Archaeology of an Image: The Great Sphinx of Giza

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Mark Edward Lehner, May 1991

ABSTRACT

ARCHAEOLOGY OF AN IMAGE: THE GREAT SPHINX OF GIZA

Mark Edward Lehner
Yale University
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This study is the first systematic description of the Great Sphinx of Giza. It is an architectural, archaeological, and geo-archaeological approach, based on five years of field work at the Sphinx between 1979 and 1983. The Sphinx and its site were documented using photogrammetry and conventional surveying techniques.

I describe the setting and layout of the site of the Sphinx and review the history of previous research and excavation. The results of eight years of excavation from the 1920s and 30s are documented here for the first time. I review published sources about the history and significance of the Sphinx. I describe the features of the Sphinx and its site on the basis of the field work. This work has lead to the following conclusions:

Builders, under the 4th Dynasty pharaoh, Khafre (ca. 2,500 B.C.), quarried a series of terraces and a U-shaped sanctuary for the Sphinx. They extracted the stone in the form of multi-ton core blocks that they used for making the Khafre Valley Temple and the Sphinx Temple on a terrace in front of the Sphinx. The project was part of a program of statue and temple building that was unequaled until New Kingdom times. The Sphinx and its associated temple were

not completed, and it is doubtful whether a cult service specific to the Sphinx was ever organized.

The Sphinx was mostly abandoned and neglected for nearly a millennium. Detailed documentation of the Sphinx's stratified masonry indicates that 18th Dynasty rulers carried out the earliest and largest reconstruction of the statue. At the same time, they quarried Khafre's pyramid and temples for granite and hauled away his colossal statues. They carried out their reconstruction of the Sphinx body with limestone slabs taken from Khafre's pyramid causeway. They made a royal chapel at the base of the Sphinx's chest and repaired the divine beard, which was original to the 4th Dynasty. There is evidence that they placed a colossal royal statue above the chapel and under the beard to embody the selection of the sovereign and his protection by the Sphinx, now known as the god, Horemakhet.

The 18th Dynasty builders added masonry boxes to the flanks of the Sphinx body. These served as pedestals for naoi. The largest may have been for a statue of Osiris, or an Osiride statue of a king related to the cult of Osiris, Lord of Rosetau. The Sphinx was repaired again, probably in the 26th Dynasty, and in Roman times.

The study concludes with a model of the Sphinx as it may have appeared in the 18th Dynasty. Comparisons with other sphinxes and 4th dynasty statues of Khafre are used to create the model with the help of computer imaging.

THE ARCHAEOLOGY OF AN IMAGE:
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PREFACE

I base this description of the Great Sphinx of Giza on five years of fieldwork at the Sphinx between 1979 and 1983 sponsored by the American Research Center in Egypt (ARCE). As the Project Director for the ARCE Sphinx Project, James P. Allen secured the official concession and provided the sponsorship that enabled me to become the project Field Director.

I use the descriptive records of the site to reconstruct the results of previous excavations, principally the work of Lacau and Baraize from 1926 to 1934. The results of these excavations were never published. What records exist require close analysis to yield information about specific provenances for objects and inscriptions. I have traced the course of the Sphinx excavations and reconstructed the findings that are pertinent to the Sphinx and its immediate sanctuary. A subsequent volume will take the same approach for the general site.

Although I have benefited from discussions with many of my colleagues, the conclusions presented here are my own responsibility. None of the work presented here could have been undertaken without the help of James Allen. As Director of the American Research Center in Egypt Cairo

Office in 1979, Jim took me under his wing and helped me begin, not only ARCE Sphinx Project, but also my career in Egyptian archaeology. Without the early support, friendship and collaboration of Zahi Hawass, then Director General for Giza and Saqqara, the Sphinx project, as well as my ongoing work at Giza, likewise would never have happened. Another close friend and supporter in this same category is the late Hugh Lynn Cayce, whose support, and that of the Edgar Cayce Foundation, made the Sphinx Project possible. Matthew McCauley, Sam and Rufus Mosely, Arch and Ann Ogden, Joseph and Ursula Jahoda and David and Norrene Leary, all made special contributions. I am indebted also to Paul Walker who, as Executive Director of the American Research Center in Egypt, contributed his firm support to the project. I am grateful for the help given by the Giza Inspectorate of the Egyptian Antiquities Organization (EAO), and for the support of Fouad el-Arabi, and the late Ahmed Qadry, EAO Presidents during the time of this research. Thanks go to the former Directors of Giza, the late Nasif Hassan, and Ahmed Moussa. And I feel a special debt of gratitude for my assistants over several years of work at Giza, Mohammed Abd el-Qadar, Salah el-Nasar, and Sami Antonios.

Ulrich Kapp, of the German Archaeological Institute in Cairo, placed the project in a good standing when he contributed his time and expertise to produce the photogrammetric front and side elevations of the Sphinx. For this, I also thank Werner Kaiser and Rainer Stadelmann, former Directors of the German Archaeological Institute. I am grateful to Jean Yoyotte, Christane Zivie-Cochem and Laurent Coloun for the long and patient loan of the Sphinx material from the Archives of Lacau, the property of the Centre Wladimir Golenischeff (Ecole Pratique des Hautes Études) in Paris.

A number of colleagues contributed to the fieldwork: K. Lal Gauri, who first opened my eyes to the information that could be gleaned from the geology of the Sphinx; Thomas Aigner, who helped me begin to apply insights from geology to the wider site of Giza; Christiane Zivie-Coche; who collated and transcribed the cryptic notes of Lacau, which proved immensely valuable, Atilla Vass, who laid out the elaborate survey grid that allowed us to plan the site with such detail, and Peter Lacovara, Cynthia Schartzer, and Susan Allen. Certain colleagues contributed important insights, primarily James Allen, Edna Russman, John Swanson and Bernard Bothmer. I owe a debt of gratitude to William Kelly Simpson for his support of my work at Giza prior to my program at Yale University, and for serving as my advisor at Yale.

For computer imaging work I am indebted to Jon Jerde and Thomas Jaggers. I thank David Leary for his photographic work. For a great deal of help in the preparation of this manuscript, I thank Margaret Sears.

