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The 1988/1989 Excavation of Petrie's "Workmen's Barracks" at Giza*

NICHOLAS J. CONARD and MARK LEHNER

Introduction

The Giza Plateau Mapping Project (GPMP) began with the aim of creating a high precision map of both the natural and cultural features of the Giza Plateau. The researchers on the project have attempted to move away from approaching the monuments of Giza as discrete objects created by and for the elite. We try to take a more integrated and dynamic view of the plateau that considers the actions of all of the members of Old Kingdom society in relation to their natural and social environment. In

our studies we attempt to integrate geological, archaeological, art historical and textual data. This approach considers both the large monuments and the smaller scale building projects of every day life that supported the construction and maintenance of the monumental during the Old Kingdom.

Any reconstruction of the social and economic history of the Giza Plateau must consider the tens of thousands of workers without whose labor any monumental building would have been impossible. One of the most glaring gaps in our understanding of the history of the

* The excavations reported here began as a collaboration between Zahi Hawass and Mark Lehner. We thank Dr. Zahi Hawass, Undersecretary of State for Giza and Saqqara for his collaboration and assistance with our research at Giza. We are grateful to the late Dr. Sayed Tewfik, President of the Egyptian Antiquities Organization during our 1988–89 season, and to Dr. G. A. Gaballa, Secretary General of the Supreme Council of Antiquities. We also thank Mr. Ahmed al-Hagar, Director of Giza, Mr. Mahmoud al-Afifi, Chief Inspector for Giza, and Mansour Bureik, Senior Inspector, for their assistance. We are grateful to our inspectors who worked long hours in the field in 1988–1989: Mr. Mohammed Ala²a el-Din, Ms. Namet Hamed Mohammed, Mr. Maher Moussa, and Ms. Nagla Nabil.

David Koch and Bruce Ludwig funded the 1988–89 season of the Giza Plateau Mapping Project. This work would not have been possible without their support that has been steadfast over ten years of our excavations at Giza. We also want to thank William Kelly Simpson and the Yale Endowment for Egyptology for additional financial support during our first excavation season. We are indebted to David Goodman for donating his time, and procuring equipment, for our survey control.

Members of the team included Dr. Wilma Wetterstrom, who served as archaeobotanist in the 1988–89 season and made important contributions to the excavation and interpretation of the galleries of Area C. Others who donated their time and expertise to the Area C excavations include Dr. Frank

Hole, archaeologist and scientific advisor, Dr. K. Lal Gauri, geologist, Dr. Herbert Haas, geochronologist, Mr. Hisham el-Hegazy, archaeologist, Dr. Howard Hecker and Dr. Richard Redding, faunal analysts. We are particularly indebted to Fiona Baker, Nick Fairplay and Diane Kerns who were area supervisors for the Area C excavation. Michael Chazan, Hisham Hegazy, Diane Kerns and Peggy Sanders all contributed to the illustrations included in this report. Ms. Caroline Hebron produced the illustration of the roofing fragments (fig. 13). We thank Peggy Sanders and Archaeological Graphic Services for computer graphics of the Area C galleries. We thank Michael Chazan, Peter Lacovara, and Anna Wodzinska for their work with the ceramics, and Cordula Werschkun for organizing and curating materials in the GPMP storeroom at Giza.

We were able to prepare this report thanks to a grant for Conard from the Alexander von Humboldt Stiftung at the Römisch-Germanisches Zentralmuseum in Mainz, and thanks to support for the Giza Plateau Mapping Project from Ann Lurie and the Ann and Robert H. Lurie Foundation, David Koch, Peter Norton, Bruce Ludwig, Robert Lowdermilk, Glen Dash, Marjorie Fisher, Sandford and Betty Sigoloff, Victor and Nancy Moss, Fred and Suzanne Rheinstein, and our other faithful supporters. A first draft of this paper was written in connection with the symposium, *Beyond the Elite: Old Kingdom Archaeology and the Giza Plateau Mapping Project*, presented at the 57th annual meeting of the Society for American Archaeology, April, 1992 in Pittsburgh, Pennsylvania.

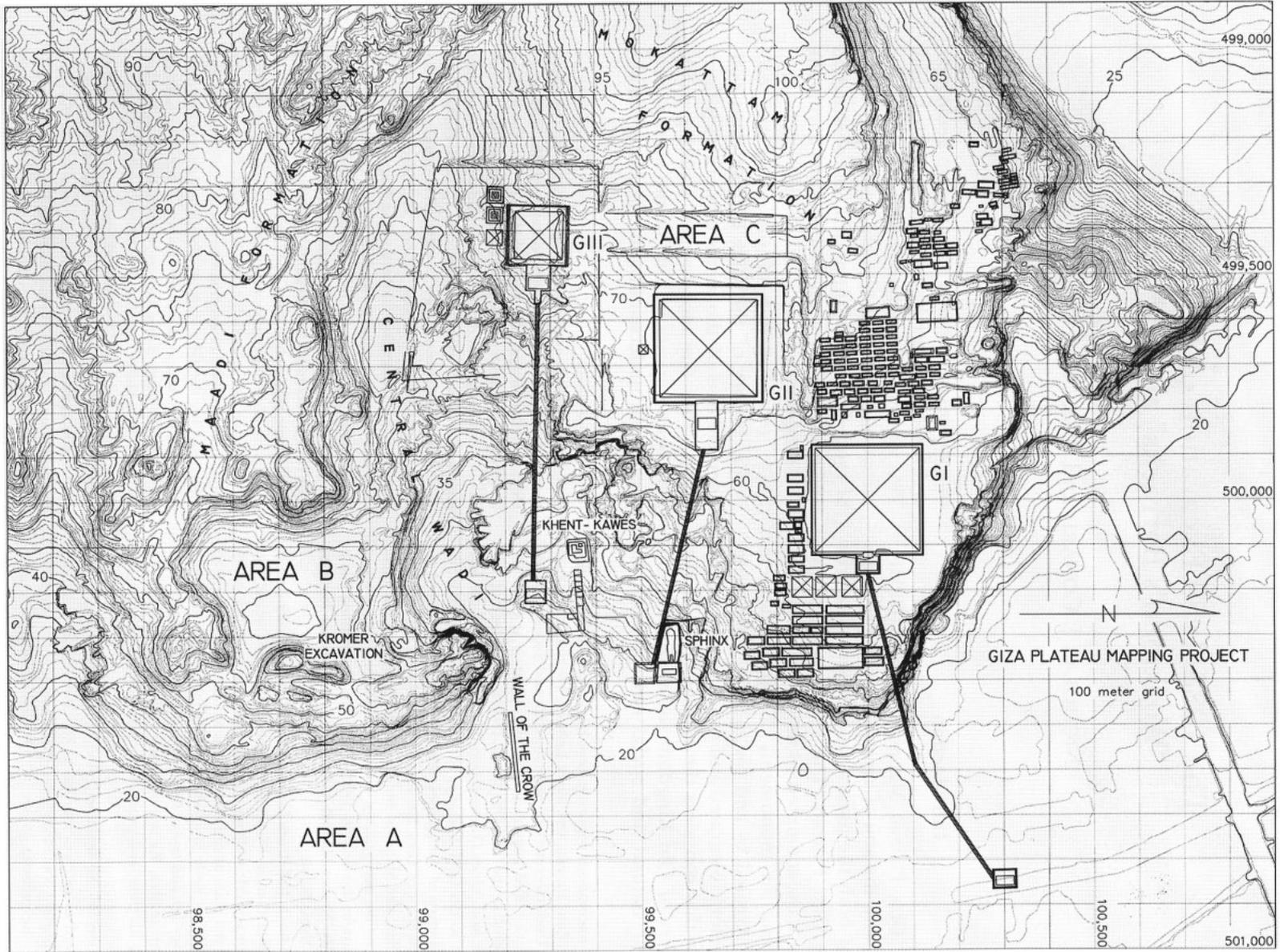


Fig. 1. Map of the Giza Plateau with pyramid complexes of Khufu, Khafre, and Menkaure reconstructed. The three principal areas of the Giza Plateau mapping project investigation are labeled Area A, Area B, and Area C. Computer graphics by Peggy Sanders, Archaeological Graphics Services.

Giza Plateau concerns how the Egyptians of that time organized and provisioned the laborers. So far most of the reconstruction of this social organization has been based on texts—tomb titles, workers graffiti or control notes and inferences about labor organization drawn from later documents. It is essential to complement textual studies by locating the workforce on the archaeological landscape of the plateau.

Although the emphasis of nearly two centuries of excavations on the Giza Plateau has certainly not been toward recovering social and economic structures, there have been attempts to identify areas of workers' housing and workshops. During his work in 1880–82, Petrie identified a series of comb-like galleries west of the Khafre Pyramid as "the Workmen's Barracks." He estimated they could have accommodated 4,000 people. Elsewhere on the Giza Plateau, he recognized tools, tool marks, and the workers' refuse dumps and made inferences about their methods and organization.¹ Between 1971 and 1975 Kromer excavated a huge dump of settlement debris on the Maadi Formation, about a kilometer south of the Third Pyramid. Kromer suggested the debris was the remains of a settlement that the Egyptians razed to build a pyramid, probably Menkaure's, on its location.² Also in the early 1970's, Abd al-Aziz Saleh excavated a small industrial settlement south of the Khafre Pyramid and within the outer "peribolus" enclosure of the Menkaure Pyramid. This settlement consisted of a broad open court and small house-like structures built against a thick precinct wall. Many large pieces of alabaster lay about the court, and there was evidence of copper work and other industry.³ Much more of such infrastructure surely existed at Giza for building the 4th Dynasty pyramids.

Beginning in 1988–89 with the goal of finding workers' quarters, the Giza Plateau Mapping

Project began excavations in two locations. One area is south of the great stone Wall of the Crow (*Heit el-Ghurob*, Area A), 400 meters south of the Sphinx at the southeast corner of the Giza Necropolis (fig. 1). The other area is the so-called Workmen's Barracks west of the Khafre Pyramid (Area C).⁴

One aim of the 1988/1989 season at Giza was to confirm or refute Petrie's interpretation of the galleries west of the Khafre Pyramid. While Petrie's excavations of the site turned up "many fragments of statues" and stone with high transportation cost like diorite, alabaster, and granite,⁵ the surface around the galleries provides no obvious signs of settlement debris. The galleries attach to the west wall of a vast rectangular enclosure, and measure 450 meters in the north-south and 80 meters in the east-west direction. The barren bedrock shows along the east of the galleries within the enclosure and behind the enclosure to the west. The surface is unencumbered with the kind of settlement debris—pottery, ash, bone, and other refuse—we might expect if thousands of men had bivouacked here for a decade or more.⁶

⁴ Area B was a third area for research. Area B is the elevated broad sandy bowl on the Maadi Formation due south of the Great Pyramid. Kromer's excavations into a great dump of settlement debris (see note above) were located in the NE corner of this bowl. Lehner, *MDAIK* 41, 133–34 suggested this bowl was an ideal place for a worker's community. An inspection early in the 1988–89 season hinted that there was little in the way of settlement deposits on the floor of the bowl. Natural marl clay (*tafla*) was found just under a shallow sand cover in a few spots that we probed. We therefore decided to concentrate our efforts in Area A, which has proved a location rich in settlement remains. It is possible that the bowl was widened and deepened during the Pyramid Age as a quarry for *tafla*, widely used in ramps, embankments, and walls of other secondary structures. It is also possible that there is some settlement debris in the dumps that Kromer excavated derived from settlements cleared off the bowl. The deposits contained seal impressions of Khufu and Khafre. Area B deserves more investigation in the future.

⁵ Petrie, *Pyramids and Temples of Gizeh*, 102–3, also page 31 where Petrie states that he found "many fragments of early statues in diorite, alabaster, and quartzite."

⁶ M. Lehner, "A Contextual Approach to the Giza Pyramids," *Archiv für Orientforschung* 31 (1985), 136–58. It should be noted that the modern asphalt road running north and west of the Khafre Pyramid curves right through the long rectangular enclosure passing in front of the east ends of the galleries.

¹ W. M. F. Petrie, *The Pyramids and Temples of Gizeh* (London, 1883), 101–3 for the so-called "Workmen's Barracks," 173–77 for tools and tool marks, 210–11 for labor organization, and 213 for masons' waste.

² K. Kromer, *Siedlungsfunde aus dem Alten Reich in Gizeh. Denkschriften, Österreichische Akademie der Wissenschaften, Philologisch-historische Klasse* 136 (1978): 1–130.

³ A. Saleh, "Excavations Around Mycerinus Pyramid Complex," *MDAIK* 30 (1974), 131–54.

Another important question relates to the size of this installation. Most estimates of the number of laborers needed to build the pyramids exceed the number of people who could have been housed in the galleries.⁷ Thus even if it could be demonstrated that the galleries served as housing, additional accommodations for the workers would have been needed. The largely unexcavated area south of the Wall of the Crow seemed to provide a place close to the plateau with enough space to have housed thousands of workers and support facilities.⁸ With these points in mind, the members of the GPMP met in Cairo in December of 1988 for two months of fieldwork.

Surface Survey of Petrie's "Workmen's Barracks"

In late 1988 while most of the research team began to excavate south of the Wall of the Crow, one of us (Conard) along with two area supervisors and about fifteen workmen, began work in Petrie's "Workmen's Barracks." First we made a sketch map of the roughly 78 E-W oriented galleries and about 15 N-S oriented galleries visible on the surface. Petrie⁹ reports a total of 91 galleries, while Lehner reports 73 E-W oriented and 18 N-S oriented galleries and mentions that originally as many as 111 galleries might have been present in this enclosure about 450 m on

its long axis and 80 m on its shorter axis.¹⁰ The sketch map included the location and orientation of the walls, wall tumble and the conspicuous concentrations of materials including alabaster, basalt, diorite, granite, flint artifacts and ceramics. Despite many irregularities on the surface of Area C, the location of most of the galleries could be determined on the basis of the placement of walls of limestone rubble. As the initial stages of the excavation began, David Goodman of CALTRANS (the California Department of Transportation) and Conard surveyed the surface of Area C using a total station to measure nearly 1000 points in three dimensions. The survey team plotted points along the estimated center of the gallery walls on the deflated surface. They discerned the positions of the walls as linear concentrations of stones while the area in between the walls showed as slightly lower, sandier strips.

The map shown in fig. 2 is the result of this survey. The lines mark the walls as documented in December of 1988. The modern asphalt road passes through the enclosure and just east of the galleries on its route from the pyramids to Sahara City. Where the road turns to the west it runs right across the southern end of the enclosure, and we were unable to discern the path of the enclosure wall here. Similarly, at the north end of the enclosure, where the asphalt road turns south, another modern road runs west to the modern complex of buildings that includes the government rest house, antiquities storage facilities (adapted from Reisner's "Harvard House" excavation headquarters), and the engineering department of the Giza antiquities Inspectorate. Together the two roads either wiped out or obscure the northern enclosure wall, and a short stub of an ancient wall that connected the east wall of the galleries enclosure to the unfinished large stone wall north of the Khafre Pyramid and south of the Western Cemetery.¹¹ The east-

⁷ See M. Lehner, *The Complete Pyramids* (London, 1997), 224–25 for a purposefully low estimate of 4,000 haulers, masons and setters and another 1,212 men working the local quarries. While this total comes close to Petrie's estimated population of the "barracks," many more people were needed for support, such as carpenters, metal workers, potters, etc. The total labor force might have been in the 20,000 range. See Dieter Arnold, "Estimates of the population of the work force at Giza," (1982); and R. Stadelmann, "Pyramidenstädten," *LÄ* 5 (1983), 9–14.

⁸ Lehner, *MDAIK* 41, 135–36. S. Hassan, *Excavations at Giza IV: 1932–1933* (1943), 42, stated he found mudbrick walls and other settlement remains in test trenches from the Wall of the Crow for hundreds of meters south. By the time of our 1988–89 season, some of the walls and Old Kingdom pottery were showing where men and boys from nearby riding stables had stripped off the clean sand overburden. There were good indications of extensive buried settlement in this location.

⁹ Petrie, *Pyramids and Temples of Gizeh*, 102.

¹⁰ Lehner, *Archiv für Orientforschung* 32, 138–58; *MDAIK* 41, 140 where, measuring off a 1:5,000 map Lehner gives 440 × 86 m.

¹¹ Reisner noted and sketched this connection in his Giza Diary for October 14, 1913–1914 in the expedition records housed at the Museum of Fine Arts, Boston. I am grateful to Rita Freed for the use of these records.

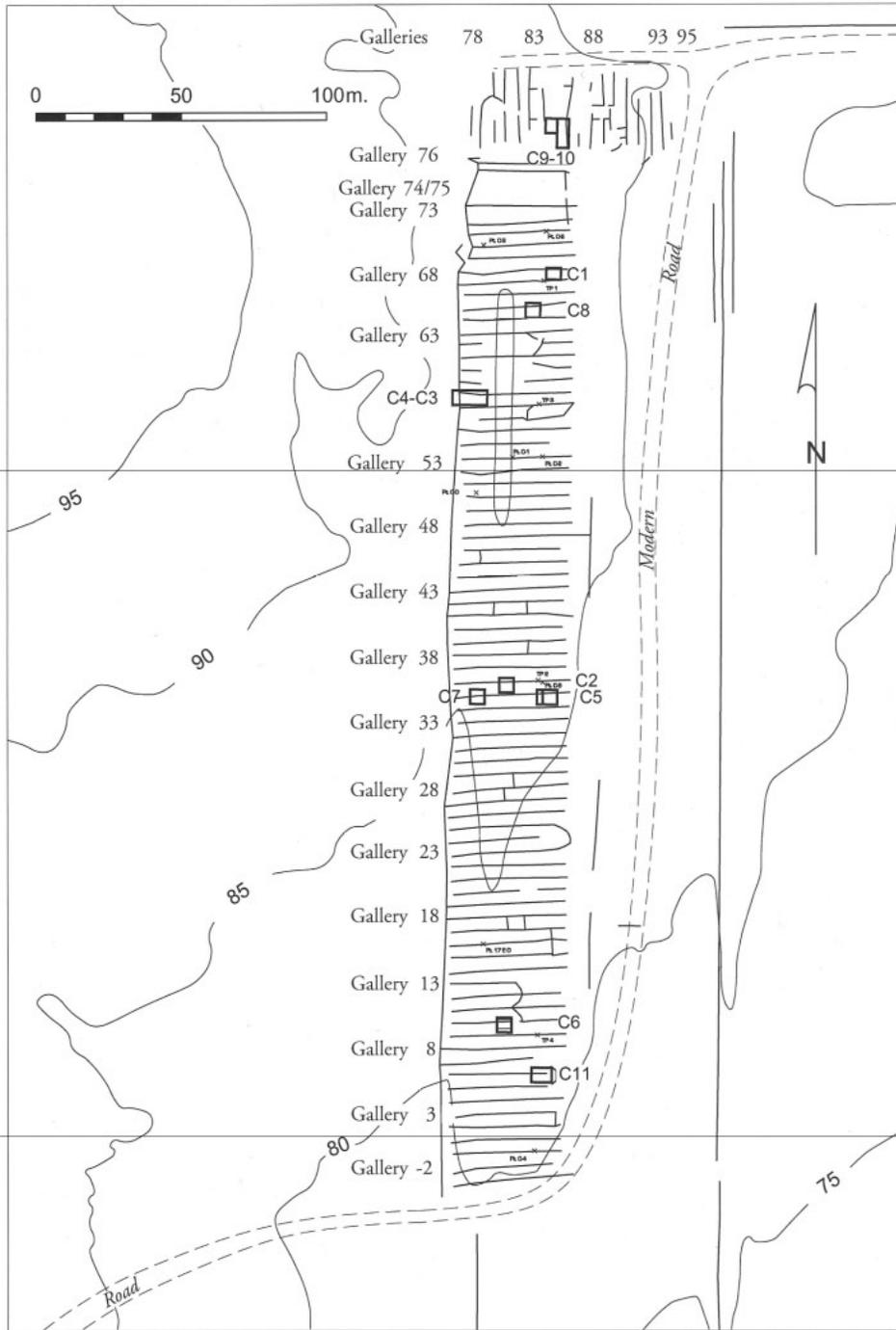


Fig. 2. Area C. Map of wall lines surveyed by David Goodman and Nicholas Conard with excavation units C1-C11. Plotted by Peggy Sanders. Contour values indicate height in m. above mean sea level.

ern enclosure wall is still visible running east of and parallel to the modern road.

