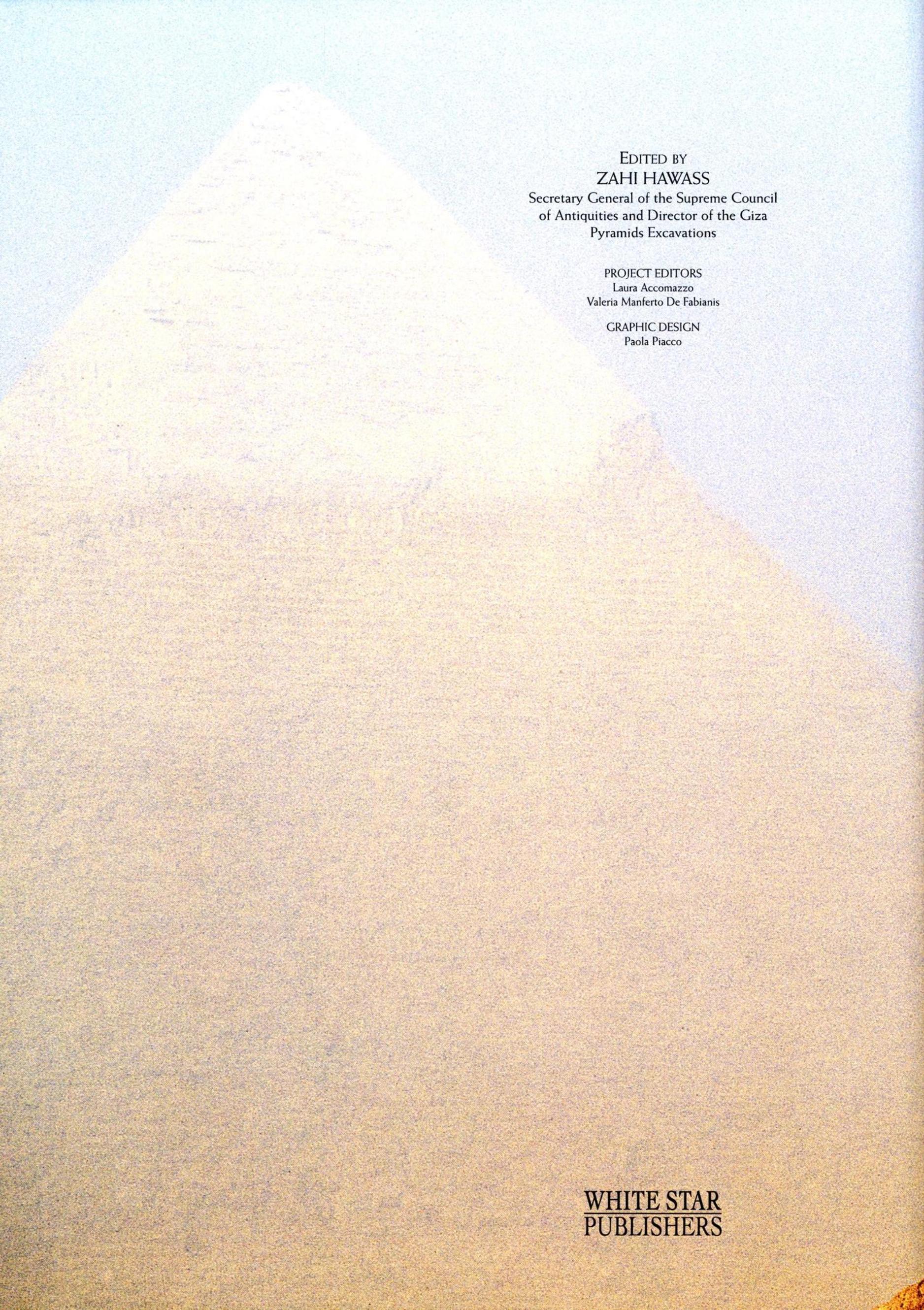
An aerial photograph of the Great Pyramids of Giza in Egypt. The pyramids are constructed from dark, weathered stone blocks, showing significant erosion and some missing sections. The Great Pyramid of Giza is the largest, followed by the Pyramid of Khafre and the Pyramid of Menkaure. In the background, a 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.