ABBREVIATIONS

ASAE	Annales du Service des Antiquités de l'Egypte (Cairo)
BÄBA	Beiträge zur ägyptischen Bauforschung und Altertumskunde (Wiesbaden)
BASOR	Bulletin of the American Schools of Oriental Research (New Haven)
BdÉ	Bibliothèque d'Étude (Cairo)
BIE	Bulletin de l'Institut d'Egypte (Cairo)
BIFAO	Bulletin de l'Institut Français d'Archéologie Orientale (Cairo)
BiOr	Bibliotheca Orientalis (Leiden)
BSFE	Bulletin de la Société française d'égyptologie
CAH	The Cambridge Ancient History
CG	Catalogue général des antiquités égyptiennes du Musée du Caire
CRAIBL	Comptes rendus de Académie des Inscriptions & Belles-Lettres (Paris)
CRIPEL	Cahiers de Recherches de l'Institut de Papyrologie et d'Égyptologie de Lille (Lille)
GM	Göttinger Miszellen (Göttingen)
HAB	Hildesheimer ägyptologische Beitrage (Hildesheim)
JARCE	Journal of the American Research Center in Egypt
JEA	Journal of Egyptian Archaeology (London)
JNES	Journal of Near Eastern Studies (Chicago)
JSSEA	Journal of the Society for the Study of Egyptian Antiquities
LA	Lexikon der Ägyptologie (Wiesbaden)
MAS	Münchener ägyptologische Studien

MDAIK	Mitteilungen des Deutschen Archäologischen Instituts Abteilung Kairo (Cairo)
NARCE	Newsletter of the American Research Center in Egypt
PSBA	Proceedings of the Society of Biblical Archaeology
Prob.Ag.	Probleme der Ägyptologie (Leiden)
RdE	Revue d'Egyptologie (Paris)
Wb.	Erman, A., and H. Grapow. *Wörterbuch der ägyptischen Sprache.* Vols. 1-7 (Leipzig)
YES	Yale Egyptological Studies (New Haven)
ZAS	Zeitschrift für Ägyptische Sprache (Berlin)

INTRODUCTION

The Great Sphinx of Giza is one of the most famous images of ancient Egypt and antiquity, and it is one of the most unusual monuments of the ancient world. Worldwide familiarity with the Sphinx, captured for about a hundred years in numerous postcard views and in thousands of tourist photographs, may have contributed to a sense that the monument was "known." This familiarity also obscured the uniqueness of the monument. In fact, the Sphinx was little studied and poorly documented until the late 1960's and 70's.

The Sphinx is the first truly colossal royal sculpture in the history of ancient Egypt. Other larger-than-life-sized statues preceded it,[1] but none of them come close to the large scale of the Sphinx.[2] During three thousand years of Pharaonic civilization, the Sphinx is the single instance of colossal sculpture carved directly out of the natural rock.[3] Except for the Louvre sphinx head of Djedefre and one small limestone sphinx from Abu Roash (Chassinat 1921- 22), the Giza Sphinx is the earliest complete Sphinx to wear the distinctive royal nemes scarf.

Three studies exist on the topic "sphinx.” Demisch (1977) covers generic sphinxes from ancient Egypt, the Near East, Greece, Rome, and Islamic period, the Renaissance, and modern times. Dessenne (1957) deals with the iconography of the sphinx in the Near East through the Second Millennium. Schweitzer (1948) studied the sphinx and lion in all major periods of ancient Egypt. De Wit (1951) published a lengthy treatment of the role and meaning of the lion in ancient Egypt, and discussed the generic sphinx.

From two years of excavation at the Sphinx, Selim Hassan published one large tome (Hassan 1953) and shorter versions (1960, 1949, 1951) of his results and interpretations, but these did not include a physical description or study of the Sphinx itself. Ricke (1970) carried out an exhaustive survey, mapping and detailed interpretation of the 4th Dynasty Temple in front of the Sphinx. His study involved some documentation and study of the Sphinx and the Khafre Valley Temple, but it focused mainly on the Sphinx Temple. Petrie (1883) mapped the interior of the Khafre Valley Temple, as did Hölscher (1912) who also excavated and mapped the terrace in front of the Valley Temple. Zivie-Coche (1976) catalogued, analyzed and interpreted New Kingdom texts from Giza, which focus mainly on the Sphinx, with some commentary on preceding periods and a follow-up study of later periods (Ibid. 1980).[4]

In spite of these studies, which address the texts and stone architecture associated with the Sphinx, the monument itself has never been documented architecturally or even described and photographed in a systematic way. This unique monument was never drawn to scale or mapped at a scale larger than about 1:1,000 until 1979. The records of a massive excavation of the site under the direction of Emile Baraize from 1926 to 1934 were never published. During this work many layers of architecture, including an extensive 18th Dynasty complex that surrounded the entire Sphinx area, were removed without being mapped or described in text.

Prior to this study, two major topics concerning the Sphinx still needed to be addressed archaeologically. The first was a systematic documentation and study of the Sphinx statue. The second was a study of existing records and on-site evidence in order to reconstruct the architectural and archaeological history of the wider Sphinx "amphitheater."

To address these needs, the Sphinx Project began in 1979. James P. Allen, was Project Director and I served as the Field Director. Most of the maps and architectural drawings of the Sphinx on which I base this dissertation were compiled during the course of the project between 1979 and 1983. These records are the basis for the description and analysis of the Sphinx contained in this study; in a forthcoming volume they will serve as the basis for reconstructing site plans for various architectural features that previous excavators removed. Archival data is available as major source material for these studies. Principal of these is the material from the Baraize excavation in the photographs and papers of Pierre Lacau (Arch. Lacau). This material includes Lacau's notes, a few sketches, and one plan of one stage of the excavation. Most valuable is a series of more than 226 photographs, many of which are dated, that record the progress of excavation over eight years. These show the condition of the Sphinx as it was first excavated in modern times, as well as many of the archaeological features that were removed from the site. Jean Yoyotte, Director of the Centre Wladimir Golenischeff (Ecole Pratique des Hautes Etudes), arranged the use of these materials by the ARCE Sphinx Project, and they have been drawn upon heavily in this study.

Some records of Selim Hassan's excavations at the Sphinx exist in the storerooms at the Giza Pyramids. These include notebooks that contain a list of objects and their dimensions, photographs, and information about where they were found. Zahi Hawass, Director General for Giza and Saqqara allowed me to consult these notebooks during the first year of the ARCE Sphinx Project. During her work with the ARCE Sphinx project, Christiane Zivie-Coche collated and drew up tables of concordance for both sets of archival material. Her collation has proved extremely valuable in preparing this manuscript.