The fact that roughly 93 galleries are visible on the surface of Area C attests to the stability of the architecture as it has eroded away over the centuries. In general, the walls of the galleries are better preserved, and stand to a greater height to the west, closer to the common west wall of the gallery set. The gallery walls, as preserved in 1988, sloped down toward their openings on the east.

While we worked at Area C, the changing nature of the surface became clear to us. During the weeks of fieldwork one could observe innumerable small alterations and interruptions to the regular pattern of the gallery walls. Some of these disturbances obviously resulted from pedestrians, camels, horses, and motor vehicles. Those in the tourist trade often redistributed the limestone rubble on the surface by building hearths, 'camel pens' and stacking stones for other reasons. Additional disturbances, including pits, must have resulted from previous archaeological excavations as well as activities in antiquity.

On the basis of our walking survey and sketch map we numbered the galleries starting on the south of the main row of the E-W oriented galleries. Later, survey identified two more likely galleries south of our number 1; and perhaps still more galleries exist farther south under the modern asphalt road and beyond. The two galleries south of our number 1 were therefore designated as -1 and -2. Figure 3 represents the original position of the complex of galleries on the basis of the features that we mapped for individual excavation units. While we surveyed walls suggesting the presence of fifteen or sixteen galleries extending southward from the northern closure wall (fig. 2), there could be more under the modern road which cuts across the NE corner of the enclosure. Extrapolating the eastern wall of the enclosure to its corner with the north wall allows room for nineteen galleries in the northern set (fig. 3).

Methods of Excavation

Due to time constraints the team could only excavate a small part of the total set of nearly one hundred galleries stretching for some 450 meters. We wanted to investigate the front, mid-

dle, and back parts of the galleries through a series of randomly selected small excavation units. For this purpose we surveyed north-south lines that divided the galleries into three 10-m parts. We chose excavation units that sampled the entrances, center parts and backs of the galleries. A fourth row took in the sandy deposits along the west of the western enclosure wall to which the galleries attach.

To decide which galleries to excavate we initially drew numbers from a hat, which was less than random but got us started. Initially we directed our attention toward the "randomly" selected galleries but later decided to try to find galleries that deviated from the typical pattern. We also directed our attention to the entrances of the galleries, which turned out to contain more cultural debris than the middle and rear parts. Figures 1 and 2 show the location of the excavation units C1-C11:

- C1: Entrance to E-W gallery 68.
- C2: Middle section of an E-W gallery 36.
- C3: Rear of an E-W gallery 58.
- C4: Area behind the main N-S wall and opposite C3.
- C5: Entrance to an E-W gallery 35.
- C6: Middle section of an E-W gallery 10.
- C7: Rear of an E-W gallery 35.
- C8: Middle section of an E-W gallery 65.
- C9: Middle section of N-S gallery 83.
- C10: Entrance and middle section of N-S gallery 84.
- C11: Entrance to E-W gallery 6.

These units measured about 5 × 5 to 5 × 10 m and excavation followed the stratigraphic system advocated by Harris.¹² Excavation supervisors identified natural deposits and archaeological features as they encountered them. The galleries were mostly filled with windblown sand that

¹² E. C. Harris, *Principles of Archaeological Stratigraphy* (New York, 1979). Any change to the cultural material from a discrete depositional event is considered a feature (layers, walls, hearths, floors, pit lines, etc.). In our first season we designated feature numbers in a series starting with 1 for each excavation square. For all subsequent seasons we log feature numbers out of a common *Feature Log*, so that feature numbers never repeat across the site. The numbers are purely for identification. The numbers do not themselves indicate the sequence of deposition.

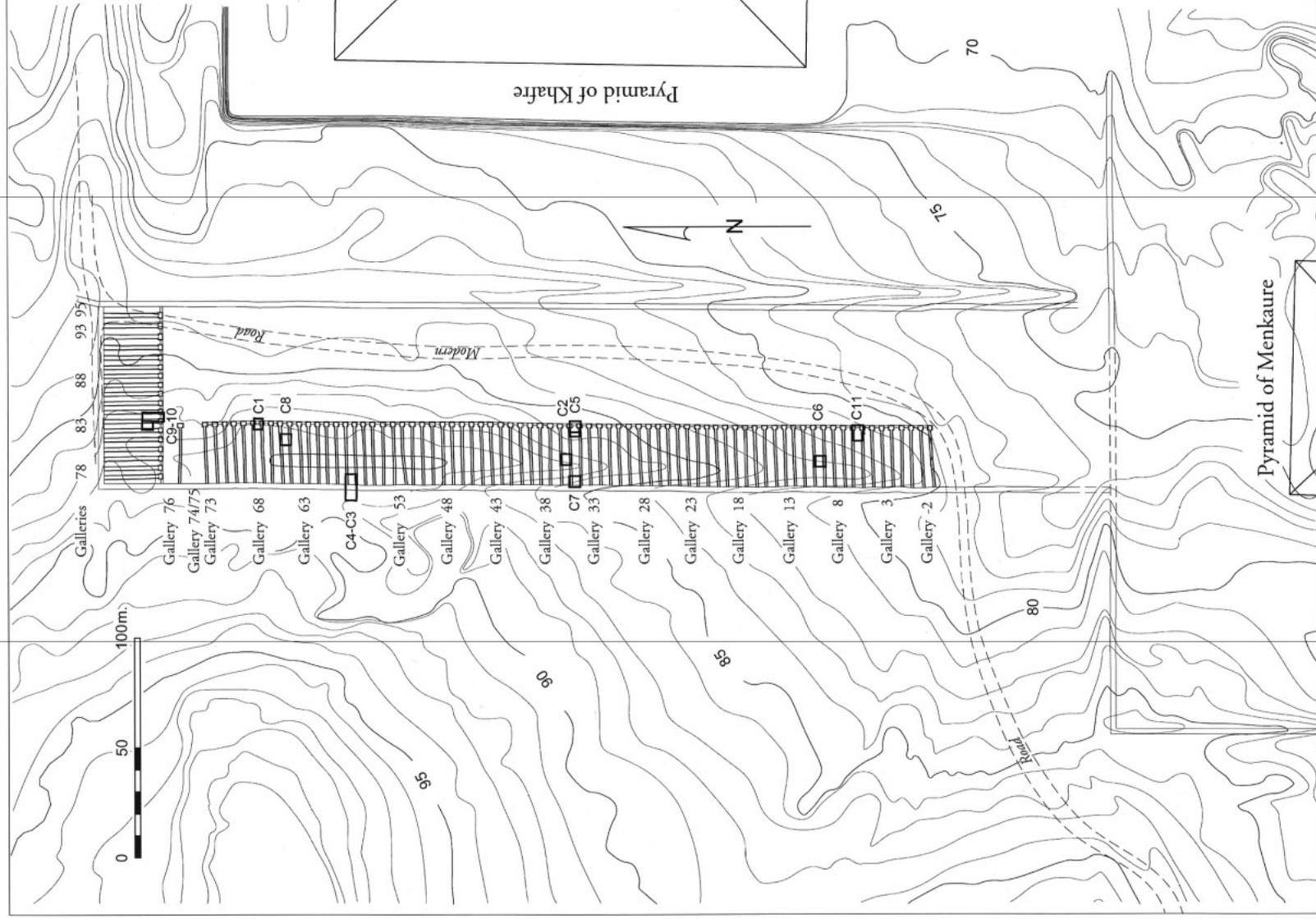


Fig. 3. Area C—map of galleries reconstructed with pyramids of Khafre and Menkaure. Contour values indicate height in m. above mean sea level. Graphics by Peggy Sanders.

workmen removed with hoes and baskets. Crew members screened all of the cultural deposits through 0.5-cm mesh, collected non-local stone materials (e.g., alabaster, basalt, diorite and granite), counted the pieces and measured the weights. We collected and counted flint artifacts, ceramics, faunal remains, charcoal, copper fragments and all other cultural material. Area supervisors sampled many of the cultural deposits for flotation and took ^{14}C samples when they encountered suitable material. The crew documented stratigraphic sections, plans and elevations of the units of excavation and the architecture they contained and also documented the more important finds in three dimensions by taking horizontal coordinates and elevations or spot heights.

Architecture

Despite the irregularities on the surface of Area C, the excavations revealed a remarkably consistent pattern in the architecture of the galleries. All of the walls of the galleries have a core of limestone rubble or irregular "field-stones" (figs. 4, 7, 8, 9). In many areas, especially the lower parts of the walls, plaster is preserved (fig. 4). Alluvial mud comprises the thicker inner layer of plaster, and a thin outer layer of marl (Arabic *tafla*) covers the wall surfaces.

In the rear of the galleries, the main N-S wall is preserved to a height of between 3.0 and 3.6 m (fig. 4). The latter figure represents the minimum height of the structures. The western enclosure wall, or main N-S wall, is the backbone of the comb-like galleries. It is a massive, solid construction with a thickness of 2.5 m at the base, tapering at about 78 degrees to a thickness of roughly 1.2 m at the top (fig. 4). The sidewalls of the galleries are strong, but less massive than the main N-S wall. They are 1.5 m thick at the base and roughly 1.0 m thick at the height of three meters at the back (west) where they are better preserved.

The interior dimensions of the galleries are fairly consistent, with widths ranging from 2.5 to 3.0 m at the floor, and an average width of about 2.7 meters. The narrower galleries tend to be in the northern half of the whole set, while the wider galleries are generally in the southern or central part of the set. The entrances to the

galleries are slightly constricted with widths ranging from 2.0 to 2.25 m. The length of the galleries is more difficult to approximate since only in one case did we excavate the front and back of the same gallery. The length of Gallery 35 containing units C5 and C7 is 28.5 m at floor level. The placement of two other entrances relative to the location of the back wall indicates that the lengths of the galleries do not deviate much from the above figure. These figures generally match the dimensions that Petrie reported with the exception that he mentions that the galleries were only seven feet (2.13 m) high.¹³ Our excavation of parts of seven galleries on the main axis and two on the lesser axis shows that while some minor variation exists in the dimensions of the structure, they are all of nearly identical form, and no obvious features distinguish the galleries on the greater and lesser axes.

The careful study of the construction of the walls, plaster, sub-floors, and floors provides evidence for the sequence of building the installation. First fissures in the limestone bedrock of the Mokattam Formation were filled with sand and limestone (fig. 9). Often the fissures contain naturally occurring rust-colored material. The limestone rubble filling the sub-floor of the galleries consists of irregular sizes ranging from small chips to pieces as large as 65 × 40 × 30 cm. Much of this rubble is white Turah-quality limestone such as the 4th Dynasty builders used to case their tombs, temples and pyramids. The fragments have sharp edges indicating that the chips resulted from stone work not long before the detritus was used as foundation fill for the galleries. Above the fill of rubble and sand follows a layer of white powdery limestone a few centimeters thick. This layer creates a flat surface that follows the 3.5-degree slope of the bedrock downward from west to east. Everywhere that we exposed a sub-floor a similar pattern was observed. This and other observations mentioned below suggest that the roughly 30 × 450 meter surface on which the galleries were built was graded or flattened at roughly the same time.

Once the bedrock fissures had been filled, workers constructed the western enclosure wall—the main N-S wall that runs for more than 400 m and forms the spine of the main axis of the

¹³ Petrie, *Pyramids and Temples*, 102.

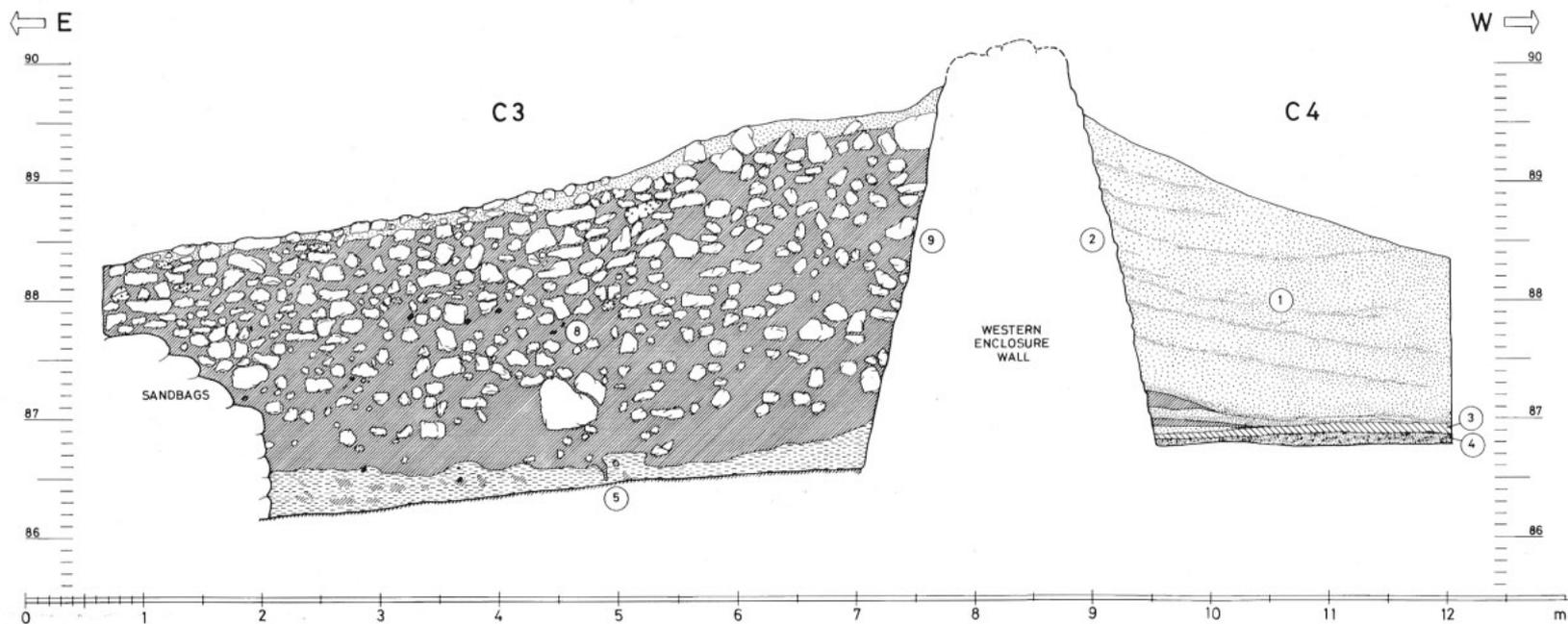


Fig. 4. C3-C4 elevation-section profile drawing across western enclosure wall of the galleries (feature 9 in C3, feature 2 in C4. On the C3 side the drawing is an elevation of the southern wall (feature 8) of Gallery 58; the mud floor is feature 5. The northern stratigraphic section of excavation unit C4 has been flipped to complete the profile: feature 1, sand fill with short-term surface lines; feature 3, crushed limestone powder with burnt limestone pieces; feature 4, reddish sandy sediment with limestone inclusions, from natural ferrous fill of Mokattam Formation. Vertical scale indicates height in m. above mean sea level. Original by Diane Kerns.

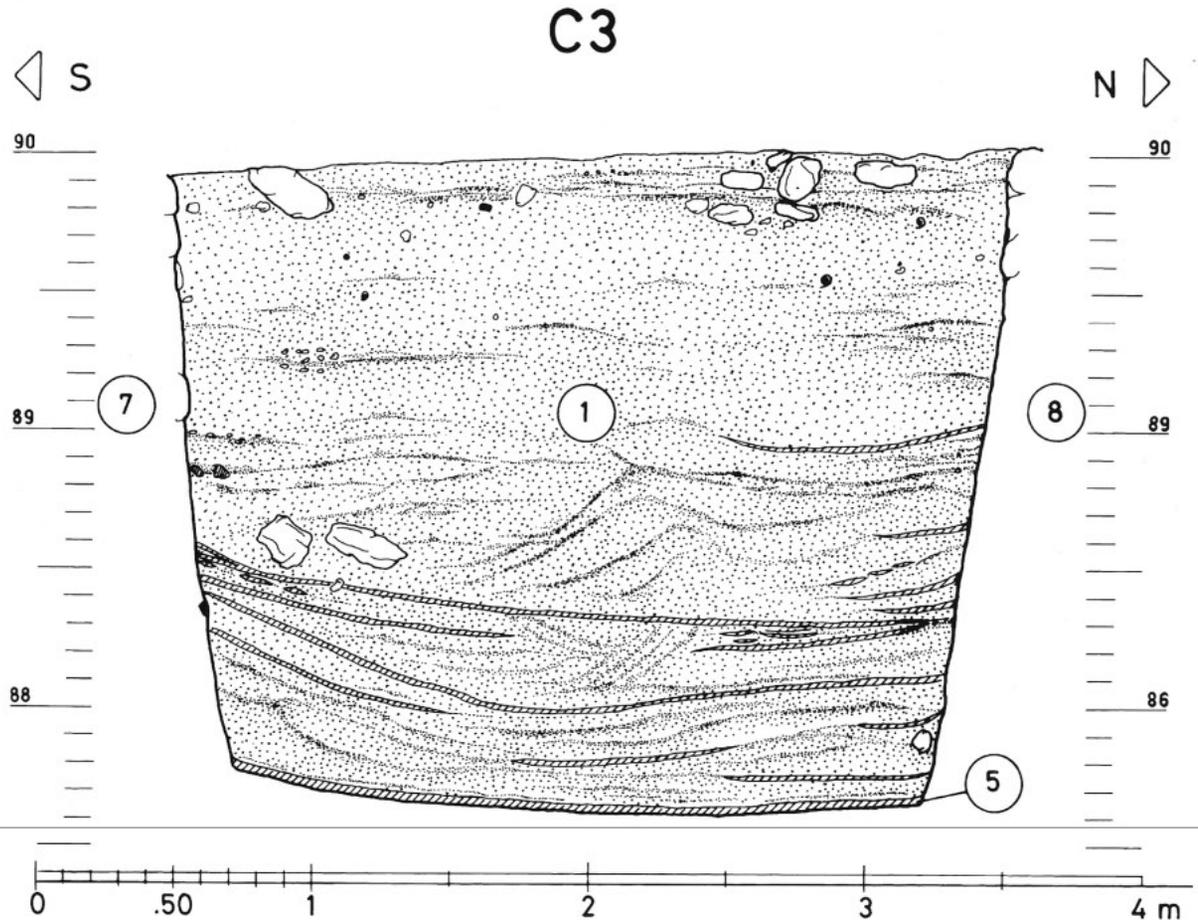


Fig. 5. C3, section drawing of sand fill, Gallery 58 back end. Feature 1: sand fill with temporary surface lines and mud lines from deterioration of side walls of Gallery 58; feature 5, alluvial mud floor of gallery; features 7 and 8, south and north side walls of Gallery 58. Original by Diane Kerns.

galleries. All of the fieldstone walls are made primarily of limestone pieces of various sizes and lesser amounts of granite rubble held together with alluvial mud mortar (figs. 4, 9). The irregularities of the rubble walls were filled with alluvial mud before a marl plaster was applied to the wall's east and west faces. The construction of the sidewalls followed the erection of the Western Wall. The entrances were then completed, and finally alluvial mud floors were laid inside and in front of the galleries.