ZAHY HAWASS

THE TREASURES OF THE PYRAMIDS



EDITED BY
ZAHİ HAWASS
Secretary General of the Supreme Council
of Antiquities and Director of the Giza
Pyramids Excavations

PROJECT EDITORS
Laura Accomazzo
Valeria Manfredi De Fabianis

GRAPHIC DESIGN
Paola Piacco

WHITE STAR
PUBLISHERS

THE TREASURES OF THE PYRAMIDS





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10-11
Scene showing the 'Meidum geese',
Egyptian Museum Cairo, Old
Kingdom.

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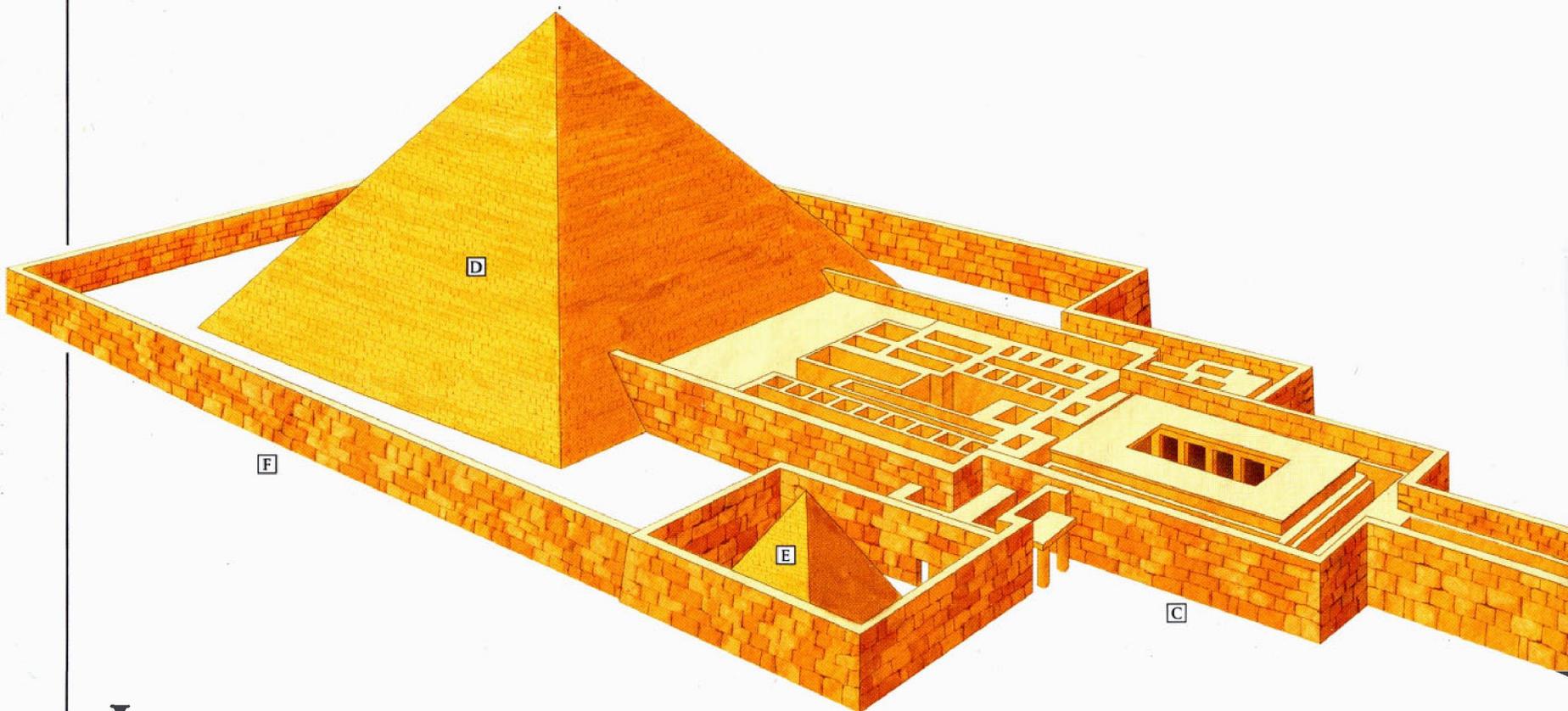
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Administration of the Pyramid

by Vassil Dobrev



In ancient Egypt, after the death of the king, his successor had one idea in mind: to build a tomb that will help him, after his own death, to resurrect and gain entry to the world of Eternity. For more than 1000 years (from the Third to the Thirteenth Dynasty, during the historical periods that we call the Old and Middle Kingdoms), the Egyptians built stone pyramids under which to bury their pharaohs. This is the so-called 'Pyramid Age' of Egypt when more than a hundred pyramids were built. In the beginning, the Egyptians constructed step pyramids, then, from the Fourth Dynasty on, they built true pyramids, the biggest of which is the Great Pyramid at Giza.

