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b. The Eastern Field: Cemetery G 7000

The pyramid causeway; mastabas built south of the causeway.

(1) **The Nucleus Cemetery of the Eastern Field**

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(2) **The Secondary Cemetery of the Eastern Field**

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(3) **Ancient Pillaging, Sanding-up of the Cemetery, and Intrusive Burials**

Complete plundering of the large mastabas; removal of the white casing of pyramids and large mastabas; sand blown in from SW; first intrusions in Saite period; reconstruction of the temple of pyramid G 1-c as a temple of Isis in Dyn. XXI; intrusive burials of Saite-Ptolemaic period centred around the temple of Isis.

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III. **ANCIENT AND MODERN RESEARCH IN THE GIZA NECROPOLIS.**

1. **THE CLASSICAL WRITERS**

Herodotus, Diodorus Siculus, Strabo, Pliny; mention of the three great pyramids, some queens' pyramids and the Great Sphinx; casing of pyramids intact or nearly intact; lower passage of the Cheops Pyramid already open.

2. **ACCOUNTS OF THE ARAB HISTORIANS**

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3. **THE EARLY EUROPEAN TRAVELLERS**

The accounts of travellers down to A.D. 1800; the scientific expedition of Napoleon (A.D. 1798-1801).

4. **EXCAVATIONS IN THE NINETEENTH CENTURY**

Caviglia, Belzoni, Howard Vyse and Perring, Lepsius (directing the great Prussian Expedition), Auguste Mariette; scholars who recorded inscriptions; Piazzi Smythe, Sir Flinders Petrie, J. and M. Edgar, survey and levelling by Survey-General of Egypt, Borchardt.

5. **THE SYSTEMATIC EXCAVATION OF THE GIZA CEMETERIES**

Granting of archaeological concessions for the Giza Pyramids in 1902 to Prof. Steindorff (for Leipzig University), to Prof. Schiaparelli (for the Turin Museum), and to myself (for the University of California); division of the site in three equal parts partly by lot and partly by agreement; the transfer of my concession to Harvard University and the Boston Museum of Fine Arts (1925); granting of a concession for the ground south of my concession at the Third Pyramid to Sir Flinders Petrie in 1906; transfer of the Schiaparelli concession with his consent to myself (1906); transfer of the German concession to Prof. Junker (for the
University of Vienna and the Hildesheim Museum, 1911); the final transfer of the German Concession to Prof. Selim Hassan (for the Egyptian University, 1928).

a. The Excavations of the Hearst Expedition


Excavation of the Pyramid temple of Mycerinus: 1906-7; work suspended in 1907-9 for the Nubian Archaeological Survey.

Excavation of the Valley Temple of Mycerinus: summer 1908, 1909-10 (winter).

Excavation of the Queen’s Temple (G III-a) and the Quarry: 1909-10.

Excavation of the Cem. G2100 continued in 1911-12.

Excavation of the northern end of the Cem. en Échelon and the mastabas added to the north and east of that cemetery: 1911-12, 1912-13.

Completion of the excavation of the Mycerinus Quarry Cem.: 1912-13.

Excavation of Cem. G4000, the four southern rows assigned originally to Schiaparelli: 1913-14, 1914-15, 1915-16.

From 1916 to 1923 the expedition was engaged on the excavation of the Pyramids of Napata and Meroe.

Work resumed at the Pyramids in the summer of 1924 when the temples of the small pyramids, G III-b and G III-c, were excavated.


Subsidiary excavation in the Western Field:
   (2) Northern part of Cem. G2100: 1932-3.

Minor clearing operations: 1933-9.

b. The Excavations of the Harvard-Boston Expedition


Excavation of the Valley Temple of Mycerinus: summer 1908, 1909-10 (winter).

Excavation of the Queen’s Temple (G III-a) and the Quarry: 1909-10.

Excavation of Cem. G2100 continued in 1911-12.

Excavation of the northern end of the Cem. en Échelon and the mastabas added to the north and east of that cemetery: 1911-12, 1912-13.

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Subsidiary excavation in the Western Field:
   (2) Northern part of Cem. G2100: 1932-3.

Minor clearing operations: 1933-9.

c. The Excavations of Other Expeditions

Sieglin Expedition (Prof. Steindorff); middle third of Western Field; temples of the Second Pyramid: 1903-10.

The Vienna Expedition (Prof. Junker) continued excavation of the middle third of the Western Field: 1911-14, 1925-7.

Junker’s expedition also excavated the Cem. G11S: 1927-9.

The Eckeley B. Coxe Jr. Expedition of the University of Pennsylvania under Dr. C. S. Fisher excavated Cem. G3000 in our concession north of Cem. G1400; see Fisher, The Minor Cemetery at Giza.

M. Baraize, for the Department of Antiquities, has excavated the Great Sphinx and continued clearing eastwards: 1923-35.

Prof. Selim Bey Hassan, for the Egyptian University, began the excavation of the Cheops-Chephren Quarry Cemetery in 1928 and has continued to the present time.


1. THE CHEOPS CEMETERY

The First Pyramid, the pyramids of queens and the mastabas of children and officials; general conception.

2. THE PRINCIPLES ON WHICH MASTABAS MAY BE DATED

a. Stages in the Construction and Use of Mastabas

The stages of the older graves and in the mastabas of Dyn. I-III. Stages increased by the introduction of the stone mastabas of Giza: core mastabas, generally five stages, (1) core, (2) excavation and preparation of burial-place, determined by type forms and rarely by masons’ marks on stone lining.

b. The Indicia for dating the Different Stages

(1) Stage 1, the core, determined by type and situation; evidence afforded by slab-stelae.

(2) Stage 2, excavation and preparation of burial-place, determined by type forms and rarely by masons’ marks on stone lining.

(3) Stage 3, construction of chapel and casing also by type forms, rarely by masons’ marks and quarry inscriptions.

(4) Stage 4, the decoration of the chapel walls; the finished state of the mastaba.

(5) Stage 5, the burial, by the funerary furniture; seal impressions of royal officials; inscribed vessels and other furniture; archaeological group presented by furniture.
c. The Principles for determining the Date of the Decoration of a Chapel

(1) Names and Titles on Chapel Walls

The titles of king’s son and king’s daughter; the honorary titles ‘king’s son’ and ‘king’s daughter’; the title of rēḥ nswt (king’s clansman) and rēḥ nswt; determination of the king referred to in the above titles; value of other titles mentioning the priesthood of a king or a pyramid chapel decorated after the reign of the king named in the title.

(2) Names compounded with the Name of a King

The naming of children; the inheritance of names; the effect of the holding of royal funerary endowments.

Names compounded with the name of a king do not date the owner of the name necessarily to the reign of that king.

(3) Names of Estates

Estate names compounded with name of a king mark estates once acquired by that king; methods of transfer of royal estates to his family or funerary priests; transfers of royal estates by royal heirs to their descendants or funerary priests; inheritance of royal estates in funerary endowments from ha-priests to their descendants; general conclusions.

(4) Names and Titles of Relations

Reconstruction of family groups of more than one generation; use of such family groups in dating mastabas.

(5) Biographical and Similar Inscriptions

Biographies concerning kings; notices of kings under whom a man lived; wills and deeds.

(6) Dated Inscriptions regarding Death and Burial

Record of date of death and burial on the doorway of the tomb of Meresankh III.

V. THE CONSTRUCTION AND THE TYPES OF MASTABA CORES IN THE NUCLEUS CEMETERIES

1. MATERIALS AND METHODS OF CONSTRUCTION OF THE CORE-MASTABAS OF THE NUCLEUS CEMETERIES

a. The Clearing of the Rock Surface for Foundations

Disposal of rubbish.

b. Kinds of Building Stone used in Core-mastabas

Local stone used in the cores; yellow (drab) and grey nummulitic limestone; occurrence of the different kinds of local stone in the nucleus cemeteries.

c. Method of Construction of the Core-mastabas

Dressing of the rock emplacement; construction pari passu with retaining wall, shaft-lining and filling of core with rubbish or masonry; in all types of cores.

Finishing of all stepped faces of the small course mastabas.

All cores of massive masonry intended to be faced with stepped courses of small masonry or cased with fine white limestone.

2. THE TYPES OF MASTABA CORES

Type I a: c.b. filled mastaba.
Type I b: solid c.b. mastaba.
Type II a: filled stone mastaba with retaining wall of small blocks set in low stepped vertical courses.
Type II b: solid stone mastaba with retaining wall as II a.
Type III: retaining wall of massive grey nummulitic blocks set in high stepped courses; filled with rubbish or more or less solidly with large blocks; faced with stepped courses of small blocks as type II a and b.
III-ii: without recess for interior chapel.
III-iii: with recess for chapel constructed in massive core and faced as type III-i.
Type IV: massive core as type III but not faced with stepped courses of small blocks.
IV-i: without recess for interior chapel.
IV-ii: with recess for chapel reconstructed later.
IV-iii: constructed with recess for interior chapel.
IV-iv: massive core, the casing of which has been prolonged southwards to include an interior chapel.