The focus of this volume is the Sphinx statue. This may seem a narrow focus, particularly from an archaeological viewpoint that seeks to reach beyond simple description and local site histories to draw broader generalizations about cultural processes. While focusing on cultural processes is a worthwhile endeavor, I offer this work with the conviction that if we do not first know what happened, it is hard to explain why it happened. The Sphinx is a large monument with close to 2,400 m2 of archaeological surface, the equivalent of ninety-six 5 X 5 m excavation squares. The geological layers from which it was sculpted are heterogeneous. Careful observation of the geology offers information about the history of the Sphinx. The masonry covering the lion body is stratified. There are four structures appended to the statue, and a complex set of architectural ruins between the forepaws.

In describing the Sphinx, I include a description of its setting, the background of its history, and research previously undertaken at the site. While reviewing the history of excavation and research in chapter 2, I go to some length to describe Baraize's eight-year excavation, drawing on most of the unpublished archival photographs in anticipation of a second volume that resolves, as best as possible, the layout of the site at various stages of its history, and that attempts to place the objects and texts in their archaeological and architectural context. I also make reference to this material in interpreting the evidence from the Sphinx itself. The history of its repairs and additions reflects the archaeological sequence that surrounded it.

Introduction Notes

[1] The Min colossi from Coptos were originally a little more than 4 m tall for a scale of about two and a half times life size (Williams 1988, 47; Kemp 1989, 81, Fig. 28). The Sneferu statues from his Valley temple at Dahshur were originally about 1 and one-third times life size (Fakhry 1961, 3).

[2] See chapter 9, note 3 for the calculation of the scale of the Sphinx body.

[3] The Abu Simbel Temples of Ramses II could be cited as an exception. These are not free standing sculpture, as they remain attached to the rock face; they are, in effect, extremely high relief.

[4] *Ed. Note: Now see Zivie-Coche 1991; 1997; 2004, all of which appeared after I wrote this dissertation.*

CHAPTER 1

Topographical and Geological Setting

1.1 Topographical Context

The Great Sphinx of Giza is part of Egypt, in the upper northeast corner of the African continent; it faces the narrow green ribbon of the Nile river valley cutting through a swath of desert some 1,800 km wide across the top of Africa.

For about three thousand years, the territory from Aswan at the 24th parallel to the Mediterranean was known as the Two Lands, reflecting the two principle parts of the Y-shaped river valley, the Delta to the north and the valley proper to the south. From a breadth of 220 km at the Mediterranean, the Delta narrows to 22 km at its apex some 170 km to the south. The high limestone escarpments of the Nile Valley open at the apex, gated by Gebel Ahmar on the east and Abu Roash on the west. The apex of the Delta has always been the gateway from the Nile Valley, 800 km long in Egypt.

The Sphinx sits on the west side of that gateway, at the base of the Giza Plateau, which serves as a platform for the three pyramids of the 4th Dynasty kings Khufu, Khafre, and Menkaure. An official Survey of Egypt marker at the top of the Khufu Pyramid is latitude 29^{0} 58' 44.38" (north) and longitude 31^{0} 07' 02" (east). The Sphinx is situated not only at the lowest part of the Pyramids Plateau, but also within a U-shaped ditch that the 4th Dynasty Egyptians quarried out of the natural limestone, leaving a core that they sculpted into the Sphinx.

Until the last several decades, the Sphinx looked out to the boundary between desert and cultivation. A couple hundred meters of low desert sand stretched from the eastern escarpments at Giza to the valley floor, with a village here and there in the distance. During the last twenty or thirty years, downtown Giza, a precinct of metropolitan Cairo, has expanded at an astonishing rate along the pyramids road corridor southwest toward the Pyramids Plateau. This, combined with the expansion of Nazlet es-Samman, Nazlet el-Sissi, and Nazlet el-Batran from villages at the foot of the plateau to a combined suburb, has brought modern Cairo literally to the feet of the Sphinx. On a clear day from the desert southwest of Giza, one can see the sweep of modern city to downtown Cairo in the distance (Fig. 1.6).

The Sphinx and Giza Pyramids were part of the vast royal cemeteries belonging to Memphis, the administrative center of Egypt throughout most of Pharaonic history. In the Pyramid Age, Memphis was the center of the newly emergent state. West was the traditional direction of the Dead in ancient Egypt, and so the high desert to the west of Memphis became the burial ground for royalty, courtiers, and later, sacred animals. Saqqara, which lies immediately west-northwest of Memphis, was the principal necropolis from the First Dynasty to Christian times. But the Old Kingdom pyramids, the tombs and temples of the god-kings, span an area from Abu Roash, northwest of Giza, to the lone Meidum pyramid, 72 km to the south. Excluding the pyramids at Meidum and Abu Roash, the twenty-one other major pyramids of Old Kingdom rulers are concentrated at the sites of Giza, Zawiyet el-Aryan, Abusir, Saqqara, and Dahshur in a 20 km span of desert west of Memphis. From the Moqattam hills east of Cairo, one can look across the valley to the lower-lying western plateau and see, silhouetted in the desert haze, the largest pyramids at these sites. One can imagine the entire pyramid field as one vast Memphite Necropolis and the pyramids beyond as tombstones of distant kings. The Sphinx is part of this centralized royal necropolis.

Recently, Kemp (1989) argued that during the development of the Egyptian state, a "formal Egyptian visual culture" developed at the center. This royal culture impressed itself upon, and supplanted, native "preformal culture" in the Egyptian provinces. Formal culture was expressed through religious and political motifs that saw distinct times of codification. The early 4th Dynasty (ca. 2575-2472 BC) pyramid complex was just such a systematization of royal power - a recodification of older forms exemplified by the Djoser Step Pyramid complex at

Saqqara, and the royal tombs of the Archaic Period (Ibid., 62-3). We can see the Great Sphinx as part of this process, perhaps even a prototype for one of the classic symbols of kingship through the later phases of Pharaonic culture.

1.2 Geological Context

The Egyptians carved the Great Sphinx directly out of the natural limestone of the Giza Plateau during a period in which they quarried seven million cubic meters of local limestone for the superstructures of the Giza Pyramids (Stadelmann 1980, 43). A knowledge of the geology of the Giza Plateau is key to understanding these monuments - how labor was organized, the techniques the Egyptians used to build them, and the weathering processes that reduced them to ruins.