Building a pyramid was the major event during the reign of any king. But the pyramid was not the only monument that had to be erected for the royal funerary cult; it was surrounded by a protective wall and was supplemented by several other structures: a spacious mortuary temple (where the priests performed rituals), a small cult pyramid (also called a cenotaph: a kind of secondary tomb but without the king's mummy), a long causeway (through which the mummy of the king was transported), and a valley

temple (where the body of the king was mummified). The valley temple was accessible by a large harbor built on a big canal connected to the Nile. All these structures, with the pyramid as the major structure, comprise the royal funerary complex.

The first thing that a new king had to do was to choose an appropriate place for his funerary complex. He was helped by a number of persons (priests, architects, scribes, and others) that belonged to his administration. Most of these persons had already been working for years on the funerary complex of the king who had just died. Sometimes, it was even the case that his pyramid was not yet finished at his death, so his successor (generally one of the royal sons) had to complete the work and bury the dead ruler. At the same time, the new king had to start the work on his own pyramid. It is clear that most of the persons that were administrating the funerary complex of the dead king had to come to serve the new king and organize the work of the new funerary complex. Nevertheless, a certain number of priests had to stay at the funerary complex of the deceased king, who was already considered a god, in order to perpetuate his mortuary

cult. The duties of this type of priests were recorded on numerous papyri. Some fragments of these papyri, dating from the Fifth Dynasty, are known as the Abusir archives. This archive is our main source of information about the organization of administration during the Pyramid Age. We would like to have similar archives from a funerary complex under construction, but until now, nothing of the kind has been found. However, the quarrymen, the stone haulers, and the builders of the pyramids left numerous inscriptions on the stones, generally painted in red, black, and ochre (very rarely were they carved). These inscriptions are another important source of information about the administration of pyramids.

The Egyptian administration existed long before the Pyramid Age. It can even be said that the creation of a well-organized administration was vital for the country. The question is: why did it come into being in the first place?

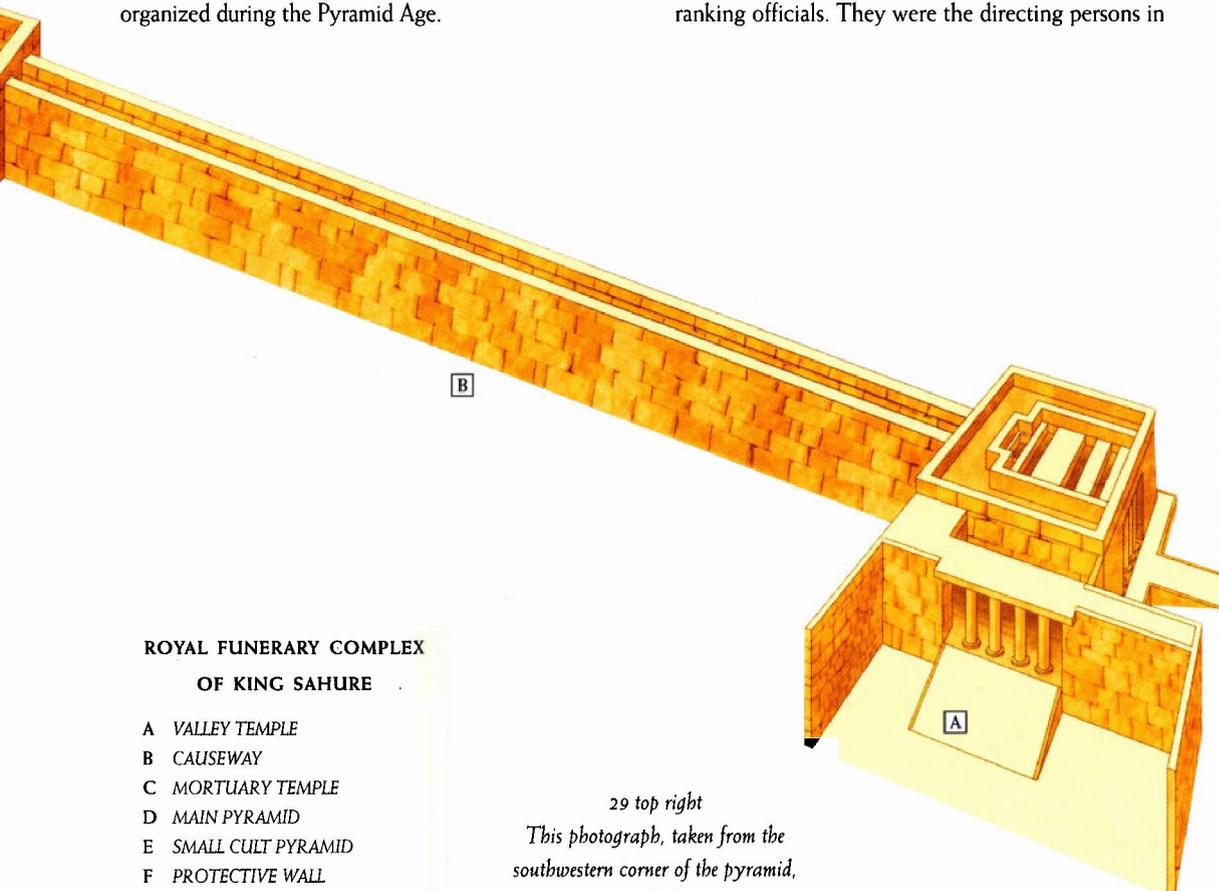
It started a long time ago (10,000–5,000 BC), when nomadic tribes began to settle on the banks of the Nile. Immediately, they had to face an important natural phenomenon: the strong periodic flood of the