TYPES OF LATER MASTABAS:
Type V: retaining wall of white limestone backed with nummulitic blocks; with interior chapel of type (3).
Type VI: retaining wall or casing of different types of masonry with interior chapel of type (3).
Type VII: as type VI with interior chapel of type (4).
Type VIII: as type VI-—VII with interior chapel of type (5), (6), or (7).
Type IX: retaining wall or casing as type VI, with exterior chapel of type (8).
Type X: mastaba as type IX but with open-air chapel of type (9).
Type XI: mastaba as type X but without niches preserved, with chapel of type (9 d).

Evidences of the chronological order of core-types I-IV.
Evidence afforded by the number of shafts: twin-mastabas; annex mastabas: origin of the two-shaft mastaba.
List of one-shaft mastabas.
List of two- and three-shaft mastabas.
Multiple-shaft mastabas of Dyn. V-—VI.
Chronological order of the types and subtypes of mastaba-cores.


a. The Sizes of the Cores

Measurements taken at rock-level; mastabas built on a higher level, the nfrw-level; arbitrary variations in widths.

Table of the mean measurements of the original cores of the nucleus cemeteries, excluding six mastabas of abnormal size and two mastabas of type III.
Cem. G 4000: 4 mastabas of type II b.
Cem. G 4000: 34 mastabas of type IV-i.
Cem. G 4000: 1 mastaba of type II a.
Cem. en Echelon: 25 mastabas of type II a.
Total: 82 mastabas.
The size of the normal mastaba-core of the Western Cemeteries.
Approximation of core-type III-i to normal size.
Seven mastabas of abnormal size, five larger than normal size and two smaller.
The large size of the normal core of the Eastern Field; twelve original cores; mean measurements.
Abnormal size of the cores of the twin-mastabas in Cem. G 7000; mean of north row of four cores; mean of south row of four cores.
Sizes of mastabas on independent sites added to the nucleus cemeteries, later in date; five massive cores added to the nucleus cemetery of the Eastern Field; sizes of the nummulitic mastabas of type VI added as the second addition to Cem. G 7000; sizes of outlying mastabas of the Western Field; cores of the Cem. G 1 S.
Variation from the normal sizes shown by the proportion (length divided by width) of the cores; proportions of cores of the nucleus cemeteries follow the old proportions of the c.b. mastabas with stairway substructure.

b. Widths of the Streets and Avenues

Definition of 'street' and 'avenue'; effect of variation in size of mastaba cores; streets narrowed by fall of rock slope; comparison of the width of streets and avenues in the nucleus cemeteries.

4. MARKS OF OWNERSHIP AND ASSIGNMENT OF THE MASTABA-CORES

Slab-stelae: manner of use; list of slab-stelae.

5. COMPOSITE CORES OF TWO TYPES OF CORE-WORK

Addition of core-work of type IV—iii to cores of types II a and II b; addition of core-work of type IV—iii to core-work of type IV i (altered to IV ii).


a. The Four Nucleus Cemeteries of the Western Field

Cem. G 4000: on the best site, the primary site of the Western Field; uniform plan established by first five mastabas; layout of the cemetery; growth of this nucleus cemetery from west to east and from north to south.
Cem. G 2100: on less desirable site; not aligned with Cem. G 4000; in two groups: western group of five mastabas, a family group, forms the nucleus of the cemetery, all five with portcullis-grooves in shafts; eastern group of six cores on a unified plan aligned with the two large cores of the second line of the western group; order of the use of the mastabas.
Cem. G 1200: position far to the west; site second in desirability; types of core-work and prevalence of slab-stelae indicate that Cem. G 1200 was founded about the same time as Cem. G 4000; layout of the cemetery and order of the construction of the separate cores.
b. The Nucleus Cemetery of the Eastern Field

The unfinished pyramid east of pyramid G I-a.
The burial of Queen Hetep-heres, mother of Cheops, in the secret tomb.
The construction of the two northern pyramids of queens, G I-a and G I-b, after the final plan of the First Pyramid had been made and partly executed.
The construction of the original nucleus cemetery of twelve massive cores of type IV i in three rows and four lines.
The conversion of the northern and middle rows of the original nucleus cemetery into abnormally long cores and their casing as four twin-mastabas with interior chapels.
The conversion of the southern row of original cores into long cores for the four southern twin-mastabas by the addition on the south of each of a massive core of type IV iii.
The casing of the western mastaba of the four southern twin long cores into a modified twin-mastaba (the mastaba of Khufu-w-khaf); the beginning of the white casing of the second long core into a mastaba, actually cased with c.b.; the third mastaba used uncased and the fourth (Min-khaf) cased later.
The second form of the nucleus cemetery of the Eastern Field consisting of eight twin-mastabas.
Enlargement of the cemetery of twin-mastabas by the construction of five massive cores.
Continuation southwards of the line of three small pyramids by the construction of the queen's mastaba G 7050.
Further continuation of the lines of the nucleus cemetery by the addition of eight mastabas of type VI a.

c. Cemetery G I S

7. THE CHRONOLOGICAL ORDER OF THE NUCLEUS CEMETERIES

Nucleus cemeteries, the basis of the chronological order of the finished mastabas.

a. The Initial Mastabas of each Nucleus Cemetery and the Origin of the Unified Plan

First cemetery laid out on unified plan, ab initio; the twelve old cores of the Cem. G 7000.
The échelon arrangement first introduced in mastabas added to Cem. G 7000 in the reign of Chephren; used ab initio in the Western Field in the 'Cem. en Échelon', the latest of the nucleus cemeteries in the Western Field.

The Cems. G 1200, G 2100, and G 4000 began with a small block of cores the lines of which were prolonged to form the unified plans of those cemeteries:
(a) Cem. G 4000: five initial cores, one of abnormal size and four of normal size; lines of the block of four normal mastabas prolonged by thirty-seven normal cores of different core types.
(b) Cem. G 2100: five initial cores laid out in two N-S lines; unified plan introduced by the six mastabas of the second (eastern) group, aligned in the E-W direction with the southern and middle mastabas of the second row of initial mastabas.
(c) Cem. G 1200: initial group of five cores, one of abnormal size and four of normal size placed in a rectangle as in Cem. G 4000; lines of initial block of four normal mastabas, prolonged by five other normal mastabas.

b. The Evidence of the Types of Cores

Order of the introduction of core-types II a and II b, type III-i and type IV i.
The fifteen initial mastabas, all of type II a or b; followed in Cem. G 1200 and G 2100 by cores of type II a; followed in Cem. G 4000 by cores of type III-i and IV i.
Cores of type IV i intended to be faced as type III-i or cased with white limestone.
Enlargement of five of the initial cores with corework of type IV iii added to core-types II a or b.
The later type of the mastaba G 2000.

c. The Relative Positions of the Three Early Nucleus Cemeteries in the Western Field

The three early nucleus cemeteries of the Western Field present in their initial cores three family cemeteries representing three groups of the family of Cheops.
The relative excellence of the sites and the comparative expensiveness of the initial mastabas of each cemetery; the size and importance of the three family groups.
All fifteen initial cores built about the same time, early in the reign of Cheops.
d. The Growth of the Nucleus Cemeteries in the Western Field  
Cem. G 1200, continued by five cores of the same type as the initial cores; continued the lines and rows established by the initial cores.
Cem. G 2100, increased by a block of six mastabas built on a unified plan and linked with the initial cores by alignment with the two most important of the initial cores; cores of type II a as four of the five initial mastabas.
Cem. G 4000, continued by thirty-seven cores of new types, originally all of type IV-i but with two altered to type III-i; all intended to be faced or cased with masonry of another kind of stone; the first addition of eight cores; second addition of nine cores; a total of twenty-two cores which date certainly to the reign of Cheops.  
The final addition of twenty cores, rows 3, 2, and 1 and line 8.  
Total of sixty-three cores in the Western Field constructed by the public works department of Cheops.

c. The Three Remaining Nucleus Cemeteries and the Isolated Mastaba G 2000  
(1) The Nucleus Cores of Cemetery G 7000  
The twelve original cores of Cem. G 7000; cemetery laid out and built after the first twenty-two cores of Cem. G 4000; introduce a normal size of about double the older normal size; position and size prove these cores intended for the most important members of Cheops family; Eastern Field the site for the important members of the royal family;  
Designed to be faced with exterior chapels of white limestone; alteration of the plan to provide eight twin-mastabas with white casing and two interior chapels.  
Addition of five massive cores to the nucleus cemetery made in the reign of Chephren.  
Later addition of eight mastabas of type VI a, continuing the lines of the nucleus cemetery.
(2) Mastaba G 2000 in the Western Field  
By position and lack of alignment constructed after the founding of the three early cemeteries of the Western Field; evidence of date given by the core-type III ii; constructed after the first twenty-two cores of Cem. G 4000 and after the twelve original cores of the Eastern Field; probably a man of blood royal.
(3) The Cem. en Échelon in the Western Field  
Built after the Cems. G 4000 and G 2100; laid out on a unified plan; the échelon arrangement leaves the chapel of each mastaba with an open eastern outlook; échelon arrangement in the first addition to the eight twin-mastabas of the Eastern Field; evidences of the date of the Cem. en Échelon, between the middle of the reign of Chephren and the middle of the reign of Mycerinus.
(4) The Cores in Cemetery G 1 S  
Built in alinement but in two groups; eastern group apparently attached to the Eastern Field and the western group apparently attached to the Western Field.  
Evidences of date: late in the reign of Chephren or early in the reign of Mycerinus; but later than the Cem. en Échelon.

f. The Chronological Order of the Blocks of Cores  
Chronological table showing the order of construction of the cores of the nucleus cemeteries.

