a sufficient number of the querns at Kommos, and the handstones as well, show signs of pecking on the surface, indicating an attempt to revitalize the implement. Examples 19, 20 and 28 could be considered handstones, used in a back-and-forth motion, as could example 51, a cylindrical sandstone object with facets created by the abrasion of the surface (4 facets on this example). The abraded surface is in this case quitesmooth.

Pounders: All stone cobbles whose surface is irregularly battered or pecked are suspect of having been used as pounders. Several varieties are visible in the Kommos collection, including an oblong type with pecking and battering marks at both ends (type 34), a squat oval type, with again, pecking at both ends (example 42) and a type which is basically rectangular, with pecking marks all round the circumference. (example 41).

Pounding of a more severe variety could be accomplished with the use of a large cobble on whose surface only simple signs of use would show, namely a small area of batter (as in example 22). Lighter forms of pounding might show up as wear on the margins of smaller sea pebbles (as in examples 35, 12, 15). This pounding activity could involve the breaking up of foodstuffs, of non-organic materials such as other stones (working the edges of blocks), and the crushing of materials such as pigments.

Whetstones: Several varieties of whetstones are obvious in the collection. Example 17 illustrates a fairly substantial sandstone rectangular solid which seems to have been abraded through use on all faces, and another example occurs in the same material as a parallelogram in x-section. Such objects could be used in the sharpening of knives or metal, (sandstone) and in finer varieties (sandy siltstone) in the manufacture of objects such as worked bone points. Example 16 illustrates a whetstone with a groove which would have been extremely useful in the latter activity. Small flat slabs of sandstone were also found (both rounded and squared) which would have been excellent whetstones (ex. 38, 39).
Hammer: This category of object involves both worked and unworked examples. Any of the implements included in the pounder category could, at one time or another, have been used as hammers.
Specific worked examples include type 26, which could easily have been hafted, or used in the hand with a leather protection in between. Many of the larger cobbles with pecking and battering on both ends would make suitable hammers.

Percussion-flaked implements: In this category one may describe objects which have been used for chopping (heavy-duty cutting), for pounding, and for crushing. Included here are objects 32, 33, and 44, which have been flaked both bifacially and unifacially in order to create a sinewy edge which has then been used in one of the above-mentioned ways. The use of this technique in the manufacture of tools dating to the Bronze Age is of great interest, for if one finds these objects without context in a field they would at once be assigned to pre-Bronze age periods. The creation of this kind of edge may perhaps indicate a revival of old techniques, or the introduction of a new technique from elsewhere. The sinewy edge is a most versatile and useful one, and can be applied to many tasks (e.g. cutting down of trees, working of wood (in rough fashion), chopping up of meat, removal of meat from bones, etc.).
The batter on the edges of some of these implements seems to indicate that they were subjected to such heavy-duty use.

Rounded pebbles: Numerous small rounded pebbles from the site which were not obvious sea pebbles (as example 24) could have been used in polishing of pottery, smoothing of plaster, treating of leather, and many other activities. Some of these show signs of use, others bear signs of abrasion which could also be the result of general rolling in water or alluvial deposits.

 Celt: One celt fragment was found at Kommos, made of an igneous rock and showing no clear signs of use. Perhaps a small ax(?) which was not intended to be used at all?

Siltstone disc: a small siltstone disc with two smoothed flat faces (ex. 73) could have been used in a fashion similar to the rounded pebbles mentioned above, and could have also served as a small weight (?)

Granite basin: Fragment of a footed basin found to be made of granite, as are such objects on the mainland (see Suchholz article
MAI 1965). This kind of implement (for drawing see catalogue in ground stone volume) would have been useful as a mortar or a quern, but should not necessarily be considered a local product.

Objects which show signs of fine grinding. A number of the igneous cobbles found at Kommos have on one or more ends very finely ground surfaces. Prominent among these examples are numbers 7, 31, and 35. This kind of fine grinding appears to indicate some sort of use as a pestle (most especially on 7, which fits neatly in the hand). Pounding would have necessarily been part of this activity, and the crushing of the material at these points of wear perhaps indicates such a motion. Other possible pestles include numbers 23, and 40.