Roofing

Near the end of this sequence the roofs were added to the galleries. The strongest evidence

that the galleries were roofed comes from what appear to be roof fragments recovered from excavation units C8, C10 and C11. These pieces of alluvial mud contain the impressions of parallel running sticks or reeds over part of the surface while the rest of the surface is irregular and broken. These fragments suggest that the galleries were covered with flat as opposed to vaulted roofs. We found neither bricks nor fragments that suggested the springing of a vault.

Figure 13 illustrates some of these roofing fragments. Examples A–C represent the impressions of relatively wide reed or wood elements, with widths from 10 to 25 mm. The impressions could be from sticks, reed, or palm frond (*gereed*). Examples D–G show patterns of mats



Fig. 6. Photograph of C1: entrance to Gallery 68. View to the south-southwest.

of woven or tied reed elements ranging from 4 to 12 mm wide. Examples H–M carry the impressions of narrow elements ranging from 4 to 10 mm, but with widths or diameters generally around 7–8 mm. These elements were round or oval as indicated by some of the better preserved impressions (fig. 13, I). Examples H, I, and J either have reed impressions on two sides of the mud fragment, or on most of the roughly semi-circular surface. These examples indicate that the reed was stuffed with mud binder into seams or joins between other elements.¹⁴

Examples of roofing fragments A through K in fig. 13 all derive from the same deposit, fea-

¹⁴ Perhaps somewhat like the reed luting suggested as a sealant between hull planks and capped by batons in the Khufu bark; Owain Roberts, personal communication. See B. Landström, *Ships of the Pharaohs* (New York, 1970), 28–29, figs. 84, 86. (The verb “lute” is ‘to smear over and close up joints and crevasses’).

tures 4 and 5 in excavation unit C11. Feature 5 simply corresponds to a band of greater density at the base of the deposit. Thus these fragments probably all derive from the same roof. They, and the reeds that left the impressions, must have provided the covering layer over a more substantial rigid framework of wood beams. The underside of the beams, and the top side of the reed or *gereed* layer, were probably covered with mud layers represented by the fragments we retrieved.¹⁵ The rooms, 2.5 to 3.0 m wide, are a little less than the maximum 3.5 meter width of flat-roofed rooms at Amarna.¹⁶ We tentatively reconstruct a flat roof composed of a first layer of cross beams that rested upon the gallery walls. The seams between the beams were filled with

¹⁵ B. J. Kemp, “Soil (Including mud-brick architecture).” In P. T. Nicholson and Ian Shaw (eds.), *Ancient Egyptian Materials and Technology* (Cambridge, 2000), 93–96, fig. 3.8.

¹⁶ Kemp, “Soil,” 93.



Fig. 7. Photograph of C3: Gallery 58 back end. Square pit at rear, right of the view is probe below the floor of the gallery (see figure 9).

reed and alluvial mud. Above this luting must have come a layer of wider reed elements, or reed matting, and a final smooth mud layer to finish off the top. Example M, from excavation unit C10 in one of the northern galleries is of gypsum and suggests a different kind of roof. The impressions of narrow round or oval reeds are found on a roughly V-shaped underside. The V-shape may result from fill between round crossbeams. The smooth side of the fragment represents the top of the roof, which is formed of a slightly harder, grayer, gypsum layer from 3 to 6 mm thick. Here, the use of gypsum may have obviated the need for thick reed luting, matting, and mud layers. It is possible that gypsum fragments A, B, and C in fig. 26, from C5, feature 2, may also derive from gypsum roofing. Other broad, flat fragments of gypsum from C5/3 and C11/3, 16 and 23 mm thick respectively, could also be from gypsum coating the roof,

although they lack the impressions of wood or reed elements.

Since all of the galleries appear to have roughly the same form, one might assume if a middle (C8) and an entrance (C11) were covered, that all of the galleries would be completely or partially roofed. On the other hand, the fact that we found roofing fragments in only C8, C10 and C11 excavation squares may indicate that the galleries were only selectively roofed. One would assume that when the galleries were no longer used, the beams and other wood in the ceilings would have been taken for reuse elsewhere, leaving mud fragments with the impressions of the covering and spanning materials. Why the people who abandoned the galleries would sweep out the debris from the removal of roofing material remains unanswered. Unfortunately the tops of the gallery walls are not preserved well enough to determine what portion

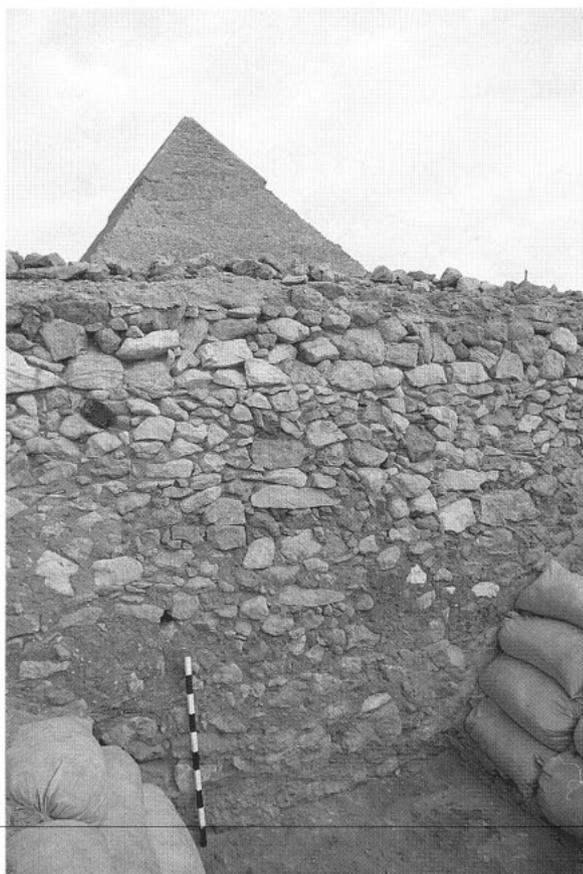


Fig. 8. Photograph of C4: west side of western enclosure wall. Sandbags were needed to retain the sections excavated through the sand fill after they collapsed.

of the galleries were covered and exactly what technique was used to span the galleries.

Internal Structure

Since the first three galleries excavated showed the same pattern of a single undifferentiated, straight room without interior walls, in choosing subsequent galleries to excavate, we deliberately chose galleries that appeared to have interior walls or that appeared to deviate from the usual pattern. However, our excavations indicate the galleries are of nearly identical form. Only excavation units C6, C8 and C11 yielded interior walls or large interior features. In all of these cases, however, the walls and disturbances to the limestone rubble walls clearly post-dated the original phase of building. The interior wall in-

side C6 is an ephemeral arc of crudely stacked limestone pieces that rest upon windblown sand. The disturbances in C8 and C11 are pits dug into the northern walls of the galleries. These disturbances, like the burial of modern (British army?) supply canisters in C3, are the result of relatively recent activities. We recovered little material from the Old Kingdom while digging the fill of these pits.

While the architecture of each gallery is simple and undifferentiated, lacking windows and interior walls, the entrances to the galleries were carefully constructed with larger limestone slabs. Excavation units C1, C5 and C10 document the structure of the entrances to the galleries (fig. 10). In each of these three cases one must step up 15 centimeters from the alluvial mud floor outside the galleries into a well-constructed threshold of rectangular limestone slabs (fig. 6). These limestone thresholds are slightly over two meters wide and extend slightly less than one meter into the galleries.

There are small pits just inside the limestone threshold in C1 and C10. These pits may have a function related to regulating access to the interior of the galleries, but they do not appear to be positioned correctly for door sockets. The lack of such a depression inside C5 suggests that these pits are not standard architectural features of the galleries. About 50 cm in front of the threshold in C5, four disks of alabaster were set into the level mud surface. These tiny alabaster pieces are too small and isolated to have been part of a pavement in front of the galleries.

The excavation documented white gypsum plaster on the limestone threshold and on the front exterior walls of excavation units C1 and C5. In C1, feature 5 we found pieces ranging from 8.2×10 cm to 2.7×2 cm. On these pieces, a thin layer of white gypsum less than one millimeter thick covers a layer of yellowish marl clay from 4 to 8 millimeters thick, which in turn covered the alluvial mud binding of the walls. There were traces of red plaster on the threshold and exterior wall of C5, although this could be the red pigment seen quite often in gypsum plaster at Giza.¹⁷ These fragments indicate that

¹⁷ See G. Bonani, H. Haas, Z. Hawass, J. Nolan, S. Nakhla, M. Lehner, R. Wenke, and W. Wölfli, "Dating the Pyramids," *Archaeology* (Sept.-Oct., 1999), 26-33.

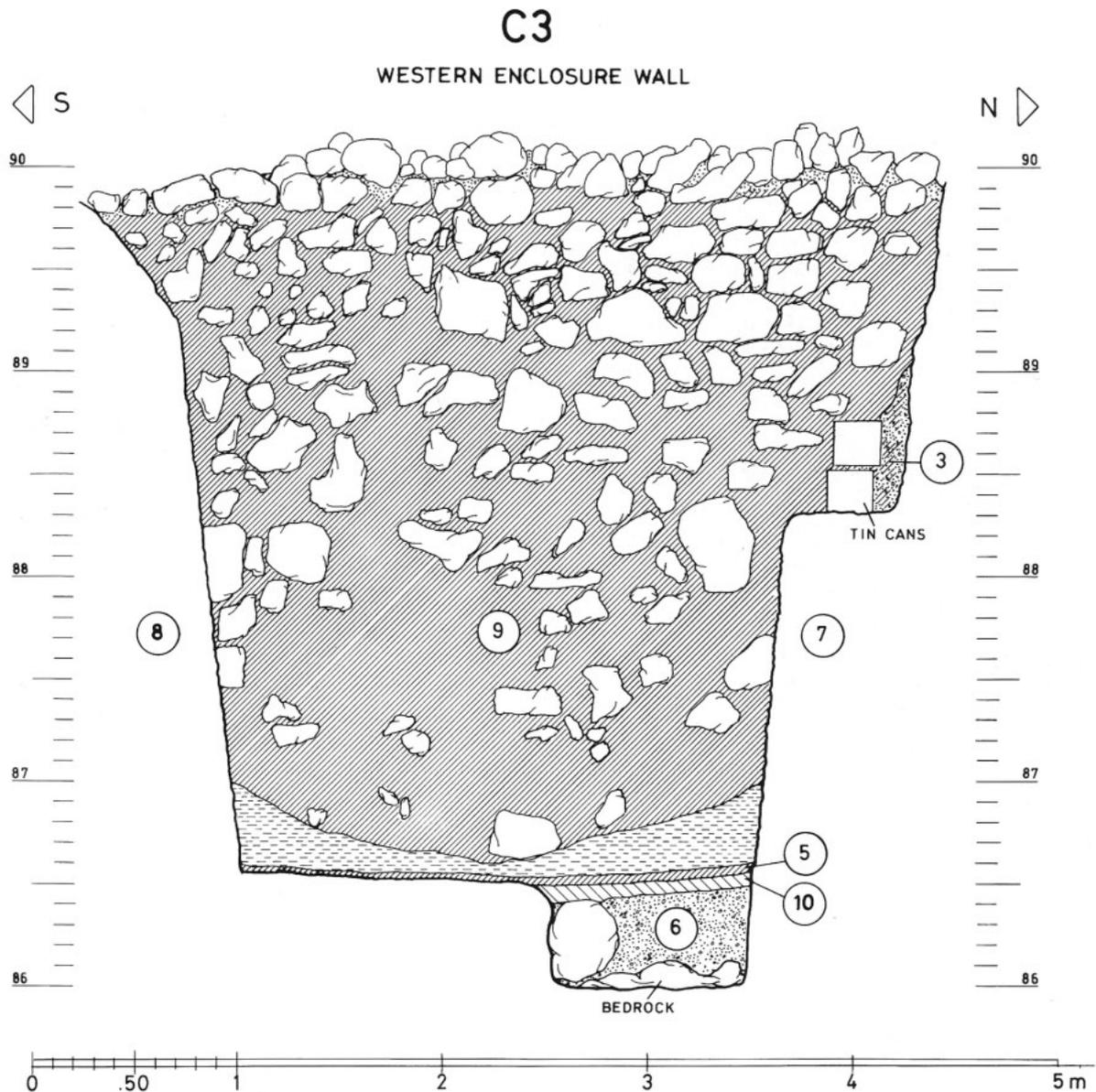


Fig. 9. C3, elevation drawing of the western enclosure wall, east face, at back of Gallery 58. Feature 3 tin canisters (British army?) filled with sand; feature 5, alluvial mud floor; feature 6, reddish sandy soil with small limestone pieces, natural ferrous fill of Mokattam Formation (?); features 7 and 8, south and north side walls of Gallery 58; feature 9, western enclosure wall of fieldstones and alluvial mud, with marl (tafla) plaster preserved at base; feature 10, crushed limestone as bed for alluvial mud floor. Original by Diane Kerns.

the fronts of the galleries were carefully covered with gypsum plaster. As noted above, at least one fragment of roofing material from C10, feature 6 (fig. 13, M) indicates that some of the roofs were covered with a layer of plaster. If the entire set of galleries were plastered with gypsum, it would have produced an extensive and

impressive whitened image compatible with the pyramid casing.

Finds Inside the Galleries

The stratigraphy of the galleries shows a fairly consistent pattern. Immediately above the mud

C5



Fig. 10a. C1, C5, C10 entrances, plans. Spot heights in meters above mean sea level. The preserved tops of the walls in C10 were not cleared of sand. Original by Diane Kerns.

C1

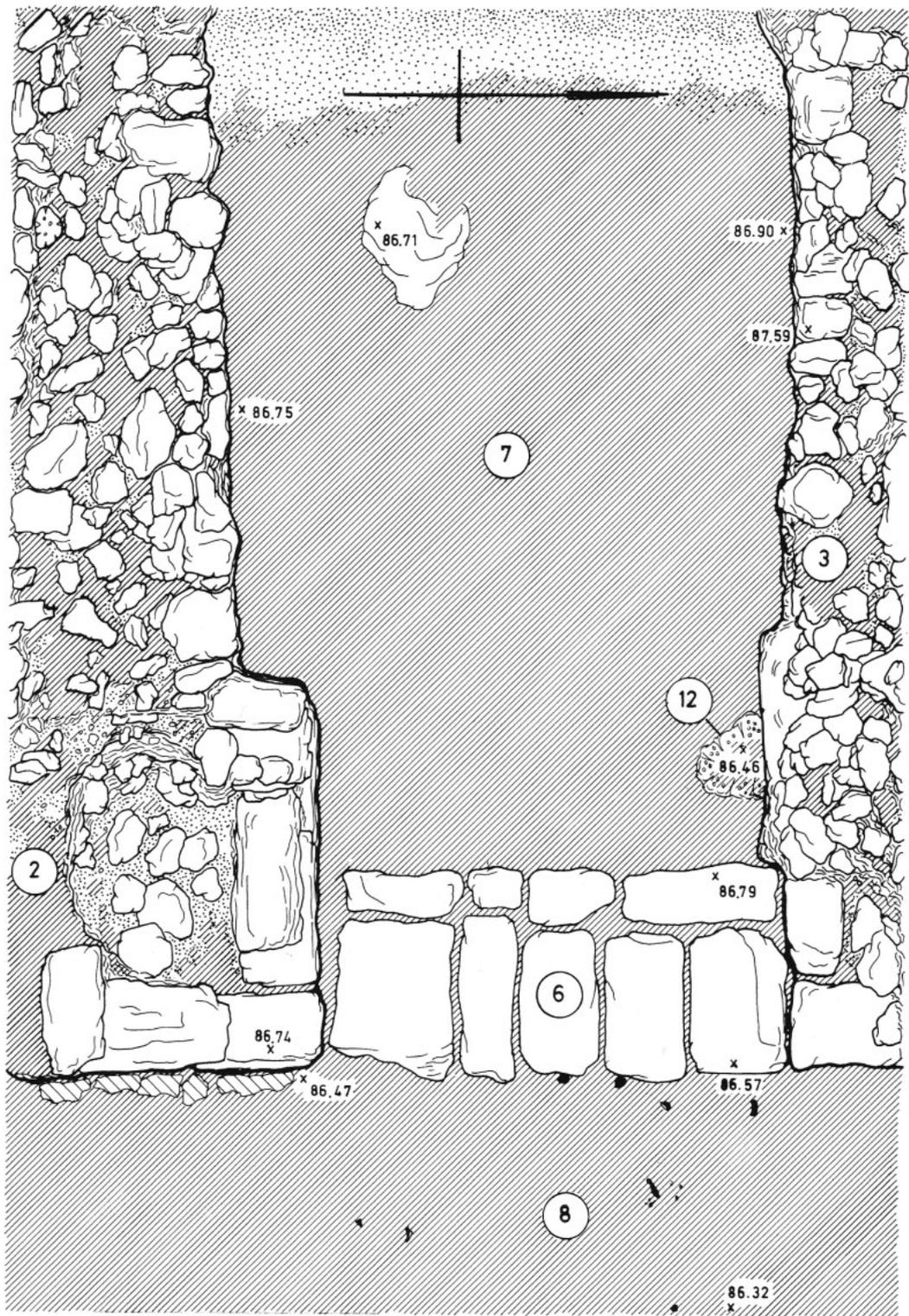


Fig. 10.b C1, C5, C10 entrances, plans. Spot heights in meters above mean sea level. The preserved tops of the walls in C10 were not cleared of sand. Original by Diane Kerns.

