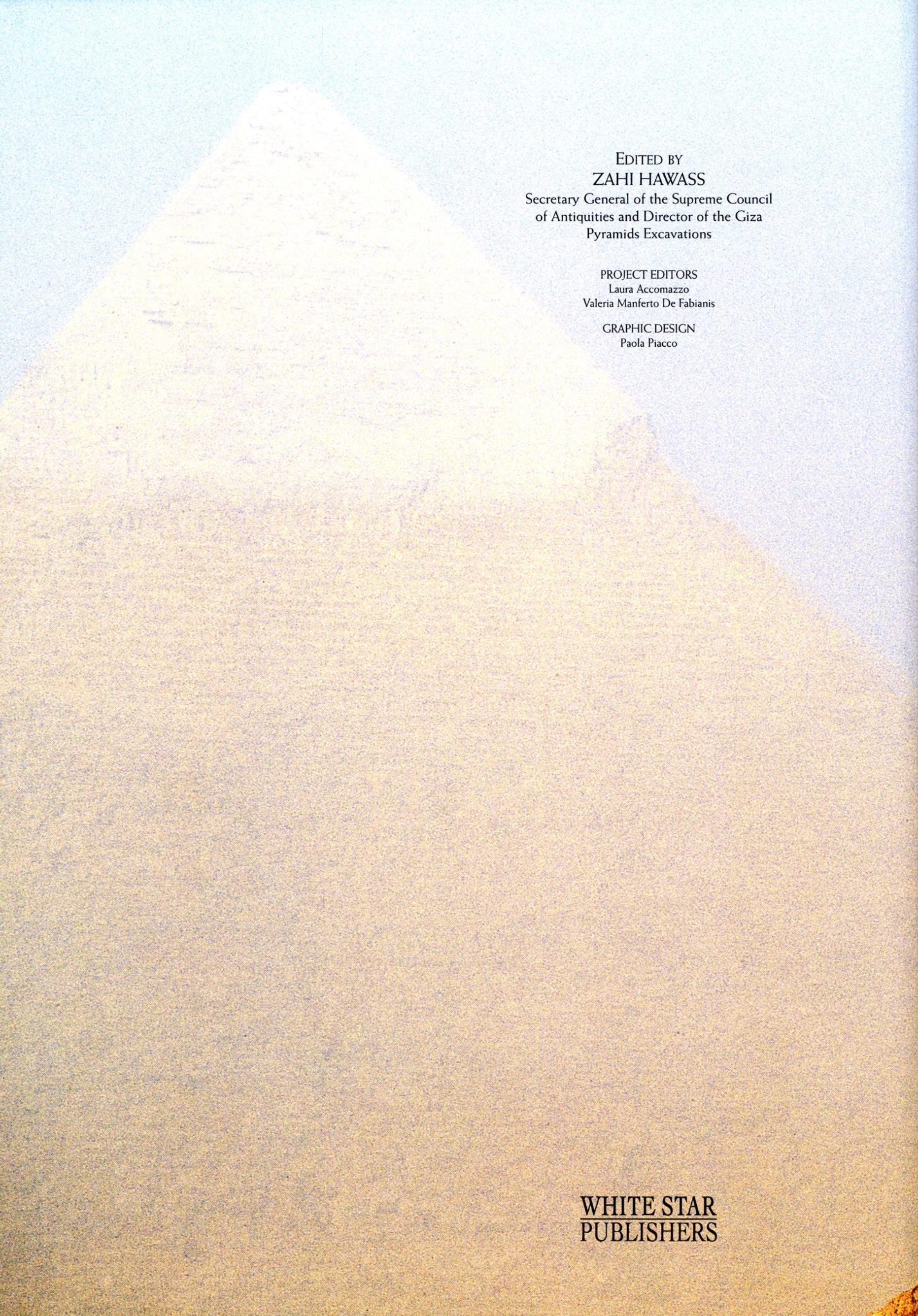


An aerial photograph of the Great Pyramids of Giza in Egypt. The pyramids are constructed from dark, weathered stone blocks, showing significant erosion and some missing sections. The Great Pyramid of Giza is the largest and most prominent, with the Pyramid of Khafre and the Pyramid of Menkaure visible behind it. In the background, a dense modern city skyline with numerous high-rise buildings is visible under a clear blue sky. The foreground shows the desert landscape with some smaller structures and debris.