The African continent is composed of rock of the Pre-Cambrian Period, which spans from the origin of the Earth itself, 4,600 million years ago to a period 570 million years ago. The northeast corner of the African continent experienced repeated influxes of water from the Tethys Sea, the ancestral Mediterranean. Floodwaters laid down sediments - metamorphic and igneous diorites, granite, gneiss, quartz, and schists - the hard stones that the ancient Egyptians favored for fine statues and temple accoutrements. For this they mounted quarry expeditions to the northern Fayum, the Red Sea Mountains, Aswan, the desert quarries southwest of Aswan, places where these stones remained exposed above the covering sedimentary rock.

The greatest part of the Egyptian tableland originated 65 to 50 million years ago, during the Eocene Epoch (65-38 million BP). Late in the Eocene, forces began to lift the limestone and to tilt it from south to north to form a drop of 85 m from Aswan to the Delta shoreline. The waters of the Eocene bay began to recede from the rising tableland, and by the end of the epoch the head of the bay was near the present apex of the Nile Delta, not far north of the Giza Plateau (Hayes 1964,74-5). The sea floor sediments from this time became the stone from which the Egyptians made the Sphinx and Pyramids. The life forms of that sea floor, corals, sponges, oysters, sea urchins, mollusks, snails, and starfish, became petrified in the limestone that was later used in the pyramids, tombs, and temples at Giza.

To understand the origins of the Giza Plateau specifically, we must return to the Cretaceous Epoch (136-65 million year BP). Before the Eocene sea invaded northeast Africa, shallower waters of the Cretaceous laid down sediments of sandstone, limestone, shale and clay. As this sedimentation progressed, compression in the land created a series of folds, pushing the surface upward and pinching it together (Ibid). One set of these folds runs north-south parallel to the Nile. The other set runs diagonally from northeast to southwest. The Giza Plateau and the Abu Roash promontory to the northwest are part of the great Syrian Arching System (Bar and Kitzch 1964,72) of folds, which runs across northern Egypt from Sinai, along the Cairo-Suez road, to the Giza Pyramids and Abu Roash districts, and southeast to the Fayum, Wadi Rayan, and the Baharia Oasis. The Cretaceous folds formed a series of highs and lows over which the Eocene sea laid down limestone-forming sediments (Aigner 1983, 348-9). Evidence suggests the folding increased again while the Eocene sedimentation was occurring. The geological formations that resulted - a series of highs separated by lows - correspond to the sites of major pyramid complexes: Abu Roash Formation (Djedefre Pyramid), Moqattam Formation (Giza Pyramids), Maadi Formation (Zawiyet el-Aryan Pyramid), Saqqara Formation (Saqqara and Dahshur pyramids) (Aigner 1982, 381-2).

Geologists characterize the Giza Plateau as a "brachy-anticline" (Omara 1952). It belongs to the Abu Roash complex, a group of synclines and anticlines left by the folding of the large rock masses in Cretaceous and Eocene times. An anticline is stratified rock that has been folded into an arch so that the layers slope down in opposite directions from the crest. The Giza Plateau is "brachy" because the northwest side of the fold is considerably shorter than the southeast side (Fig. 1.2), which hosts the three pyramids and makes up the major area of the "plateau." A syncline is a trough of layered rock in which the layers, or beds, slope toward each other from either side.

The Giza Plateau is part of the Moqattam Formation, named after the Moqattam Hills that tower above the eastern boundary of Cairo. Moqattam "forms the classic outcrop of the Middle and Upper Eocene of Egypt" (Said and Martin 1964, 107). At Moqattam the formation is about 130 m thick, while at Giza it is only about 40 m thick. At Giza the Moqattam Formation extends about 2.2 km from east to west and 1.1 km from north to south (Fig. 1.2). This limestone is called nummulitic because of the presence of numerous Nummulites gizehensis - small coin-shaped fossils of unicellular planktonic organisms that lived in warm shallow tropical waters of the Eocene sea. These are some of the first fossils described by natural historians. Strabo, in the First Century B.C. reported that the "heaps of stone chips lying in front of the pyramids" were the petrified remains of lentils left behind by the pyramid builders (17.I.34; Jones 1932, 95).

It is possible to reconstruct roughly the original outlines of the Giza Plateau by "erasing" the architecture and interpolating the trend of the formation over areas that were quarried away (Lehner 1985b). This reconstruction is presented as Fig. 1.3. Features with circled numbers on the drawing are parenthetical numbers in the text that follows.

The surface slopes about 3^0 to 6^0 northwest to southeast from a high point (6) west of the pyramids, 105.80 m above sea level, to 23 m above sea level where the formation sloped into the low desert about 200 m south of the Sphinx (7). Geologists refer to the slope of a formation as its "dip". Any line perpendicular to the dip direction is called the "strike". When one walks around the side of a hill without going up or down, the line of strike is followed. With the dip direction at Giza from northwest to southeast, the line of strike is northeast to southwest. The three large Giza Pyramids follow the strike of the plateau on a northeast to southwest diagonal, to which their southeast corners align (Lehner 1985a), which allows their bases to be more or less at the same level (the base of Khafre's pyramid is 10 m higher than that of Khufu). The long slope to the southeast is one side of the Giza anticline. The shorter northwestern side descends abruptly in two terraces or cliff lines (Aigner 1983b) to a large sandy wadi (13) that follows a syncline and limits the plateau on the northwest (Fig. 1.3).

Another broad wadi (14) limits the Moqattam Formation on the south. The boundaries of the wadi are largely reconstructed in Fig. 1.3. The mouth of the wadi was originally about 150 m wide. During the 4th dynasty the pyramid builders quarried great amounts of stone from the north side of the wadi, and from the area between the circled numbers (4), (5), and (3). Today debris dumped in ancient times, modern excavators' dumps, and wind-blown sand cover this entire area. However, farther up the wadi, the original rock surface of the Moqattam Formation and its contact with the overlying Maadi Formation is well exposed. The surface of the Moqattam Formation is also well exposed to the west of the three pyramids. On the basis of these exposures, the line of the escarpment N and E of the Khufu Pyramid, and points of original ground exposed at the quarries south of the pyramids it was possible (through interpolation with the contours of the 1:5,000 map series) to restore the original surface of the Moqattam Formation south of the pyramids and the approximate outline of the wadi.

In spite of the slope of the Moqattam Formation, its surface is fairly regular and unbroken by major wadis or gullies. This makes it suitable as a foundation for the largest pyramids ever constructed. The layering, or bedding, of the upper part of the formation at Giza is a series of thick beds, some of which (Member II, see below) alternate with softer, more marly beds. This layering is very apparent in the sides of the Sphinx core body and its rock-cut ditch. The sequence of thick-hard and thin-soft layers makes the Moqattam Formation suitable for quarrying building stone in large size blocks.