Purposely worked objects (of more specific utility perhaps)

Ferronated cobbles: 2 examples of this type have been found, both of which are approximately the same size. These objects, which are worked only slightly on the margins, have been perforated by means of drilling from both faces. They would have been suitable for use as loomweights, in the manufacture of threads, as weights for general weighing purposes, as sinkers in fishing (the list is endless).

Smaller worked objects include

1) perforated siltstone disc (ex. 49) which was manufactured by carving and abrasion and which could have been used as a whorl in spinning, as a small weight, as the balance on a drill.
2) perforated pendant of siltstone - cosmetic?
3) conical and campaniform whorls of soft stones such as soapstone - which could be cosmetic or actual whorls
4) Beads of hard stones such as amethyst, lapis lazuli, and other materials - made with the use of finer and finer abrasives and in some cases the abrasion marks are preserved. Drilled.
5) sandy limestone disc (example 54)

The following is an incomplete listing of the provenance of objects which illustrate the types mentioned above

type 2) cobble with fine grinding at one end 24/54

type 6) cobble with battered end and pecked end 182/4t. 23

type 12) cobble with slight signs of pecking on one end 53/3:25

type 13) S 22/51/1:31. cobble with pecked circumference and
smoothed face
type 14) cobble with pecked circumference and one flat edge

5B/3:17

type 15) irregular shaped cobble with pounding marks and pecking on various margins

9A/3:12
4A2/3:64

type 16) rectangular whetstone with central groove

12A3/pail 40

type 17) rectangular whetstone with all surfaces smoothed

9A1/p. 8
4A2/3 pail 64

type 18) cobble with smoothed face

9A/20

type 19) rounded cobble with two smoothed facets

10/p. 10
11A/3:26

type 20) handstone with one flat smoothed face

9A/pail 24

type 21) whetstone with smoothed faces and parallelogram x-section

4A2/3:64

type 22) cobble of irregular proportions with limited batter and pecking in one area

9A/2:9

type 23) possible pestle (flat abraded surface)

9A/4:14

type 24) small rounded pebbles

9A/pail 21

type 25) cobble or pebble with signs of light pecking throughout

9A/3:18

type 26) trapezoidal shaped object with pecking on margins (possible hammer)

K 76A/a24/5B: 4:31

type 27) triangular shaped object with pecking on margins

K 76A 6A/9:19 tool 4

type 28) flat granular stone cobble with ground surface

K 76A/2:3 (S 11)

K 76A 5B/pail 30

type 29) cobble with partial pecking on angled surfaces (almost bevelled)

4A pail 18

type 30) cobble with percussion flaking and pecking on margins

12A3/pail 63

type 31) igneous sea cobble with fine grinding on one end and percussion flaking

12A3/44
type 32) cobble with percussion flaking either bifacial or unifacial
batter on margin
  bifacial - 16A level 3 east cubicle
  unifacial (S23) 5B/4:31

type 33) squat oval cobble with one pecked edge, one percussion
  struck edge showing batter
  1B/3:28

  type 34) long cylindrical cobble with clear signs of pounding at
  both short ends
  17A/3:19
  9A/3:35 (frag)
  5B/4:31 (S21)

  type 35) cobble with pecking (light) on one margin and fine grinding
  on opposite
  17A/3:19
  12B/pail 48

  type 36) cobble with unifacial percussion flaking and pecking
  on one margin
  17A/3:19

  type 37) cobble with bevelled and fine ground edges
  9A/2:7
  2A/pail 54

  type 38) whetstone - rectangular
  9A/2:2:45

  type 39) whetstone with rounded margins
  4B/4:32

  type 40) conical cobble with flattened surface and batter
  at opposite end
  9A/3:13

  type 41) squared cobble with batter and pecking along entire
  circumference - faces unworked
  9A/2:54

  type 42) squat oval cobble with pecking and pounding on both ends
  (the most common type so far) A GOOD PESTLE
  2A/6:48
  4A/5:41
  4A/pail 48
  9A/3:46
  1B/3:24
  1B/3:10
  2A/3:37
  2A/4:58
  6A/2:2

  type 43) round to oval cobble with pecking on entire circumference
  1B/3:11
  2A/6:13
  4A/3:3
  4A/3:51
  4A/3:64
  4A/3:66
type 44) cobble with percussion flaked margin and batter 183/127

type 45) cobble of igneous rock with fine ground terminations (a fine pestle) 6A 9:18

type 46) perforated cobble 16A 3:118 2A2/4:58 (S 18)