C10

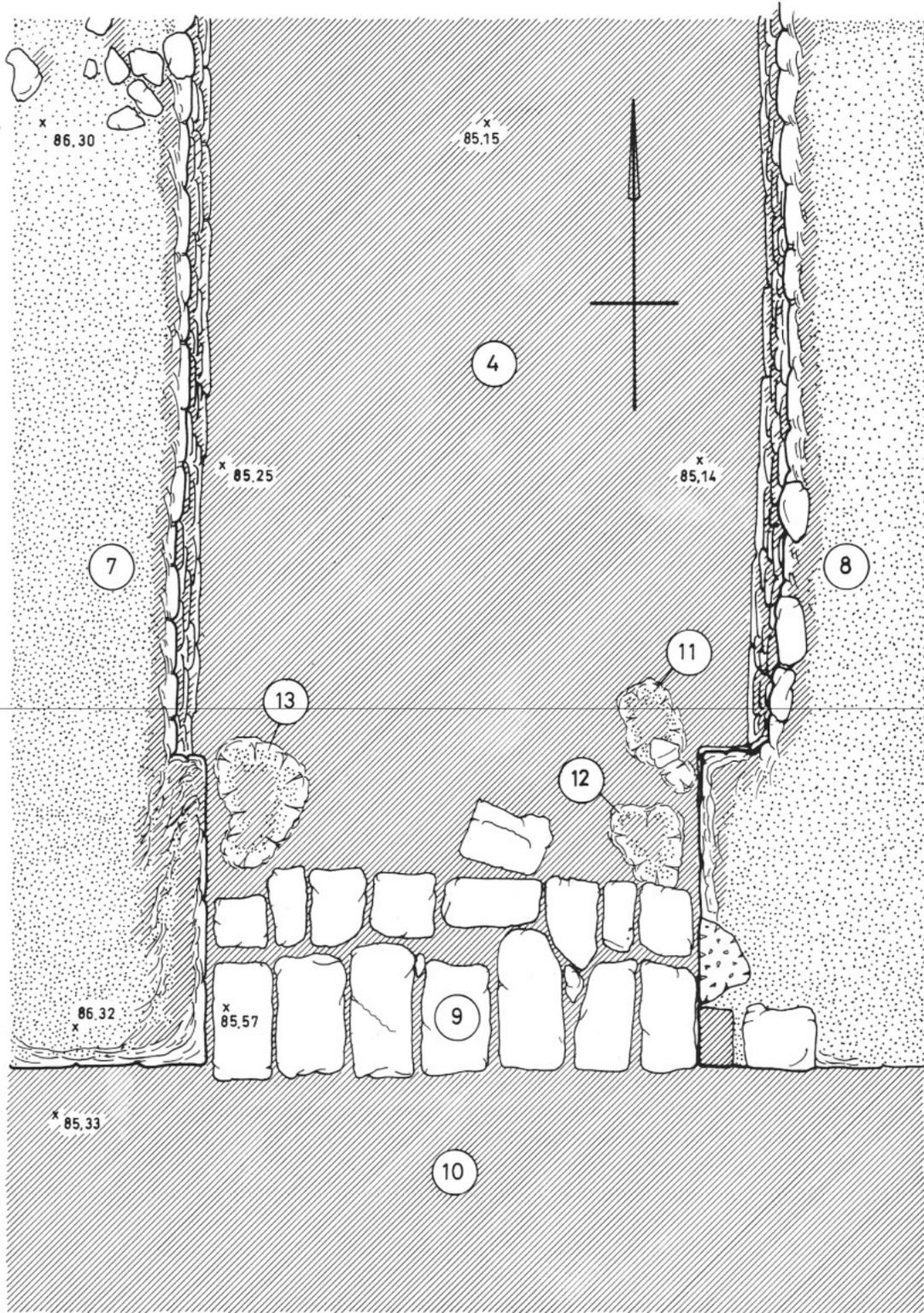


Fig. 10.c C1, C5, C10 entrances, plans. Spot heights in meters above mean sea level. The preserved tops of the walls in C10 were not cleared of sand. Original by Diane Kerns.

floors, one often encounters thin gray cultural deposits with alluvial mud matrices and a paucity of artifacts. Most of this matrix probably derives from the deterioration of the plaster and mud that eroded from the walls. Near the entrances of the galleries we found thicker, ashy, alluvial mud deposits that were rich with cultural material. Above the alluvial mud features, limestone rubble is visible in most of the stratigraphic sections. As one would expect, this rubble is thickest toward the entrances of the galleries where the walls of the galleries are not as well preserved. Overlying the rubble from the collapsed walls one invariably sees thick deposits of wind blown sands (fig. 5). These deposits often have thin bands of alluvial mud. The bands may be composed in part of plaster that weathered from the walls as the galleries filled with sand. The sand also shows thin fragile crusty surfaces, or "dry lines". In some areas it was possible to uncover horizontal exposures of these fine, crusty, sand layers. These surfaces apparently mark a *hiatus* in the accumulation of wind-blown sand. Several roughly horizontal bands of limestone bits were also visible in the higher parts of the sections cut through the sand fill. Again these mark temporary, short-term surfaces.

A very curious feature of this sand is the presence of many small snail shells. These snail shells were ubiquitous throughout the clean sand fill. For example, field notes from unit C3, at the back of Gallery 58, describe the retrieval of a "double handful [of snails], 100 plus specimens" from the sand fill. The snail shells must indicate wetter conditions than at present across Area C, or a cycle of wetter periods, when the snails could proliferate, and drier periods when the snails died and their shells were trapped in the accumulating sand. We plan to have our samples of snail shells analyzed and to further explore the implications of this feature of the sand fill.

After digging C1–C4, it became clear that the richest cultural deposits were near the entrances to the galleries, while the middle and rear parts of the galleries contained far less material. Unit C4, behind the main N-S wall (the western enclosure wall), produced very little cultural material (figs. 4, 8). The most significant finds from the middle and rear of the galleries can be summarized as follows. Small copper fragments were

scattered on the floors of C2, C3 (one 6-mm amorphous piece), C6 and C8. Two copper pieces from C2 were identified as "nails" or "pins" measuring 15 × 5 mm and 20 × 30 mm respectively. C2 also yielded a piece of feldspar, two pieces of malachite, and a piece of pottery with "slag" or slag-like material attached. One small copper piece 5 mm long and a piece of gypsum 6 mm long that appeared to be stained by copper came from unit C6. Excavation unit C7 produced two small pieces of malachite and a pile of several dozen large quartzite flakes mixed with charcoal. Ten pieces of copper came from C8 alone. They range from 2 mm to 7 mm in length. A sherd in C8 was identified as a "waster" from pottery firing, and from this unit we found a bead, 4 × 15 mm, and a stone ball, 1.4 cm in diameter. Other finds from C8 included a fragment of polished granite, two flint blades and two diorite pounders. It should be noted that one of the blades was one of three sickle blades retrieved from our excavations in Area C.¹⁸ Other evidence of stone working includes a sandstone abrader and a worked piece of granite from C9.

In contrast to the remarkably empty middle and rear portions of the galleries, excavation of deposits near entrances yielded comparatively large amounts of ceramics, faunal remains, botanical remains, lithic artifacts and most other classes of artifacts.

Four gallery entrances were excavated: C1, C5, C10 (fig. 10) and C11, during the 1988/1989 season. The latter gallery could only be excavated as far as its threshold before we had to conclude our season. Excavation unit C10 is on the minor axis (northern galleries), while the other gallery entrances are on the main axis (western galleries). In all of the excavation units near the entrances of the three galleries on the main axis we found layers of gray cultural deposits ranging in thickness from 20 to 60 cm immediately above the floor.

Diane Kerns, who supervised excavation unit C1, documented two patches of gray deposit separated by unencumbered floor, features 4 (east) and 5 (west). Feature 4 was "alluvial mud

¹⁸ N. Conard, "Flint Artifacts from the 1988/1989 Excavations at Giza," *MDAIK* 56 (2000), 21–41, fig. 11 nos. 5, 6, and 9.

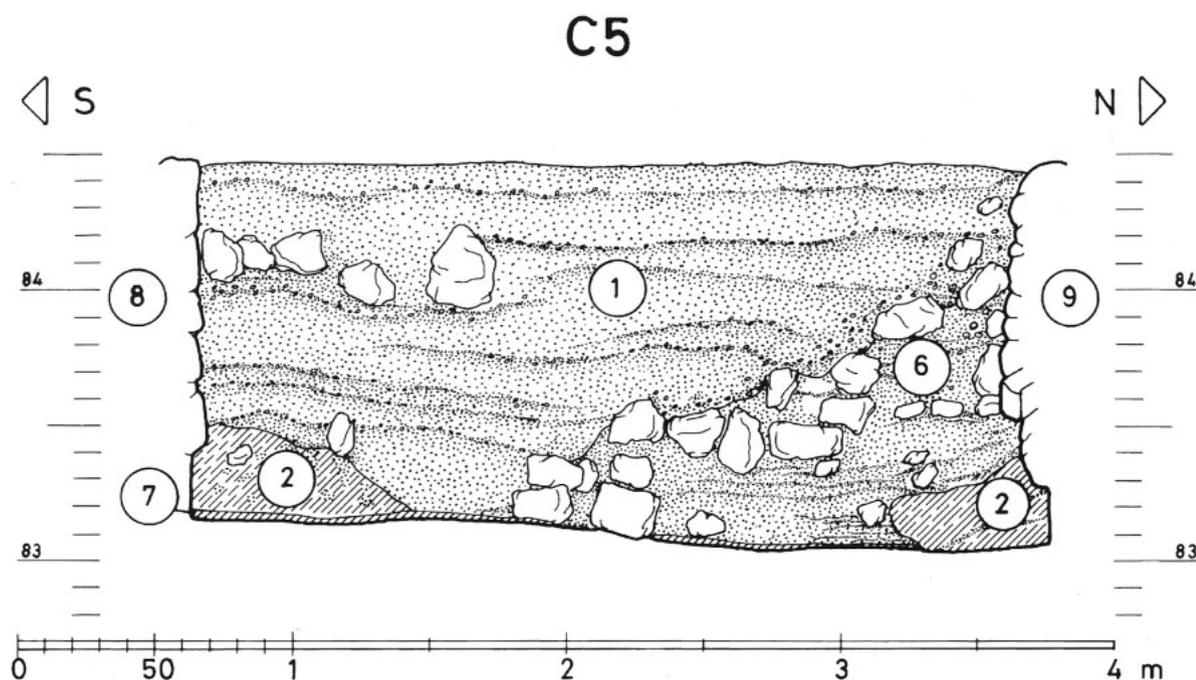


Fig. 11. C5, stratigraphic drawing of western section of the excavation. Feature 1, sand fill with temporary surface lines; feature 2, gray ashy deposit with charcoal, pottery, and other artifacts; feature 6, limestone rubble with alluvial mud and plaster collapsed from side walls of Gallery 35; feature 7, alluvial mud floor; features 8 and 9, south and north side walls of Gallery 35. Original by Diane Kerns.

and gray ashy material (possibly ash debris) mixed with pottery, limestone chips, alabaster, flint, granite, charcoal and a few faunal remains." The alluvial mud floor was gray (Munsell 10YR 4/3) and ashy, or composed of "gray ashy sediment" with scattered pieces of charcoal and "many pieces of pottery."

In square C5 a similar gray deposit overlying the floor contained plaster fragments fallen from the gallery walls, and pottery, charcoal, diorite, quartzite, flint, and bone (fig. 11, feature 2). Flotation samples (4 large bags) yielded carbonized plant remains. The deposit was highest against the walls of the gallery and sloped down toward the center of the floor. Upon feature 2, near the walls, small patches of yellowish-gray (Munsell 10 YR 8/4) material, probably marl, may mark a higher floor that was worn or eroded away in the center of the gallery. Near the southern patch there was a large concentration of wood charcoal. Small fragments of red material—possibly pigment—lay beside the

northern patch of marl. On this spot we found a small figurine, the model of an architectonic statue, painted red and black (fig. 16, see below). The patches of marl, perhaps a secondary floor, were about 25 cm above the original floor of this gallery. This stratigraphy is important for understanding use of the gallery, particularly because just here were found a number of fragments of very small human and animal figurines and other evidence of craft activity.

In C11 the "gray deposit" (feature 4) was about 40 cm thick above the floor. Once again there were marl patches that could indicate that the top of this layer was a higher floor laid down after the material of features 4 and 5 had accumulated. However, we think this is unlikely. The marl showed in the west section of C11 as two superimposed thin marl lines running from the north wall of the gallery (fig. 12). We designated as feature 5 a more concentrated alluvial mud layer about 10 cm thick just upon the original floor of the gallery. Diane Kerns, the supervisor,

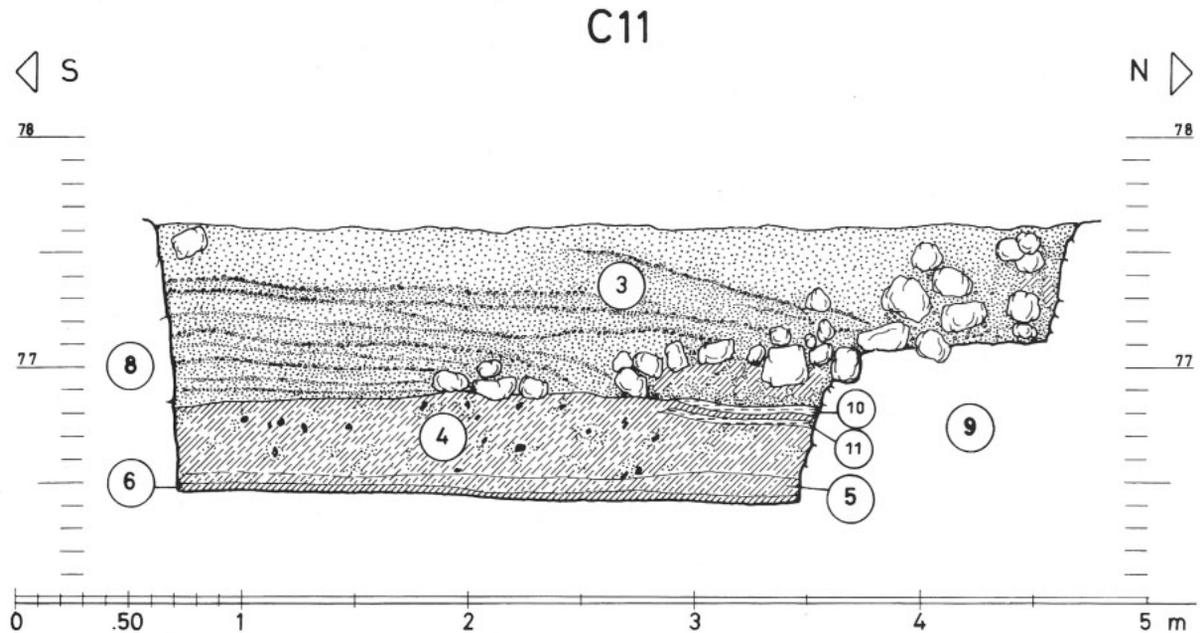


Fig. 12. C11 stratigraphic drawing of western section of the excavation. Feature 3, limestone rubble and sand fill with temporary surface lines; feature 4, gray ashy alluvial mud deposit with pottery, bone, plaster and roofing fragments, statue fragments and other artifacts; feature 5, concentrated, dense mud, about 10 cm thick, with bone, limestone debris, roofing fragments, pottery and other artifacts; feature 6, alluvial mud floor; features 8 and 9, side walls of Gallery 6 (a pit cut into the northern wall); features 10 and 11, marl (tafla) lines, probably from deterioration of marl plaster from northern wall of the gallery. Original by Diane Kerns.

described feature 4 as “very ashy, fine material, loosely packed and uniform throughout the square in coarseness and texture.” Feature 4 was “very rich in pottery and faunal remains,” and yielded a “great quantity” of wood charcoal, and a few pieces of marl plaster, evidently fallen from the gallery walls. Eight large fragments of roofing material were uncovered in all areas of the square, including finds from both features 4 and 5¹⁹ (fig. 13).

In contrast to C11 the gallery entrance excavated in C10 yielded mainly lithic finds. Here we found a thinner deposit above the floor. Noteworthy finds from C10 include two diorite pounders, a ceramic fragment with a slag-like material, a worked piece of alabaster, 3 × 11 cm, and red stone pigment, two triangular flint scrap-

ers, several cores of desert flint cobbles, and flint flakes. Several of these flakes could be refitted to the cores from which they were struck.

In the deposits above the original floors of the galleries, particularly in those units near entrances, we found ample evidence that the occupants were consuming, if not processing and producing, meat and plant food. Richard Redding examined 159 bones from Area C: “103 were unidentifiable, 44 were from domestic cattle, 6 from sheep-goat, 5 from pig, and 1 from a canid. A large sample of the cattle are from C11, feature 4 and represent what could be the remains of a single young animal. This feature alone yielded 40 cattle fragments, 3 pig fragments, and 76 unidentified mammal fragments.”²⁰

While a complete report on the faunal and floral analysis will follow, we can state summarily

¹⁹ It should be noted that a large intrusive hole, 2.45 × 1.10 meters penetrated the north gallery wall and part of the sand, rubble, ancient cultural fill and floor of the gallery within C11. This did not affect the provenience of the material we now describe, but see following main text for its relevance to our finding of the fragments of larger statues in C11.