river, which reached its zenith at the end of July. If the flood was not controlled, the country would have been facing a general disaster due to destroyed agriculture and a starving population. So the Egyptians had no choice; they had to organize themselves and dig canals and basins in order to control and stock the waters of the flood. It is not by chance that one of the first known representations of an Egyptian king shows him digging canals. A quite elaborate administration emerged to organize and direct the work in the country. The result was a fertile land that was irrigated permanently. Egypt became prosperous and was even considered as the granary of the ancient world.

What we actually know about pharaonic administration is probably quite far from the ancient Egyptian reality. Nevertheless, the actual sources of information that we have in our possession depict a certain image of this administration and how it was organized during the Pyramid Age.

There is a word in the pharaonic language, pronounced *za*, that might have been used to designate the most important groups of people in the administration. The earliest evidence of the hieroglyph  *za*, which represents a looped cord serving as hobble for cattle, comes from First Dynasty inscriptions on royal stone jars (3100 BC). One of the latest is on a bilingual decree of King Ptolemy III (237 BC), where *za* was translated as the Greek word 'phyle' which means 'a tribe.' The fact that phyles were mentioned regularly throughout the three millennia of ancient Egyptian history, shows clearly that they were the skeleton of the Egyptian administration. The phyles were composed mainly of priests. An Egyptian priest could have many other functions at the same time: a scribe, a controller of works, an architect, a judge, a vizier, a king's son, and so on. Therefore, some of the members of the phyles were already high-ranking officials. They were the directing persons in

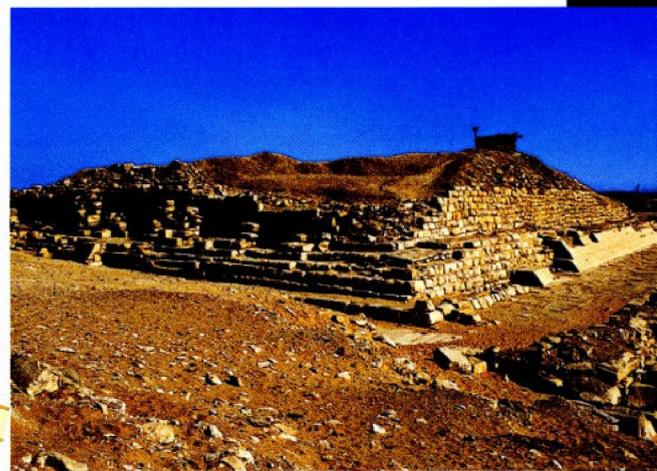
the phyles, and, together with the other priests, were serving the pharaoh. The priests were living in a city next to the pyramid complex of the ruling king, called the 'pyramid town,' but some of them had their living place inside the royal temples, where they were working. These temples were the storage places for the enormous quantities of offerings coming from all around Egypt to celebrate the royal mortuary cult. In fact, these offerings were also used, after the ceremonies, to provide the income of the priests. It is obvious that when a new king came into power, the priests would not let someone else plan and direct the building of his pyramid and its adjacent structures, i.e. their main working place. From the first stone of the future pyramid until the completion of the royal funerary complex, the priests' phyles were there to organize and control the work, then provide the necessary service for the mortuary cult of the king, even after his death.