In Fig. 1.3, (4) marks the position of the Sphinx. I have reconstructed a minor escarpment that would correspond to the upper layers of the Sphinx's head. However, the original appearance of the rock surface here is especially problematic. In the reconstructed topography, the minor escarpment curves around to the position of the Khentkawes monument (Porter, Moss and Malek 1974, 288-89) southwest of the Sphinx. The basis for this reconstruction is that the same layers as the Sphinx head are still preserved on the quarry faces opposite the north side of the Khentkawes monument. These layers near the Khentkawes monument include a bit of the original plateau surface. This suggests that the head of the Sphinx corresponds to the uppermost stratigraphic units of the Moqattam Formation at Giza. The Sphinx head-layers are found nowhere else in the Central Field at Giza (the area east of the Khafre Pyramid and south of the Khufu Pyramid), probably because they have been quarried away for building stone.[1]

Reisner (1942, 11) suggested that the top of the Sphinx head marks the original surface of the plateau. He believed that the Sphinx was carved out of an nodule of rock left over from quarries of Khufu (Ibid., 26). It has also been suggested that the Sphinx head was formed from a natural knoll or hummock (El-Baz 1981, 116-22). My research suggests that considerable thought went into determining the location of the Sphinx in relation to the rest of the Khafre complex (Lehner 1985a), which would also suggest that its location was not a chance occurrence of a knoll or quarry nodule. Nevertheless, there might have been some kind of rise or hummock to the original surface from which the Sphinx was created. If the original surface in the Sphinx area was fairly uniform with the top of the Sphinx's head, an astonishing amount of stone was quarried away from this part of the plateau.

The north line of the wadi is where the Moqattam Formation dips into the sand to run underneath the younger, Upper Eocene, Maadi Formation (8) to the south. As is apparent in the quarried face of the prominent knoll (10) rising south of the Sphinx, the Maadi Formation here is characterized by thinly bedded rock that is softer, more marly, and of a more conglomerate nature than the layers of the Moqattam Formation exposed in the Sphinx ditch (Lehner 1985b, 114). The surface of the Maadi Formation is also characterized by many wadis, loose conglomerates of large boulders, clasts, and shell accumulations (Aigner 1983a, 317-18). In terms of masonry, this formation was unsuitable for quarrying large blocks, or for founding large monuments. I have suggested that the Maadi Formation was exploited for tafla and loose material for secondary buildings and construction ramps, and for settling the vast numbers of the workforce that must have been required for pyramid building (Lehner 1985b, 133-36).

The broad patterns of the Giza Necropolis include the following: Monumental buildings and quarries are on the Moqattam

Formation, a broad sheet of limestone tilted from the northwest down to the southeast. Across this sheet the three main pyramids line up on a great northwest-southeast diagonal, following the strike of the formation. The quarries run roughly parallel to this diagonal at the base of the slope of the formation from the area of the Sphinx to the southwest, around the Khentkawes monument, and on to the area below the southeast corner of the Menkaure Pyramid (marked "alabaster depot settlement" on Fig. 1.2).

Aigner's (1983a) model of the formation of the Giza Plateau explains this distribution. This model, in turn, highlights and clarifies many of the distinctions in the natural rock from which the Sphinx was carved.

To reiterate, the Giza Plateau is part of a series of highs and lows along the western desert of the Memphite region. The folding that created the "paleohigh" at Giza was augmented by more tectonic activity in the Eocene when the sea waters deposited sediments that became the Giza limestone. At the same time the Eocene bay was receding toward the north.

At the top of the "paleohigh", or submarine swell, created by the Cretaceous and Eocene folding at Giza, a nummulite colony thrived in the shallow subtropical water of the retreating sea. The evidence is massive nummulitic packstones - rock formed of concentrations of nummulites - in the northern and eastern cliffs at Giza, as well as in the surface around the bases of the Khufu and Khafre Pyramids. Storm waves winnowed away the mud environment of the nummulites and blew and sorted their shells into a coquina. This accumulation of nummulite shells eventually formed a bank over 30 m high along the north-northwest part of the Giza Plateau. This is illustrated in Fig. 1.4, a schematic profile along the dip direction of the Moqattam Formation from northwest to southeast (after Aigner 1983a, 363, Fig. 11). The nummulite embankment, cross-sectioned in Fig. 1.4, runs along the line of strike, from northeast to southwest, and forms a solid foundation for the three Giza Pyramids (Aigner 1982, 382).

In the deeper waters in back of nummulite bank a shoal (sandbar) developed that eventually capped the nummulite embankment. The northeast corner of the Khufu Pyramid is carved from this rock. Down slope, that is, in the direction of the Sphinx and the Central Field, the shoal became more reef-like with scattered colonies of corals. In the protected waters behind the bank, a reefal environment grew. This makes up the lowest layer in the Sphinx and its ditch (Member I, see below) where petrified coral can be seen in life position.

The reef and bank formed a natural barrier to the deeper sea waters. Shell-encrusted algae, sponges, and oysters in addition to coral thrived on the bank. As the Eocene sea waters retreated farther, this protected backwater "low energy environment" became a muddy lagoon, inhabited by burrowing bivalves and echinoids (sea urchins) (Aigner 1983, 361). Marine mud and silts accumulated in a fairly regular sequence. The sequence became stone of soft marly layers interspersed with harder beds (Ibid., 364). These are the layers that make up the body (Member II) of the Sphinx. The head of the Sphinx is a stone of harder quality (Member III) than the layers of the body. As mentioned before, the place of the head layers in the original surface, and in the overall stratification at Giza, is problematic because so little of this rock is preserved, other than the head and the layers by the Khentkawes monument. As the Eocene sea retreated, the seafloor emerged temporarily from the water. Eventually the sequence led to the layers of the Maadi Formation.

Aigner's model [2] helps to explain the distribution of moments, quarries, and other features across the plateau. The hard nummulite embankment and shoal cap provided a solid base for the pyramids along the line of strike; the softer stone, in a soft-hard-soft sequence convenient for quarrying, was obtainable from what had been the back bank lagoon in Eocene times. It was also convenient that these exploitable layers ran parallel to the foundation embankment, and were just down the 3^0 to 6^0 slope from the pyramid platforms (Aigner 1982, 382-3). The Sphinx is part of these quarried softer, down-slope layers. Aigner's model outlines the major divisions of the natural rock of the Sphinx, for which I have adapted the terms Member I, II, and III proposed by Gauri (1984, 25).