(type 47) small flake slate fragment

(type 48) perforated siltstone disc

(type 49) perforated pendant

(type 50) conical whorls or buttons

(type 51) handstone of sandstone or other abrasive material 9A 3:41

(type 52) celts fragment

(type 53) silty sandstone disc with smoothed faces 12A5/3:95

(type 54) sandstone disc 5 13 4A2/2 5b

The use of ground stone at Kommos and its relation to other artifact categories:

Bone: Bone implements could easily have been manufactured by means of the use of some abrasion — siltstone and sandstone slabs would have been quite useful in this respect, and one can imagine that the grooved sandstone example was indeed used for such. In splitting bones into pieces a pounder or perhaps a percussion flaked chopper would have been of use.

Metal: In the sharpening and even fashioning of metal objects of small dimension, the various grades of sandstone and siltstone would have been effecting abrading implements and burnishers.

Clay: The use of ground stone implements in particular rooms of the Kommos settlement requires that an extensive examination of the ceramic types found in that room also take place. As this has been done by those studying the pottery at Kommos, it would be of great interest to combine such information and see the result. As an example, a stone object used for pounding or grinding foodstuffs in a clay basin would not show any signs of wear after limited use, and could easily be discarded without one knowing that it had been functional.

Large jars and various other vessels in a room might receive the materials prepared by means of the use of ground stone implements. In the manufacture of pottery, stone implements become important as scraping tools (vela in the modern Greek), burnishers, and smoothers.
A Floor Deposit of Ground Stone Implements

E 77A  trench 118E  Level 3  pail 22  Room 5
Tools 1 - 6

"In a room with a paved floor, along the west margin of the komos hill, a floor deposit of ground stone implements came to light which gives some idea of the use and inter-relationships of various types at this site.

Five of the implements show definite signs of use; the sixth shows no signs of ever having been used, but its position on the floor of the room suggests that it may have had some purpose.

Four of the objects were located in the NE corner of the room in an area which had several slabs laid down, presumably for use as seats. The four objects were:
1) quern - tool 5. A well cemented grey sandstone quern whose surface had been re-prepared for further use (it was pecked and remnants of the original smooth surface were also visible). This was located on a small layer of earth above the level of the slab floor.
2) Limestone cobble with ground surface (tool 3)
   a cherty limestone cobble whose worked surface is quite smooth. The shape of the worked area appears to indicate that this had been used in a back-and-forth motion, such as would be required in grinding on a quern.
3) Igneous stone cobble with pecked margins and very smooth facets which might be from use (tool 2) this object could have served both as a pounding implement, in the initial breaking up of particles (as of food), and as an object with which one might roughen up the surface of the quern. It could also have been used in the final grinding of foodstuffs or other materials.
4) Quartz or limestone cobble with one smoothed surface which could have been used in pounding - no signs of intentional working of the object - could have been used as a grinding implement as well.

In the center of the room, above an ashy layer (above the paved floor) was found Tool 1, an object with a battered circumference which appears to have been used in heavy-duty pounding and crushing activities. It is quite a heavy object and would not necessarily be held in the hand for long periods of time as it would seem.

Along the west margin of the room, near a wall, was found an oval cobble with no signs of use. Its location, however, suggests that it may have fulfilled some function.

(tool 6)

These objects considered as a whole tell us the following:

1) the following activities were being carried out in this room
   a) grinding, pounding, and crushing of materials (presumably foodstuffs)
   b) possible repair and revitalizing of implements (as in the quern
   c) we may perhaps generalize and state that the room was used in the preparation of food

We are then obliged to ask what other kinds of artifacts were contained in the room? A combination of such facts might point in other directions.
Summary (preliminary)

An examination of the Kommos ground stone inventory permits the following statements to be made:

1) The Kommos inhabitants engaged in industrial activities which included grinding, pounding, crushing, and abrading of various materials (perhaps both organic and inorganic) as natural tools.