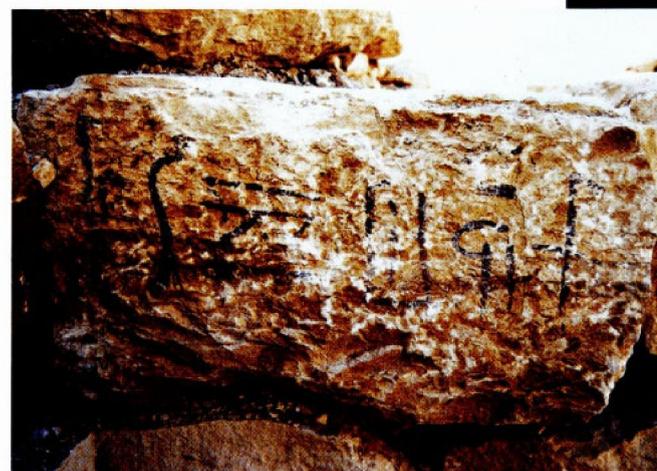
**ROYAL FUNERARY COMPLEX
OF KING SAHURE**

- A VALLEY TEMPLE
- B CAUSEWAY
- C MORTUARY TEMPLE
- D MAIN PYRAMID
- E SMALL CULT PYRAMID
- F PROTECTIVE WALL

This drawing, based on the model of the royal funerary complex of King Sabure (Fifth Dynasty) conserved in the Egyptian Museum in Cairo, shows the structures characteristic to a pyramidal complex.



29 top right
This photograph, taken from the southwestern corner of the pyramid, shows the pyramid of King Pepy I at Saqqara.



29 bottom right
In this inscription, painted in black on one of the inner stones from the pyramid of Pepy I, the name of Inti, the pyramid's architect can be read.

Administration of the Pyramid

The system of phyles was not exactly the same throughout the Pyramid Age. During the Old Kingdom, according to the Abusir papyri mentioned above, there were five phyles designated by adjectival names, such as 'great,' 'green,' and 'small.' Each phyle was divided into two divisions, bearing names like 'the living,' 'the strong,' 'the noble,' 'the favored,' 'the one in front,' 'the first,' or 'the rising one.' The members of a division were engaged in a ten-month cycle of rotating service, i.e. they were working one month in a temple, the next month in another temple, then after ten months they were serving again in the first temple. This rotation did not concern the persons that were employed permanently (lector and purification priests, scribes, guards, artisans, potters, handymen, and others in similar positions).

During the Middle Kingdom, the system of phyles was somewhat different: according to the papyri found at the pyramid town of Kahun (al-Lahun in the Fayum), there were four phyles named 'first,' 'second,' 'third,' and 'fourth' (later was added a 'fifth' phyle). Each phyle provided a one-month service, rotating with the other phyles in numerical order. This system was apparently in use for many centuries, until the Ptolemaic Period.

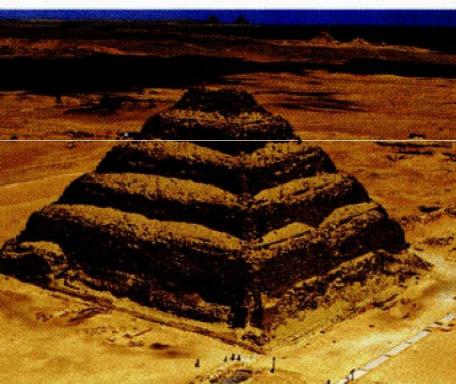
It was noticed long ago that some variant names of the phyles during the Old Kingdom are similar to four nautical terms that correspond to the right and the left sides of a ship (starboard and larboard), as well as to its front and rear parts (bow and stern). The conclusion was drawn too quickly: in a country like ancient Egypt, where the river Nile was the political and the economic axis, it was natural that the fluvial activities had been organized early on and that this nautical organization was later adapted to the other

activities, so that it was not surprising to find nautical terms used as names for priests' phyles. In fact, the analysis of all phyle names shows that they did not originate from nautical terms but from several characteristic signs. These signs, or emblems, could have designated certain groups of people that might have existed long before the first military or commercial ships ever sailed on the Nile. In this case, the organization of ship crews could have been influenced by the organization of priests' phyles rather than vice versa.