1.3 Architectural Context

The three pyramid complexes of Khufu, Khafre, and Menkaure (GI, GII, and GIII respectively) define the layout of the Giza Necropolis. The basic scheme of each complex includes the pyramid as the royal tomb, a temple at the center of the eastern base of the pyramid, a long ramp or causeway stretching down to the level of the valley floor, and another temple which served as an entrance, a *torbau* in German, to the entire complex. The valley temple stood behind a harbor that was presumably fed by a canal connected to the Nile. This arrangement gave an east-west orientation to the pyramid complexes, in spite of the fact that the entrances to the pyramids are on the north. The east-west layout gives the impression that the pyramid complexes, particularly those with boat burials near the pyramid, were in one sense symbolic ports for the journey beyond death, a journey that the Egyptians picture as a voyage.

The pyramid, of course, is the dominant element and focus of each of these architectural layouts. As already stated, they are arrayed on a great northeast-southwest diagonal across the approximate center of the great sheet of Moqattam Formation limestone (Fig. 1.2). While this is not the highest ground on the plateau, the elevation of the pyramids, around 60 to 70 m above sea level, affords a platform high above the valley floor while still retaining access to the quarries at the southern base of the slope (Lehner 1985a), and to the valley floor at the eastern base of the plateau. As I have pointed out, this diagonal arrangement of the three pyramids is due partly to geological constraints and opportunities. However the accuracy within which the SE corners of the pyramids align diagonally may suggest a thematic reason envisioned by the Egyptians in addition to the practical reasons for this pattern (Ibid.).

The Sphinx is an absolutely unique addition to the Khafre Pyramid complex. The Sphinx sits at the valley end of Khafre's causeway. The southern side of the Sphinx ditch or sanctuary is a face quarried out of the bedrock aligned to the Khafre causeway. It forms the northern side of the causeway foundation where it enters the northwest corner of the Valley Temple. Another temple in front of the Sphinx must have been built for a cult associated with the Sphinx (Ricke 1970). The masonry of this temple is composed of multi-ton core blocks with granite casing like the Pyramid Temple and Valley Temple of Khafre. The Egyptians built the Sphinx Temple[3] on a terrace some 2.5 m lower than that of the Sphinx. The Khafre Valley Temple is also built on this terrace, level with the Sphinx Temple. The front and backs of the Sphinx and Khafre Valley Temple are nearly in alignment.

Because of this intimate association with Khafre's valley complex, it is highly unlikely that Khufu created the Sphinx, as some have suggested (Stadelmann 1985, 125-6). That the Sphinx is securely part of Khafre's funerary complex is indicated by the stone rubble walls that divide the upper part of the plateau into great rectangular areas, from 330 m (Khufu) to 470 m (Khafre) in width, around the three major pyramids (Lehner 1985a, 157-58). Petrie (1883, 33-38) referred to these as "peribolus walls." In some cases the walls appear to have been built at the same time as the pyramid they surround, as with the so-called Workmen's Barracks west of the Khafre Pyramid, which are an appendix to the peribolus walls.[4]

In other cases, such as the walls west and south of the Khufu Pyramid, they were made after the pyramid had been built. The wall west of the Khufu Pyramid retained an embankment, perhaps for construction in the Western Cemetery *en Echelon* (Lehner 1985b, 124-5), which is made up of 5th and 6th Dynasty tombs (Porter, Moss and Malek 1974, 83-95,141-68). The peribolus wall south of the Khufu Pyramid ran over the southern edge of the Khufu boat pits (Abubakr and Mustafa 1971, 1). These walls around the Khufu pyramid may have been built after earlier ones were removed with the expansion of the Western cemetery and the

Western cemetary and the southern Cemetery GI-s following Khufu's reign.

The peribolus walls probably describe precincts assigned to each of the three pyramid complexes. They may, in fact, describe the territory of the *š*, as in *š n-pr ꜥꜣ*, "royal precinct," (*Königsbezirk*), which Stadelmann (1981) identified with royal funerary enclosures. It has been suggested that the rectangular royal enclosures of the Archaic Period and those of the step pyramids of Zoser and Sekhemkhet at Saqqara survived in the square courtyards defined by enclosure walls around the later pyramids. These enclosure walls were built of fine Turah-quality limestone close to the pyramid base.[5] But, by the time of the pyramids at Meidum and Dahshur, the overall royal precinct, or *š*, for each pyramid was already considerably broader than just the area within the enclosure wall defining the pyramid court. For the first time, at Giza, three new-style pyramid complexes, each belonging to a different king, were built in close proximity across the Moqattam Formation. The peribolus walls were built to delineate the respective royal precincts and auxiliary structures like the so-called Workmen's Barracks west of the Khafre Pyramid.

Fig. 1.5 emphasizes the peribolus walls. I extrapolate the lines of the walls to the east to illustrate how features like the locations of the Valley Temples for each pyramid fall within the respective precincts. The Sphinx sits squarely within the

Khafre precinct, far from the causeway and probable location of the Khufu Valley Temple (Lehner 1985b, 120). The Sphinx and its temple bear little or no topographical or architectural relation to the Khufu complex. Again, this makes it highly unlikely that the Sphinx was built or begun by anyone other than Khafre.

1.4 The Sphinx Immediate Surroundings

The Sphinx sits at the lowest part of the Moqqatam Formation slope (northwest to the southeast) about 500 m east of the Khafre Pyramid, and 400 m southeast of the Khufu Pyramid. It sits in a U-shaped ditch, open to the east, quarried out of the natural rock at the same time that the Sphinx was carved. The floor of the Sphinx within this ditch is one of a series of terraces that are described in detail in chapter 4.

Two large stone temples were built in front of the Sphinx on a lower terrace (Terrace I). The Valley Temple of Khafre southeast of the Sphinx was attached to the Pyramid Temple and Pyramid court by a causeway that was once walled and roofed. Immediately in front of the Sphinx is the Sphinx Temple, which must have been built for an association with the Sphinx (Ricke 1970). Together the two temples occupy an area of 45 X 120 m (Fig. 4.1). The lower terrace is exposed for about 15 m out in front of the Sphinx Temple. Beyond this point it disappears under the sand. Excavations of Hawass (shaded squares in Fig. 1.7) and core drilling by the Egyptian Ministry of Irrigation (p1 in Fig. 1.7) in 1980 indicate that the Terrace I drops off about 55 m east of the Sphinx Temple (Fig. 1.8)

A third temple to the front of the Sphinx is associated with Amenhotep II (Porter, Moss and Malek 1974, 39-40). The base of the mudbrick walls, the door jambs and other limestone parts, and the large limestone Stela of Amenhotep II (Urk. IV, 1276-86) remain from this temple. It is built upon the bedrock terrace (Terrace III) that rises along the north of the Sphinx ditch and Sphinx Temple. The temple is oriented northeast-southwest so that its axis points at the Sphinx's head.

