INTRODUCTION

About 2475 b.c., in the latter part of the Fifth Dynasty of Egypt, the necropolis that surrounded the Fourth Dynasty pyramids of Giza once again became a popular site for the tombs of Memphite officials. Among these new tombs was a group of mastaba tombs that clustered along the northern edge of the great Western Cemetery, west of the Great Pyramid. This cluster began just east of the large Fourth Dynasty tombs of cemetery 2100 and extended west to a point opposite the north face of the giant mastaba g 2000. The cluster was bounded on the north by an escarpment and on the south by a path that led past the north face of g 2000 and into the western part of the mastaba field. Between 1936 and 1939, the tombs of this cluster were excavated by George Andrew Reisner for the Museum of Fine Arts and Harvard University. Reisner assigned the tombs in the group the numbers from g 2084 to g 2099 and the numbers g 2230, g 2231, and g 2240.

Averaging less than 50 square meters in area, the principal mastabas typically had recessed or L-shaped chapels, or simple false door emplacements. None of the chapels had more than one decorated room, although courtyards and porticoes were occasionally enclosed to form undecorated anterooms. Seven of the mastaba chapels were completely decorated and two others had isolated areas of decoration. Three of the subsidiary mastabas also contained decorated elements.

All of the inscribed tombs belonged to officials bearing the title *ḫntj-š pr-ꜥ* or one of its supervisory levels. Whatever its literal meaning, this title clearly entailed personal service to the living king that was performed in his palace. I have therefore translated it "palace attendant."

As with earlier publications in this series, the aim of the present volume is to present the artifactual, iconographic, and architectural results of the excavation as clearly and economically as possible. Secondary studies comparing the tombs with tombs and cemeteries elsewhere will be published separately in articles by the present author[1] and, it is hoped, by other scholars using this volume. However, because these tombs are contiguous, and because their owners bear the same title, the architectural relationships between the tombs, as well as the family and professional relationships between their owners, have been subjected to a more detailed study than was attempted in earlier volumes.

[1] An initial article has already appeared: A.M. Roth, "The Practical Economics of Tomb Building in the Old Kingdom: A Visit to the Necropolis in a Carrying Chair," in: *For His Ka: Essays Offered in Memory of Klaus Baer*, D. Silverman, ed., SAOC 55 (Chicago, 1994), pp. 235–48. Further articles are planned treating the carrying chair motif in general and the "spanking" scene in g 2091 and g 2097.

The publication thus has two parts. The first part deals with the architecture of the cluster as a whole, the sequence of its development, the interrelationships of its tomb owners, and, so far as they can be discerned, the principles that governed the spatial organization and forms of its tombs. The second part details the archaeology, architecture, and iconography of the individual tombs that make up the cluster. For convenience of reference, these individual studies, like the corresponding sections of photographs and drawings at the end of the volume, are arranged by tomb number, which is essentially the order in which the tombs were excavated. The position of a tomb in this section thus does not in any way reflect its chronological position or its interest or importance.

The one exception to this pattern is discussion of the tomb shaft or serdab, variously labeled "2091 x" and "1903 x," in which two statues were found in 1926. The tomb that was the source of these statues has not been located, but the finds and the evidence for the tomb are discussed in conjunction with 2097 a, b, and c, because those subsidiary tombs seem to have been nearest to it.

Summary of Conclusions

A careful examination of the evidence for the processes of construction and modification of tombs can yield conclusions about the organization of cemeteries, the decisions made by tomb builders, and the constraints limiting those decisions, such as tradition or control by some sort of central authority. The first four chapters of this volume are an initial attempt to address such questions in this small part of the Giza cemetery. As a by-product of these investigations, patterns were also noted that have implications for the nature of the office of *ḫntj-š* and the cultural conventions surrounding funerary, and perhaps to some extent domestic, architecture.

Membership in the corps of palace *ḫntjw-š* seems to have been a prerequisite for owning a tomb in this cluster, and in most cases the size of the mastaba corresponded to the tomb owner's rank in that hierarchy. The same hierarchy also seems to have determined the proximity of the earlier tombs to the major mastaba g 2000, but this perquisite apparently lost much of its value when the foot traffic to the mastabas was shifted to the north, away from g 2000.

This shift is the best evidence for some sort of central control of the cemetery and access to its tombs by some powerful authority. The proscription of the southern approach to the cluster can be clearly seen in the orientation of new tombs and the universal adaptation of old ones to face the new northern approach. This shift seems to have been strictly enforced, despite the fact that it was of relatively brief duration (less than a generation). Soon after the reopening of the southern approach, however, control over this part of the cemetery apparently lapsed entirely, and it was invaded first by builders of intrusive tombs that obscured earlier cult places and later by scavengers for stone and tomb robbers.

These shifts in orientation allow the sequence of construction of the mastabas to be determined with unusual exactness, which in turn allows the tomb owners' titles and personal relationships to be compared with the dates and forms of their tombs. These comparisons reveal that different factors limited the tomb builder's allocation of

resources to each part of the tomb. In addition to the place of the tomb owner in the *ḫntj-š* hierarchy, the allocation of resources seems to have been influenced by date and by wealth (deduced from consistently greater or less investment than would be expected from the official's rank). The following hypotheses emerged:

(1) The area of the cemetery ground occupied by a tomb is greater, the greater the rank of its owner.[2]
(2) One type of tomb chapel is predominantly favored by each level of wealth: exterior false doors for the poorest, a false door in a corridor or small recessed chapel for the next level, an "L-shaped" chapel for the next, and larger recessed chapels of more varied shape, but usually containing one or more pillars, for the highest level.
(3) The quality and extent of chapel decoration is also tied to the wealth of the owner rather than to rank.
(4) The tombs of higher and wealthier officials include a wider variety of texts, which may indicate these officials' greater degree of literacy.
(5) During a period when the depth and volume of the principal shaft decline, serdab chambers grow larger. This pattern suggests a functional alternation.