VI. THE BURIAL-SHAFTS OF THE FINISHED MASTABAS OF THE NUCLEUS CEMETERIES  
Definition of the term "finished mastaba".
1. TYPES OF SHAFTS AND BURIAL CHAMBERS  
a. The Classification of the Burial-shafts at Giza  
Characteristics of the early Giza shafts descended from older forms; N-S orientation and proportions of mastaba; position of the chamber on the south of shaft; the lining of the chamber with fine limestone.  
Types 1-9, covering the whole period of the Giza Necropolis; position of the chambers in these nine types.  
Variation a, chamber parallel to the adjoining side of the shaft; when the chamber is north or south of the shaft, its long axis is E-W; when the chamber is east or west of the shaft, its long axis is N-S.  
Variation b, chamber with long axis at right angles to the adjoining side of the shaft; when the chamber is north or south of the shaft, its long axis is N-S; when the chamber is east or west of the shaft, its long axis is E-W.  
These variations have the same meaning in types 1-6 and 8.  
Variations c-d not common to the types 1-6 and 8.  
Shaft types 1-9 introduced in this chronological order.
(1) **The Variations of Shaft Type 1**

- **a**: E-W chamber on the south of the shaft.
- **b**: N-S chamber on south of shaft.
- **c**: square or practically square chamber on the south.

Variations describing the connecting passage:
- **r**: opening at roof-level.
- **m**: opening in or near middle of north wall of chamber.
- **l**: opening low down in north wall of chamber.
- **f**: opening at floor-level of chamber.
- **x**: sloping passage.

(2) **Variations of Shaft Type 2**

Shall Type 2, like 1, but with Ramp or Stair descending from Floor of Passage to Floor of Chamber; some Chambers unlined or with Lining only partially constructed. Variations **r** and **m** as type 1; use of ramp or stair excludes variations **l** or **f**.

Variation **x** as type 1.

(3) **Variations of Shaft Type 3**

Like Type 1, but not lined. Variations **a**, **b**, **c**, **r**, **m**, **l**, **f**, and **x** as type 1.

(4) **Variations of Shaft Type 4**

Degeneration of Type 3, with passage practically same height as chamber; passage shorter but over 0.5 m. long; chamber on south, north, east, or west of shaft.

Variations **a** and **b** as type 1-3.

Other variations dependent on the form of the doorway and its position with reference to the burial-chamber:
- (1) with false door-jamb as type 1 (a);
- (2) doorway same width as shaft; no door-jamb;
- (3) without door-jamb, opening in or near middle of chamber;
- (4) with two false door-jamb; opening near end of chamber;
- (5) with two door-jamb; opening in or near middle of chamber.

(5) **Variations of Shaft Type 5**

Type 5, a degeneration of type 4; with a connecting passage or door-jamb less than 0.5 m. in length; chamber on south, north, east, or west.

Variations **a** and **b**, as types 1-4.

Variations **c**: like type 5 a but with floor area of chamber less than 2.0 sq. m.

Variation **d**: small chamber about same size as shaft.

Variations (1) to (5) as in type 4.

(6) **The Variations of Shaft Type 6**

Type 6 without connecting passage or door-jamb; shaft opening directly into chamber became predominant in the smaller tombs of Dyn. V-VI; chambers on south, north, east, or west.

Variations **a** and **b**: relations of chamber to shaft as in types 1-5.

Variation 6 a (2) with doorway near end of chamber.

Variation 6 a (3) with doorway at or near middle of chamber.

Variation 6 b (1) chamber with parallel sides.

Variation 6 b (2) with 'fan-shaped' chamber.

Variation 6 c with recess chamber, small, nearly square:
- (1) with parallel sides;
- (2) 'fan-shaped';
- (3) irregular form.

Variation type 6 d: recess chamber less than 0.4 m. deep, with body partly in shaft protected by construction in shaft.

(7) **Variations of Shaft Type 7**

Type 7 open shaft with or without burial-chamber constructed in bottom of shaft; variations as follows:

Variation **a** with built or sunk chamber in middle of shaft.

Variation **b** built or sunk chamber on east or west side of shaft.

Variations (1) to (5), designate the type of roofing.

Variation **c**: with burial in open shaft covered with filling.

Variation **e**: smaller shaft and chamber built in open shaft.

Variation **x**: shaft without chamber with evidence of burial removed by plundering.

Frequent in secondary shafts of Dyn. V and even in chief shafts of Dyn. VI.
(8) **The Variations of Shaft Type 8**

Type 8 with built shaft and chamber in filling of mastaba or intruded in streets and chapels of old mastabas:

- Variations a and b and (1)-(5) as type 5.
- Variation 8 c: imitation of type 6 c (1) and (2).
- Variation 8 d: like 6 d.
- Variation 8 e: like 6 c; sunk in rock and roofed with slabs.
- Variation 8 f: abnormal variation of type 8 b.

Predominating type of the intrusive shafts made after the sanding-up of the cemeteries.

(9) **Variations of Shaft Type 9**

Type 9, large N-S chamber cut in the rock approached by sloping passage from north or east; the variations are:

- Variation 9 a: with sloping passage from east.
- Variation b: with sloping passage from north or south.
- Variation (1) with plain rock-cut passage.
- Variation (2) with built passage in rock-cut passage.

Used in large mastabas of Dyn. V-VI as an improvement of the vertical shaft types of that period.

(10) **Summary of the Square Shafts with Rock-cut Chambers: Types 1-6**

All large tombs at Giza of types 1-6 except for the later burial places of type 9.

Types 2-6 descended from the lined chamber of type 1.

- Chronological order of the introduction of types 1-6.
- Decrease of size and cost of burial-shafts during Dyn. V-VI.
- Manner of excavation of rock shafts and chambers; tools used; advantage of excavation with downward blows of chisel and hammer; devices for excavating chambers with downward strokes.

b. The Occurrence of Stone-lined Chambers at Giza

Lined chambers in the Western Field; thirty-one lined chambers of types 1 and 2; include all the earlier mastabas of the Western Field; no other lined chambers in this field.

In the Eastern Field only three lined chambers, G 7150 B, G 7430 B, and G 7510.

Lined chambers in the pyramids of queens at Giza.

Sporadic examples of lined chambers at other sites in Dyn. V-VI; lined chambers of pyramids of kings in Dyn. V-VI.

Construction of the lined chambers of type 1 and 2 at Giza.

c. Distribution of the Shaft Types in the Nucleus Cemeteries

(1) **The Shafts in the Fifteen Initial Mastabas of the Nucleus Cemeteries**

- Total number of shafts of type 1 among the fifteen initial mastabas is fourteen shafts; one unlined chamber of type 4.

(2) **The Distribution of Shaft Types in Cem. G 4000**

The importance of Cem. G 4000.

(a) The five initial mastabas all with shafts of type 1; table showing core-type, slab-stela, shaft type, area, capacity.

(b) The eight succeeding mastabas of rows 5-6 in lines 3-6; seven of type 1 and one of type 3; table as above.

(c) The following nine mastabas of row 4, lines 1-7 and rows 5-6 of line 7; all of type 2; table as above.

(d) The nine mastabas of row 3 and line 8; types 3-6; table as above.

(e) The six mastabas of row 2; types 5 and 6; table as above.

(f) The five mastabas in row 1; types 4 and 6; table as above.

The distribution of shaft types in the cemetery; the chronological order of the types and the use of the shafts from the reign of Cheops to Dyn. V.