There is a generally accepted idea that the administration of a pyramid was led by big crews or teams, incorporating the five phyles and their divisions (we have evidence of two divisions per phyle from the Abusir papyri, but four from the mortuary temple of Menkaure and even more from the pyramid of Pepy I). This idea should be reviewed, because large teams of several hundred persons, designated by the hieroglyph  *aper*, were recruited when needed, especially when the pyramid was begun. Furthermore, it seems that they were not permanently in existence as the phyles were. The names of the *aper*-teams, known from the inscriptions of pyramid builders, included very often one of the pharaohs' names. From the inside of the Great Pyramid at Giza, we have evidence of some *aper*-team names like 'The Two-Lands (Egypt) Purifiers of Horus Medjedu (Khufu)' (team name A), 'The Purifiers of Horus Medjedu' (team name B), 'The Friends of Khufu' (team name C) and 'The Followers of the Powerful White Crown of Khufu' (team name D). Some elements of these names, like 'friends,' for example, could perpetuate through different reigns, as illustrated by 'The Friends of Menkaure.' The name of

another *aper*-team from the time of Menkaure has been completely misunderstood for almost a century; the translation 'The Drunkards of Menkaure' is not logical and could be replaced by 'The Laborers of Menkaure,' which sounds much more appropriate for a group of people constructing a pyramid. The numerous persons that were organized in *aper*-teams had to be guided and controlled by other persons, permanently employed by the pharaoh: most probably the members of a phyle. Because the name of the *aper*-team has been written before the name of a phyle, as is seen on some stones from the mortuary temple of Menkaure, it did not mean that this team was leading the work, with the members of the priests' phyle under its control. The names of these *aper*-teams included an important word—the royal cartouche—which had to be written at the beginning of the inscription, like the god's name Re (the Sun), illustrated by a circle in the cartouche of Menkaure, which was the most important element of the name. Even though pronounced last (Men-kau-Re), it was written at the beginning of the cartouche (this is the well-known Egyptian rule of the so-called honorific anteposition).

Therefore, it is now preferable to think that it was the phyles, composed of several divisions, who were administrating the work of the big teams, like the *aper*-teams, but also the *ges*-teams and maybe others. These teams with numerous members were doing the heavy and demanding tasks like quarrying, hauling, and lifting stones, while smaller groups of persons, the divisions of the phyles, were doing the very precise and specialized tasks. The professionalism of these smaller groups made possible the miracle of the Pyramid Age of ancient Egypt.



30 left

The Step Pyramid of Djoser at Saqqara seen from its southeastern corner.

30 and 31 bottom

Builders' inscriptions painted on some of the stones from the pyramid of Khufu and from the mortuary temple of Menkaure (Fourth Dynasty, Giza).

Old Kingdom phyle names from the Abusir Papyri		variant names from other documents		Nautical terms	Characteristic signs
 <i>wr</i>	pronounced "ur"	 <i>jmy-wr</i>	 <i>jmy-wr.t</i>	<i>jmy-wr.t</i> = starboard	 <i>wr</i> = great, big
 <i>t3</i>	pronounced "to"	 <i>t3-wr</i>	pronounced "to-ur"	<i>t3-wr</i> = larboard	 <i>t3</i> = shrouded, hidden
 <i>w3d</i>	pronounced "uadj"	 <i>w3d.t</i>	pronounced "uadjet"	<i>w3d.t</i> = bow	 <i>w3d</i> = green, fresh
 <i>nds</i>	pronounced "nedjes"	 <i>nds.t</i>	pronounced "nedjeset"	<i>nds.t</i> = stern	 <i>nds</i> = small, little
 <i>jmy-nfr.t</i>	pronounced "imi-neferet"	 <i>nfr.t</i>	pronounced "neferet"	—	 <i>nfr</i> = perfect, beautiful

The hieroglyph za (a looped cord serving as hobble for cattle) designates the word "phyle."



One of the papyri from the Abusir archives shows that a phyle's division consisted of ten priests, whose names were clearly written on the papyrus. These priests, called *hemiu-netjer* ('Servants of God') and *kbentiu-sbe* (literally translated 'Those in Front of the Basin'), were assigned to daily and nightly rituals inside the mortuary temple or on its roof, as well as around the pyramid and on its surrounding wall (these rituals could have taken place even during the construction of the pyramid complex). They were preparing and presenting the ritual meals for the king, performing libation and fumigation rituals (with incense, for example), unveiling, cleaning, dressing, and adorning statues, guarding the monuments overnight, and so on. The accomplishment of each assignment was strictly controlled by noting the presence or the absence of the priests (a black vertical stroke when the priest has fulfilled the task, a red stroke when he was absent).