Also significant for an understanding of human activity in Old Kingdom cemeteries is the surprisingly rapid breakdown in respect for the major mastabas that can be seen in the cluster after the end of the Fifth Dynasty. Already by the early Sixth Dynasty, it was no longer felt necessary to preserve access to the earlier cult places. The dismantling of chapel walls and the scattering of the contents of serdabs occurred not long afterwards, to judge from the apparent stratigraphic position of the remains. These activities may have been coupled with the robbery of many of the tomb shafts.

The patterns of titles and decoration in the cluster have also contributed to a better understanding of the nature and chronology of the problematic title *ḫntj-š*. There is evidence to suggest a connection with music and musicians; and some of the titles recorded by tomb owners on the earliest parts of their tombs may represent typical offices held by people who became *ḫntjw-š* when the office was instituted, probably in the reign of Niuserre or shortly thereafter.

The architectural patterns revealed in this cluster suggest the characteristics of the "ideal" tomb in the minds of the builders. Some of these conceptual models may be derived from the conventions of contemporary domestic architecture, while other aspects may relate to the tombs' ritual functions. These results may be summarized as follows:

(1) When an addition abutted a battered mastaba facade, the facade was usually extensively rebuilt, completely camouflaging the joint between the two parts.
(2) When an addition converted the exterior walls and doorways into internal ones, attempts were made to fill in or cut back revetments and battering so that the walls were smooth and vertical.
(3) On the western walls of the chapels, plaster-cut decoration is consistently avoided in favor of stone-cut decoration, even in tombs otherwise decorated in plaster.
(4) Rooms, porticoes and corridors had consistent dimensions, some of which may relate to spatial patterns in domestic architecture.
(5) The number, position, and density of principal burial shafts, relative to secondary ones, may reflect a pattern of nuclear family residence.

Designations of Tombs, Shafts, Chambers, Serdabs and Alterations

When the perimeter of a major mastaba had been cleared, Reisner assigned it a four-digit number prefixed by a "g." These numbers were assigned to every tomb Reisner excavated in the Khufu cemetery, and frequently to tombs excavated by others. These are the numbers used in my discussions, although for simplicity's sake, I have omitted the initial "g" except at the beginning of sentences. Subsidiary mastabas were given the number of the nearest major mastaba augmented by a lower-case letter.

Shafts were designated by the mastaba number followed by an upper-case letter, from the beginning of the alphabet if the shaft was cut into the body of the mastaba, and from the end of the alphabet if the shaft was cut or built in outside areas or passages. The tops of shafts labelled a, b, or c thus opened on the roof of the mastaba and had chambers in or under the mastaba massif; while shafts labelled x, y, and z were outside the massif, either cut down from ground level or built above it. Shafts cut or built into chapels and serdabs (when this was noticed) are also labelled x, y, or z.

Serdabs were designated by the tomb number augmented with a capital "s." If there were several serdabs in a single mastaba, Reisner assigned each a number. (Serdabs are marked with a lower case "sr" rather than "s" on the new plan, but Reisner's numbers have been retained.)

Rooms of a chapel were given lower-case letters on plans. In the text, these letters were put in parentheses to distinguish them from subsidiary mastabas. (Reisner assigned letters to chambers starting with the inner room, in contrast to the Porter and Moss *Topographical Bibliography*, which assigns letters beginning with the outermost room.)

One mastaba, built north of 2091, was not assigned a number by Reisner, but was instead considered a part of 2097, which it in fact significantly predated. I have called this mastaba 2097' to differentiate it from 2097. Similarly, 2095' is a mastaba north of 2095 that had a separate chapel; Reisner did not distinguish the two. In both cases, the designations of shafts and serdabs have been left intact.

The sequence of numbers 2084 through 2099, which was used to number all but the three eastern mastabas, is complete with the exception of the number 2090, which was not used. Since 2090 is occasionally used to designate mastaba 2091 in the expedition records, however, it seemed potentially confusing to assign it to 2095' or 2097'. (Mastaba 2086a also has two numbers in the notes; it was originally assigned the number 2083.) The remaining three mastabas, 2230, 2231, and 2240, were assigned numbers in a different sequence because they were excavated after the rest of the group. They are properly a part of cemetery 2000 as Reisner himself realized,[3] and are not distinguished from the 2084 through 2099 sequence in anything beyond their date of excavation.

[2] This correlation has already been noted and studied extensively by Naguib Kanawati, *The Egyptian Administration in the Old Kingdom: Evidence on its Economic Decline* (Warminster, 1977). The distinctions made in the cluster studied here, however, are finer than the ranges proposed by Kanawati's study.

[3] G.A. Reisner, *Giza Manuscript*, an unpublished manuscript in the Museum of Fine Arts, Boston, Chapter "L:" A History of Cemetery 2000, p. 2. Alexander Floroff's plan of the cluster (reproduced as pl. 132) made sometime after 1939, includes all of the mastabas treated in this volume.

The extensions of earlier mastabas, if they were large enough, were assigned new mastaba numbers by Reisner, for example, 2096 and 2231. Other additions and changes in the mastabas were either not noted or not labeled. To distinguish my designations from those of Reisner, I have used an different system of indicating additions and alterations: the tomb number is followed by a period and then a number representing the new version of the monument. When the addition includes a serdab, the period is followed by Reisner's serdab number (which does not affect the numbering of the non-serdab additions). For example, the sequence of additions made to 2091 is 2091.1, then 2091.2; to 2088 is 2088.s1, 2088.s2, and 2088.1; and to 2230 are 2231 and 2231.1. This system is cumbersome, but distinguishing my own interpretations from Reisner's seemed worth some sacrifice of clarity.

Two completely unnumbered structures were built against the southern faces of 2091 and 2088. These were narrow east–west structures bounded by rubble walls on the west and south, with somewhat more substantial massifs at the western end. It was impossible to determine the nature of these structures without excavation, although they are marked on the plan, and the eastern one is shown on the east–west section.

Confusingly, Giza mastabas numbered from 2086 through 2099 occur in Clarence Fisher's 1924 publication of the tombs he excavated at the far west end of the Western Cemetery,[4] duplicating the numbers of mastabas in the cluster studied here. Reisner apparently renumbered Fisher's mastabas as 3086 through 3099 after their publication. All of Reisner's notes and records, as well as subsequent publications by other scholars (including the Porter and Moss *Topographical Bibliography*), use Reisner's numbers.