Summary

(3) **The Distribution of the Shaft Types in Cem. G 2100**

(a) The chambers in the five initial cores: four of type 1 and one of type 4; table as above.

(b) The following six cores:

- Six cores laid out on unified plan: one shaft of type 1, one of type 3, three of type 4 and one of type 6; table showing core type, slab-stela, shaft type, area and capacity of burial chamber.
- Lined chambers in order of size.
- The six plain rock-cut chambers in order of size.
- Chronological order of the shafts; parallel to series in Cem. G 4000, but of shorter duration.
(4) The Distribution of the Shaft Types in Cem. G 1200
Homogeneous group of ten mastabas constructed continuously beginning in the reign of Cheops; all ten shafts
of type 1; eight of the ten in mastabas with slab-stelae.
Chronological order of the shafts; table as above.
Table showing the shafts in order of their cubic capacities.
Shaft types in the annexes: two of type 3, one of type 5, and one of type 6.

(5) Shaft Type of the Isolated Mastaba, G 2000
Extraordinarily large size of rock-cut chamber of type 2, with lining designed but not built.

(6) The Distribution of the Shaft Types in Cem. G 7000
(a) The four northern twin-mastabas set out in table form showing type, area, and capacity.
(b-d) The four southern twin-mastabas set out in table form showing type, area, and capacity.
(c) The succeeding six mastabas built around the eight twin-mastabas set out in table form showing type,
area, and capacity.
(f) The eight following nummulitic mastabas of type VI a, set forth in table form showing type, area, and
capacity.
(g) Mastabas in lines 5 and 6 south of G 7550 and G 7660. Table as above.
Summary of the occurrence of the type forms.
List of chambers arranged in order of cubic capacity. Total of forty-four shafts ranging in date from the last
years of Cheops to the end of the reign of Chephren with a few from the reigns of Mycerinus and Shep-
seskaf.
Name and rank of persons concerned.
Number of examples of the different types compared with the numbers of the same types in the Western Field:
prevalence of type 1 in the Western Field and the prevalence of type 3 in the Eastern Field.
Introduction of type 3 at the end of the reign of Cheops, a fortuitous development from type 1.
Type 4 introduced in the reign of Chephren.
Large size of the chambers of type 3 in the Eastern Field; introduction and distribution of two-room apart-
ments in the chambers of the Eastern Field; rank of the persons with two-room apartments; list of the
lined chambers.

2. COMPARISON OF THE SIZES OF THE BURIAL-CHAMBERS IN MASTABAS AND PYRAMIDS

a. The Normal Size of Chambers of Type 1
Mean of nineteen chambers, 10.23 sq. m. and 26.79 cu. m.; chambers carried out by the public works depart-
ment of the king; variations, smaller and larger than the normal size, within the range of possible influence;
two abnormally large chambers made for princes with mastabas larger than those of normal size.

b. Use of the Normal Size in Chambers of Type 2
Lined chambers of type 2 follow the old normal size of chambers of type 1 and the unlined chambers which
were designed for linings would have been of the same size; variations of size in type 2 as in type 1; un-
finished linings connected with the unfinished condition of the mastaba casings.
The enormous size of the chamber of type 2 in G 2000 corresponds to the size of the mastaba.
Two lined chambers in the Eastern Field, one of type 2 and corresponding in size to the larger variation in the
normal mastabas of the Western Field, and the other of type 4 and about the same size but unfinished.

c. The Sizes of Chambers of Type 3
Early chambers of type 3 in the Eastern Field, designed as lined chambers of type 1; the sizes of these
chambers to be compared with the rock-cut sizes of the lined chambers of the Western Field; the four
northern twin-mastabas in order of size.
The burial-chambers of the four southern twin-mastabas; alterations in Ptolemaic period; decrease in sizes of
chambers. Chambers in the six massive cores which form the first addition to Cem. G 7000; two-shaft
mastabas; types of secondary shafts.
Burial-chambers in the eight nummulitic mastabas forming the second addition to Cem. G 7000; chambers
of type 4 and 6.

d. Conclusions drawn from the Comparison of the Sizes of Mastaba Chambers
Normal size of mastaba and burial-chamber made by the working gangs of Cheops; variations and their
causes; type 2 follows type 1 in size.
Later chambers made by owners and vary greatly in size; no normal size used after the introduction of type 3.

e. The Burial-chambers in the Pyramids of Queens at Giza
List of the chambers of the seven small pyramids showing their forms and sizes.
Made by the public works departments of the kings; three by Cheops, one by Chephren, and three by
Mycerinus (last two perhaps finished by Shepseskaf).
Method of constructing these small pyramids: superstructure and substructure made simultaneously in one continuous operation and finished about the same time.

The three chambers in the small pyramids of Cheops; burial-chamber and ante-room; use of the normal mastaba size in the first and in the floor area of the third; normal variation in second; rock-cut chambers corresponding in size with the chambers of the four north twin-mastabas; these three pyramid chambers form a connection between the chambers of types 1 and 2 of the Western Field and the chambers of type 3 of the Eastern Field.

Use of ante-rooms as turning-rooms for sarcophagi; use of ramp in turning-room of G I a; mastaba chambers of type 2 derived from the ramp-room of G I a; date of G I a and mastaba chambers of type 2.

Form of the chamber of the small pyramid south of the Second Pyramid; follows the form of the substructure of the Pyramid of Radechef; size and lack of lining.

The two last pyramids, G III b and c; change from E-W to N-S burial-chamber, following the substructure of the Third Pyramid in its final form; reversion to the form with ante-room but modified; sizes and lining; probably finished by Shepseskaf.

1. The Sizes of the Burial-chambers of Kings of Dyn. IV

Descriptive list of the burial apartments of the pyramids of Sneferuw, Cheops, Radechef, Chephren, Mycerinus, and Shepseskaf; Nos. 1-10.

Use of corbel and pent roof; capacity of rooms (so roofed) taken from floor to bottom of roofing for comparison with flat-roofed chambers; comparison of the sizes of the burial-chamber and the great hall (if any), excluding the galleries, ante-rooms, portcullis rooms, and rock-cut magazines.

Pyramids the plans of which had been increased; those have received burial apartments for each new plan, three in pyramid of Cheops, two each in the pyramids of Chephren and Mycerinus; increase in size of burial apartment with each increase in size of pyramid.

Comparison of the areas and capacities of the burial apartments of kings of Dyn. IV.

E-W orientation of the burial-chamber except in the Pyramid of Mycerinus in which the N-S sarcophagus chamber was the final addition to an E-W apartment; adoption of N-S burial-chamber in the last two pyramids of queens at Giza but not by Shepseskaf.

Use of two-room apartments; previous to Cheops and in Dyn. IV by descendants of Cheops; an old feature which reappears by the arbitrary choice of owners.

3. SUMMARY OF SHAFT TYPES IN THE FIRST FOUR NUCLEUS CEMETERIES

Table showing the chambers of types 1-7 x in the four cemeteries, Cem. G 4000, G 2100, the isolated mastaba G 2000, Cem. G 1200 and Cem. G 7000.

Totals of above tables for Western and Eastern Fields.

Summary table showing the sizes of chambers of different types (1-6), with total for both fields.

4. DISTRIBUTION OF SHAFT TYPES IN THE CEM. EN ÉCHELON

Discussions based on sixteen of the twenty-five mastabas.

Descriptive list of the shafts in numerical order, giving mastaba number with letter of shaft, the core type, shaft type, area and capacity of chamber.

List of chambers of types 1-7 x; thirty-three shafts in sixteen mastabas.

Table of chambers arranged in order of the cubic capacity.

Range of the sizes of the chambers in type groups; maximum capacity of 43.1 cu. m.; ranging down to less than 1 cu. m.

Table of the chief shafts, showing numbers of chambers of each type grouped according to capacity.

Similar table of secondary shafts.

The significance of the chief shafts for dating the cemetery.

5. DISTRIBUTION OF SHAFT TYPES IN LARGE OUTLYING MASTABAS IN THE WESTERN FIELD

The burial-chambers of four large mastabas important for the history of the shaft types: G 2220, G 5110, G 5230, and G 5210.

6. DISTRIBUTION OF SHAFT TYPES IN CEM. G 1 S

7. CHRONOLOGICAL ORDER OF THE SHAFT TYPES

Summary of the evidence yielded by the distribution of the shaft types in the nucleus cemeteries.

Type 1 introduced by Cheops and used only in his reign.

Type 2 introduced and used for a period including the last few years of Cheops and the early years of Chephren.