ZAHÍ HAWASS

# THE TREASURES OF THE PYRAMIDS



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# THE TREASURES OF THE PYRAMIDS





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Scene showing the 'Meidum geese',  
Egyptian Museum Cairo, Old  
Kingdom.

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# The Architectural Development of the Egyptian Royal Tomb

by Zahi Hawass

The kings of the First Dynasty were buried in their ancestral cemetery at Abydos. There is also a group of large, elaborate First Dynasty tombs at Saqqara, near the Early Dynastic capital of Ineb-hedj; the current Egyptological consensus is that these tombs belong to high officials, but it is also possible that these are royal cenotaphs or cult centers.

The tombs of the First Dynasty at Abydos are located in an area called the Umm al-Qa'ab, which means 'mother of pots.' These Early Dynastic tombs mark a significant change in construction from those of the Predynastic Period, when tombs were simple oval or rectangular graves. The tombs become more and more elaborate, with pits and chambers lined with mud brick or, in some cases, wood. In addition to the burial chamber, there were also chambers for grave goods. Surrounding the tombs of the First Dynasty were small subsidiary tombs for attendants thought to have been sacrificed to accompany each king into the afterlife.

On the east side of each tomb limestone stelae were set, bearing the name of the king in a *serekh* (a rectangle bounded at the bottom by the representation of a niched palace façade). Most of the kings of the Second Dynasty were buried at Saqqara, but the last two kings of this dynasty, Peribsen and Khasekhemwy, were buried at Abydos.

At a distance of about two kilometers from the Early Dynastic tombs in Umm al-Qa'ab, is a group of large enclosures associated with the funerary cults of the kings; the earlier enclosures also had subsidiary burials associated with them. These are thought to have once contained ritual structures built of perishable materials. David O'Connor of the Pennsylvania-Yale Expedition recently found a fleet of twelve boats moored neared the complex of the Second Dynasty king, Khasekhemwy (although not necessarily belonging to this king). The funerary complexes associated with the Second Dynasty tombs at Saqqara have not yet been located. We are now making a new plan of these tombs, in cooperation with Günter Dreyer of the German Institute; we have already begun to clean these tombs in preparation for this new plan.

Through study of the royal tombs and associated enclosures at Abydos, one can identify the basic architectural components, and correlate them with the

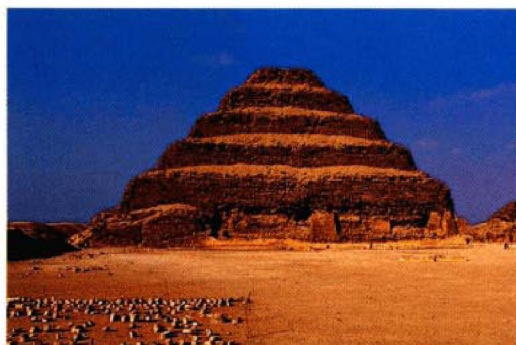
elements of later complexes: the tomb, enclosure wall, the stelae (corresponding to the upper temple), the funerary complex (lower temple), and boats. Thus, the basic elements of the royal tombs, which continued to develop throughout Egyptian history, were already in existence at this time.

A number of the Early Dynastic tombs at Saqqara have mounds, and in one case a stepped platform, over the burial shafts. The tombs at Abydos are also thought to have been covered with mounds. These are thought to represent the primeval mound on which the creator god stood to bring the universe into being.

The Step Pyramid complex of Djoser represents a major step forward in royal funerary architecture. Djoser and his chief architect, Imhotep, brought the two elements of the Early Dynastic complex, tomb and valley enclosure, together into one monumental complex, and translated the mud brick and perishable materials into stone. The mound above the burial shaft became a towering step pyramid, rising in six stages to a height of 60 meters.