²⁰ Richard Redding, personal communication. When Richard took over the faunal analysis in 1991, a list of proveniences for some of the faunal samples that he should have inherited from the 1988–89 season had been lost. Fortu-

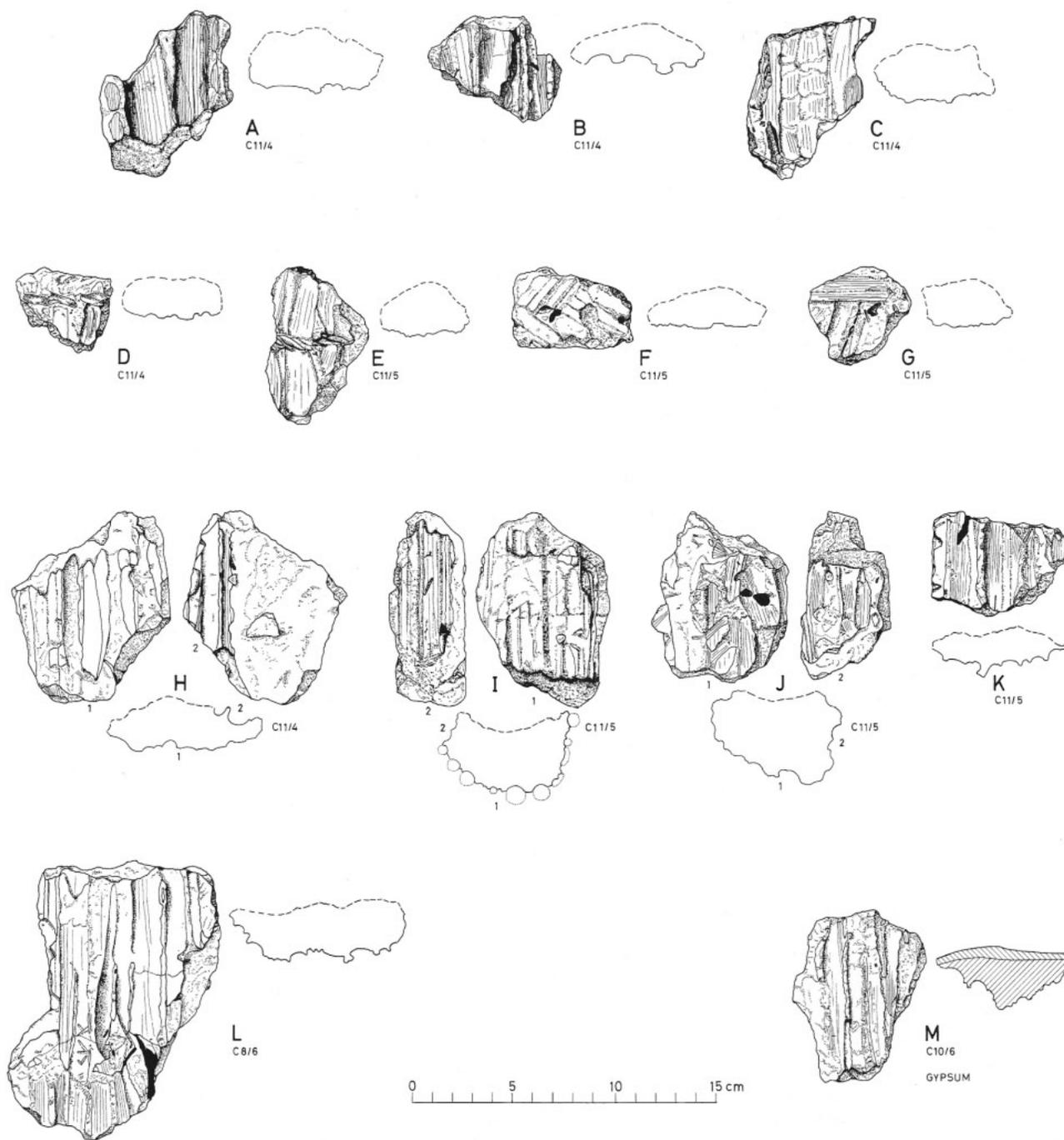


Fig. 13. Roofing fragments from Area C galleries. Solid line in profiles indicates surface with reed impressions, dashed line indicates rough surface or break. A through K all from C11, features 4 and 5. Top row, A–C show impressions of wide reed or palm frond(?) elements. Second row, D–G show impressions of bound or woven reed matting. Third row, H–K show impressions of narrow reed elements. Diameters of reeds indicated in fragment I. M from C10/feature 6 is gypsum with impressions of narrow reed elements, a V-shaped bottom which may indicate seam between cross beams, and a thin harder, grayish layer that may indicate top of roof. Drawings by Caroline Hebron.

that 49.4% of the identifiable plant remains from Area C flotation samples were chaff (barley internodes, emmer glume bases, emmer spiklet forks, or cereal culm nodes), 8.0% were grain and 42.5% were weeds. From C11, feature 4, alone, the results indicate 57% chaff, 4% grain, 29% wild weed seeds, 7% Trifoliacea (*berseem*) and 3% reeds and sedges. The high percentage of chaff contrasts with the first round of samples and analysis from Area A, which yielded only 6.2% chaff, 7.2% grain, 72.4% wild weed seeds, 12.3% Trifoliacea, and 1.7% reeds and sedges.²¹

What could the abundance of chaff in Area C mean? Chaff results from cleaning grain. It can be burnt in dung fuel, which preserves it in carbonized form. Wilma Wetterstrom reports: "Chaff can be abundant in settlement sites. It might have been used directly as fuel or burned in dung fuel. Chaff ends up in dung when it is 1) added to dung cakes as temper, and 2) used as fodder."²²

nately, the bags of bone from the richest intact ancient deposits on the floors of two galleries near the entrances, C5/2 and C11/4, were not among the group that lost a provenience. Unfortunately 12 out of 21 bags from Area C did lose their provenience. The largest sample of bone material came from C11/4

<i>Bone samples from Bag Lists*</i>			<i>Redding Analyzed</i>	
<i>Square</i>	<i>Feature</i>	<i>Bag No.</i>	<i>Yes</i>	<i>No</i>
C1	1	6		N
C1	4	10	Y	
C1	5	14	Y	
C1	9	18		N
C2	2	6		N
C2	3	17	Y	
C2	10	38	Y	
C3	1	6	Y	
C4	1	5		N
C5	1	3		N
C5	2	9	Y	
C6	4	12	Y	
C6	5	17	Y	
C8	1	4		N
C8	5	21		N
C8	3	25		N
C8	6	31		N
C8	7	37		N
C11	4	6	Y	
C11	3	15		N
C11	5	17		N

*Note: Bag and Features numbers started a new sequence for each square in our 1988–89 season.

²¹ Wilma Wetterstrom, personal communication.

²² Wetterstrom, e-mail, October 27, 2000.

We recorded a total of 552 diagnostic sherds from Area C. Crude red ware jars (so-called beer jars, variations of Reisner's type A-IV),²³ which seem to be the second most common type from our Area A excavations, account for 20% of the total. Bread molds and trays—generally the most abundant type from our Area A excavations—account for 113 examples, about 20% of the assemblage. The highest percentage of Area C sherds, 147 examples or 26.63% are from a type of carinated bowl that we have called CD7. This is generally a thicker, heavier bowl than the red burnished carinated bowl, the so-called "Meidum ware." CD7's are carinated bowls with round bases, fabric of Nile A, Nile B, or Marl C, with a rim diameter in the 14 to 17, and 18–23 ranges, a height of 8 to 11 centimeters, and a wall thickness ranging from 0.5 to 13 mm. This ceramic form was made on a slow potter's wheel, well smoothed when the clay was wet, and the bottom was scraped before firing. A distinctive feature is that after firing both interior and exterior were covered with white or buff wash, perhaps of powdered limestone. A total of 113 CD7 sherds came from the gray ashy layers, features 4 and 5, in C11 alone—accounting for 20% of all diagnostic sherds (35% of 318 diagnostic sherds from C11/4–5).²⁴ From C11, features 4 and 5 we also recovered 55 sherds from bread molds or bread trays and 42 examples of our type, G2, a shallow bowl with an internal flange that may have functioned as a lid for bread molds or for CD7's.

In addition to the quantity of pottery and animal bones, we were struck by the amount of copper from C11, features 4–5. Excavations retrieved eight pieces ranging from 2 mm × 30 mm, 2.6 mm in diameter and 8 × 15 mm, to small bits 3 mm and smaller (fig. 27).

This material in C5 and C11 was mixed with a number of diverse small pieces of art and craft work that hint at something more than simple food and accommodations for unskilled labor.²⁵

²³ G. Reisner, *A History of the Giza Necropolis*, Vol. II (Cambridge, Massachusetts, 1955), 70, fig. 85.

²⁴ Anna Wodzinska, personal communication.

²⁵ The relative abundance of material in C11 was in spite of the fact that, between January 17 and 24, 1989 we were unable to finish the excavation of this unit by clearing the gallery entrance to the east before we had to close our season.

Table 1

*Objects from C5 (all from feature 2 except no. 5)***1. Limestone figurine of king wearing south crown****GPMP No. 149** (fig. 14)

Measuring 7.8 cm high, 2.5 cm in wide and 2 cm thick, the figure represents the king striding forth, wearing the south crown and *shendyt* kilt. The eyes, eyebrows, and ears are painted black. The legs and right lower arm are broken off. The left arm was sawn off or never formed. The left shoulder ends in a smooth straight cut, similar to sculptors' trial pieces known from other contexts.²⁶

2. Base of figurine with human feet**GPMP No. 174** (fig. 15)

The base measures 3 × 4.4 cm (where complete length preserved). The left foot is forward (length: 1.8 cm), and the toes of right foot, back, are preserved. Thickness of base is about 6 to 7 mm. The feet are unpainted. The base is painted black on top and edges. An unpainted rough ridge, 2 mm high, runs between feet. The base was found in 6 pieces close to GPMP No. 175, but could be base for GPMP No. 149 (above).

3. Model statue figurine**GPMP 175** (fig. 16)

No. 175A, found in 3 pieces (fig. 16a), represents head of king wearing the south crown, against a back pillar with a roof projecting over top of crown. Two more pieces are from the same or similar object (figs. 16b, c). All pieces were painted red with large black stipples. The right side of the face and crown was unpainted, because of re-carving after painting, as evidenced by flat planes from carving and blocking out of the ear. The right side of crown and ear shows more finished modeling. The face was broken or worn away and the head broke away from the back pillar before we found it. The top of the pillar-roof has a black painted line marking the back of the statue underneath. The model statue measures 3.7 cm × 3.8 cm, and 6 cm high. 175B (fig. 16b), which does not fit the other pieces, may be the bottom of 175A, although it is 1 to 2 mm narrower. A narrow rectangle is painted in black on the lower back part of 175B. 175C (fig. 16c), found in two pieces that join, could also belong to the lower part of 175A, although 175B is 4.6 cm wide, 9 mm wider than 175A. The fact that 175B and C do not match the width of 175A may indicate that the former pieces belonged to other figurines similar to the model statue. 175A evidently represents an architectural royal statue with a back pillar and projecting roof, like the projecting of a colonnade roof into a courtyard. These pieces were found next to red pigment around a marl patch.

4. Limestone lion figurine**GPMP 152** (fig. 17)

The lion figurine is 5.3 cm long, 2 cm wide, and 3 cm high. The base is 8 mm thick. The lion is painted red; its mane is rendered in stylized relief. The paws are missing due to a break across the lower front. The break is worn smooth on the right side.

5. Fragments of limestone feline figurine: feature 10**GPMP 176** (fig. 18)

The paw is painted black. The base is unpainted. The paw piece is 2.2 cm long, 1.5 cm wide and the base is 5 mm thick. The paw alone is 9 mm wide, and 1.7 cm long. The paw includes the rear toe that indicates this is the left leg. The second leg piece is 2.7 cm long, 1 cm wide and the base is 6 mm thick. The leg alone is 2 cm long, 7 mm wide, and 8 mm high. The leg has four facets, or flat planes. The third piece may have flaked off the animal body of the figurine. It is flat, though slightly saddle-shaped, 3 mm thick, and 1.7 × 1.7 cm. It is faceted like the leg piece. Feature 10 was yellowish gray material dotting the original mud floor, probably marl plaster.

²⁶ C. C. Edgar, *Sculptors Studies and Unfinished Works. Cat. Gén. 31,1* (Cairo, 1906); G. Steindorf, *Catalogue of Egyptian Sculpture in the Walters Art Gallery* (Baltimore, 1946), 7, where the author suggests the models were for training apprentices. Those in the Walters—one of the most extensive and diversified collections—are all of the Late Period with unknown provenience. See for Old Kingdom, J. Capart, *Documents pour servir a l'étude de l'art égyptien, I* (Paris, 1927), Pl. 2; E. D. Ross, *The Art of Egypt Through the Ages* (N.Y. and London, 1931), 99; L. Borchardt, *ASAE* 28 (1928), 43–50.

Table 1—*continued***6. Faience tile fragment****GPMP 177**, fig. 21c

The piece is corrugated, 2.1 × 1.6, 5 mm thick, dark gray ceramic-like layer between “glaze” and white outer layers.

7. Malachite fragment**GPMP 162**

The fragment measures 3.2 × 0.8 cm.

8. Gypsum and limestone shaped pieces**GPMP 182** (fig. 26)

From feature 2 Diane Kerns recovered 60 shaped pieces of gypsum or limestone, ranging from very small, thin bits to fragments as large as 5.8 × 4.5 × 2.3 cm. The largest is A in figure 26, a selection of the larger, better shaped pieces. Some of these are certainly gypsum—soft, pinkish, and porous. It was hard to tell if others were very hard gypsum or limestone. Many are small flakes but a number in figure 26 have finished faces or facets and a variety of shapes. Fig. 26,A could be from the gypsum layer of a roof (like Fig. 13,M). If so, it might have been squeezed into a corner seam so that the smoother surface would be the top of the roof, or, possibly, the underside or ceiling. Others of the flat fragments (fig. 26B-C) could also be roofing, but most of the rest have trapezoidal, conical, or rectilinear shapes that preclude them as roofing. Some may have been parts of molds (e.g., fig. 26,E).

Objects from C11**1. Limestone statue fragment of king in shendyt kilt: feature 1.****GPMP 150**, (fig. 19b)

The chest, abdomen, left shoulder and arm, and back pillar are preserved. The piece is 35.5 cm long, 15.5 cm thick, and 2.5 cm wide including the back pillar.

2. Limestone statue fragment of king in shendyt kilt: feature 1**GPMP 95**, (fig. 19a)

Only the kilt, forward left leg, and parts of lower arms are preserved. The piece is 16 cm long. It is very friable.

3. Limestone statue fragments, shoulder: feature 4**GPMP 179**, (fig. 19c)

The piece is 18.5 cm high, 3.8 wide, and 3.5 cm thick. The piece includes the left shoulder and, below a break, the lower arm. The statue may have been unfinished; the front of the upper arm was left as flat plane. Below the break the lower arm seems to have a curious angle. There is a slight ridge on the chest, just at the break. A bridge to a divine beard seems unlikely because this is not the center of the chest. At the back of the lower arm 5 mm remains of a back pillar. This object was found in two pieces.

4. Limestone statue fragments, leg: feature 4**GPMP 180**, (fig. 19d)

The object includes a bit of the bottom of the kilt, the knee, shin and calf. Found in three pieces (including a flake off calf). Fine modeling of the knee, shin and calf muscles. There is a trace of the plane connecting to the back pillar on the right side of the piece. This piece is possibly from the same statue as No. 179.

5. Limestone statue fragments, feature 4**GPMP 151**

The entry is for two large pieces of a small statue of soft brecciated white limestone. The only part of the figure preserved is the shin, about 5 cm long at join to back pillar, and 2.5 cm at front of shin. The heavy back pillar makes up the bulk of the piece, 8.5 cm wide, 11 cm from shin to back of pillar, 13 cm total height. Leg is statue's right, since that side of back pillar is preserved. A second piece of a back pillar of same quality of limestone, probably from same statue, is 6.5 × 8.2 × 4.2 cm.

6. Limestone pendant or loom weight: feature 4**GPMP 102**, (fig. 20)

This object measures 6.3 × 4.5 cm. A sign is inscribed on one side. The sign might be a crude writing of *st* (“Asiatic”) or *t3 wr* (“port”), the name of one of five Old Kingdom phyles into which temple service and labor were organized. The reading, with the two options, is problematic.²⁷

²⁷ See A. Roth, *Egyptian Phyles in the Old Kingdom*, SAOC 48 (Chicago, 1991), 20–30.

Table 1—*continued*

-
-
7. *Polished alabaster bar: features 3-4*
GPMP 71a-b, (fig. 22a)
 In cross section one corner of this piece is curved, the other has a right angle. It measures 17.5 × 5.5 × 6 cm.
8. *Limestone bar: feature 4*
GPMP 181, (fig. 22b)
 The piece is broken at both ends, roughly square in cross-section, 10.1 × 3.7 × 4 cm. A black line is painted across one smoothed face and, spaced 3.6 cm, there is a short red line extending from one edge. The excavator included about 20 other limestone fragments and 2 of gypsum with 181. Two of the limestone pieces have finished corners reminiscent of the shaped limestone and gypsum pieces from C5/2 (see above, C5 no. 8). One of these is illustrated in fig. 22c.
9. *Sandstone abraider or polishing stone: feature 3*
GPMP 99
 Oval with one flat face, 7.2 × 4 cm.
10. *Faience "tile" piece: feature 4*
GPMP 90, (fig. 21a)
 The glazed surface has a black spot. The piece measures 4.2 × 3.5 cm, 4 mm thick
11. *Faience piece, feature 4*
GPMP 96 (fig. 21b)
 This small piece measures 2.5 × 2.0 cm
12. *Sherd with incised crossed lines, feature 2*
GPMP 167, (fig. 25a)
13. *Faience tubular bead, feature 4*
GPMP 164
 Length: 9 mm
14. *Faience disk bead: feature 4*
GPMP 111, (fig. 25b)
 Diameter 10 mm, 3 mm thick
15. *Two faience tubular beads, feature 4*
GPMP 141, (fig. 25b)
 3 mm diameter × 8 mm length and 3 mm length
16. *Copper needle, feature 4*
GPMP 24, (fig. 27)
 3 cm long, 2 mm diameter
17. *Copper fragments of small, thin, flat piece, feature 4*
GPMP 27, (fig. 27)
18. *Stone jar stopper, feature 5*
GPMP 97
 6.8 × 3.8 cm
19. *Stone bowl fragment, feature 4*
GPMP 87
 2.6 × 2.5 cm
20. *Ceramic "wasters," features 3,5*
GPMP 91, 126
 From pottery sorting in storeroom
21. *Painted sherds, feature 4*
GPMP 124 (one), **129** (three)
 From pottery sorting in storeroom
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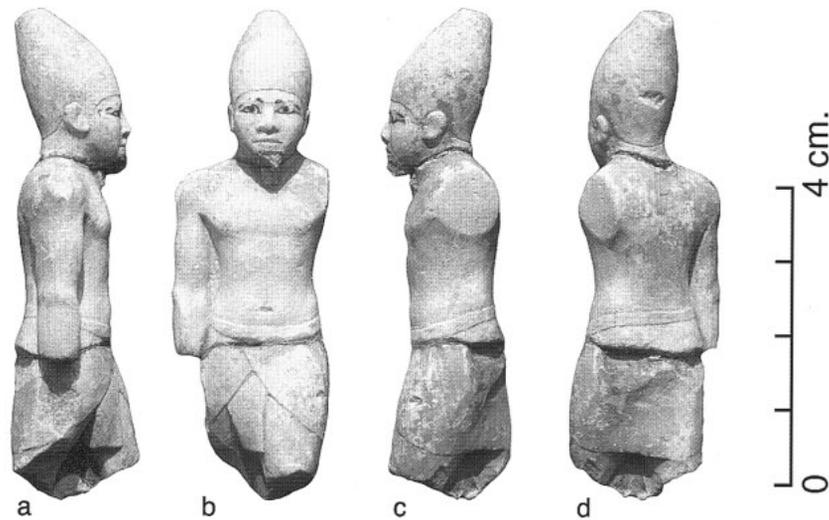


Fig. 14. Royal figurine from C5, feature 2, photographs and drawings (GPMP 149): a. right side; b. front; c. left side; d. back.