Type 3 introduced fortuitously at the end of the reign of Cheops as a substitute for type 1 and ranging to the end of Dyn. IV or a little later.
Type 4, degeneration of type 3, introduced in the reign of Chephren and ranging down to the early part of Dyn. V; for large chambers.
Type 5, degeneration of types 3 and 4, appears about the end of the reign of Chephren and ranges to the end of Dyn. VI.
Type 6, simple form, ranges from the reign of Chephren to the end of Dyn. VI.
Effect of the overlapping of the ranges of the later types.
Types 2-6 developed from type 1; present a continual cheapening from type 1 to type 6, corresponding to the lapse of time in the use of the Necropolis; amount to a rough chronological scale.
The Giza Necropolis in Dyn. V-VI.

8. BURIAL-PLACES OF TYPE 9
Sloping passage tombs in large mastabas of Dyn. V-VI; relation to sloping passage tombs of Medium.
Examples of type 9 in the Giza Necropolis of the reign of Mycerinus and later; examples 3-7.
The tomb of Khuwnera in the Mycerinus Quarry; No. 8.
The sloping passage added to the burial-place of Prince Ka-wab (G 7120 A).
Examples of type 9, rare in Dyn. IV; a few examples in the Quarry Cemeteries; shaft and sloping passage connected with older shaft types.
Type 9 in the Senezem-ib complex; dated from the first year of Unis to the middle of the reign of Pepy II.
List of shafts of type 9, Nos. 1-35.

9. MINOR FEATURES OF THE SHAFT TYPES

a. Canopic Pits and Recesses for containing the Canopic packages
Removal of viscera result of mummification; the alabaster canopic chest of Queen Hetep-heres I; primitive mummification in Dyn. I; introduced for royal persons and spread downwards through the different classes of the population; uncertain date of the introduction of full mummification and separate wrapping of the limbs; use of canopic receptacles indicates the use of full mummification; use of mummification for Zoser and members of his family; use of mummification in Dyn. IV shown by the long coffins and the canopic receptacles. Canopic pits in the SE corner of the burial-chamber and canopic recesses in the south wall, definitely developed in large tombs of Sneferu at Medium.
Types of canopic receptacles at Giza:
(a) Canopic pit roofed with slab in SE corner.
(b) Canopic recess in south wall of chamber, near the SE or SW corner, closed by vertical slab.
(c) Pit or recess built of stone and closed with slab, 'built canopic chest'.
(d) Canopic chest of stone or wood.
Examples of canopic pits in the SE corner:
(a) In twelve of the fifteen initial cores.
(b) In the succeeding twenty-three chambers of types 1 and 2.
(c) The five finished twin-mastabas in the Eastern Field; two examples in ten chambers.
(d) Mastabas finished in succession to the twin-mastabas in the Eastern Field; two shafts, G 7430 A and G 7650 C.
(e) Finished mastabas of the reigns of Mycerinus, Shepseskaf, and early Dyn. V.
Canopic recesses and their distribution.
Appear first in the twin mastabas of the Eastern Field.
Other chambers with canopic recess.
'Built canopic chest'; examples.
Limestone canopic jars in G 7530 A, early in the reign of Shepseskaf; other examples in G I S, No. 7 B, and No. 2 B; many examples in burial-chambers of Dyn. V, usually with no trace of contents.
Canopic chests of stone and wood; evidence at Giza.
SUMMARY TABLE: distribution of the canopic receptacles at Giza: showing numbers of shafts, pits, recesses, and built chambers for the various groups of mastabas
Chronological order of the use of canopic receptacles.
SUMMARY TABLE: showing the distribution of canopic receptacles in the various types of shafts
Resume of occurrence of canopic receptacles.

b. Coffin-pits
The open pit in the floor of the burial-chamber, the coffin-pit and the roofed pit, the burial pit.
The coffin-pit; used to prevent the overturning of the coffin by thieves to remove the lid.
List of coffin-pits in the six nucleus cemeteries; coffin-pit not in general use but found in large tombs from the end of the reign of Cheops to Dyn. V and sporadically thereafter; use of both stone and wooden coffins.
The roofed pit, or built pit, in general use in secondary mastabas of Dyn. V-VI.
Coffin recess as substitute for separate burial-chamber.
c. The 'Window' between Shaft and Chamber
Five examples in the six nucleus cemeteries; Nos. 1-5.
Used to facilitate the cutting of the chamber in the rock.
d. The Turning Recess in the North Wall of the Shaft
Device for turning large stone coffins from a vertical to a horizontal position to permit introduction into the burial-chamber; other devices for same purposes.
Manner of lowering heavy stone coffins and turning; lid and box handled separately.
Method of moving coffin from passage to its place along the west wall of the chamber.
Removal and lifting of the stone coffins by our expedition; length of time required.
Evidence of the use of stone balls in the original introduction G 7000 X, G I S No. 1 (Junker).
List of shafts with turning recess; Nos. 1-13; ten shafts contained granite sarcophagi and one a limestone sarcophagus.
Occurrence of shafts without turning recesses which contained coffins; turning recess not necessary.
e. The Blocking of the Doorways of the Burial-chambers
Blocking designed to prevent plundering.
(1) Masonry Blocking and Portcullis Slab: Blocking Type I
Use of portcullis with interior c.b. blocking, type I a; portcullis grooves previous to Dyn. IV.
In the early stone mastabas at Giza, the passage began to be blocked with masonry set in plaster with portcullis slab outside the blocking, type I b; used in shafts of types 1-6; variation in inner blocking; portcullis slabs with portcullis grooves and slabs with rope holes for lowering.
List of shafts with portcullis grooves; all in one block, the five initial cores of Cem. G 2100.
The portcullis required the use of large and unwieldy slabs; when the grooves were omitted a small slab was used; list of smaller portcullis slabs and their measurements; Nos. 6-17, with notes on sizes and rope holes.
Distribution of blockings of type I b.
Use of interior blocking of c.b. at Giza, type I a; list of five examples; from the reign of Chephren to early Dyn. V.
(2) Blockings Developed from Type I; Blockings Types II-VI
Blockings designed to protect burial-chambers from intrusion of shaft filling and rainwater; no type prevented plundering.
Blocking type II; interior blocking as in type I without portcullis slab; variations.
Blocking type III; thin interior blocking wall; variations.
The types I-II adapted to tombs with long passages; type III to those with short passages (shaft types 4 and 5); exterior blockings adapted to shaft type 6 but also used for type 5.
Blocking type IV; exterior vertical wall; variations.
Blocking type V; exterior leaning wall resting on shaft side above doorway; variations.
Blocking type VI; exterior wedge-shaped blocking; variations.
Comparison of the frequency of blocking types in Cem. G 1000-1500 and G 3500.
f. The Filling of the Shaft after Burial
The filling with masonry and plaster of the shaft of the secret tomb of Hetep-heres I (G 7000 X).
Few examples of the covering of the mouth of the shaft.
VII. THE FINISHED MASTABAS: CORES, CASINGS AND CHAPELS
1. Distinction between Cores or Faced Cores and Cased Mastabas
Cores of type II a and b used either as finished mastabas or as mastaba cores; construction like the c.b. mastabas I a and b but without niches in the retaining wall; offering-place marked by slab-stela fixed in emplacement cut in the retaining wall of the core and exposed in a niche in the west wall of the c.b. chapel.
Cores of types IIa and b, used as finished mastabas with exterior c.b. chapels of type I; eleven out of twenty-six, of which eight had slab-stelae.

Core type III, a massive core faced with stepped masonry like type II, presented the same outward appearance; two examples; with slab-stela in stepped facing: one used as finished mastaba with c.b. chapel and the other with unfinished white casing and unfinished exterior stone chapel.

Conclusion that cores of types II a, II b, and III, presenting the same outward appearance, were intended to be used as finished mastabas, but later some of them were cased.

Problem presented by cores of type IV-i; rough outward appearance; use of slab-stelae and exterior c.b. chapels; conclusion that cores of type IV-i were intended to be faced (converted into type III) or cased with white masonry.

Alteration of type IV-i to IV-iii by reconstructing with recess for interior chapel; all cores of type IV-iii certainly intended to be cased.

2. TYPES OF CASINGS

2. TYPES OF CASINGS

a. Classification of Casings

Casings of white limestone; x-casing, with blocks laid with the grain horizontal; y-casings with blocks laid with grain sloping; examples of mixed casings, xy.

Casing of nummulitic blocks set in low vertical faced stepped courses; casing z.

Casing of large nummulitic blocks set sloping; casing w.

Small nummulitic blocks set in low courses to form a rough sloping surface; u-masonry or casing.

A later combination, z-casing and u-casing built of small nummulitic blocks; the courses are sloping and the steps very narrow; zu-casing.

b. Distribution of Casings x and y

White limestone casing appears definitely in the Zoser complex as x-masonry; y-masonry a cheaper form of x-casing.