The modern road descending from the Khufu Pyramid runs over Terrace III upon an embankment of debris that is walled off on the side facing the Sphinx. The road runs along the base of a cliff face with rock cut tombs of the Old and New Kingdoms (Figs. 1.6, 1.7). This cliff bounds the greater Sphinx "amphitheater" on the north. The term "amphitheater " refers to the wider depression formed by quarrying, into which the Sphinx ditch was cut yet deeper. Above and to the east of the North Cliff is the Eastern Field of tombs, Reisner's Cemetery G7000.

Behind the Sphinx the amphitheater is bounded by a high cliff face, the top of which slopes gradually from the Khafre causeway up to the north (Fig. 1.6). The cliff appears to be one side of a natural stone ramp bridging the depression of the Sphinx amphitheater and a quarried area to the west. This quarry is filled with debris, probably left over from quarry and construction activity. The debris- filled depression extends along the north side of the Khafre causeway for its entire length, and from the causeway to the row of large mastaba tombs, Cemetery GI-S, south of the Khufu Pyramid. The quarry is about 350 m (E-W) by 200 m (N- S).

On the other side of the Khafre causeway, south and southeast of the Sphinx a crowded cemetery of rock-cut and masonry-built tombs make up the eastern part of the Central Field at Giza (Porter, Moss and Malek 1974, 230ff, Pl. XX), mostly excavated and mapped by Selim Hassan. The cemetery is less orderly than the mastaba cemeteries east and west of the Khufu Pyramid, and in contrast to those tombs built of masonry, many of the mastabas in the Central Field were first large rectangular blocks of bedrock left in the plateau surface when the area was trenched for quarrying stone. These quarry blocks were subdivided by smaller channels until the size of the desired block was isolated, after which the block would be pried loose. The eastern part of the Central Field, then, is a quarry that was never exhausted or worked deeply. It lies between the large basin quarry in the west part of the Central Field, which was probably exploited for the Khufu Pyramid (Lehner 1985a, 1985b, 121-22), and the aforementioned quarry along the north side of the Khafre Causeway, west of the Sphinx. The tombs fashioned into the unused quarry blocks date mostly to the 5th Dynasty. An exception is the 4th Dynasty Tomb of Khamerernebti II, daughter of Khafre and wife of Menkaure (Porter, Moss and Malek 1974, 273-4). This tomb lies directly south of the Sphinx on the other side of the Khafre causeway, and close to the eastern limit of the quarry cemetery.

Between the quarry cemetery and the back of the Khafre Valley Temple a sheet of bedrock slopes down to the south and disappears under a large mound of unexcavated sand (Fig. 1.6). This area has never been excavated completely, although in 1973 Hans Goedicke cleared some trenches into the mound close to the Valley Temple and exposed part of the mudbrick enclosure wall of Thutmose IV. The sandy surface continues for about 100 m south of the Khafre Valley temple. At this point the ground is covered by the Muslim cemetery of Nazlet es-Semman. Like the town, the cemetery has grown drastically over the last several decades. It fills the mouth of the broad wadi separating the Moqqatam from the Maadi Formation. The cemetery ascends the slope of old quarry debris against the face of the prominent knoll, the *Gebel el-Qibli*, of the Maadi Formation that rises above the wadi. The cemetery also covers the west end of the large stone wall, *Heit el-Ghurab,* extending from the knoll to the east (Fig. 1.6). The wall may limit access to the area of the Khafre Valley complex from the tract of low desert to the south, where I have suggested there may have been settlement associated with pyramid building (Lehner 1985b, 135-36).[6]

The area in front of the Khafre Valley temple has likewise never been thoroughly excavated. In 1969 the terrace immediately in front of the temple was paved with limestone and cement as a stage for various performances. The sandy area just to the east of this was also paved as a seating area (Fig. 1.7, numbers 5, 6). The buildings and parking area for the Sound and Light production are east of the seating area (numbers 6-10). Behind the Sound and Light installations, lies the town of Nazlet es-Semman. These modern features are bordered on the north by the road and tourist parking area (number 2). A small area is left open in front of the Sphinx Temple and between the road and the houses of Nazlet es-Semman to the north. These open areas were investigated by Zahi Hawass in 1978.[7]

Chapter 1 Notes

[1] *Ed. note: Originally Thomas Aigner and I thought that the strata showing in the bedrock pedestal of the Khentkawes Monument, and the quarry cut immediately north of Khentkawes (fig. 27) were the same strata as the Sphinx head and body. Indeed the quarry corner immediately northeast of the Khentkawes Monument is "strikingly" similar to the Sphinx bedrock core. I set off "strikingly" in quotes, because the Khentkawes profile is about 45 degrees southwest of the Sphinx, so it should be along the "strike" of the formation, a line perpendicular to the slope or "dip."*

Sometime after I wrote this dissertation geologist K. Lal Gauri and I traced the strata, finger to bedrock, down Bed 5b from the Khafre Causeway to the south, then up through the Central Field East quarry to the Khentkawes

Monument. One can trace the bedrock layers over most of this stretch, although they are obscured by debris in some parts. Already in the farthest east of the house-sized quarry blocks we see Sphinx-neck and head layers. Additional layers superimpose until we see the highest at Khentkawes. Given the tilt, the bedrock strata at the Khentkawes monument are much higher than the Sphinx head layers, not in absolute elevation, rather in the sequence of the natural limestone strata (Hawass and Lehner 1994, 46-47). I reviewed these observations with Tom Aigner in 2010. (These observations should be further tested, documented and published with survey and photographs).

[2] Aigner's model has been criticized, partly on stratigraphic grounds, by Strougo (1985, 97) who sees the "bank" and "back bank" deposits widely separated in time, while the northern part of the plateau was uplifted by tectonic forces intervening between the two.