2) The raw materials used in these activities and in the manufacture of ground stone implements at the site were procured locally (in most cases).

3) A wide range of technological skills are in evidence in this inventory, indicating that the ability to shape, create, and use implements of stone had not died out in this later part of the Bronze Age. (Some sites on the mainland of Greece in later MB and LB offer evidence of the demise of stone technology).

4) Certain complexes of rooms at Kommos were the locations of particular industrial activities which must be considered part of daily life. The nature of each of these rooms may then be considered in contrast with the rooms around them so as to further define their particular place in a "complex" of rooms (defined by the excavator's understanding of the architectural and spatial arrangements).

5) The frequency with which groups of tools occur and the mixture of types needs further examination, for it may tell us something more about room groupings as they were conceived or in activity.

The Kommos inhabitants, if defined by the character of their stone implements, show a varied interest in a wide selection of materials, and contrast quite significantly with the drab selections available on the mainland at this same time. There appears to have been either a retention of old techniques here, or a re-introduction of same, as the limited intentional creation of shaped, is characteristic of earlier periods in Greek prehistory. This collection is certainly worthy of extensive and detailed analysis, as a representative of the behaviour patterns of one Bronze Age Aegean settlement, and as a significant indication of man's interaction with his environment.

H. Blitzer
Kommos 1977
Extraction at Kommos in 1976 and 1977 has produced a total of 13 fragments which may be classified as "worked bone". These are:

<table>
<thead>
<tr>
<th>OBJ #</th>
<th>TRENCH</th>
<th>OBJECT</th>
<th>POTTERY DATE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>K 76 A 6A</td>
<td>level 5</td>
<td>pail 13</td>
</tr>
<tr>
<td>2</td>
<td>K 76 A 2A</td>
<td>level 4</td>
<td>pail 31</td>
</tr>
<tr>
<td>3</td>
<td>K 77A 9A</td>
<td>level 3</td>
<td>pail 19 (dump)</td>
</tr>
<tr>
<td>4</td>
<td>K 77A 9A</td>
<td>level 3</td>
<td>pail 20 (dump)</td>
</tr>
<tr>
<td>5</td>
<td>K 77A 11A</td>
<td>level 3</td>
<td>pail 20</td>
</tr>
<tr>
<td>6</td>
<td>K 77 A 11A</td>
<td>level 3</td>
<td>pail 27</td>
</tr>
<tr>
<td>7</td>
<td>K 77 A 11A</td>
<td>level 3</td>
<td>pail 31</td>
</tr>
<tr>
<td>8</td>
<td>K 77A 11A</td>
<td>level 3</td>
<td>pail 33</td>
</tr>
<tr>
<td>9</td>
<td>K 77A 11A</td>
<td>level 3</td>
<td>pail 39</td>
</tr>
<tr>
<td>10</td>
<td>K 77A 12A</td>
<td>level 4</td>
<td>pail 83</td>
</tr>
<tr>
<td>11</td>
<td>K 77A 12A3</td>
<td>level 2</td>
<td>pail 40</td>
</tr>
<tr>
<td>12</td>
<td>K 77 A 13A</td>
<td>level 3</td>
<td>pail 30</td>
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</tbody>
</table>

Method of Retrieval: All of the bone bags sent in during 1976 and 1977 were checked for possible worked bone fragments. In this manner were recovered 12 of the 13 fragments listed above. The thirteenth was noted and sent up from excavation.

Condition of the Bone: The worked bone objects are extremely fragile. Accordingly they have been dry brushed and cleaned with a scalpel - wherever necessary. Upon contact with water they split and burst. It is suggested therefore that in the next excavation season a small supply of FVA (polyvinyl acetate) be procured and applied to these objects (a mixture of one part FVA to 20 parts acetone is generally a good one). This decreases the possibility of breakage during storage and prevents general decay. Each worked bone object is stored in a small plastic bag closed with a paper clip (a form of storage which has generally been found to be fairly safe).
Recording and Cataloguing of Bone Objects:

None of the worked bone objects has been entered in the official Kommos catalogue.