The Excavation of the Cluster

The tombs in this cluster were excavated between 1936 and 1939, with the exception of the chapel of mastaba 2091, which had been cleared "by Mr. Ballard in 1901–02 in his search for serdabs."[5] The expedition began the re-clearance of mastaba 2091 in July 1936. From there, the workmen moved west, excavating 2092, 2093, and 2094 by the end of January 1937. This area of the cemetery was then abandoned for more than a year. At the end of March of 1938, work was begun again, and 2089 and the western parts of 2088 and 2087 were cleared. While the "Big Dump" east of these tombs was moved, the workmen turned to the north, uncovering 2084, 2085, and 2086. Work on these mastabas continued sporadically through late May. In August the expedition returned to the area briefly to clear the shaft 2089 a. The map of the Western Cemetery published in Reisner's *Giza Necropolis* i[6] apparently dates from this period, since the mastabas excavated later are not included.

Work resumed in late December of 1938, beginning with the exploration of the area north of 2094. Clearance continued in a clockwise pattern around the cluster, and during January mastabas 2095 through 2099 were numbered in order of discovery and cleared. After clearing the last shaft of 2099, the workmen returned to the mastabas to the south. While part of the team finished clearing 2084 through 2088, others moved eastward, uncovering 2230 and 2231. In mid-March, while intermittently working on shafts in these tombs, the expedition cleared the path south of the cluster and began work on the tombs further to the south. g 2240 was encountered in late April of 1939, and work in and around it continued through the middle of May, when g 2083 (later renamed 2086a) was uncovered to the north of 2086. Clearance of various shafts continued through the end of May 1939, after which no further work in the cluster was recorded.

In his *History of the Giza Necropolis* i, Reisner did not describe in detail any excavation after 1933. The table of contents entry "Minor clearing operations, 1933–1939"[7] can only refer to the sentence "At intervals since 1924, small gangs of men (5–10) have been employed in clearing small points for the purpose of maps, plans, and other references."[8] As the excavation photographs (pls. 5–8) demonstrate, the clearance of the cluster was accomplished with a much larger crew.

Judging from the proveniences noted in the registration books, excavation was conducted according to the method outlined in Reisner's *Archaeological Excavation Techniques*,[9] in which the archaeological deposition was removed in three phases: (1) "surface," which was defined as the area from the surface to the top of the architectural remains, (2) "debris of decay," the deposition within the mastaba chapels and outside the mastabas, and (3) "floor." Upon discovery of walls, the procedure seems to have been to clear off the top of the entire mastaba to the level of the top of the walls of the casing, noting the location of the shafts. The interior spaces and the surrounding "streets" were then cleared, normally to bedrock. The shafts were cleared after the complete excavation of the mastaba, often considerably later. There was no attempt made to remove or analyze the material that filled the body of the mastaba.

Matrix was removed in baskets to the Decauville railway cars, which dumped it over the escarpment at the northern and northeastern edges of the plateau. The pace of the excavation may be surmised by the occasional tallies of the Decauville railway cars emptied. For example on April 23, 1936, 97 cars were emptied between 6 and 8 am, 300 were emptied between 8:30 and noon, and 195 between 2 and 5 p.m. When daily totals are recorded, they range from about 450 to 650 cars. However, these tallies often represented periods in which no architecture or finds were expected, such as the removal of the "Big Dump." During other phases of the excavation, work presumably proceeded more slowly.

Backdirt from the cluster could not be identified and analyzed because it was inextricably mixed with large quantities of fill deposited by the same method of disposal during the excavation of other parts of the cemetery. Aerial photographs taken prior to the excavation show two thick linear deposits crossing over the cluster, which

[4] C. Fisher, *The Minor Cemetery at Giza* (Philadelphia, 1924).
[5] Reisner, *Giza Manuscript*, Chapter "L," p. 142.
[6] G.A. Reisner, *A History of the Giza Necropolis* i (Cambridge, Mass, 1942), hereafter "*GN* i."
[7] Ibid., p. xii.
[8] Ibid., p. 25.
[9] G.A. Reisner, *Archaeological Excavation Techniques*, an unpublished manuscript at the Museum of Fine Arts, Boston, currently being prepared for publication by P. Lacovara.

represent the buildup of debris from the use of Decauville railway tracks to the northern escarpment in earlier excavations. The "Big Dump," the laborious removal of which is mentioned frequently in the expedition records, covered the eastern half of the courtyard of 2088, angling north and east over parts of 2084 and 2230. The hill of debris that still remains north of 2230 (see, for example, pls. 10a and 118c) represents the end of this dump. The "surface" layer removed from the cluster was thus mixed with debris from the southern part of cemetery 2000 and probably from Junker's excavations in cemetery 4000 as well, accounting for some of the "surface" remains that considerably predate the construction of the cluster.

Original Expedition Records

The Reis's Diary. A daily record of the excavation of these tombs was maintained by the Reis, Mohammed Said Ahmed; it was translated into English by the expedition secretary. This record, the "Reis's Diary," has been the principal source for the section on the excavation of the individual mastabas. It records the clearance of walls and shafts, and gives a general description of the components of the matrix removed, for example "drift sand" or "pebbles" or, most commonly,"rubble" a mixture of irregular stones of varied sizes that was often bound with mud to form walls. (The Arabic term *dubsh*, is frequently left untranslated in the Reis's Diary, but I have rendered it as "rubble" throughout.) Another component of the fill that is sometimes mentioned is "red debris," the nature of which is unclear. Granite would certainly have been identified by name. It may refer to red ocher, commonly used in making mason's marks, laying out the preliminary wall decoration, and painting the reliefs; or it may simply refer to the crumbly layer of reddish-brown stone (Reisner calls it "red gravel") that overlies the bedrock in this area.[10] The Reis's Diary also contains a sketch map of each mastaba and each shaft at the point when it was completely cleared. Some of the details recorded in the Diary are unrecorded elsewhere, for example, remarks on the position of skeletal material in some disturbed tombs and the mud-brick paving of the "street" between 2091 and 2092.