The components of Djoser's complex are:

1. The enclosure wall with the colonnaded entrance
2. The pyramid
3. The northern temple
4. The south tomb
5. The south court
6. The *beb-sed* court
7. The southern altar
8. Temple 'T'
9. The northern temple
10. The northern altar
11. Pavilion of the south
12. Pavilion of the north
13. Boundary markers



Over the course of the next hundred years, the major elements of the step pyramid complex evolved into the standardized elements of the Old Kingdom pyramid complex. Much of this development can be traced in the complexes of Sneferu, first king of the Fourth Dynasty, at Meidum and Dahshur. Sneferu built four pyramids: one each at Seila and Meidum, and two at Dahshur. He built the Seila pyramid as a representation of the primeval mound, associated with a royal residence in the area, not as a tomb. The Meidum pyramid was built as a step pyramid in the beginning of his reign and left unfinished for reasons we do not know. Sneferu started a new pyramid complex at Dahshur in about the fifteenth year of his reign; this was designed to be the first true pyramid. However, for structural reasons, the angle of slope had to be modified part way up, which gave the pyramid its distinctive 'bent' profile. This complex was then abandoned, and a new true-pyramid complex in North Dahshur was completed and used for the king's burial.

The complex at Meidum contains some of the basic elements of the pyramid complex: a wall, which encloses a small satellite pyramid to the south and an offering chapel to the east, and a causeway leading toward the flood plain. There are also tombs of officials and family members near the pyramid.

The Bent Pyramid complex contains all of these elements, plus a lower temple at the eastern end of the causeway. These elements now become standard, and can also be seen in Sneferu's northern pyramid complex at Dahshur. We also have evidence for a pyramid city associated with this complex.

Thus, by the time of Sneferu's son and successor, Khufu, the basic elements of the pyramid complex were in place. The Early Dynastic mound has become a straight-sided pyramid. The royal stelae have become the upper, or mortuary, temple. Djoser's south tomb, *sed*-festival court, and Temple 'T' become the satellite, or ritual, pyramid and its court. Djoser's complex also contains *sed*-festival chapels, altars, and the pavilions of the north and south. These separate buildings develop into rooms and niches inside later pyramid temples. Khufu adds three queens' pyramids and an elaborate, planned cemetery for royal relatives and officials to the elements of the pyramid complex. Evidence for harbors associated with the complexes of

46 bottom

*In this general view of the Djoser pyramid complex at Saqqara, the Step Pyramid dating to the Third Dynasty can be observed.*

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*The imposing structure of the pyramid of King Khufu of the Fourth Dynasty dominates the Giza Plateau and represents an architectural ability never again reached during the following dynasties.*



both Khufu and his son Khafre have also been found, and traces of Khufu's palace have recently been uncovered. Ongoing excavations at Giza are yielding traces of the workers who built the pyramids: the tombs of the pyramid builders, the workmen's camp, and the workmen's installation, where the workers who built the pyramids received tools and rations, and perhaps slept.

The current work at Giza is clarifying the issue of where the king lived while his pyramid was being built. It used to be thought that the capital, the royal residence, of the king was at Memphis itself. However, the Egypt Exploration Society excavations at Memphis under David Jeffreys have found no evidence for a settlement dated to the Archaic Period or the Old Kingdom. They have, however, found traces of an Archaic settlement at the foot of the

Saqqara plateau, near the First Dynasty tombs there.

At Giza, in addition to the remains of a monumental building which may be Khufu's palace, we have found traces of an Old Kingdom settlement under the modern village that lies at the foot of the plateau. This settlement was about five square kilometers, and I believe that this is where the royal administration was based. Textual evidence from the Fifth Dynasty also supports this interpretation: the Abusir Papyri, found in the pyramid complex of Neferirkare Kaki, mention a palace of Djedkare Isesi which was located near his pyramid.

The pyramid was the national project of the nation; every household participated in this monumental task by sending workers and food to help the king. The construction of the pyramid and its complex magically provided for the rebirth and

divinity of the king, and thus assured the safety and prosperity of the country. It has been said that the pyramids built Egypt: the complex administration needed to manage these enormous projects helped to create this ancient civilization. The king would have had his primary residence near the pyramid site so that he could supervise the most important project of his reign.