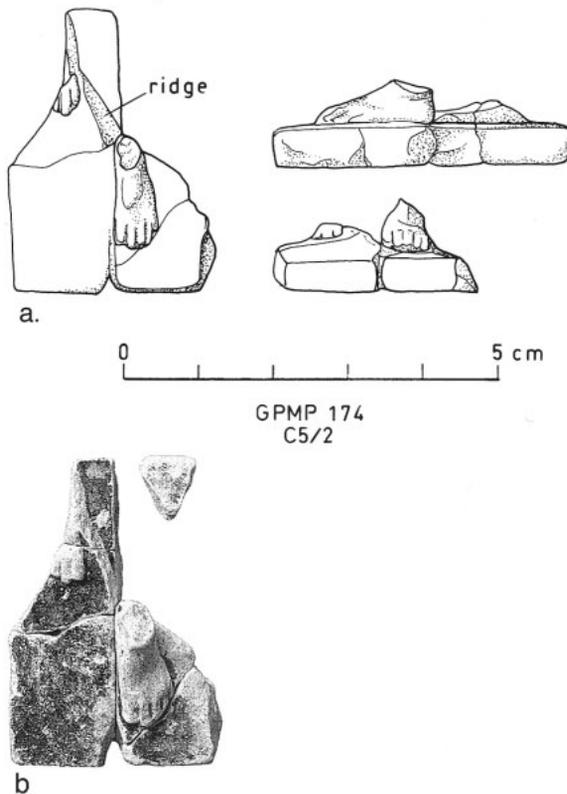


Fig. 15. Base of figurine from C5, feature 2 (GPMP 174): a. drawing scale 1:1; b. photograph, scale 2:1.

Functional Interpretation of the Galleries

One major problem in interpreting the finds from Area C is determining which material corresponds to the primary use of the galleries. The fact that we found the middle and back parts of the galleries to be practically empty suggests that the contents of the galleries were cleared prior to the abandonment of the structure, or that they were never fully used. If the galleries were emptied it is possible that wood from the roofing was also removed. We found roofing fragments and plaster fragments from the side walls intermingled with the pottery, animal bone, plant remains, and craft objects in the intact ancient deposits near the entrances of two galleries in squares C5 and C11. In C11, the roofing fragments originated from both feature 4, the intact ancient deposit, and feature 5, the more concentrated mud deposit on the floor (fig. 12). We must conclude that these features were deposited, along with the artifacts and other materials they contained, as, or after, the roof was deconstructed and the walls had partially deteriorated. One must therefore be cautious in assuming that the finds on the floors

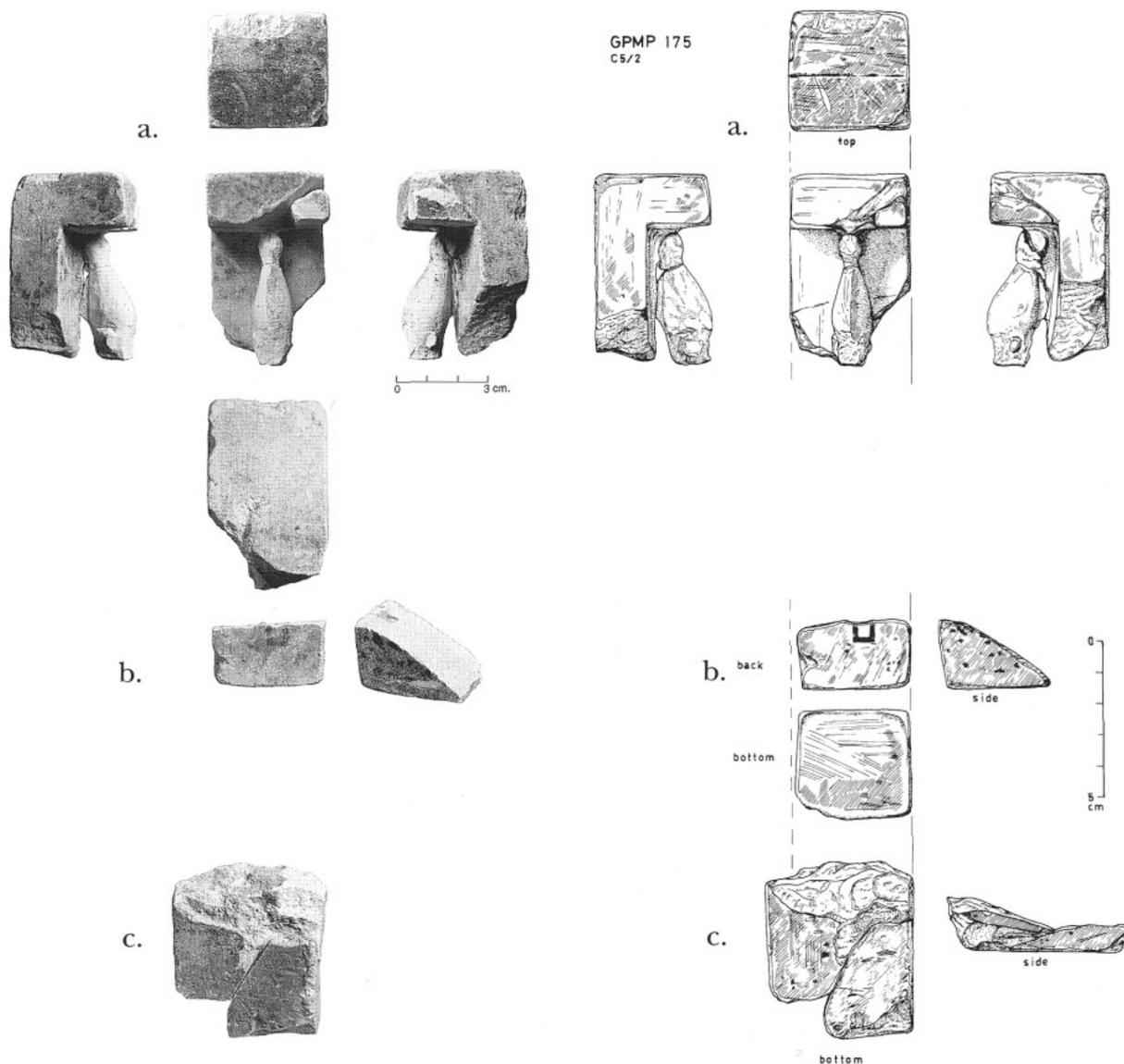


Fig. 16. Three pieces of one or more model statue figurine(s): a. front, sides, top and back (photo) of head piece; b. back, bottom, and side views of base; c. wider base or back piece, bottom and side view (drawing).

of the galleries correspond directly to the principle activities that took place here during their main period of use. A good deal of diverse material could have been piled up near the entrances as the roofs were dismantled and the galleries vacated. This caution being stated, we must still rely to some extent on the concrete finds from the galleries in putting forward interpretations of Petrie's "Workmen's Barracks."

In support of Petrie's hypothesis, the intact ancient deposits in our units near the entrances do have a settlement quality to them. The ashy component suggests there were hearths nearby, and they contain carbonized plant remains, animal bones and pottery. C11 feature 4 contained pig bone—a small amount, but pig might be expected in the context of a small settlement. The flint artifacts include three sickle blades, a

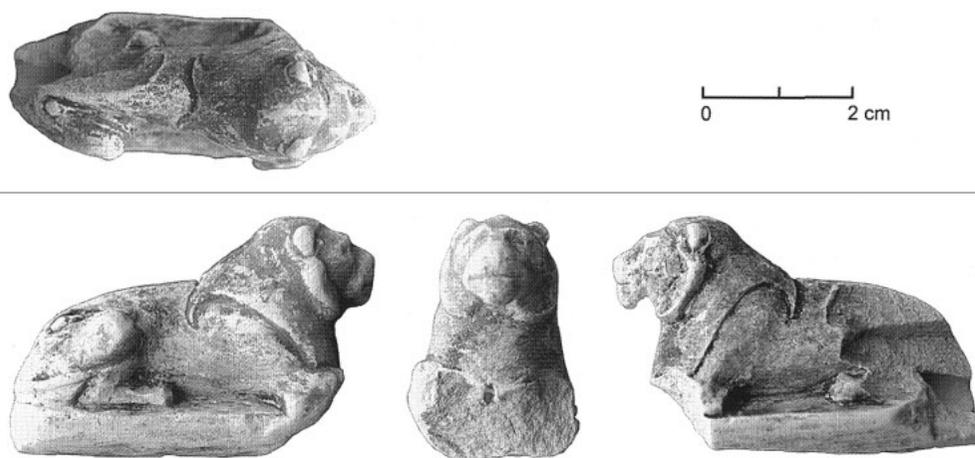


Fig. 17. Lion figurine from C5, feature 2, scale 1:1 (GPMP 152).

form characteristic of settlement contexts (see note 16). In the floral samples, the high proportion chaff could suggest a village if we had analyzed the sample ignoring the obvious pre-planned, state-like character of the Area C galleries. There is in the samples of plant material from Area C evidence of tamarisk wood (*Tamarix sp.*), probably used as fuel. This is considered a cheaper fuel than *Acacia*, commonly found on village sites. *Acacia* is also amply attested in the samples from Area A (Rainer and Gerisch personal communication). While the chaff could be the result of dung fuel, the wastes from all stages of cereal processing could have been burnt as fuel. Chaff might be expected in a grain storage facility. In this context the resemblance of the galleries to New Kingdom temple storage facilities might be noted, as is discussed below. However, where burnt storage facilities have been found at Abydos, for example, there is almost no chaff at all.²⁸

As for the pottery, the high number of bread molds and trays in C11, features 4 and 5, also lend the impression of food production or consumption, giving the deposit a domestic cast. The high percentage of a particular type of bowl,

our type CD7, on the other hand, suggests a rather specialized function. So does the overall pattern of the galleries which, the settlement-like material notwithstanding, is about as unlike a village as one might imagine. The eleven excavation units produced no obvious hearths, internal walls, or other installations (ovens, pot stands, etc.) that one would expect from domiciles, even those of a barracks character.

It is reasonable to ask what other ancient Egyptian buildings resemble this great set of galleries; to compare form and what we know of function while being cautious of possible multiple uses, and changes over the course of centuries. The Area C galleries resemble, at least superficially, galleries identified as granaries around New Kingdom temples, or at the "King's House" at Amarna. Kemp pointed out, citing tomb scenes, that these long comb-like corridors could have stored a wide variety of commodities.²⁹ The galleries with staircases are thought to be granaries because the stairs would have allowed the compartments to be filled through roof apertures.³⁰ Kemp stated "it is likely that in any [New Kingdom] large magazine block most

²⁹ B. J. Kemp, *Ancient Egypt, Anatomy of a Civilization* (London, 1989), 191–95, fig. 69.

³⁰ Kemp, *Ancient Egypt*, 192, fig. 68.

²⁸ Mary Anne Murray, personal communication (2000).

of the capacity was used to store cereal grain, as at the Ramesseum."³¹ On architectural grounds, one might feel most comfortable interpreting the galleries at Giza as an enormous storage facility. As in the case of the New Kingdom storage galleries, it would seem that the most likely commodity that required a total length of roughly 2.5 km of galleries with an interior volume of about (3 m × 3 m × 25 m × 100 galleries) 22,500 m³ would be cereal grain. Unlike the New Kingdom grain storage magazines, excavation has yielded no evidence for stairways in the area C galleries. However, we wonder if the very empty and clean condition of the back ends is because this was dark, dead storage space, left clean when the commodities were removed. In contrast, those on guard and craft duty may have left their trash just inside the entrances, which provided light and shelter. Again, one could consider whether the high proportion of chaff in the plant remains might be due to grain storage. Grain (emmer and barley) stored while still in spikelet has the advantage of greater protection from moisture. Artistic evidence "indicates that, after winnowing and sieving, the cereals were recorded by scribes and put directly into storage, evidently still in spikelet form, since no further processing, such as the pounding stage, is associated with this sequence."³²

In addition to grain storage, the ancient Egyptians of the New Kingdom organized other functions in long rows of narrow modular units. In ground plan the Area C enclosure and galleries resemble superficially the Dynasty 18 "Temple Magazines" south of the Great Temple of the Aten at Amarna, in that both layouts include comb-like modular units and broad open spaces within rectangular enclosures. The Amarna temple magazines, however, are grouped in three sets of galleries—two long and one shorter, altogether measuring about 187 × 80 m.³³ The modular units are shorter than the Area C galleries, and several of those that were excavated had internal features including ovens, bins, and stairways. On the

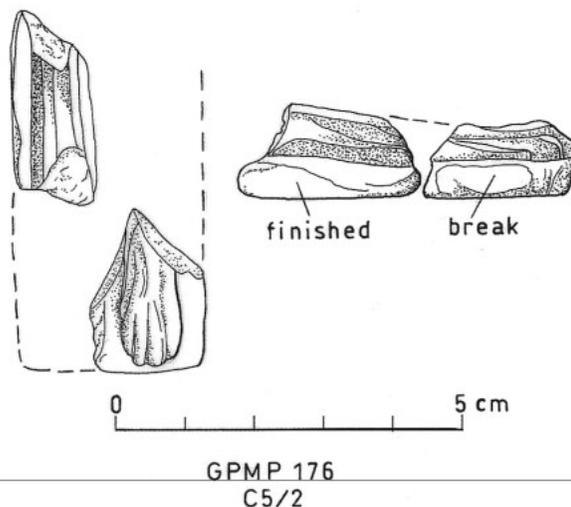


Fig. 18. Fragments of lion figurine from C5, feature 2 (GPMP 176).

basis of huge quantities of bread molds in the vicinity, in particular in a large dump outside and to the east of the complex, Kemp identified the Temple Magazines as the temple bakeries.³⁴ He compares the compartments on the ground with depictions of compartmentalized baking in relief carved blocks.³⁵ These depictions suggest vaulted roofs for the magazines. Kemp calls the bakeries "a rare example of large-scale factory production though characteristically arranged in the form of repeated cellular units."

It is worth noting that while the bread production function of the Amarna temple magazines

³¹ Kemp, *Ancient Egypt*, 194, fig. 69.

³² M. A. Murray, "Cereal Production and Processing," in P. T. Nicholson and I. Shaw (eds.), *Ancient Egyptian Materials and Technology*, (Cambridge, 2000), 527–28.

³³ J. D. S. Pendlebury, *The City of Akhenaten, Part III, Vol. 2: plates* (London, 1951), pl. XII.

³⁴ B. J. Kemp, "Preliminary Report on the El-Amarna Survey 1978," *JEA* 65 (1979), 7–12.

³⁵ B. J. Kemp, *Ancient Egypt, Anatomy of a Civilization* (London, 1989), 289–91, fig. 96.

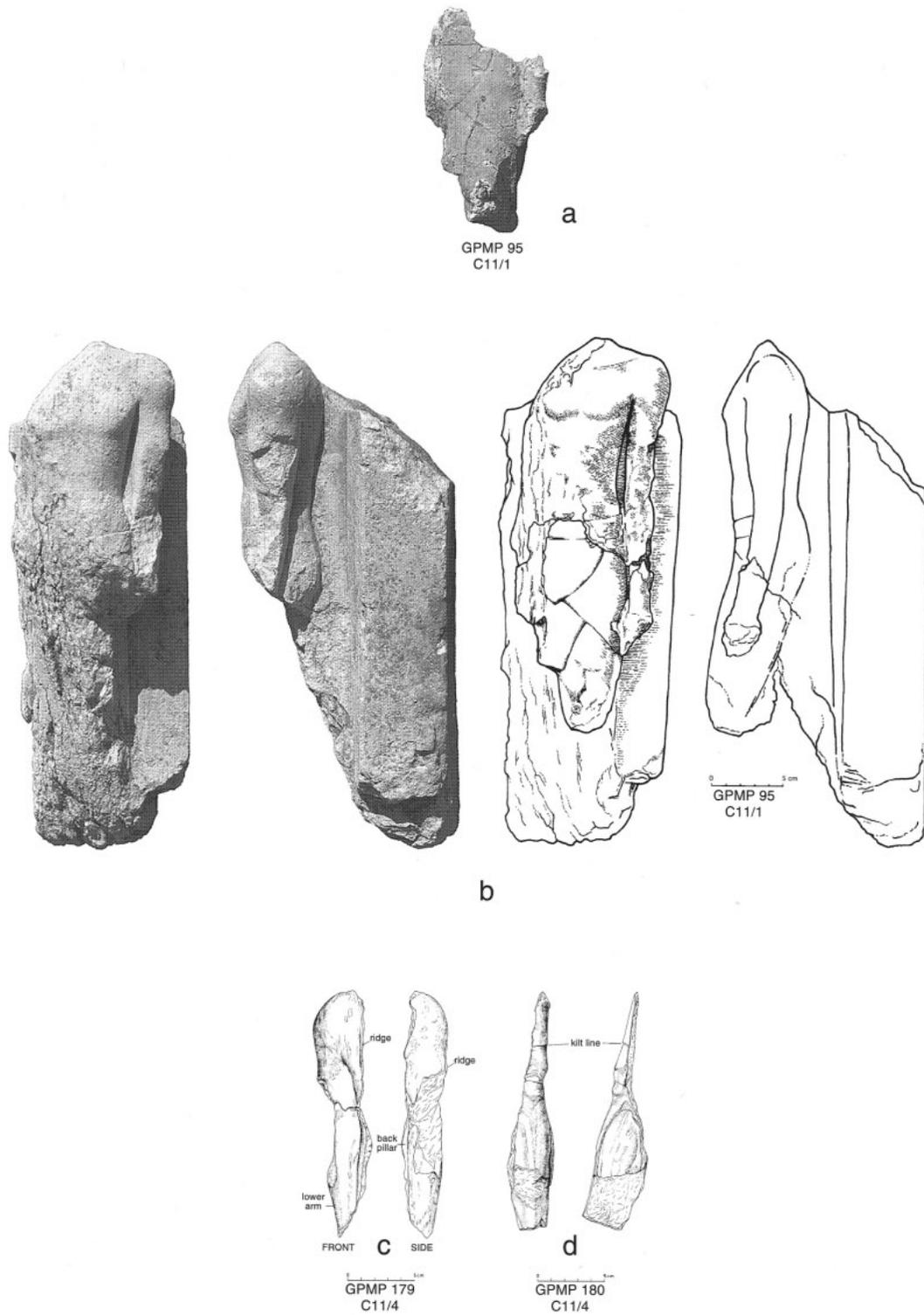


Fig. 19. Royal statue fragments: a. front of middle part of small statue (GPMP 95); b. large statue fragment, front and side views (GPMP 150); c. shoulder and arm piece (GPMP 179), front and side; d. Leg piece, (GPMP 180) front and side.