Finally, the Diary contains references to the events in the life of the excavations that are helpful in reconstructing the personnel present, such as the comings and goings of workmen from Quft, the quantity of matrix removed, or the activities of Dr. Reisner himself. Social events were also mentioned, as in this entry on April 16, 1939: "Today was the cocktail party for the exhibition of paintings painted by Mr. J[oseph] L[indon] Smith. There were 280 guests including Egyptians; Nokrashi Pasha, the Minister of the Interior, and Sir Miles Lampson were in that party. There were 113 cars. The weather was very fine and all the arrangements were good."

Tomb Cards. Each shaft and serdab was recorded on a separate "Tomb Card," a 1:50 scale drawing of the top, profile, and bottom of the feature on a slip of graph paper. Comments on the blocking and disposition of the body in intact burial chambers were noted in Arabic on the back of the card. Most Tomb Cards are initialed M.S., probably by the surveyor Mohammed Sayed, but possibly by the Reis, Mohammed Said Ahmed. Drawings of the shafts are based on these cards, even when they appear to differ from or contradict Floroff's plan of the tomb. They presumably reflect the state of the shaft at the date it was cleared (which can be determined from the "Excavation" section of the individual tomb descriptions). Major points at which the two diverge are noted in the text, although I have not remarked upon the divergences in the types or disposition of masonry. The Tomb Cards can be assumed to be more accurate than the Floroff plan, since they were made on the spot.

The masonry recorded in the Tomb Cards is, however, almost as schematic as that of Floroff's plan. The floor plan of the chamber was constructed by measuring points and then joining the dots, which probably exaggerated the sharpness of the angles. Bedrock, crumbly bedrock, rubble, and mudbrick are indicated schematically. Only masonry walls were measured, and the measurements were limited to the distance between vertical joints. The depth and exterior shape of the blocks were drawn in mechanically later, and the relationships of the blocks at corners were left unrecorded. The surveyor's drawings assume that both blocks end at the corner line, even when bonds and abutments are visible at the top of the shaft. Floroff has tried to correct this problem by bringing each block halfway around the corner. The result looks like a carefully mitered joint; to avoid such erroneous appearances and emphasize the schematic nature of the plans, I have left the gaps as they are on the Tomb Cards. Block lines on rubble walls were not measured; the dimensions of the irregular blocks on the plan appear to bear no relation to the size of the stones in the wall.

All the Tomb Cards that I could find are reproduced in the text figures. (Several seem to have been lost or were never drawn.) I have attempted to place the floor plans of the chambers and the base of the shafts within an outline of the mastaba plan so that their interrelationships are clearer. The placement of these plans is approximate, based on the placement of the tops of the shafts in Floroff's plan, which were checked in 1990, but usually not remeasured unless they appeared to be erroneous. When chambers were superimposed, the chamber with interior details was drawn completely, and the overlap of the other was indicated with a dashed line. Usually one of these was cut into the bedrock and the other built into the mastaba massif; obviously, the chamber cut in the bedrock was the lowermost. In cases of shafts with double chambers, reference to the shaft profile should resolve any ambiguities. The drawing conventions are those of the originals: groups of hatching lines at different angles represent limestone blocks or bedrock; a speckled pattern represents crumbly stone, either bedrock or fill; and hatching all at the same angle represents mud-brick.

The shaft plans follow the traditional orientation for plans of the Western Cemetery: north is at the right and west at the top. When the burial chamber axis ran east–west, shafts were recorded on Tomb Cards with north at the top, and the profiles and top plans of these shafts were provided with an "east arrow." The chamber plans have been turned to correspond to their orientation within the mastaba outline. The long axis of each mastaba outline has been taken to run east–west, so the northward orientation, like that on the Tomb Cards, is only general. With few exceptions, shafts were placed

[10] This last possibility was suggested to me by Ms. Brigit Crowell.

squarely with respect to the rectangle of the mastaba rather than according to the cardinal points. Since neither the shafts nor the mastabas were entirely regular, however, there was some variation.

These drawings reveal the consistency with which subterranean chambers were placed underneath the body of the mastaba, and the care that was taken to avoid intruding on other shafts. (Only one such intrusion was noted, between 2095 b and c.) The relationship between burial chambers and above-ground features such as false doors is also elucidated. The human remains are also sketched in, based on the Tomb Card drawings; this both clarifies the variety of orientations and degrees of contraction within a mastaba and emphasizes the underlying mortuary purpose of the mastabas. In at least one case, too, this method provides information about the later history of the necropolis: the shafts in 2095 (though not 2095') remained completely unexplored by tomb robbers, a striking circumstance that requires further explanation.

Giza Manuscript. Reisner's unpublished account of these and other mastabas, as well as his analyses and comparisons of several types of artifacts and associated features, is preserved in manuscript in the Museum of Fine Arts, Boston.[11] It was apparently composed and typed by Reisner in the field, based on Tomb Cards and other material. This manuscript was partially checked and corrected by another staff member, and then retyped. In the chapter dealing with these tombs,[12] the retyping was done only for mastabas 2084 through 2087, after which the rough original manuscript extends from the middle of 2088 through 2240. A note inserted in the manuscript indicates that the figures have been corrected only through mastaba 2094. The typing of the original manuscript is erratic and often unintelligible ("a swmp dxzmp scene: Chizd diguez"), casting some doubt on the accuracy of the unchecked measurements and the numbered and lettered typological assignments.