But, we must always keep in mind that the Abusir papyri gave account of the work of approximately 200–250 persons serving the mortuary cult of a dead king. During the whole reign of a king, the administration had to govern many more people. Herodotus mentions that 100,000 persons had been involved in the construction of the pyramid of Khufu, but modern Egyptologists' estimates reduce this number to 30,000. The majority of the Egyptian pyramids were not as big as the Great Pyramid, so one could imagine that 10,000–20,000 people would have been enough for the construction of these pyramids. Such figures show that the number of persons that had to be organized on the necropolis of a living king, during the construction of his pyramid, was about a

hundred times higher than the number of persons serving the cult of a dead king. Consequently, the information available from the Abusir papyri must be quite far from the real scope of the administration of a pyramid under construction.

In order to come nearer to the Egyptian reality, we have the inscriptions left by the pyramid builders: a direct source on the administration of a pyramid. But there is a serious problem in using this source since the great majority of the stones with these inscriptions are still under sand and debris, the lower stone courses of the four sides of the commonly-known pyramids are generally not cleaned. The reason for this is most probably lack of financial means to finish the job of clearing, but reluctance to do this work could also be a factor. Otherwise, it is hard to explain that out of more than a hundred pyramids, and after more than 150 years of modern excavations in Egypt, only the pyramids of Khufu and Khafre at Giza, the pyramid of Pepy I at South Saqqara, and to a certain extent, the pyramid of Unas at Saqqara, have been systematically cleaned and sand removed from their sides down to the foundation. The enormous potential of the pyramid builders' inscriptions is far from being completely explored. Some examples of inscribed stones from the pyramid of Pepy I show clearly how fertile this source of information could be.

When we see the essential information that has already been collected from builders' inscriptions, information about pyramid construction, the administration of the pyramid, and the persons

leading this administration, it is clearly a pity not to try to enrich the corpus of these documents. Archaeologists have to start thinking about systematically cleaning the lowest parts of some of the pyramids in Saqqara, Dahshur, Abusir, and Giza. Some prime subjects would be the pyramid of Djedkare (Fifth Dynasty) at South Saqqara, one of the best-preserved pyramids in Egypt; the pyramid of Teti (Sixth Dynasty) at Saqqara, the pyramids of the two half-brothers Merenre and Pepy II (Sixth Dynasty) at South Saqqara, the pyramid of Menkaure (Fourth Dynasty) at Giza, the two big pyramids of Sneferu (Fourth Dynasty) at Dahshur, the Red Pyramid and the Bent Pyramid, which is the best preserved pyramid in Egypt, as well as the monument of Sneferu at Meidum where the clearing of its northwestern angle (work done in 1984–86), has produced hundreds of inscriptions. Even the step pyramid of Djoser at Saqqara, one of the most famous and most visited monuments in Egypt, has the lower part of its western side still under sand.

The destruction of the Egyptian pyramids during the three to five millennia that separate us from the Pyramid Age, leaves little or no chance for even the greatest optimist to imagine that one day treasures could be found from an intact pyramid tomb, like the treasures from the tomb of Tutankhamun, for example. Instead, what we may find in the future, if we are willing to invest in cleaning some of the pyramids, are more and more inscriptions from their builders that will give us genuine information about how the pyramids were constructed and administered. In fact, these inscriptions would be the real 'treasures of the pyramids'!

Team names from the pyramid of Khufu				Phyle uadjet			Phyle ur		
team name D	team name C	team name B	team name A	division name	phyle name	team name	division name	phyle name	team name
	"The Friends of Khufu"		"The Two-Lands Purifiers of Horus Medjedu"						"The Laborers of Menkaure"
	"The Followers of the Powerful White Crown of Khufu"	"The Purifiers of Horus Medjedu"							translated previously as "The Drunkards of Menkaure"
									"The Friends of Menkaure"

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THE PYRAMIDS

Text by Zahi Hawass

Zahi Hawass is a world-renowned Egyptian archaeologist. Now he is the General Secretary of the Supreme Council of Antiquities and the Director of the Excavations at the Giza Pyramids, Saqqara, and Bahariya Oasis. He has been excavating around the pyramids for the last twenty years and has made several major discoveries, including the Tombs of the Pyramid Builders and the Valley of the Golden Mummies in Bahariya Oasis. He is the author of many books and articles on the Pyramids, such as *The Pyramids of Ancient Egypt* and other books related to Egyptology. He has lectured all over the world. Hawass has brought Egypt into the homes and hearts of people worldwide through numerous television appearances. Zahi Hawass received the First Class Award for Arts and Sciences from President Mubarak in 1988 for the Sphinx conservation. In October 2000, he was one of thirty international figures to receive the Golden Plate Award from the American Academy of Achievement in honor of his accomplishments in archaeology. In 2001, National Geographic announced him as an Explorer in Residence and in 2003 his name was written on a CD for the Mars exploration and Rover Mission.