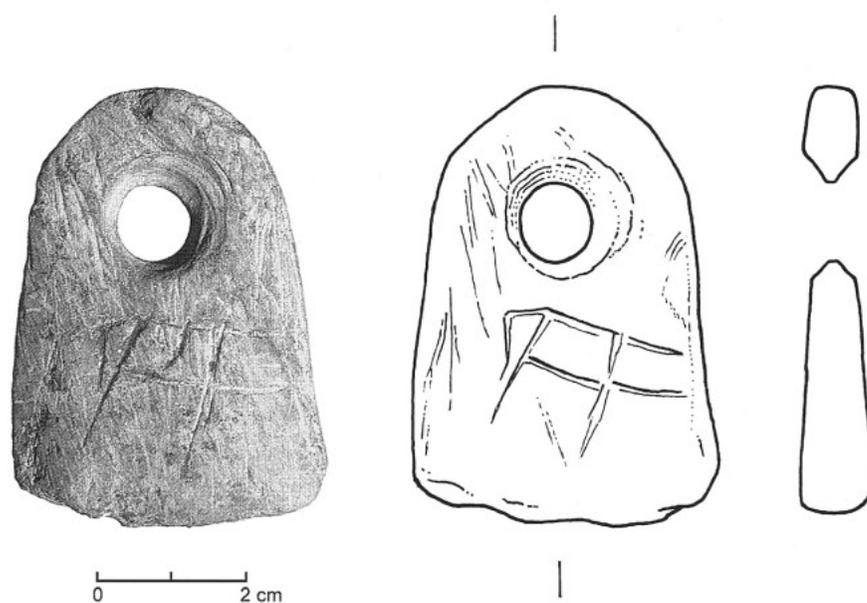


Fig. 20. Pendant (loom weight?) (GPMP 102).

is indisputable, craft activities, similar to those suggested by our evidence for Area C, may have also been carried out in this complex. While failing to recognize the evidence for bread production, Pendlebury noted a list of small objects from the magazines and from the approach on the west. His list includes fragments of faience inlay, a faience fish, a sculptors trial piece of a clenched hand, bronze nails, a lid and roundel of alabaster, a faience figurine, the lower face of a sandstone statue, a bronze dish and rings, a stone mould for metal amulets, and an inscribed stone weight.³⁶ To the extent that these items reflect the use of this installation, or the use of the magazines, they suggest a variety of craft work activities in addition to baking.

Although the Area C galleries seem to have been largely emptied, the materials we found overwhelmingly suggest craft activity of a kind and quality not expected for "barracks" that

sheltered unskilled labor. Petrie already found this kind of evidence in the form of "many fragments of early statues in diorite, alabaster, and quartzite."³⁷ The figurines and other items like the curious shaped limestone and gypsum objects (fig. 26) suggest that sculpture and fine art were conceptualized and experimented with in this place. To reify, to first render a concept or motif in material, may be the very purpose of the figurines as a genre, which are paradoxically so diminutive compared to the immensity of the galleries in which they were found. The tiny model of an architectural statue (fig. 16) must be a conceptual piece in which a back pillar and projecting colonnade roof are being worked out in combination with the king wearing the south crown. Certainly the actual sculpture being conceived would have been finished in its temple location. However, the large pieces (fig. 19) suggest that larger sculpture—still much less than life size—and other crafted products were worked within the Area C galleries enclosure. We also found a granite artifact 41 cm tall, 17 cm wide and 14 cm thick on the surface in the northeast corner of the galleries enclosure (fig. 24).

³⁶ J. D. S. Pendlebury, *The City of Akhenaten, Part III, Vol. 1: Text* (London, 1951), 31. Fairman thought the hieratic dockets naming the "store house," *Šn^c K3 n^cnh R^c*, referred to the temple magazines directly south of the Great temple of the Aten because this was the only institutional name on dockets from the area. H. W. Fairman, *The City of Akhenaten, Part III* (London, 1951), 211.

³⁷ Petrie, *Pyramids and Temples of Gizeh*, 31, 102–3.

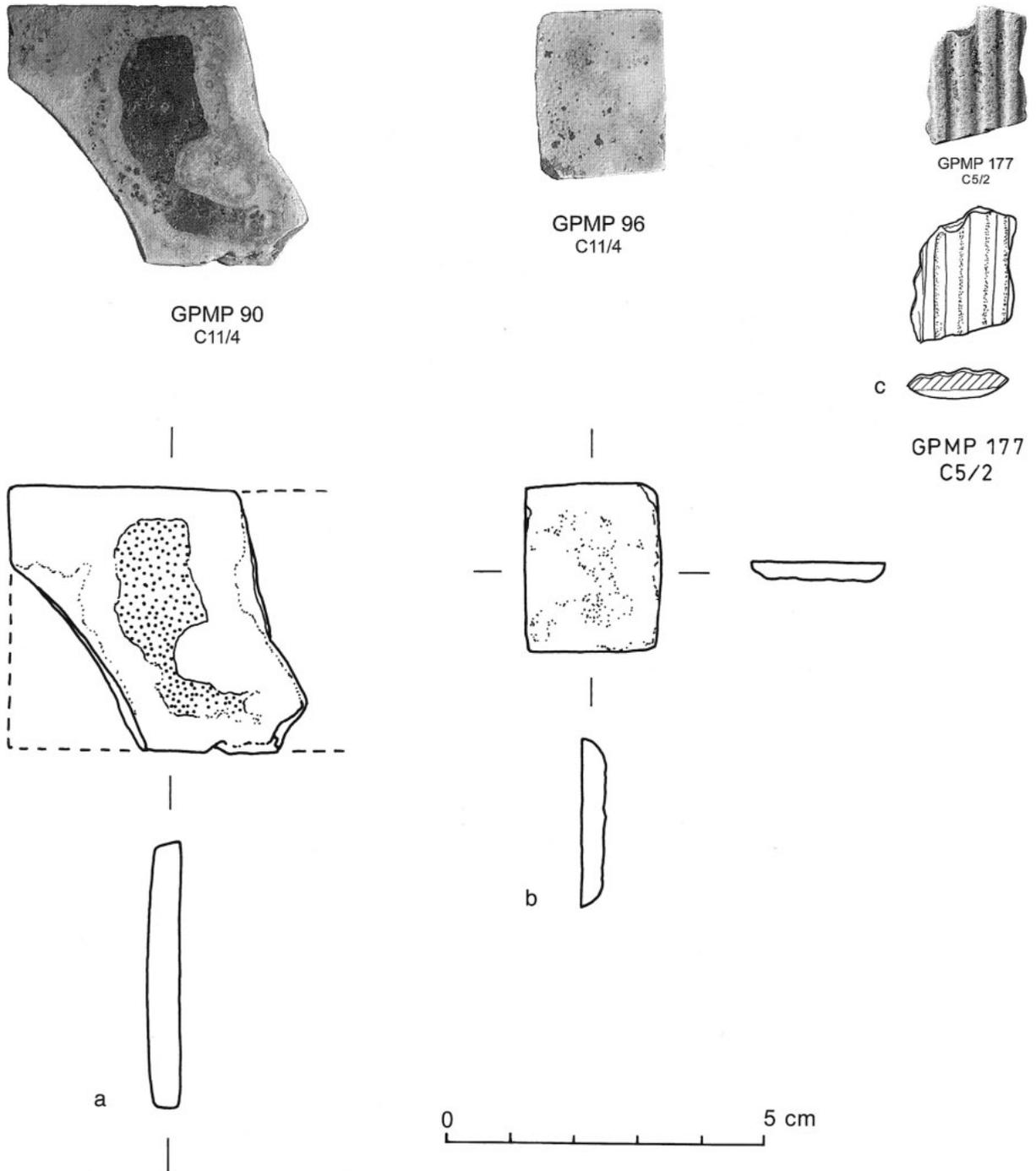
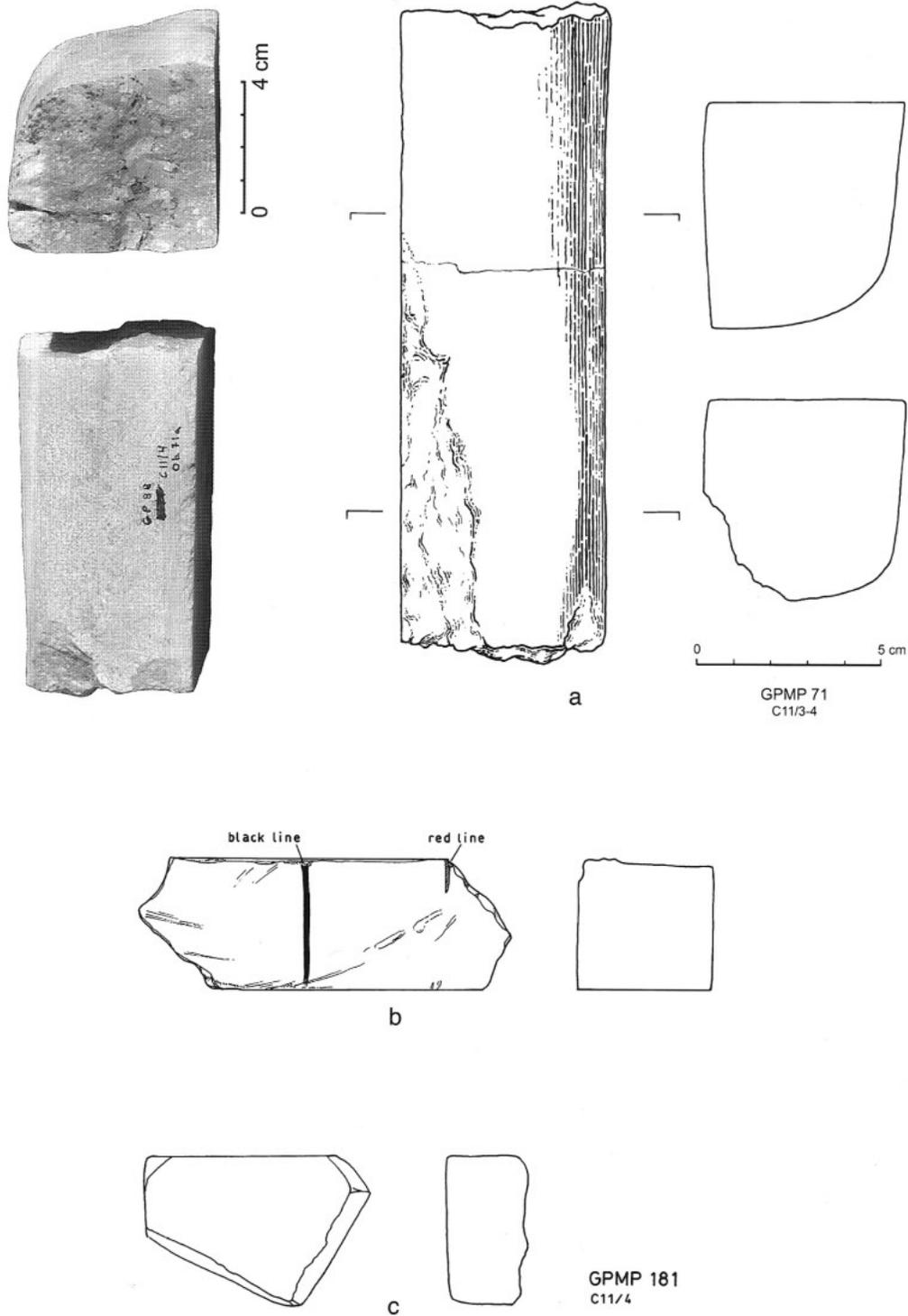


Fig. 21. Faience pieces (1:1): a. GPMP 90 from C11, feature 4; b. GPMP 96 from C11, feature 4; c. GPMP 177 from C5, feature 2.



GPMP 71
C11/3-4

GPMP 181
C11/4

Fig. 22. Alabaster and limestone bars: a. Alabaster bar from C11, features 3-4, photo; b. GPMP 71; c. Limestone bar GPMP 181 from C11, feature 4, with black and red painted lines; c. shaped limestone piece.

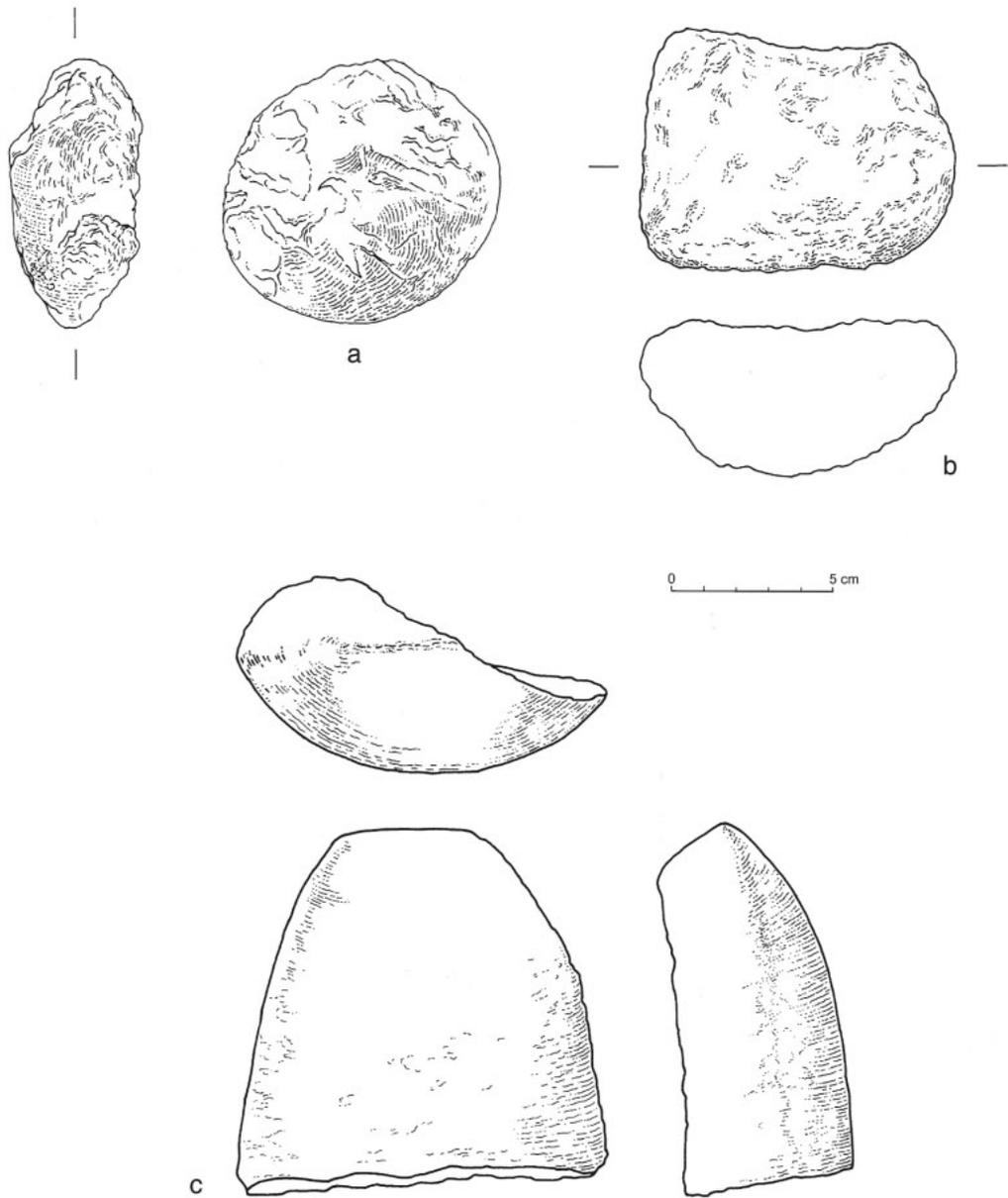


Fig. 23. Hammer stones: a. dolerite poulder from C5, feature 2 (GPMP 79), strike end shows traces of white, 8.2 × 7.9 cm; b. dolerite poulder from C1, feature 5 (GPMP 47); c. end of polished diorite hammer (GPMP 81) from C8 feature 3, 11.4 × 11.6 cm.

This piece might be an unfinished offering stand. It must be an example of the granite blocks of "pillowy form" that Petrie mentions finding in the area of the galleries.³⁸

³⁸ "Unaccountable blocks of granite were often found, lying loose in the sand; they are smoothed all over, about 30 lbs. weight, with rounded faces and slight edges. They never

Given the relative emptiness of the galleries in most of our excavation units, we would not immediately suggest that other kinds of materi-

show any wear, and so could hardly be corn rubbers; and yet they were too smooth and not flat enough to be intended for a building." Petrie, *Pyramids and Temples of Gizeh*, 103.

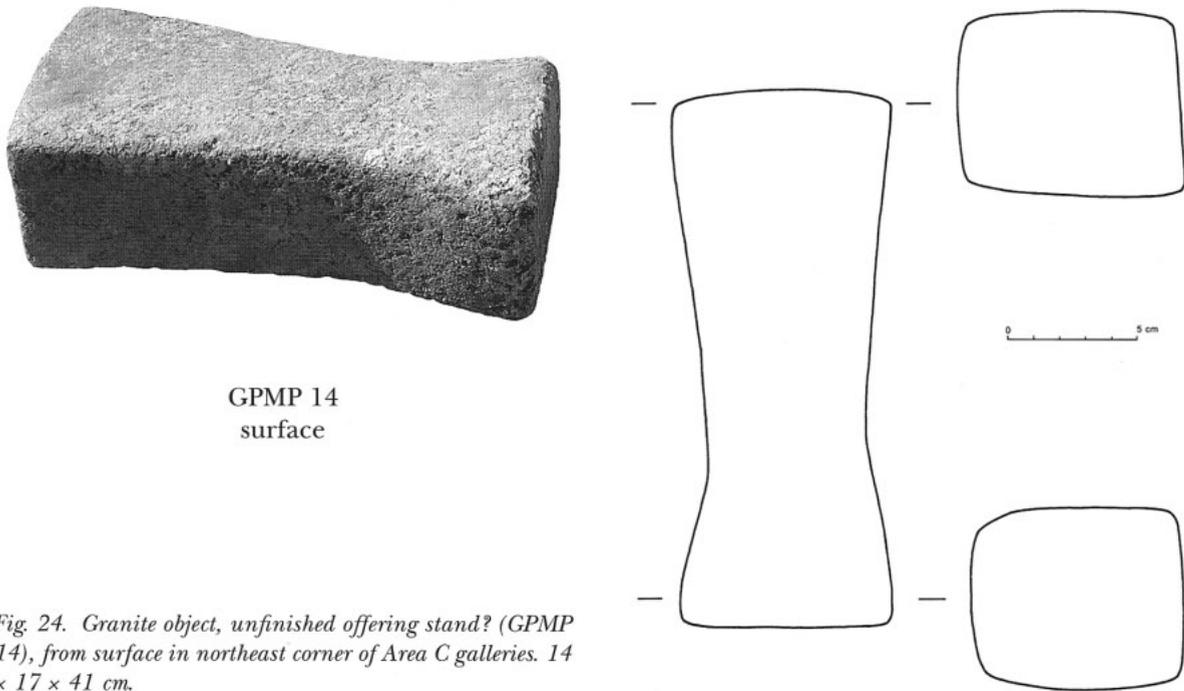


Fig. 24. Granite object, unfinished offering stand? (GPMP 14), from surface in northeast corner of Area C galleries. 14 x 17 x 41 cm.