Reisner assigned each mastaba, chapel, casing, shaft chamber, shaft blocking and masonry wall to a "type," as described in his *Giza Necropolis* 1 volume. The measurements of each mastaba in this cluster and the types to which that Reisner assigned its features are reproduced at the beginning of its entry in Part ii, largely as this information appears in the *Giza Manuscript*. The first dimension given is always the north–south measurement; the second is the east–west. In addition, Reisner calculated the "proportion" of mastabas and chapels, by which he meant the ratio of the east–west dimension to the north–south dimension and also the "relation," the ratio of the area of the chapel to that of the mastaba. These ratios are always given as fractions with numerators of 1. The only alteration I have made to this initial summary has been to correct, in square brackets, the frequently (and obviously) incorrect masonry types and to correct errors in multiplication. I have also noted instances where Reisner's interpretations of the architecture affect the measurements and the designation of shafts. The designations assigned by Reisner, especially his assignment of chapel types, do not always agree with my own interpretations. Except as noted, the type assignments and measurements given in this initial section are all Reisner's. (Measurements mentioned elsewhere in the text, unless specifically noted, are those of the 1989 and 1990 expeditions.)

The description of the tomb shafts in the *Giza Manuscript* sometimes differs from that on the Tomb Card; in such cases, the Tomb Card, which was prepared on the site and usually includes a drawing as well as a verbal description, has been followed without comment. Only if a second source, usually the Reis's Diary, agrees with Reisner's version are the divergences noted.

The Floroff Plan. The mapping of the cluster was begun in June of 1937, when Alexander Floroff made pencilled notes and diagrams recording the measurements of the mastabas exposed at that point. These include vertical measurements used in preparing pl. 136.[13] Another set of measurements, including some of the newly excavated mastabas, date from August and September 1938. Both sets of diagrams are stored at the Museum of Fine Arts, but they are badly labeled and difficult to decipher, having been made by Floroff for his own use. His plan of the cluster (traced by A. Barbe Harrison and reproduced as pl. 132) seems to have been made away from the site, based on his measurements as well as photographs and Reisner's *Giza Manuscript*, both of which have marginalia initialed A.F. He may also have used the diagrams in the Reis's Diary. Many of the inaccuracies noted in the plan during 1989 and 1990 are doubtless due to Floroff's physical and chronological distance from the cluster and its measurement. These errors are almost invariably in the direction of regularization and simplification.

It should be noted that Floroff's plan is a plan of the top levels of the preserved architecture. As a result of the variable preservation of the stepped or battered casing of most mastabas, walls often appear to be niched or staggered. (More recent planning of the cluster is discussed below.)

Epigraphic Drawings. Epigraphic work done at the cluster during the Reisner excavations includes drawings of 2091 made by Norman de Garis Davies in 1905–06. His drawings of the corridor have been reproduced as pls. 155–160, as the only record of the decoration, which has now largely disappeared. (Because of the narrowness of the space, the corridor was not photographed by the Reisner expedition. Plates 42b and 43a show samples of the current state of the wall.) Drawings also exist of 2086 and the east wall of 2097. The artist is unknown; but the drawings may have been done by William Stevenson Smith, who was preparing his monumental study of Old

[11] Although the manuscript itself is in the form of a single volume with lettered appendices, Reisner referred to it as volumes 2, 3, and 4 of *The History of the Giza Necropolis* (*GN* i, p. ix). He described volume 2 as a typological catalogue of finds, volume 3 as a study of the chronology and genealogy of the cemetery, and volume 4 as an account of the "secondary mastabas." After Reisner's death, however, the tomb of Hetepheres was published as *Giza Necropolis* 2, confusing the numbering. The lettered appendices of the manuscript cover the individual "secondary" mastabas (presumably contrasted with the "core" mastabas described in *GN* 1). Appendix "L" is the source for most of the information cited here. These appendices are being supplanted by the volumes of the *Giza Mastabas* series.

[12] Chapter "L" of the Appendix includes the description of the mastabas treated in the present volume, and also the mastaba tombs to the south of the path south of it. It fills two flat archival boxes in the Museum's collection.

[13] Floroff presumably used these notes to prepare the sections in *GN* i, figs. 182 and 186; however, several details were omitted. Most notably, the skylight slot in 2091 was omitted from fig. 182.

Kingdom art[14] during the period when the tombs were excavated. These, as well as the other Davies drawings of 2091, have been used as references in the preparation of new drawings based on the photographs and the surviving decoration.

Object Registers. Artifacts recovered during the excavation were recorded in object registers. These registers are stored in archival boxes, on microfilm, and on printed and bound photocopies from the microfilms at the Museum of Fine Arts, Boston. Copies must also have been submitted to the Service d'Antiquités. Each object was given three numbers, separated by hyphens. The first two represent the year and the month of registration, and the third the sequential number assigned to each object registered within the month. In theory, each object was measured and drawn and its exact find spot given; in practice, this information was often omitted.

These registers included skeletal material and ceramics. Although technically all objects registered would have been subject to a division, some registered material from this cluster is recorded as having been left in the tombs. No skeletal material or ceramics from these tombs appear to have been exported. They are presumably still in tomb shafts at Giza or in storage elsewhere in Egypt. Some objects recorded in the notes and photographs were not registered, notably the headless scribe statue from 2240. These are presumably also in storage.

Expedition Photographs.[15] The original excavation photos were taken between 1936 and 1939 by Mohammedani Ibrahim, a member of the expedition staff. (A few earlier photographs of g 2091 are also extant.) These historic glass negatives are currently stored at the Museum of Fine Arts, Boston. They are identified by their size (a, b, or c) and a sequentially assigned number of four or five digits.

Photographs were taken of work in progress (rarely), of many of the artifacts, and of burials and tomb decoration when the space allowed. The registers of these photos often give useful information such as the location and date of the photographs. A selection of these photographs arranged by tomb number and mounted on cards (the "Gray Boxes") also contain valuable annotations, providing information about the location of lost decoration and the angles at which puzzling site photographs were taken.

Other Records. Although it is possible that Reisner or a designated subordinate kept a separate record of the excavation, as was done in earlier periods, no field diaries for the years involved can be located. In view of the detail included in the Reis's Diary, it was probably seen as a substitute.

William Stevenson Smith also left notes on the mastabas, taken at least in part on a visit to the tombs in 1951.[16] The most valuable contribution of these notes is to identify the location of "g 1903" as "North of 2097a, 3 pits about 50 feet north, one with niche and two statues." Smith published a photograph of the most interesting of these statues, a mother and child.[17] The second statue, which presumably represents the woman's husband, is in the Museum of Fine Arts, Boston.[18] The problems posed by this material and the possible excavation of its source in connection with the clearing of the cluster are dealt with as an excursus to the descriptions of subsidiary mastabas 2097a, 2097b, and 2097c.