List of twenty mastabas faced with finished or unfinished white casing, in the Western Field; three in Cem. G 1200; the isolated mastaba G 2000; four in Cem. G 2100; ten in Cem. G 4000; one in the Cem. en Échelon, and one in an outlying mastaba; forty-three cores.

List of twelve cores with white casings in the Eastern Field; seven of the eight twin-mastabas; five in the mastabas added to the nucleus cemetery.

List of five cased cores in the Gem. G I S.

Percentages of white casings in the various cemeteries of the Giza Necropolis.

Use of z and w masonry for casing old cores later than the middle of the reign of Chephren (some as late as Dyn. V); introduction of the mastabas of type VI a in the Eastern Field.

Smooth white casing used during Dyn. IV and V at Giza; within the means of highly placed and wealthy persons down to the end of Dyn. VI.

c. Summary Table: Distribution of Fine White Casing through the Six Nucleus Cemeteries

Table shows numbers of finished and unfinished white casings, the total number of white casings, and the total number of mastabas; arranged in groups: (a) the fifteen initial cores; (b) the twenty-three succeeding mastabas and G 2000; (c) the eight twin-mastabas in Cem. G 2100; (d) mastabas in Cem. G 4000 of the reign of Chephren (one of Shepseskaf); (e) the nine excavated mastabas in Cem. G I S; (f) mastabas in the Western Field unused at the death of Cheops or built thereafter.

Only white casing used in the reign of Cheops; after the introduction of nummulitic casings and mastabas, white casing continued to be used for persons of unusual means.

3. CHAPEL OF THE CORES AND FINISHED MASTABAS

History of mastaba chapels in Dyn. I-III.

At Giza the mastaba chapel did not continue the development of the c.b. interior chapels of Saqqarah; all the early chapels at Giza were exterior chapels of c.b. or stone attached to stone cores; the L-shaped chapel introduced as an interior chapel late in the reign of Cheops.

Differences between the cruciform chapel and the L-shaped chapel of Giza; probably connected with the interior L-shaped chapels of the Zoser complex.

Functional parts of a chapel; interior and exterior chapels at Giza in Dyn. IV; terms ‘interior’ and ‘exterior’ refer only to offering-room; the interior L-shaped chapel usually had exterior rooms of stone or c.b.

Two kinds of exterior chapel, that covering the whole façade of the mastaba and that covering only a part of the façade, in the place of or covering the chief offering-niche; one-niched and multiple-niched exterior chapels.

Interior L-shaped chapel with one niche represents a withdrawal of the chief niche within the mastaba; the interior two-niched chapel represents in its west wall the façade of the mastaba; interior corridor chapel of type (5) represents in its west wall the actual façade of the mastaba.
Range of the mastaba chapels at Giza from Cheops to the end of Dyn. VI; contemporary range of chapels at Saqqarah; two series of chapels developed independently and constructed by two different sets of craftsmen; both cruciform chapel at Saqqarah and L-shaped chapel of Giza in Dyn. IV situated in SE corner of mastaba with north subsidiary niche; difference in the two series.

a. Classification of Giza Chapels of Dyns. IV–VI

Exterior chapels:
- Type (1): exterior c.b. chapel; with variations a–f.
- Type (2): exterior stone chapels; with variations a–b.

Interior chapels:
- Type (3): interior L-shaped stone chapels with one niche; with or without exterior rooms; variations a–c.
- Type (4): N–S offering-room with two niches in west wall; in SE corner of mastaba with subsidiary north niche; asymmetrical entrance from east; variations a–b.
- Type (5): long N–S corridor, extending more than half the length of the mastaba; one or more niches in west wall as mastaba façade; entered at east at one end of east wall or from north or south end of chapel; variations a–e.
- Type (6): exterior or interior symmetrical chapel (cruciform) with one or two niches in west wall; variations a–c.
- Type (7): interior chapel; single E–W offering-room with false door stela in west wall or a multiple-room chapel based on such an E–W offering-room; variations a–e.
- Type (8): roofed exterior chapel, built against the façade of a mastaba, with the nichework of the mastaba appearing in the west wall of the corridor; variations a–g.
- Type (9): open-air corridor chapel, rarely with enclosing wall; variations a–d.
- Type (10): interior square or nearly square offering-room with one or two niches in west wall; variations a–c.
- Type (11): the portico chapel; a wide recess in the façade of the mastaba (over half the length); with roof supported by pillars; variations a–c.
- Type (12): complex interior chapels, or partly interior and partly exterior, which cannot be classed under the above type; each built on its own design.
- Type (13): abnormal chapels, usually a roofed niche in the place of the chief niche.

b. Chapels of Dyn. IV: Types (1)–(4 a), Rock-cut Chapels of Type (6)

Chapels of Dyn. IV considered in the chronological order of the cores: (a) the chapels of the fifteen initial cores of the three nucleus cemeteries of the Western Field; (b) the chapels of the thirty-seven mastabas following the fifteen initial mastabas of the same cemeteries; (c) the chapels of the eight twin-mastabas of Cem. G 7000 in the Eastern Field; (d) the massive core-mastabas added to the eight twin-mastabas of the Eastern Field; (e) the chapels of the eight nummulitic mastabas of type VI a and two others; (f) a number of mastabas of the Western Field, which are built around or attached to nucleus mastabas or for other reasons are to be dated to Dyn. IV; (g) the ten mastabas of G I 8, excavated by Junker; (h) a certain number of rock-cut tombs in the quarry cemeteries.

These tombs present mastaba chapels of types (1)–(4 a), rock-cut chapels of type RC i, and mastaba chapels of type (6).

1. The Exterior Crude-brick Chapel of Type (1).

(a) Chapels of type (1 a).

Exterior multiple-room c.b. chapel built around a slab-stela fixed in the stepped face of the core; stela visible in a niche in the west wall of offering-room; c.b. leaning course vaults; windows and doors; entered from north, east, or south; alteration and reconstruction of chapels of type (1); chief functional rooms, L-shaped offering-room, magazine or magazines, vestibule room, and open court.

List of examples of chapels of type (1 a); fourteen examples.

(b) Exterior c.b. chapels of type (1 b), based on slab-stela but secondary to stone chapel of type (2 a).

Two examples of chapel type (2).

(c) Miscellaneous exterior c.b. chapels related to type (1 a), attached to core-mastabas of the nucleus cemeteries: type (1 c).

List of chapels of type (1 c); nine examples.

(d) One-room exterior chapels in place of chief offering-niche: type (1 d).

Examples of type (1 d); seven examples.

Total of above chapels, thirty-two; eight cores of the nucleus cemeteries had no chapel preserved.

Comparative table of chapels of types (1 a) to (1 d); showing tomb number, area of offering-room and its proportions, number of rooms, total area of chapel, and slab-stela (if found).

Date of chapels of type (1 a) and (1 b) and the later chapels of type (1 c) and (1 d).
(c) Exterior c.b. chapels attached to stone chapels
Exterior c.b. chapels without offering-place, built subsidiary to stone offering-rooms.
Type (1 e): subsidiary to chapels of type (2).
Type (1 f): subsidiary to chapels of type (3).
Type (1 g): subsidiary to chapels of type (4).
Type (1 h): subsidiary to chapels of type (5).
List of examples of chapels of the type (1 e) to (1 h).
Functional character of the rooms; magazine and vestibule, a hall, a statue chamber, and a court.

(2) Exterior Stone Chapels, Type (2) with One Niche
One-niched offering-room with deep compound niche; L-shaped room.
Examples of chapels of type (2 a) with subsidiary c.b. chapel of type (1 b); two examples.
Examples of chapels of type (2 b); eight examples.

(3) The Interior Stone Chapel of Type (3)
All the cores of the six nucleus cemeteries built without recess for interior chapel; all the interior chapels found in these cores were built in recesses reconstructed in the core in a hole broken in the core, or in an addition to the south end of the core.
Interior chapels of white limestone in mastabas cased with white limestone and in some cores rebuilt as mastabas of type VI a; usually interior chapels in nummulitic mastabas were also of nummulitic limestone.
List of four interior chapels of type (3 a) in corework added to cores of type II; Nos. 1-5.
List of chapels built in recesses reconstructed in old cores or in holes broken in the cores; eight examples, Nos. 6-13.
Other examples of chapels of type (3) built in holes broken in old cores.
Cores with chapel recess constructed ab origine, later than the above examples.
List of early cores with chapel recess and chapel of type (3); eight examples, Nos. 14-21.
List of three chapels in G 1 S, all in holes broken in the core; Nos. 22-4.
Two examples of later chapels of type (3) broken in old cores, in the Western Field; Nos. 25-6.
List of nummulitic mastabas with chapels of type (3); twelve examples, Nos. 27-38.
Sub-types of chapels of type (3); type (3 a) with one compound niche at one end of the west wall; type (3 b) with niche in middle of west wall usually included in palace facade panel; examples of type (3 b).
Transition from one-niche to two-niche chapels; dated to end of Dyn. IV; isolated examples of two-niched chapel in reigns of Cheops and Chephren; one-niched and two-niched chapels in the rock-cut tombs of the reign of Mycerinus.