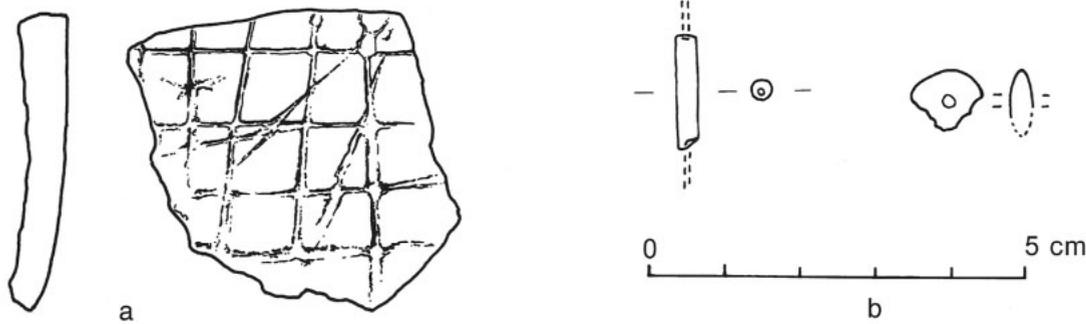


Fig. 25. a. Sherd with incised cross lines from C11, feature 2 (GPMP 167); b. Beads: left, tubular bead from C11, feature 4 (GPMP 141); right, disk bead from C11, feature 4 (GPMP 111).

als were being processed or produced in this complex. However, the number of copper bits recovered here and there close to, or embedded in, floors leads us to ask if copper objects were produced in, or in front of, the galleries. Other small bits of material also direct our attention to the question of copper production or processing in this gallery complex. These in-

clude the pieces of malachite—a copper ore mineral—that were found in C7, in C2, feature 3 (along with a bit of feldspar), and in C5 feature 2. In C10 excavators found a pottery sherd with “slag” adhering to it and identified two pottery sherds as “wasters” from C11, features 3 and 5, and another “waster” from C8, feature 2. Thus one could ask whether pottery and faience

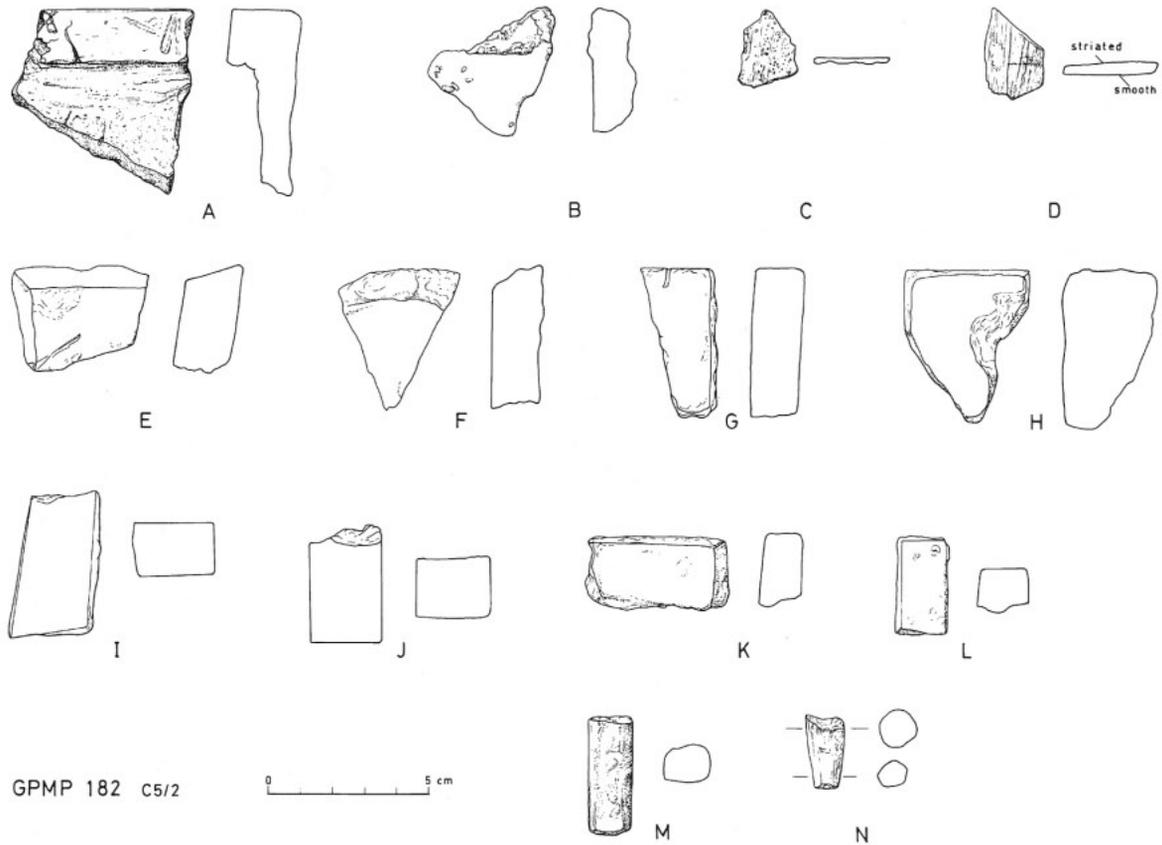


Fig. 26. Hard gypsum and limestone objects from C5, feature 2: A–D are definitely gypsum, possibly roofing fragments (see fig. 13M). E through N are very hard gypsum or limestone.

objects, such as the tiles (fig. 21) were also produced in Area C.

It seems unlikely that “wasters” or sherds with “slag” would be introduced into the galleries if the activity that usually produced such items did not take place nearby. But we lack other tangible evidence of copper work like “crucibles, tuyères, moulds, waste, slag, and other metal working tools” such as that found on other sites where copper work has been ascertained.³⁹ It is possible that copper work was carried out in the galleries with portable tools like clay crucibles, and blowpipes⁴⁰ that were removed when the galleries were abandoned. Evidence from

Abydos indicates that early faience production could have left nothing more sophisticated than simple bowl-shaped pits, in one case lined with fire-reddened mud bricks.⁴¹ Again it is possible that our excavation units simply missed this kind of evidence, and that we missed the kind of more permanently built features or large ash-filled pits and trenches such as we found in the Area A galleries in 1998 associated with roasting and copper work.⁴² There the back of the galleries were probably unroofed. In tight spaces where production involved burning and roasting, the floors are covered in ash and charcoal. One

³⁹ J. Ogden, “Metals,” in P. T. Nicholson and I. Shaw (eds.), *Ancient Egyptian Materials and Technology*, (Cambridge, 2000), 155.

⁴⁰ Ogden, “Metals,” 151.

⁴¹ P. T. Nicholson, “Egyptian Faience,” in P. T. Nicholson and I. Shaw (eds.), *Ancient Egyptian Materials and Technology*, (Cambridge, 2000), 180–81.

⁴² M. Lehner, “Giza,” *The Oriental Institute 1998–1999 Annual Report*, 70–71, fig. 5.

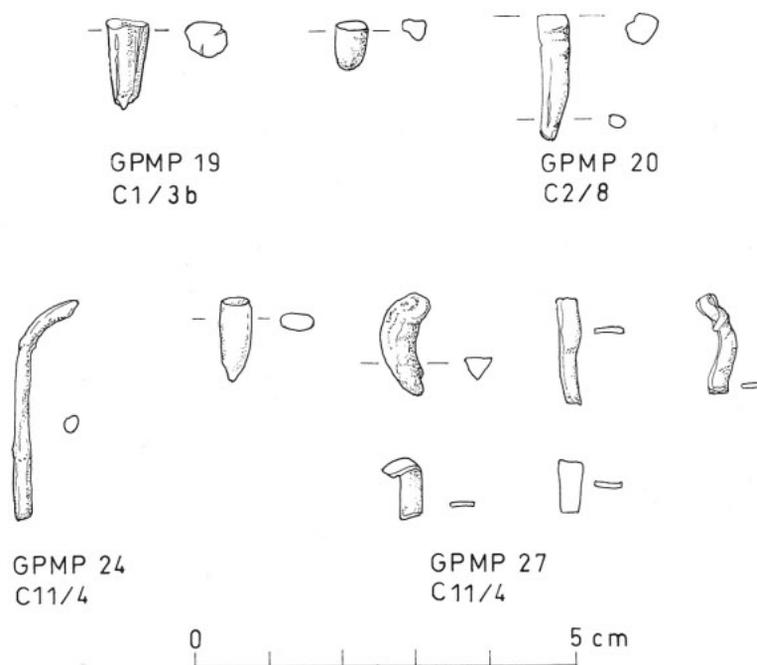


Fig. 27. Selection of copper pieces from Area C galleries. GPMP 19 from C1, feature 3b; GPMP 20 from C2, feature 8 (alluvial mud floor in front of entrance to Gallery 68). GPMP 24 and 27 from C 11 feature 4. GPMP 27 is a selection from 21 small pieces, most of which appear to be very small bits broken from a thin flat strip. Scale 1:1

could imagine that such activity took place in the 80-meter-broad area along the eastern part of the rectangular enclosure in which the Area C galleries are located. Without the protection of the densely spaced gallery walls, smaller structures and loose material could have simply been eroded away in the years after the gallery complex west of the Khafre Pyramid was abandoned.

The wide distribution of copper bits throughout our excavation units is noticeable. We found copper in unit C3, a back end of a gallery, in C2, C6, and C8, toward the middle of galleries, and in C11, near the entrance of a gallery (fig. 3). If not manufactured here, one could still ask if copper, including tools, might have been stored within the galleries.

More excavation and analysis of the copper and other materials such as the “wasters” and “slag” are needed to ascertain the range of activities carried out in the Area C gallery complex. So far, the evidence certainly points away from a simple barracks-like shelter for unskilled workmen. If one looks primarily to the mate-

rial remains from within the galleries, one must note the conspicuous presence of evidence for craft activities and particularly stone working at Area C. Models and depictions of Old, Middle and New Kingdom workshops of various kinds indicate that craft work and other kinds of production were conducted inside highly compartmentalized structures which were open at least in part to sunlight.⁴³ Sliwa noted that for woodworking “the workshop—or place set aside for craftsmen—had an adjoining store for raw materials (beams, boards, and wooden sticks for further

⁴³ H. Junker, *Die gesellschaftliche Stellung der ägyptischen Künstler im Alten Reich*, Österreichische Akademie der Wissenschaften, *Phil.-Hist. Klasse. Sitzungsberichte* 233, Band 1 (Vienna, 1959), 35–36, fig. 1; J. E. Quibell, *Excavations at Saqqara (1906–1907)* (Cairo, 1908), Pl. 17:4 for workshop in tomb of Karenen; J. H. Breasted, *Egyptian Servant Statues* (New York, 1948), 50; H. E. Winlock, *Models of Daily Life in Ancient Egypt* (Cambridge, Massachusetts, 1955), pls. 28, 29, 68; N. Davies, *The Tomb of Neferhotep at Thebes* (New York, 1923), pl. 11; N. Davies, *The Tombs of Menkheperresonb, Amenmose, and Another* (London, 1933), pl. 11; N. Davies, *The Tomb of Two Sculptors at Thebes* (New York, 1925), pl. 11.

treatment and production); this separate room must have also served as a store for complete products."⁴⁴ Area C conforms to this pattern insofar as the large area in front of the galleries might have provided an outdoor working space for the craft people who must have manufactured statues and other goods to meet the needs of the royal necropolis. If the area in front of the galleries served as a work place for skilled artisans, the galleries may have been used in part to store the goods manufactured here. Additional goods or food stuffs may also have been stored in Area C. We could thus see the Area C enclosure as a typical ancient Egyptian workshop enlarged an order of magnitude and then repeated a hundred fold inside the 450 × 80 meter enclosure.

The problem here is that our sample excavation units suggest that most of the galleries were emptied thoroughly, or else were never used before the structure was left to collapse and eventually fill with drifting sand. This house cleaning may make a definitive answer to this question impossible, although further excavation may indeed shed more light on the question of function.

Finally, we must consider the possibility that the role of the galleries was not entirely utilitarian. The position of the structure in a prominent spot in the Giza necropolis suggests that the design of the galleries might not have been inspired by strictly practical considerations. This possibility forks in two directions. On the one hand the immense design, laid down according to a preconceived scheme by "state" or royal house planners, may never have been very practical for those who carried out whatever activity actually took place within its boundaries. In this case the galleries may not have been fully useable or used beyond craftsmen ensconced just inside the entrances of some of the units, while leaving the long corridors behind them largely empty. On the other hand the Area C galleries may have been a huge symbolic provisional facility, as much for the king's afterlife as for servicing the royal structures of this world. If this was the motivation for creating this vast com-

plex—perhaps not entirely divorced from the first consideration of impracticality—the Area C galleries would be similar in function to the equally immense subterranean system of magazines west of the Djoser Step Pyramid complex.⁴⁵

Date

Petrie cites three reasons for dating the galleries no later than the reign of Khafre; 1) the galleries are arranged square to the Second Pyramid; 2) the placement of the galleries would be out of the way for later work on the plateau; 3) the walls are of the same style as the other large fieldstone and clay walls (Petrie's "peribolus walls") west and north of the Khafre pyramid.⁴⁶

The galleries are arrayed west of the Khafre Pyramid square with the terrace on which it is founded and with the base of the pyramid itself. They are a neat western extension of the enclosure formed by the secondary "peribolus walls" of field stones on the west and south, and the unfinished wall of large limestone blocks on the north. This pattern gives us the strong impression that the galleries belong to the scheme of the Khafre Pyramid complex.

The relationship of the enclosure containing the galleries with the Menkaure complex is unclear. It would be useful to clear the corner between the western enclosure wall of the galleries and the northern fieldstone "peribolus wall" of the Third Pyramid, if it has not been obliterated by the modern asphalt road and the gravel tourist road leading to the front of the Third Pyramid (fig. 3). In Petrie's day the spot must have been less disturbed. His map shows the long rectangular enclosure of the galleries closed on the south end by the north fieldstone wall of the Menkaure enclosure.⁴⁷ Although it forms the southern side of the enclosure around the Area C galleries, Petrie noted more than once that

⁴⁵ J. P. Lauer, *La Pyramide à Degrés, III* (Cairo, 1939), 39, pl. 22. A central corridor and two parallel corridors extend over 365 meters north to south and connect 400 rooms arranged like teeth on a comb. In the north side, west end, of the Djoser enclosure, below dummy granaries, a set of magazines, 68 meters long, were found to contain figs, Juniper berries, and long loaves of bread; Lauer, *La Pyramide à Degrés I* (Cairo, 1936), 184–85.

⁴⁶ Petrie, *Pyramids and Temples of Gizeh*, 102.

⁴⁷ Petrie, *Pyramids and Temples of Gizeh*, pls. 4–5.

⁴⁴ J. Sliwa, *Studies in Ancient Egyptian Handicraft: Woodworking* (Warsaw, 1975), 43.

this wall was probably built as part of the secondary enclosure ("peribolus") of the Menkaure Pyramid. Toward the east, this northern wall of Menkaure's secondary enclosure joins what Petrie saw as the earlier southern wall of the Khafre secondary enclosure. Since the two walls are not quite aligned, they were joined by an elbow.⁴⁸ The importance of this for dating the use of the galleries is that if the southern wall of the enclosure around the Area C galleries was built (or rebuilt, replacing an earlier wall) in the reign of Menkaure, the galleries would have been accessible from the south during the building of the Third Pyramid. Petrie, furthermore, noted that the west side of the Third Pyramid is nearly aligned with the western enclosure wall of the galleries and that the north peribolus wall of the Third Pyramid (which is the south wall of the enclosure around the galleries), divides the space between the Third Pyramid and the last of the galleries on the south in half. It thus seems likely that the galleries were accessible during the reign of Menkaure, and that his pyramid was positioned in a meaningful, measured, relationship to them.⁴⁹

On the other hand, the small model of an architectural statue (fig. 16) from excavation unit C5, feature 2, provides the impression that the galleries and their contents date to the reign of Khafre. The little piece depicts a royal statue in granite against a granite back pillar topped by a projecting roof that would have to have been from a colonnade around an open court. According to reconstructions of the finished form of the Giza pyramid temples allowed by evidence on the ground, there were no granite court statues with back pillars in the mortuary temples of Khufu and Menkaure.⁵⁰ Only the Mor-

tuary Temple of Khafre and the Sphinx Temple, which was probably also built for Khafre, had exactly this configuration with royal granite statues around an open court, just in front of pillars, and under the projecting roof of a colonnade. However, the most recent reconstruction of these temples would have seated statues of the king wearing the *nemes* headdress, rather than striding granite statues of the king wearing the south crown,⁵¹ which is what our craftsman from Area C seems to have had in mind.

Conclusions

The goal of the 1988/1989 excavation in Area C was to confirm or refute a more than century old view of Petrie that the galleries west of the pyramid of Khafre housed the workers who build the monumental structures on the Giza Plateau. Several lines of evidence suggest that the structure dates to the reign of Khafre but may have been used into the reign of Menkaure. We cannot be entirely certain that the galleries served a single discrete function. In fact a clear distinction in function for such an ancient Egyptian installation may be artificial, reflecting a modern penchant for zoning and specialization that did not hold in the practical world of its day. We can say that the architecture and the nature of the cultural deposits within the galleries are not consistent with Petrie's interpretation. The most likely interpretation is that these galleries were planned initially as storage

⁴⁸ Petrie, *Pyramids and Temples of Gizeh*, 101, 114.

⁴⁹ According to Petrie's map, once the secondary field-stone walls were built on the north and west of the Menkaure Pyramid, an opening was left to the west by the fact that the western enclosure wall of the galleries did not touch the northern peribolus wall of the Menkaure Pyramid. There is another opening into the empty rectangular enclosure west of the Menkaure Pyramid, so that one could have exited the Area C galleries at the southwest corner of the enclosure by turning west, then entered the Menkaure western enclosure by turning south.

⁵⁰ J. P. Lauer, "Le temple funéraire de Khéops à la grande pyramide de Guizéh," *Annales du Service des Antiquités de l'Égypte*

46 (1947), 246–59, fig. 17; "Note complémentaire sur le temple funéraire de Khéops," *Annales du Service des Antiquités de l'Égypte* 49 (1949), 116–23; G. A. Reisner, *Mycerinus, The Temples of the Third Pyramid at Giza* (Cambridge, Massachusetts, 1931), pls. I–III; H. Ricke, *Bemerkungen zur ägyptischen Baukunst des Alten Reiches II (Beiträge zur ägyptischen Bauforschung und Altertumskunde 5)*, (Cairo, 1950), 28–29. Tf. 1, 3.

⁵¹ Ricke, *Bemerkungen zur ägyptischen Baukunst des Alten Reiches II*, Abb. 17–19, Tf. 2 for the Khafre Mortuary Temple; Ricke, "Der Harmachistempel des Chefred in Giseh," *Beiträge zur ägyptischen Bauforschung und Altertumskunde* 10 (Wiesbaden, 1970) 12, 25–26, Plans 3, 4; See pp. 10–12 where Ricke points to a close match in the layout of the Sphinx Temple and Khafre Mortuary Temple. The colossal royal statues in both temples appear to Ricke, and to U. Hölscher, *Das Grabdenkmal des Königs Chephren* (Leipzig, 1912), 56, to have been systematically removed for re-use elsewhere.

facilities for materials with a high volume. In practice, this material could have included foodstuffs, raw craft material, and manufactured objects including copper, statues and other goods related to the royal cult of the dead. The evidence indicates that the galleries, and the areas in front of the galleries, were used for a variety of crafts, particularly sculpting and stone working. Perhaps the location of this immense swath of galleries near the highest part of the Giza

Plateau, west of the pyramids, and far from the presumed main settlement near the flood plain, provided a form of security and control for food, precious materials, and the finer craft industries.

University of Tübingen
Harvard Semitic Museum and Oriental
Institute, University of Chicago