Recent work on the Cluster

Modern epigraphic work in the cluster began in the summer of 1975, when the Giza Mastabas Project made tracings of several scenes in g 2092+2093 and g 2097. The scene depicting the *senet* game in g 2097 was published by Timothy Kendall on the basis of those tracings.[19] Tracings from that season's work have been used only as references in preparing the drawings published here.

In August 1987, the Giza Mastabas Project began to trace decoration of five of the completely decorated tombs. It was at this point that the fragility and loss of the plaster-cut decoration became a problem. Although much of the decoration was traced in 1987, it was found preferable to use photographic enlargements as a basis for drawing most of the wall decoration in the cluster, both because they allowed a greater part of the original decoration to be recorded in facsimile drawings, and because they could be made without touching, and perhaps further damaging, the plaster still tenuously adhering to the walls.

The July–August 1989 season was devoted to making and correcting these new drawings and to the completion of new full–scale tracings in areas where undistorted photographs were not available. In addition, an initial check on the Floroff plan was done, revealing more errors and architectural complexities than had been anticipated. The architecture and unrecorded relief was also recorded photographically, and some cleaning and consolidation of the most fragile decoration was accomplished.

The final season, in May–June 1990, focussed on a more thorough architectural analysis of the tombs, with the aim of determining the sequence of mastaba construction. This was achieved by a systematic and detailed examination of each wall and shaft. Many further corrections were added to the Floroff plan and an elevation was drawn across the western part of the cluster. In addition, some obvious surface components of the mastaba fill were recorded, including utilitarian ceramics such as bread molds and beer jars, as well as two concentrations of model offering vessels. The season also offered the opportunity for a last check on the completeness of the epigraphic work.

During the fall of 1991 and again in the summer of 1994, I had an opportunity to visit the cluster again.[20] Clearance of sand and debris had taken place under the supervision of the Giza inspectorate

[14] W.S. Smith, *A History of Egyptian Sculpture and Painting in the Old Kingdom* (Boston, 1946), hereafter *HESPOK*.

[15] For an annotated and illustrated reproduction of Reisner's photographic methods and techniques, see P. Der Manuelian, "George Andrew Reisner on Archaeological Photography," *JARCE* 29 (1992), pp. 1–34.

[16] I am grateful to Prof. Simpson for locating these notes and giving me a copy.

[17] Smith, *HESPOK*, pl. 27e.

[18] Accession number 39.829.

[19] T. Kendall, "Passing through the Netherworld: The meaning and play of *senet*, an ancient Egyptian game" (Belmont, MA, 1978), pp. 12–13 (pamphlet included with a game).

[20] I am grateful to Dr. Zahi Hawass for this chance to check some final points in the cluster during my work on other projects at Giza.

of the Egyptian Antiquities Organization. This clearance revealed several features that we had been unable to record previously. Among these newly revealed features were a hole that was cut into the bedrock in the northern part of the recessed chapel of 2092+2093; a large decorated block that had apparently fallen into this hole; the base of the eastern of the two pillars in the courtyard north of the chapel of 2092+2093; and a platform that formed the base of the false door of 2092a. During the clearance, the false door from 2092a, the secondary false door of Ankhiemaes in 2088, and the false door tablet of Tjezet on the east face of 2097' were all uncovered. Most interestingly, an entirely new shaft was cleared in 2088, behind the northern false door, extending down into the bedrock. (I was unable to obtain information about the shape or contents of the chamber.) These new features could not be incorporated on the plans and sections published here, but they are noted in the text where they are relevant, insofar as they could be recorded in the course of a visit.

Conventions of Citation, Reference, and Recording

Citation conventions. In dealing with the archaeological sources, I have tried to distinguish the interpretations of Reisner and Reis Mohammed from more recent work. I have identified Reisner's hypotheses and conclusions most specifically where they seem incorrect to me. In such cases, I have tried to keep them in his own words, in the hope that they will be clearer to others.

It can be assumed that any remarks regarding the appearance of features during excavation, the location of artifacts, and the subsurface structure of the shafts are taken from the Reis's Diary, or, in the case of the shafts, the Tomb Cards. We made no attempt to re-excavate, or even re-enter the shafts. In 1990, our team checked all the visible features, including the mouths of the shafts, against the Floroff plan. When the orientation of the burial chambers could be determined from the top of the shaft, this was also noted. Comments based on these more recent observations will be identified as such.

By contrast, the Reisner expedition's descriptions of the mastaba chapels and superstructures were fully checked and extensively augmented at the site. Comments on these features can be assumed to be based on observations made in 1987–1994. I have cited the older sources only when they appear to differ from current state of the monument. However, Reisner's measurements and typological conclusions are summarized in tabular form at the beginning of each mastaba description.

Epigraphic conventions. In general, the aim of the epigraphic drawings was to reconstruct, as far as possible, and to present clearly the intended decoration of the chapel walls. Random damage was not recorded except as it interfered with the reconstruction. (Intentional ancient damage would have been recorded, but except for the recutting of one side of the false door from 2092a, none was found in the tombs of this cluster.) The 1930s condition of the walls can be determined from the photographs; where extensive deterioration has occurred, a recent photograph has been included for contrast.

The text describes the epigraphic method used for each tomb, and in some cases, each drawing. The choice of method was largely determined by the degree of conservation of the reliefs. Those reliefs that were intact and likely to remain so during the process of tracing were traced with soft pencil on translucent plastic sheets. This method was most frequently used to record the decoration on the thicknesses of doorjambs, where the narrowness of the space made undistorted photographs impossible. Fortunately doorjambs are built of better-quality stone for structural reasons, so that this tracing could be done without damage to the reliefs. Tracing was also used on pillars, which are similarly durable, and on some chapel walls.