Khufu's pyramid required a large number of men to move and place over 2,600,000 cubic meters of stones, yet the number of artisans required was relatively few. This ratio of stone-movers to artisans would change, however, over the next two dynasties as architects decreased the volume of stone by making the pyramids smaller and using smaller stones, mud brick, or loose rubble fill, while they increased the number of beautiful wall reliefs with which the

temples were decorated. For example, it is estimated that the pyramid of the Fifth Dynasty's first king, Userkaf, contains only one-thirteenth of the bulk of Khufu's pyramid. Indeed, the 2,600,000 cubic meters of raw stone in Khufu's pyramid is almost equal to all the raw stone of all the pyramids of the Fifth and Sixth Dynasties combined. On the other hand, the Fifth Dynasty pyramid of Sahure at Abusir had, according to German Egyptologist Ludwig Borchardt, 10,000 square meters of wall reliefs. The decreasing size of the pyramids and hence, the reduced need for workmen, was probably not economically motivated,

Fourth Dynasty complex. Unlike the Giza pyramids, the pyramids of Userkaf, Sahure, Neferirkare Kaki, and Niuserre all have their entrances at ground level, and the interior layout is different. The sarcophagus is placed near the west end of the chamber and the chamber walls are decorated with designs of a palace façade, an alabaster veneer, and later, the Pyramid Texts. The temples become larger (providing more wall surface for the reliefs), and contain numerous rooms and magazines. The courts of the upper temple, which are oriented north to south in the Fourth Dynasty, are now oriented east to west.

The kings of the Fifth Dynasty also built sun temples in an area about one kilometer north of Abusir. These complexes consist of a large, squat obelisk and an altar in an open court, an upper temple, causeway, and lower temple. These temples were dedicated to the worship of the sun god, Re. Two of these temples have been found and excavated so far; we have textual evidence for six of them.

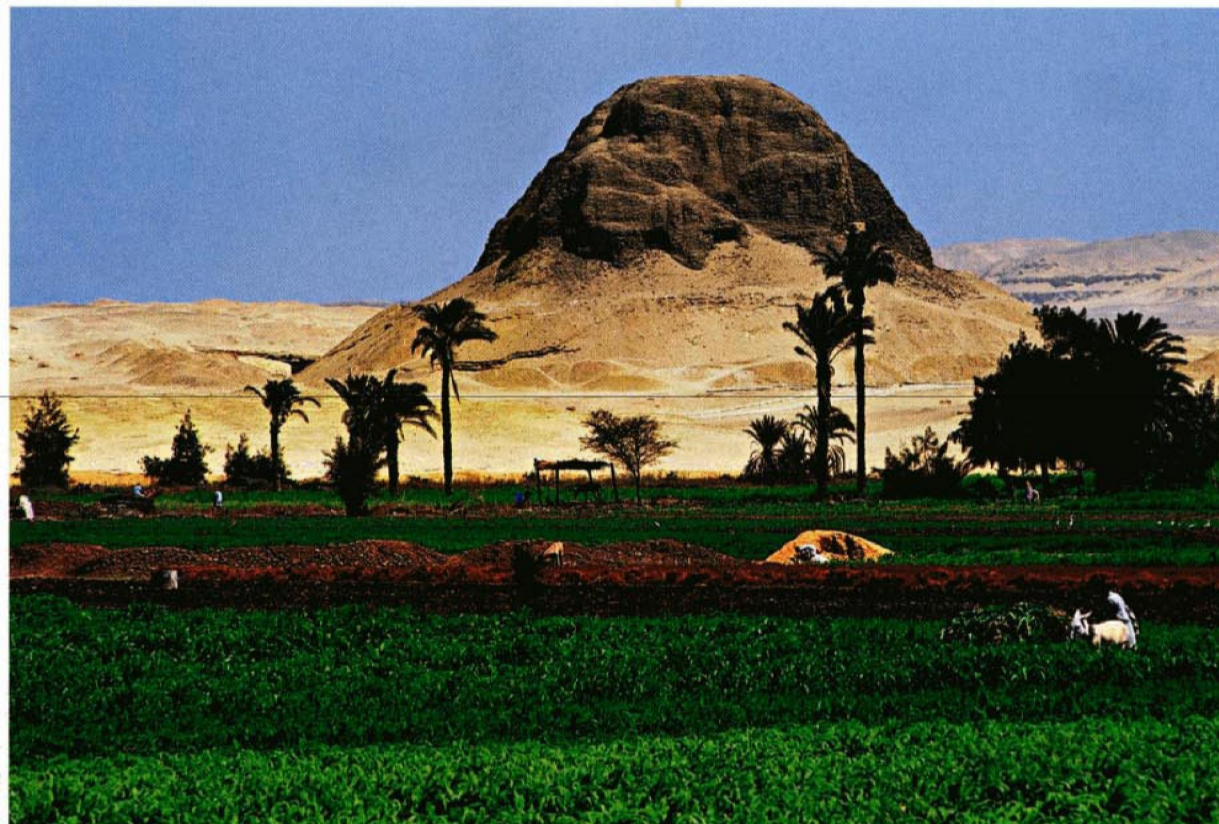
After the chaos of the First Intermediate Period, the kings of the Middle Kingdom were once again buried in pyramids. The first king of the Twelfth Dynasty, Amenemhet I, built his pyramid at Lisht, near the entrance to the Fayum. In the core of his pyramid, he used rough blocks of limestone and a fill of mud brick and debris. Included in this debris, and also in the lining and blocking of the substructure, were inscribed blocks from the pyramid complexes of Khufu, Khafre, and Unas. These blocks may have served to magically link this king with his divine predecessors.