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10-11 Araldo De Luca/Archivio White Star
13 Kenneth Garrett
16-17 Kenneth Garrett
19 Araldo De Luca/Archivio White Star
20-21 Araldo De Luca/Archivio White Star

WHY A PYRAMID? PYRAMID RELIGION

Text by James Allen

James Allen received his degree in Egyptology from the University of Chicago, with a dissertation on the grammar of the Pyramid Texts. He has served as epigrapher with the University's expedition in Luxor, Egypt, and as Cairo Director of the American Research Center in Egypt. Since 1986 he has held a research appointment at Yale University, and has taught there as well as at the University of Pennsylvania. He is currently Curator of Egyptian Art at the Metropolitan Museum of Art and Vice-President of the International Association of Egyptologists. Dr. Allen's specialties include ancient Egyptian language, texts, and religion, and he has written extensively on these subjects as well as the history of the Middle Kingdom and Amarna Period. He is the author of *Genesis in Egypt: the Philosophy of Ancient Egyptian Creation Accounts* and, most recently, *Middle Egyptian: an Introduction to the Language and Culture of Hieroglyphs*.

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24, 25, 26, 27 Araldo De Luca/Archivio White Star

THE ADMINISTRATION OF THE PYRAMID

Text by Vassil Dobrev

Vassil Dobrev, a French archaeologist, was born in 1961 in Varna (Bulgaria). In 1992, he received his PhD in Egyptology from the University of Paris-Sorbonne for his dissertation "Researches on the Kings of the Fourth Egyptian Dynasty." From 1995 until 1998, he was Scientific Member of the French Archaeological Institute in Cairo (IFAO). Since 1987, he has worked on the excavations of the pyramids and temples of Pepy I and his Queens at South Saqqara. Since 2000, he has been responsible for the IFAO Mapping Project of South Saqqara and Director of the IFAO Mission at Tabbet al-Guesh (South Saqqara). The author of several scientific studies, and he is specialized in the inscriptions of the pyramid builders and pyramid history.

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29 Vasko Dobrev
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BUILDING AN OLD KINGDOM PYRAMID

Text by Mark Lehner

Mark Lehner is one of the leading experts on Giza's Great Sphinx and Pyramids. He is president of the nonprofit research organization AERA, Inc., that sponsors the Giza Plateau Mapping Project. The project conducts excavations of Old Kingdom settlements near the Sphinx and Pyramids with a team of archaeologists, geochronologists, paleobotanists, and faunal specialists. Lehner has appeared on television in National Geographic's *Explorer* program, and on NOVA's *Secrets of Lost Empires* series on ancient technology including *This Old Pyramid and Obelisk*. He is author of *The Complete Pyramids* published in 1997. In addition to books and articles in print, Lehner's book on the Great Sphinx is in preparation with the University of Chicago Press. From 1990 until 1995 Lehner was Assistant Professor of Egyptian Archaeology at the University of Chicago. He is now a Research Associate at the Oriental Institute of the University of Chicago and at the Harvard Semitic Museum. Lehner was born, raised, and began his college education in North Dakota. He went to Cairo in 1973 as a Year Abroad Student at the American University in Cairo where he received his B.A. in Anthropology. He lived in Egypt in for thirteen years, working for American, Egyptian, British, French, and German archaeological projects. From 1979 until 1983 he was the Field Director and then Director of the Sphinx Project sponsored by the American Research Center in Egypt. In 1984 he began the Giza Plateau Mapping Project (GPMP), sponsored by ARCE and Yale University where Lehner received his Ph.D in Egyptology in 1990. In 1988 the GPMP began to excavate in search of the settlement and infrastructure that supported the pyramid work force. The team has discovered a workers' city that includes work shops, storage buildings, bakeries and a large royal administrative center from the time of the pyramids (ca 2,500 B.C.).

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