Descriptions of worked bone objects are contained in the brown folder marked Kommos-Chipped Stone, Worked Bone. Each object is described on a separate sheet (except for no. 6, which is composed of two fragments, both described on the same sheet). The number on the upper right hand corner of the sheet corresponds to that given on page 1 of this report (object number). This consecutive numbering system is implemented to keep track of the actual number of objects in the category, and to provide some ease in recovering the objects in the apotheca. They are stored in this same number order.

Worked Bone Types: (see illustrations on type sheet, last page). Three types are represented in this collection (though small):

Bear’s tusk fragments: 3 examples
Bone point fragments: 8 examples
Spatula and worked distal end: 1 example

Methods of Manufacture:

Bear’s tusk: Of the three fragments, only one shows clear signs of having been worked. This example is highly lustrous and very smooth. No rough grinding signs are visible on the surface.

Presumably finer and finer grades of abrasive stones (e.g. sandstone, siltstone) or scrapers of metal and/or stone could have been used perhaps in the shaping of this object, terminating with the use of the tusk shavings as a final polishing element. (Experiments have shown that bone and tusk shavings are quite effective in polishing).

Spatula and distal end: This object in two fragments (presumably both ends of the same piece) illustrates clear signs of abrasion on several surfaces, indicating that the piece was first worked (at the ends) to create facets and then was gradually rounded down to smoother surfaces and non-angular margins.

Points: All of the points are extremely thin, and appear to have been made from slivers of long bone which have been split from the matrix. Finer and finer grades of sandstone (abrating stones)
Would have been useful in the manufacture of such points, as would various kinds of stone or metal tools. They appear initially to have been worked in facets, and then rounded down and polished (possibly with bone shavings). Some of the points are highly lustrous at the tip, while others are less so and worn.

Suggested Function:

Boar's Tusk: As exhibited in the Heraklion Museum, these curved and polished boar's tusk fragments are assumed to have been elements of a late Bronze Age helmet (Knossos provides one good example, Dendra in the Argolid another). Domestic context at mainland sites suggests, however, that they may have had other uses. They are found both perforated and unperforated. (The ends are missing on our fragment and it is not clear into which category it might fit).

Spatula: This name is given to this piece on the basis of its shape. The tool would have been extremely useful in potting (in shaving pottery on the wheel, "tooling" adding fine details), working the bases of objects such as conical cups, although one may suggest many other uses.

Points: For the two point types visible in the collection here (one broader type, and one with much narrower rounded tip) one may suggest similar functions. These are: 1) as a perforator for various kinds of materials (cloth, leather, natural fibers, plants; 2) as a needle of general use or more specifically as a needle used in the manufacture of fishing nets; 3) in the manufacture of pottery (as an implement for "tooling" the pots, creating impressed decoration, shaving the surfaces); and 4) as a simple shuttle in small weaving projects. The narrower more rounded point would be especially useful in creating even-sized perforations. Many other functions could also be suggested.

Neither of the point types is especially sturdy, and heavy-duty activities would not seem to be likely possibilities in the use of such objects.

Comarranda:

EE Kyttos (Warren, p. 241) illustrates shorter but much sturdier bone points than those which we have recovered. On the mainland,
virtually every habitation site has bone points of shape and
manufacture similar to those from Kommos (e.g. Asea, Asine, Malthe et al).

Only the boar's tusk fragments might in any way be considered cosmetic
objects. Kommos has provided no evidence of the typical LB Age pin
...(ie. typical on the mainland, in the Cyclades, and Dodecanese).

knowledge of

The bone points suggest that the manufacture of these objects
may have been common to all of the inhabitants of Kommos (the manufacture
being a fairly simple process). It is not possible to say, however,
that these implements were restricted to use in one activity.

H. Blitzer
Kommos 1977

PHOTOGRAPHY
B/W roll 41
Frames 14/15  Row 1) 3, 8, 7, 2, 4, 11, 12.
        Row 2) 9, 5, 1, 6a, 6b, 10
Frames 16/17  tool 9, 1, 5
Frame 18  3, 8, 7, 4, 2, 11, 12
Frame 19 possible worked bone 9A1 level 3, bail 46

4 colour shots
As in Frames 14/15, 16/17, 18,
and details of object 3, 6a-6.
1. Bear's tusk

2. Bone terminations worked into particular shapes - spatula, flat-shouldered

3. Broad flat point

4. Narrower flat point