(4) Early Two-niched Chapels and Chapels of Type (4 a)
(a) Early chapels
Five two-niched chapels previous to Mycerinus; Pyramid chapel, G I-b, one corridor chapel (G 4000), and three chapels of type (4 a), G 2000, G 7510, and G 7650.
(b) Two-niched chapels of type (4 a)
Later than the first five two-niched chapels are eleven of type (4 a) which enclose old cores of the nucleus cemeteries of the Western Field; dated to the period from the end of Mycerinus to the end of Neferirkara; list of chapels of type (4 a), Nos. 6-17; owners and their rank.
Outlying mastabas with chapels of type (4 a); Nos. 18-25.
Later chapels of type (4 a); Nos. 26-8.
Two chapels without niche in west wall; Nos. 29-30.
(c) Other two-niched chapels
G 5110 of type (6 b); two-niched chapels of type (5), (8), and (9) based on the two-niched mastaba.
Degeneration of type (4 a) in (4 b).

(5) Rock-cut Chapels at Giza
Rock-cut tombs of the family of Chephren began in the reign of Mycerinus; covered the period of the transition from the chapels of type (3) to those of type (4); continued to end of Dyn. VI.
Rock-cut tombs of members of the royal family affected the subsequent development of the mastaba chapel.
Correspondence of the parts of the rock-cut tomb with those of the built mastaba.
Topography of the Chephren Quarry Cemetery; rock-cut tombs; mastabas partly built and partly rock-cut and built mastabas.
The rock-cut tombs first introduced at Giza by the application of the trained craftsmen to the opportunity presented by the great open quarry.
Each of the early rock-cut tombs was made on an individual design according to the wish and resources of the owner; two chief features used in preliminary separation of the tombs into types; the two-room form
and the symmetrical or cruciform form; these two types found in degenerate forms and other smaller types introduced later.

Classification of the rock-cut tombs.

Type RC (i): two-room arrangement with N-S hall (room a) and E-W offering-room (room b), with or without pillar ed alcove or additional rooms; including degenerate examples of the form; sub-types RC (i a) to (i f); with examples.

Type RC (ii): the rock-cut cruciform chapel, sometimes partly built; doorways and connecting passages lie in the E-W medial axis of the tomb; sub-types RC (ii a) to (ii c); with examples.

Type RC (iii): N-S offering-room with entrance at one end of east wall; sub-types RC (iii a) to (iii d); with examples.

Type RC (iv): N-S hall or corridor with entrance from north or south; sub-types RC (iv a) to (iv c); with examples.

Type RC (v): E-W hall or offering-room entered by doorway or by long passage in east end of north or south wall; sub-types RC (v a) to (v c), with examples.

Type RC (vi): square or nearly square offering-room (prop. 1/1.2 to 1/0.6); entered from north, south, or east; subtypes RC (vi a) to (vi b), with examples.

Development of type RC (i) from the L-shaped chapels with exterior stone rooms; increase in size; alterations caused by being excavated in rock and by the necessity of making the burial-chambers in the floor or sides of the chapel.

RC (i) presents greatly increased wall-spaces available for decoration; corresponding expansion of scenes in relief; effect on mastaba chapels; special scenes in relief; special technique used in decorating walls of rock-cut chapels; cost of RC tombs.

Separate origin of chapels of RC (ii), cruciform; based on pyramid chapels as G III-2.

Chapels of types RC (iii) to (vi) originated in mastaba chapels of type (4), (5), and (10) of Dyn. V and VI.

Conclusions as to the origin, date, and effect of the rock-cut chapels.

(6) Mastaba Chapels of the Cruciform Type, Type (6)

Origin of the special cruciform chapel of Giza; based on cruciform pyramid chapels of Dyn. IV; one-niched and two-niched cruciform chapels; rock-cut chapels of the cruciform type RC (ii); simplified form RC (ii c).

Mastaba chapels formed on type RC (ii c).

The paucity of cruciform chapels at Giza; examples of pyramid chapels of type (6 a), interior two-niched mastaba chapel; one example of type (6 b), interior two-niched mastaba chapel; one example of type (6 c), exterior chapel of cruciform design.

c. Chapels of Type (4 b): Transition from Chapels of Types (5) and (4 a) to Chapels of Type (5)

The position of chapels of Dyn. IV in the SE corner of the mastaba and the relation in size to the size of the mastaba; change in position and relation of the chapels of Dyn. V after Neferirkara; the degenerate forms of chapel type (4 b) in chapels of type (4 b) at Giza and Saqqarah.

(1) Chapels of Type (4 b) in Mastabas on Independent Sites

Mastabas of the descendants of the Seshem-nofer and the Kanofer families situated east of the Cem. en Echelon; other mastabas on independent sites; between Neferirkara and Isesy.

List of seventeen mastabas with chapels of type (4 b).

(2) Chapels of Type (4 b) in Small Mastabas Secondary to Other Mastabas

Six chapels of doubtful character owing to their position and relation; Nos. 18-23.

(3) Summary of Chapels of Type (4 b)

Degeneration of chapel type (4) into type (4 b) by the omission of the subsidiary northern niche; influence of chapel type (5) on this degeneration; effect on the form of the most degenerate chapels of type (4 b) caused by the form of the mastaba.

Dependence of the form of the chapel on the size of the mastaba; type (5) in medium and small mastabas.

Types of chapels used in Dyn. V beginning with Weserkaf.

Evidence that in general chapels of type (5) were later than chapels of type (4 a) and (4 b).

Chapels of type (4 b) used until Isesy; oldest dated chapel of type (5) in reign of Weserkaf (G 4631); chapels of type (7) introduced after Newseera; types of chapels used in last part of Dyn. V and in Dyn. VI.

d. Chapels of Dyns. V–VI: Types (5), (7)–(13)

(1) Mastaba Chapels of Type (5)

Development of the two-niched chapels of type (4) by the extension of the west wall to represent a full or nearly full mastaba façade; general omission of the north subsidiary niche; sizes and proportions; variation of type (4 b) at Saqqarah.
Introduction:

Variations of type (5). (5a) to (5e).

Type (5) used with two-shaft and multiple-shaft mastabas; relation between niche-work (ka-doors) and shafts; affected by older chapels, in particular rock-cut chapels of type RC (i c) and (i d); also by contemporary chapels of type (8); size limited by strength of roofing slabs.

(a) Chapels of type (5a).

One old two-niched corridor chapel, G 4000. Examples of later chapels of type (5a) one or more niches; Nos. 1–29.

(b) Chapels of type (5b).

Corridor with subsidiary small room on north; Nos. 1 and 2.

(c) Chapels of type (5c).

With deep recess or alcove containing a stela in west wall at south end of west wall; examples Nos. 1–6.

(d) Chapels of type (5d).

With alcove at north end of west wall; examples Nos. 1–3.

(e) Chapels of type (5e).

With alcove on east at south end of corridor; one example.

(2) For chapels of type (6) see pp. 247–249, above.

(3) The Interior Mastaba Chapel of Type (7): E–W offering-room

Development of the E–W offering-room; the outer offering-rooms of the temples of G I–III; the E–W offering-room in asymmetrical chapels of the pyramids of Dyn. V; E–W offering-rooms in chapel type RC (i); the E–W offering-room appears in mastaba chapels at Giza after the reign of Neueserra.

Chapels of type (7); common to both Giza and Saqqarah but with different sub-types prevailing in each necropolis; sub-types arranged to cover both series.

Chapels of type (5), corridor chapels, more frequent at Giza than chapels of type (7); appear earlier.

Chapels of type (3) present an expansion of the wall-spaces and scenes of the chapels of types (3) and (4); the multiple-room chapels of type (7) present a still greater expansion.

List of chapels of type (7) at Giza:

(a) Chapels of type (7a): with single E–W offering-room; two examples

(b) Chapels of type (7b): two rooms, E–W offering-room and N–S offering-room; ten examples

(c) Chapels of type (7c): two-roomed nucleus like (7b) with other rooms; four examples

(d) Interior mastaba chapels of type (7d): E–W offering-room with other rooms presenting a modification of type (7c); five examples from Giza and one from Saqqarah

(e) Interior mastaba chapels, type (7e): complex of rooms based on a cruciform nucleus with E–W offering-room; one example at Giza and one at Saqqarah

(4) Exterior Mastaba Chapels of Type (8)

Older forms of roofed exterior chapels; chapels around the chief niche and chapels covering whole façade of mastaba.