Amenemhet I's complex is clearly based on the Old Kingdom prototype, with, however, some details that reveal the Theban origin of the family. Some of the standard features are present: upper temple, causeway, and lower temple, but the causeway was unroofed, like the processional ways of the Theban tombs of the kings who preceded him. Another Theban element is the fact that the pyramid and its temple are on terraces. There was no satellite pyramid, and family members were buried in *mastabas* or shaft tombs within the pyramid enclosure. A small chapel lay in front of the entrance to the substructure in the north face of the pyramid, and the king was buried in a chamber that lay at the bottom of a shaft on the vertical axis of the pyramid—this shaft is another Theban element. The Middle Kingdom decoration that has been retrieved from this complex is difficult to tell from the Old Kingdom intrusive fragments, as the later artists appear to have tried to copy the older models as faithfully as possible. The causeway was decorated with scenes of foreigners,

because the increasing number of reliefs would have necessitated hiring many more skilled artisans who commanded a higher wage than the workmen who moved the stones.

It is at the end of the Fifth Dynasty that the so-called 'Pyramid Texts' appear on the inside walls of the pyramids chambers—the first example being the pyramid of Unas at Saqqara. The Pyramid Texts are magical spells inscribed in vertical columns on the walls of the antechamber and burial chamber of the pyramid. The spells are designed to help the king ascend to the sky, to illuminate the relationship of the king to the gods, and to ensure the divinity of the king. In the following dynasty these precise carvings grace the burial chambers of both kings and queens.

The pyramid complexes of the Fifth Dynasty, in addition to their expanded decorative repertoire, make some changes to the specific details of the





funerary estates, royal officials, and gods.

Amenemhet I's son and successor, Senusret I, built his pyramid near that of his father. For the core of the pyramid itself, his architects used an ingenious system of spines and cross-walls, but the pyramid was unstable, and only a ruined mound remains today. Like his father, he placed an entrance chapel against the north face, from which a descending passage leads to the burial chamber, far beneath the ground (and now under the water table). All of the Twelfth Dynasty kings placed their burial chambers deep in the earth, as part of an effort to link themselves with Osiris, king of the underworld.

Senusret I's complex contains most of the elements that had become standard by the end of the Old Kingdom: upper temple, causeway (originally uncovered but later roofed), lower temple (which has never been found), and a satellite pyramid in the southeast corner of the inner enclosure. Nine queens' pyramids lie inside the outer enclosure wall, surrounding the main pyramid. Large statues of the king in the red and white crowns were placed in niches along the inside of the causeway. Another decorative innovation found in this complex is the addition of monumental *serekhs* containing the king's names to both faces of the inner enclosure wall. The wall was also niched, harkening back to the Third Dynasty enclosure of Djoser and the Early Dynastic walls at Abydos and Saqqara.