In many cases, the excavation photographs record details that are now lost. Normally these areas were not restored when the tracing was otherwise based on the wall in its present state. In the case of the north wall of 2097, where a block that is now completely eroded contained significant decoration that is difficult to discern on the photograph, a drawing was made from an enlargement of the photograph. This has been inserted and distinguished from the surviving decoration by a heavy block line. In the same way, fallen plaster fragments restored on the drawing of the north wall of 2098 have also been indicated by a heavy outline. In both cases, the darker outline indicates that the placement and scale of the enclosed decoration are approximations.

A photographic method was used in areas where the decoration was carved on a thick layer of plaster that was not securely attached to the wall. The same fragility that would make tracing these reliefs destructive also made them the most likely to have suffered damage. Excavation photographs of these reliefs, almost uniformly taken straight on with very little distortion, were enlarged and traced onto translucent plastic paper. These were then checked against the surviving plaster decoration. Corrections were drawn on the basis of the photograph where possible. A measured drawing was made when the photograph was insufficiently clear.

Regrettably, as a result of the diverse methods employed, the time over which the drawings were prepared, and the number of people involved in producing the final drawings, the conventions used within the individual drawings vary. These include the weight of lines, the rendering of damage to the wall, and the consistency with which architectural features, such as the lines of masonry and edges of walls, are recorded. In most cases the shortcomings of these variations are merely aesthetic.

In general, the edges of raised areas are outlined in a heavy line of uniform thickness and the interior lines are indicated in a lighter line. Weighted (sun-shadow) lines are used only for sunk relief with interior details, although in some cases lines of uniform thickness have been used to record sunk relief as well. On walls which are decorated with both raised relief and sunk relief, the decoration in sunk relief normally consists only of hieroglyphs with no internal details. In such cases, the sunk relief is recorded as solid, filled signs, to distinguish it clearly from the surrounding raised relief.

Damage is not always indicated consistently. In some drawings, damaged areas were outlined by a light line marking the edge of the preserved surface. This was found to be distracting, and in drawings made later in the project, edges of preserved decoration were noted

only selectively. Block lines are also indicated inconsistently. They have been included where the decoration is fragmentary and they can help readers to locate isolated decorated areas on the photographs. They have been omitted where they might be confused with decoration. Users of the publication who are concerned about the condition and architecture of the wall will want to refer to the corresponding photograph in any case.

Edges of walls and ceilings are recorded by dashed lines with long dashes. For the sake of clarity, these lines, as well as register lines and vertical lines at edges of scenes, have often been straightened and short gaps in them have been restored without comment. Again, those wishing more exact information are referred to the expedition photographs.

Lines of short dashes indicate traces of paint. A single dashed line may indicate either a fine line of paint or the border of a color. These should be clear from context and also from the description in the text. The locations of isolated traces of color have not been marked on the drawing, but are recorded in the text.

The texts describing the scenes are intentionally general, dwelling only on interesting or anomalous details. The descriptions normally begin with the principal figure, and then move either from top to bottom or from bottom to top, depending upon the organization of the scene.

Photographic conventions. Photographic coverage of the mastaba decoration is largely complete. The major omissions are isolated doorjambs in mastabas 2086, 2091, and 2231, and the decoration in the corridor of 2091. In most cases, these omissions are due to the narrowness of the space, which prevented clear photography during the Reisner expedition.

Photographs taken at several periods are reproduced in the plates. The negative number of Reisner photographs (beginning a, b, or c, and normally followed by a number of four to five digits) is listed in these photo captions in order to facilitate reference to the Museum collection. Photographs dated 1989 were taken by Rus Gant; I am responsible for those dated 1990; and Peter Der Manuelian has contributed two photographs taken in 1993.

The New Plans and Sections of the Cluster

Plans (Michael Jones). The plan of the cluster that was prepared by Floroff (pl. 132) is a general one. The juxtapositioning of the mastabas and their internal features is not always correctly shown and masonry is drawn schematically. It is essentially a top plan, although exceptions were made to show, for example, the plan of roofed chapels. The planning of only the upper levels of the architecture means that doorways and false doors are often not clearly recorded. During the course of our fieldwork, it became clear that a new plan of the tombs would be desirable, in keeping with modern requirements. However, application to resurvey the site did not receive the approval of the Egyptian Antiquities Organization. Therefore, it was possible only to remeasure a few of the architectural features and then to use Floroff's drawing as the basis for a new site plan. The results of this work are presented here in pls. 133, 134, and 135. They represent a correction of Floroff's plan based on fieldwork in 1989 and 1990.

The revised plan (pls. 133, 134, and 135) shows the outline of the ground plans of the mastabas and subsidiary structures in a heavy line. Internal features such as the stone-built masonry around the tops of shafts, serdabs, and the upper levels of walls (when these are included for clarity) have been shown in a lighter line. Fallen masonry lying loose on the modern ground level has been indicated in an even lighter line. In drawing the field plans for these sheets, the schematic masonry around the shafts and serdabs was shown as Floroff drew it where this did not diverge too far from reality. Where the stonework was noticeably different from that in the plan, it was redrawn more accurately, and the plan shows it stone by stone as preserved in 1990.

Among the changes from Floroff's plan are several shafts that were not visible in 1990, but which were extant when Floroff's plan was prepared. These include shafts 2085 d, 2094 a, 2095 j, 2095 x, 2097c b, 2097c c, and the serdab of 2097c. Errors in the Floroff plan include the interior angles of Serdabs 2 and 3 of 2097, the dimensions of the chapel of 2089, the omission of a jog in the wall enclosing the outside court of 2086, and a rubble-built structure of uncertain date along the southern face of 2091.

The mastabas and their shafts are given the same numbers and letters as on Floroff's plan, except for 2095' and 2097', which are newly numbered. Serdabs are marked "sr" and pillars are marked "p." Stippling denotes mud-brick features. Walls that appear on Floroff's plan or in the field notes as complete but which are now only partially preserved are indicated by dotted lines representing the sections now missing. Doorways and false doors are shown in ground plan on the new plan, where on Floroff's top plan they are often obscured by lintels or roofing slabs.