In the mastabas of the nucleus cemeteries of the Western Field, roofed exterior chapel around the place of the chief niche, type (1) and (2).

In the crowded cemeteries around the nucleus cemeteries, the conditions forced the use of the exterior corridor chapel covering the façade of the mastaba (as in Dyn. III); exterior corridor chapels at Giza possibly originated independently of older forms.

Exterior chapels types (8f–g) attached to chief niche, derived from old chapels of type (1); exterior corridor chapels of types (8a–d) connected with interior chapels of type (5).

Variations of the corridor chapel of type (8) depend on the variations of the niche-work in the mastaba façade covered by the chapel; type (8a–d).

The occurrence of east alcove at south end of east wall is marked by an 'x' appended to the type designation.

List of corridor chapels of types (8) at Giza:

(a) Chapels of type (8a) covering the façade of ordinary two-niched mastabas, 22 examples

(b) Exterior chapels of type (8b) with two or more pairs of niches, 15 examples

(c) Exterior chapels of type (8c) with abnormal niche-work, 14 examples

(d) Exterior chapels of type (8d) without niches or with no niches preserved, 6 examples

(e) Exterior chapels covering the façade of the mastaba: type (8e), 2 examples

(f) Exterior multiple-room chapel around chief niche of two-niched mastaba: type (8f). See type (1c), 2 examples

(g) Exterior one-room chapel around chief niche: type (8g). See type (1d), 3 examples
(5) Exterior Open-air Chapels of Type (9).
Open-air chapels of Dyns. I-III; type (9) presents variations depending on the niche-work of the mastaba façade, like type (8 a-d).
Numbers of examples of type (9 a-d) in Cem. G 1000-1600.

(6) Interior Chapels of Type (10).
Square or nearly square room, sometimes approached by a long N-S corridor; roof often supported by a pillar or pillars; one or two niches in west wall; same form presented by chapels of type RC (v) and (vi); relation to chapel type (5 c) and (5 d).
Type (10 a), square or nearly square room with one or two pillars supporting roof; with one or two niches in west wall; entered by doorway from outside; two examples.
Type (10 b), like type (10 a), but entered from end of a corridor; examples at Saqqarah.
Type (10 c), recess room opening on corridor and separated from it by pillar or pillars and pilasters; two examples.

(7) The Portico Chapel of Type (11).
Pillared portico built in wide shallow recess in façade of mastaba, open to the east, without other rooms; date and origin.
Variations of type (11), (a) with open court; (b) opening on a roofed corridor; (c) opening on a street.
Examples of type (11); three of type (11 a); two of type (11 b); two of type (11 c).

(8) Complex Chapels of Type (12).
Complex chapels of Dyns. V-VI; present maximum expansion of wall surfaces available for decoration.
Complex chapels of Dyns. V and VI which occupied the greater part of the mastaba; shafts crowded in the part of the mastaba not taken by the chapel; chapels decorated for more than one person.
Complex chapels partly interior and partly exterior.
Each of the great complex chapels built on its own plan.
List of great complex chapels.

(9) Anomalous Chapels grouped under Type (13).
Chapels which cannot be classed under types (1)-(12); description of two roofed niches used as chapels at Giza, G 1221 (Dyn. IV) and G 2197 (Dyn. V).

(10) Summary: Chronological Order of the Chapel Types at Giza and Saqqarah.

VIII. THE DECORATION OF THE CHAPELS.

1. The Decorated Chapels of Different Types.
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b. The Decorated Stone Chapels of the Three Early Nucleus Cemeteries, Types (2 a), (2 b), and (3).
c. The Chapels of the Five Finished Twin-mastabas of the Eastern Field

d. The Decorated Chapels of the Eastern Field in Immediate Succession to the Five Finished Twin-mastabas

e. The Decorated Chapels of the Eight Nummulitic Mastabas of Type VIa, built in Immediate Succession to the Massive Core-mastabas in the Eastern Field

f. Other Decorated Chapels of the Western Field which may be assigned to the Reign of Chephren or to the end of Dyn. IV

g. The Decorated Rock-cut Chapels of the Quarry Cemeteries

h. The Decorated Chapels of Types (3) and (4a) of the End of Dyn. IV and the First Half of Dyn. V

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k. Decorated Chapels of Type (10)
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m. Various other Decorated Chapels of Dyns. V–VI, including Rock-cut Chapels

2. THE DECORATED PARTS OF THE L-SHAPED CHAPELS

The different wall-spaces in the chapel each decorated with separate scenes; arrangement in different types of L-shaped chapels; relation of the niche or niches to the scenes on the west wall.

(i) The Large Wall Scenes

Classification of wall scenes: (a) the table scene; (b) the offering scene; (c) the presentation scene; (d) the family group; (e) scenes from life; absence of scenes from life in the L-shaped offering-rooms; scenes most necessary for supply of food and drink dominate the L-shaped chapels at Giza.

Table showing distribution of the various types of wall scenes on the four walls of the offering-room.

West wall usually bore a presentation scene; east wall decorated also with presentation scene; north wall usually decorated with offering scene or family group; south wall usually decorated with table scene or offering scene.

(ii) The Minor Scenes of the Chapel Walls

Component elements of the presentation scene, the offering scene, and the table scene.

The minor and small independent scenes of the wall decoration:

(a) The small table scene over the offering-niches
(b) The boating scene usually over the doorway
(c) Viewing the document (accounts?) of the house of the weaving women
(d) The bringing of the funerary meal by the servants of the ka
(e) The slaughter scene
(f) Scenes of dancers, singers, and musicians

(f) Decoration of the Ka-door

The decorated parts of the ka-door.

(i) The Architrave over the Offering-niche

(a) Architraves with titles and name.
(b) Architraves with offering formula.

(ii) The Tablet of the Ka-door

(a) Tablets with old compartment list.
(b) Tablets with the short list in horizontal lines; without old compartment list.
(c) Tablets as above, with short list not separated by raised lines.
(d) Tablets with short list above table but not on right.
(e) The two-figure tablet.
(f) The degeneration of the tablet scene.
(3) The Cross-bar of the Ka-door
(4) Drum over the Inner Niche
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  (a) With standing figure, facing out.
  (b) Men bringing the funerary meal.
  (c) Estates bearing offerings.
  (d) With vertical rows of tall bowl stands.
(7) The Ka-door: Back of the Outer Niche
  (a) Children or wife and children.
  (b) Man or woman standing facing in, man with staff and wand.
  (c) With servants of the ka.
  (d) With tall bowl-stand.
(8) Ka-door, Outer Recess, Sides (Thickness)
  (a) With wall scenes, or compartment list.
  (b) With man standing facing out.
  (c) With estates bearing offerings.
  (d) With men bringing funerary meal.
  (e) With tall stands and vessels.
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4. THE DECORATION OF THE ENLARGED CHAPELS OF DYN. V-VI
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The diversity of the layout of the decoration of the enlarged chapels; expanded scenes as in rock-cut chapels; decoration derived more immediately from pyramid temples of Dyn. V.

Descriptions of selected scenes and selected chapels.

c. The Types of Scenes in the Chapels of Dyns. V–VI

Classification of wall scenes in enlarged chapels: (1) table scene; (2) the offering scene with great picture list and often with a great pavilion; (3) the small offering scene with owner seated in kiosk; (4) the scenes from life on the estates (agricultural scenes, &c.); (5) great swamp scene with owner hunting birds, fishing, &c.; (6) scene of hunting wild animals in the desert; (7) scenes of craftsmen at work; (8) the carrying-chair scene; (9) the large funeral scene.

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5. THE DEVELOPMENT OF THE TRADITIONAL KA-DOOR OF PLAIN COMPOUND FORM AT GIZA DURING DYN. IV–VI

Great door and plain compound niche in Dyn. III; the form and parts of the traditional ka-door of plain compound form.

Effects of the manner of construction on the ka-door at Giza; built ka-doors and monolithic ka-doors; deep ka-doors of the reigns of Cheops and Chephren; ka-doors in rock-cut chapels; growing shallowness of ka-doors during the period Shepseskaf to Neferirkara.

Development of ka-door at Giza determined by the use of monolithic forms; origin of the framed ka-door in the execution of ka-doors in a stepped wall; general use of framed ka-doors in small and medium mastabas of Dyns. V–VI.

Reduction of the decorated surfaces of the ka-door by the growing shallowness of the ka-door in monolithic stelae and particularly in the framed ka-doors; number of decorated vertical panels in ordinary ka-doors, in framed ka-doors of two forms (the single frame and the double frame).

Introduction of the false-door stela; hollow cornice and round moulding; inside the moulding a framed ka-door with either single or double frame; parts of the false-door stela with five or seven vertical panels.

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