The succeeding kings, Amenemhet II and Senusret II, built pyramid complexes that are significantly different, referring perhaps more to the Third Dynasty step pyramid enclosures than to the late Old Kingdom models. In any event, each of the next kings built a unique complex which incorporates some of the standard elements with experimental features. Amenemhet II's pyramid is at Dahshur, and is set in a rectangular, east-west enclosure. The pyramid itself was built as a skeleton of stone filled with sand and then cased with fine white limestone; it is now in ruins. The entrance to the substructure is in the north face, and leads to a burial chamber which contains a sarcophagus of sandstone. This complex has been neglected by archaeologists: little is known about the layout of the upper temple, and the lower temple has never been found, although an open causeway leads down to the edge of the floodplain.

Senusret II moved back to the Fayum, and built a pyramid primarily of mud brick within a square enclosure. The substructure of this pyramid is very unusual, and is the first to try to hide the entrance in an attempt to foil tomb robbers. This substructure is entered via a shaft on the south side of the pyramid.

A horizontal passage at the bottom of the shaft leads to a vaulted chamber, at one end of which is a deep well whose bottom has never been reached. The horizontal passage continues through an antechamber to the burial chamber cased in granite, in which was found a red granite sarcophagus and an alabaster offering table. A passageway runs around the burial chamber, providing for the symbolic journey of the king's spirit and also helping to associate him with Osiris, whose cult was becoming increasingly more important during this period.

In this complex are a number of *mastabas* and one subsidiary pyramid which may be a satellite pyramid. The enclosure wall of the complex was niched, like Senusret I's. Included in the complex were an upper temple, causeway, and lower temple, none of which have been adequately explored. At the foot of the plateau is Senusret II's pyramid town, a planned settlement which tells us a great deal about daily life, at least under royal protection, in the Middle Kingdom.

Senusret III moved back to Dahshur, and built his pyramid again of mud brick with limestone casing. The substructure consists of a hidden entrance to the west, a descending passage leading to an antechamber, magazine, and burial chamber of granite containing a granite sarcophagus. Against the northern face of the pyramid is an entrance chapel, and to the east is a small upper temple. The pyramid enclosure was expanded later in the reign, and a second temple was added to the south. A causeway leads from the southeastern corner of the expanded enclosure; no lower temple has yet been found. Surrounding the main pyramid are the superstructures of seven small pyramids; underneath are the shaft tombs of a number of royal women, in which a number of inscribed artifacts and jewels were found. Just outside the southwest corner of the pyramid enclosure is a building of mud brick and a fleet of six wooden boats, each six meters long.

Fragments of relief from the upper temple include the king at an offering table, a funerary menu, offering bearers, scenes of gods, officials, and the butchering of sacred cattle. Bits of relief from the southern temple show the king in his *sed*-festival robe. Josef Wegner has recently discovered a second tomb for Senusret III at Abydos, which may have been the king's actual burial place.

Amenemhet III built two pyramids, one at Dahshur and the other in the Fayum. The Dahshur pyramid was built of mud brick. Underneath is a maze of corridors cased in white limestone which includes the king's burial chamber, a number of small chapels,

and the chambers used for the burial and equipment of several queens. There are two entrances, and the corridors are quite complex. They may, in addition to their practical purposes, model the underworld. In 1997, I was able to visit this pyramid with Dieter Arnold. It was amazing to explore these labyrinthine corridors myself.

Amenemhet III's Dahshur complex had an upper temple, causeway, and lower temple. Structural problems, however, caused the king to leave this site and build a second pyramid at Hawara in the Fayum. The layout of this pyramid and its enclosure is very different from its predecessor at Dahshur. The substructure here is truly a labyrinth, with dead-end corridors, and passageways hidden in the ceiling. The burial chamber itself is carved from a single piece of quartzite. Inside was the king's quartzite sarcophagus, a second, smaller sarcophagus, and two canopic chests.

The pyramid complex of Amenemhet III at Hawara is the largest of the Middle Kingdom enclosures. It is oriented north to south. It was approached via an open causeway from the east. The upper temple is completely unique, and was called 'The Labyrinth' by visitors in ancient times. Unfortunately, most of this structure has now been destroyed, enough remains only to tell us that it was a vast complex of small courts and shrines. Petrie found the remains of a large granite statue of the king close to the pyramid. Other statue fragments of gods, the king, and offering bearers, were recovered from this area.