North–South Section of the Cluster (Michael Jones). A north–south section was drawn across the western part of the cluster, to elucidate the relationship between 2093 and its various extensions, 2096, 2092a, and 2097 (see pl. 137). Of especial note is the slope down towards the north of the floors, creating a difference in level from south to north of 1.28 meters. This must reflect the natural gradient of the desert surface prior to building the tombs. Note also the position of the bedrock surface exposed at the lip of shaft 2092 a, where the east wall of 2096 is clearly laid straight on the bedrock surface.

The letters labelling the section correspond to the following architectural and archaeological elements: (a) the west jamb of the north entrance to 2092+2093 from the pillared court containing 2092a, with its lintel in position at the upper south side; (b and c) serdab slots 1.0 cm wide created by leaving open gaps between blocks in the facing of the east wall of 2096; (d) south wall of 2092a abutting the east face of the east wall of 2096; (e) north wall of 2092a, formed by the south face of the serdab 2097.S3; (f) west jamb of the entrance between 2092a and 2097; (g) west wall of the passage leading from the pillared court to the open court forming the east room of 2097; (h) west wall of the east room of 2097; (i) doorway between the east and west rooms of 2097; (j) north wall of 2097; (k) site of 2097b.

Additional elevations were drawn of the south and east sides of 2092a, to illustrate the casually built secondary walls abutting the

square pillar. Note especially here how the pillar (49.0 cm square in plan) was clearly part of the original monument and the crudely constructed walls around the top of 2092a were fitted in against it. The pillar still stands vertically without any inclination. The south wall of 2092a is only one block high at its west end, where it abuts the east wall of 2096, and two blocks high at its east end. There may have been one or more additional courses over the uppermost surviving course; it is impossible to determine the original full height of the south and the east walls from what survives *in situ*. Much of the east wall is obscured by rubble that may be the remains of packing behind the false door on Floroff's plan. (When the cluster was cleared by the Giza inspectorate, 1991–1994, this false door was discovered in the corridor between 2092 and 2091. There are plans to consolidate and re-erect it. For the excavation photo and drawing, see pls. 64 and 169.)

The letters labeling these smaller elevations are as follows: (a) the western pillar of the court, around which the walls of 2092a were built; (b) the east face of the east wall of 2096; (c) the southeast corner of the north wall of 2092a, equivalent to (e) on the larger elevation; (d) the south east corner of the southwest jamb of the passage between the courtyard of 2092+2093 and the eastern room of 2097, equivalent to (f) on the larger elevation.

In both drawings, the bottom line at the base of the walls is the level of sand filling below which we could not investigate without excavating, with the exception of the bedrock at shaft 2092a a, as mentioned above.

East–West Section of the Cluster (AMR). In 1991, I discovered that Floroff's notes for the mapping of the cluster included measurements for an east–west section, running from shaft 2094 z through the corridor of 2094 and the chapels of 2092+2093 and 2091. From these notes, augmented by photographs and by field notes from the 1990 season, a second section was drawn (pl. 136). The southern facades of 2089 and 2088 were not recorded in Floroff's notes, but have been reconstructed from previous on-site measurements and photographs, in order to demonstrate the relationship between these tombs and to illustrate the original stepped facades and the stages of growth of 2088. The right half of the section (which is essentially an exterior elevation) is thus both later in date and less accurate that the left half. Unfortunately, it was impossible to plot on this section a brick pavement that, according to the Reis's Diary, originally extended over the bedrock between mastabas 2092 and 2091.

Beginning at the west end of the cluster (left), the section passes through a secondary shaft, 2094 z (labeled x), and the body of mastaba 2094, cutting its serdab (A), but not its chapel. Only the coursing of the top of the serdab was recorded. Between the stepped facades of 2094 and 2093, a roof block and, further north, a doorway to the corridor east of 2095 are seen in elevation (B). In the chapel of 2092+2093, a fragment of a buried column (C) can be seen in the NW corner of the recess; above it can be seen the rubble wall (D) of shaft 2093 d. The doorway (E) to the courtyard to the north is shown in elevation, as is another doorway to the same area (F) east of mastaba 2092. The section through 2091 cuts the serdab (G) and to the north of the central column in this chapel. The doorway to the chapel (H) is flanked by the original facade of 2091 on the left and a bulging, almost vertical wall on the right. The coursing of this wall, however, suggests that the steps of the original western facade has here been filled in to make a vertical wall. (A suggestion of the profile of the original face has been indicated with a dashed line.) In the eastern alcove of the chapel of 2091, the section passes through an angled skylight (I), which currently provides the only light in the chapel.

Beyond the east wall of 2091, many of the measurements are extrapolated from the Floroff plan. At the base of 2089 can be seen the rubble of 2089a, with the surviving top of shaft 2089a b abutting the wall of 2091. The walls facing the chapel (J) of 2089 extend above the outer facing and fill of the mastaba, which have been taken down to a uniform height to support the eastern facade of 2091. Between 2089 and 2088, the tops of two of the three shafts (K) that were built in this passage are visible. The rubble at the base of 2088 is an unnumbered structure built at a later period. No shaft was identified or excavated. The original eastern face of 2088 can be clearly seen in the wall profile, and is marked with a slightly heavier line (L). The first addition, 2088.S1 abuts it; the roof of the serdab (M) can be seen over the southern spur wall. The second addition to this part of the mastaba, 2088.1, is preserved only to the top of a single course on its southern face, and to the top of the second course on its northern face.

Conservation

In an effort to preserve and consolidate some of the most fragile parts of the tombs under study, the Museum of Fine Arts and the National Endowment for the Humanities provided a conservator for the 1989 season. Pamela Hatchfield, Conservator at the Museum of Fine Arts, accompanied the expedition and prepared a report evaluating the mastabas and offering recommendations for their conservation, which was presented to the Egyptian Antiquities Organization as part of our report. Ms. Hatchfield's comments on the techniques of decoration and the current condition of the individual mastabas are given in the "Conservation" sections appended to the description of each decorated mastaba in Part ii. These sections also include her description of the protective measures she has taken for the preservation of the relief. In some cases I have added observations based on visits to the cluster in 1991 and 1994.