The kings of the New Kingdom were aware that neither the huge monuments of the Fourth Dynasty nor the maze corridors of the late Twelfth Dynasty had protected the royal burials. Thus, beginning with Thutmose I of the Eighteenth Dynasty, the kings built only their mortuary temples in the open, in the floodplain along the west bank. In place of a valley, or lower temple, they used the temples at Karnak. In a vain effort to protect their mummies and treasures, they hid their actual tombs in a remote valley further to the west, the Valley of the Kings. Towering above this series of desert wadis is a pyramid-shaped peak, known as the Qurn. Thus, the royal burials continued to be surmounted by the powerful symbol of the pyramid. In one sense, the New Kingdom came full circle, back again to the tombs separated from their cult centers that were seen in the First Dynasty. Each period introduced changes in the funerary cult, but the primary importance of the pyramid remained, from its beginnings as a mound of sand over the first royal tombs, to the towering peak that protected the last.

## RISE AND RUN - CASING

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## THE ARCHITECTURAL DEVELOPMENT OF THE EGYPTIAN ROYAL TOMB

Text by Zahi Hawass

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Text by Zahi Hawass

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## THE PRE-DYNASTIC PERIOD

Text by Renee Friedman

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## THE TOMBS OF THE FIRST AND SECOND DYNASTIES AT ABYDOS AND SAQQARA

Text by Günter Dreyer

Günter Dreyer studied Egyptology, Assyriology and Ancient Near Eastern archaeology in Hamburg and Berlin, where he completed his Ph.D. in 1978 about temple donations in the early periods of Egypt. He excavated with the German Institute of Archaeology at Luxor, Elephantine, Wadi Garawi, Abydos and Giza. He became assistant director of the German Institute in 1989, and director in 1998. He completed his Habilitation at Berlin University in 1997 on Early Writing from Egypt and is now mainly conducting the excavations of the earliest Royal Tombs at Abydos.

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67 center Araldo De Luca/Archivio White Star  
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69 bottom left Araldo De Luca/Archivio White Star  
70 and 71 private collection  
72-73 private collection  
73 top, center and bottom Araldo De Luca/Archivio White Star  
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76 top and bottom Araldo De Luca/Archivio White Star  
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## THE ROYAL MORTUARY ENCLOSURES OF ABYDOS AND HIERAKONPOLIS

Text by David O'Connor and Matthew Adams

David O'Connor is Lila Acheson Wallace Professor of Egyptian Art and Archaeology at the Institute of Fine Arts, New York University. He is also a Professor Emeritus of the University of Pennsylvania and Curator Emeritus of the Egyptian Section, University of Pennsylvania Museum of Anthropology and Archaeology. David O'Connor has excavated extensively in Egypt and the Sudan, and his publications include *Ancient Nubia: Egypt's Rival in Africa*, *Ancient Egypt: A Social History* (co-author), and several others. He is currently completing a book entitled *Abydos: The Evolution of a Sacred Landscape*.

Matthew Douglas Adams holds a dual Ph.D. in Anthropology and Egyptology from the University of Pennsylvania. He is Research Scholar at the Institute of Fine Arts, New York University, and a Research Associate of the University of Pennsylvania Museum. He has worked at Abydos since 1981 and has been a project director there since 1991. He is Director of the Abydos Settlement Site Project, and has undertaken excavations in the ancient town of Abydos. He is Associate Director of the Abydos Early Dynastic Project and has excavated many of north Abydos' Early Dynastic royal monuments. In addition to Egypt, Dr. Adams has also done archaeological fieldwork in Turkey, Syria, and North America. The author of several articles and reviews, his research interests include Egypt as a complex society, kingship and the nature of the early state in Egypt, Egyptian socio-economic organization, and the archaeology of settlement in Egypt.

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## THE STEP PYRAMIDS

Text by Ali Radwan

Ali Radwan is a Professor at Cairo University where he teaches Egyptian Art and Archaeology. He was the former dean of Cairo University and excavated at Abusir.

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