[3] Ricke (1970, 35) felt that "Sphinx Temple" was too general a name for this temple and called it the Harmachistempel, suggesting that the Sphinx was worshipped already as a form of the sun god, Hor-em-akhet, in the Old Kingdom. While the form of the temple does suggest a solar cult, the name Hor-em-akhet is not mentioned until the New Kingdom, as discussed in chapter 3. By New Kingdom times the Old Kingdom temple was robbed, abandoned, and filled with debris, so Ricke's name seems untenable. Stadelmann (1985, 138) suggests *Sonnenheiligtum des Cheops*, as a name for the temple, in the belief that it was made by Khufu. Since this is also far from certain, and because the temple does lie immediately before and below the Sphinx, the neutral term, Sphinx Temple, seems most appropriate.

[4] The “Workmen’s Barracks” were so named by Petrie (1883,34) after he dug two of the long comb-like galleries attached to the west wall of this enclosure which measures about 430 by 80 m. We investigated these galleries in 1989 *[Ed note: see Conard and Lehner 2001]*. The evidence is that they were for storage and craft production. The east wall of the enclosure is the west wall of the great peribolus rectangle around the Khafre Pyramid.

[5] The enclosure wall of the Khufu Pyramid ran 10.20 m from the pyramid baseline. It was 3.60 m thick at the base (Maragioglio and Rinaldi 1965, 6-7; Lauer 1947, 246). The enclosure wall of the Khafre Pyramid ran about 10.47 from the pyramid base (Maragioglio and Rinaldi 1966, 72-4).

[6] *Ed. Note: South of the Heit el-Ghurab (“Wall of the Crow”), since 1988, AERA teams have excavated 7 ha of 4th Dynasty settlement, called the Heit el-Ghurab (HeG) site.*

[7] *Ed. Note: Conditions east of the Sphinx changed since I wrote in 1991. In 1993 Zahi Hawass, then Director of Giza for the Egyptian Antiquities Organization (=Supreme Council of Antiquities) removed the modern stage in front of the Khafre Valley Temple and, later, the Sound and Light building. The paved road and parking east of the Sphinx Temple was replaced with a circular road around a piazza paved with limestone gravel. In 2002 Mansour Boraik, then Chief Inspector of Giza, excavated east along the northern entrance ramp of the Khafre Valley Temple. In 2010, Essam Shehab directed excavations for Zahi Hawass, then Minister of Antiquities, east along the southern entrance ramp of the Khafre Valley Temple. Shehab also cleared the*

mudbrick walls and pavements of the southeastern corner of the New Kingdom complex, built on sand up to 5 m deep over the 4^{th} Dynasty terrace and entrance ramps. As of this writing (November 2017), tourists enter the north entrance of the Khafre Valley Temple to view the Sphinx from the causeway. They exit along the west and south of the Valley Temple, then east along a corridor lined with souvenir sellers.

CHAPTER 2

The History of Excavation and Recording at the Sphinx

2.1 Ancient Archaeology of the Sphinx

The earliest known record of interest in the excavation and preservation of the Sphinx is "spoken" by the Sphinx himself in the text on the famous granite stela that Thutmose IV erected around 1400 B.C. between the Sphinx's forepaws when the Sphinx was about 1,200 years old. The story of the stela is told to nearly every tourist at the site: Thutmose sleeps in the shadow of the Sphinx's head. The Sphinx speaks to the prince and offers him the crowns of Upper and Lower Egypt, suggesting that Thutmose free the statue from the desert sand and restore the god's ruined limbs. The text breaks off on the deteriorated stela and any account of restoration work on the Sphinx is lost. Thutmose IV's name is found stamped in some of the bricks that were used to build a series of mudbrick walls around the entire site to hold back the desert sand (Hassan 1953, 5-7). This lends credence to the idea that Thutmose IV excavated the Sphinx.

The Thutmose IV stela (Porter, Moss and Malek 1974, 37), along with those of Ramses II found in the chapel between the forepaws (Piankoff 1938, 158; Zivie 1976, 196-8), and numerous votive stelae found in the neighborhood

(Hassan 1953), give stylistic renderings of the Sphinx. Many show a couchant Sphinx upon a pedestal. Six or seven stela show a royal statue at the chest of the Sphinx. Details of the stela differ, such as in the Sphinx's crown, and their reliability as a record of the Sphinx's actual appearance has been questioned (Ricke 1970, 34, nt. 55; Zivie 1976, 308-10).

Papyrus Turin 1882 vs. 3,3, of the time of Ramses II, mentions that laborers were taken to extract stone for *ḥwr m mn-nfr*, which may refer to the Sphinx under one variant of its name Hauron (Gardiner 1937; Caminos 1954). In addition to two chapel stelae, Ramses left other monuments at the Sphinx (Zivie 1976, 194-201). Whether he cleared the Sphinx sanctuary of sand or carried out further repairs to the statue is not known.

The Inventory Stela, or 'Stela of Cheops's Daughter, discovered by Mariette in 1853 in the small Isis Temple east of Queen's Pyramid GI-c at Giza, dated to the 21st or 26th Dynasties (Wildung 1969, 182-4; Zivie 1980, 95), tells of ancient repairs to the Sphinx, specifically to the tail of the *nemes* headdress, and ascribes the repairs to Khufu, implying that the Sphinx precedes Khafre. The account is probably an example of the "authenticating apparatus," an ancient literary motif that bestows great antiquity to texts or monuments (Wilson 1950, 495)-- in this case, the Temple of Isis, which, according to the text, Khufu also restored.

According to a stela set up by the people of the nearby village of Busiris, the Sphinx was cleared of sand again in Roman Times in honor of Nero and the Governor Claudius Babillus (Schwartz 1950, 49, nt. 4; Dittenberger 1960,381-5).

2.2 18th and 19th Centuries

French scholars accompanying Napoleon's expedition to Egypt mapped the Giza plateau and produced impressionistic renderings of the Sphinx (Gillispie and Dewachter 1987, Pls. 11-12, A. Vol V, pl.8). At that time, 1798, the Sphinx was buried in sand up to its neck. The French team probably cleared only the top of the back of the Sphinx, although a story, apparently told to Mariette and repeated by Vyse (1842, 108) and Hassan (1953, 13), related that the French undertook a large excavation in front of the Sphinx and found a door. Hassan suggests that those who told this story may have mistaken the Thutmose IV granite stela that stands against the base of the chest for a door. As far as I know, there is neither evidence nor published description of a French excavation at the front of the Sphinx in 1798.

Caviglia excavated a deep trench in front of the Sphinx in 1817. He worked in collaboration with the British

Consul, H. Salt, who recorded the results of the excavation in notes and sketches; these were published by Vyse (1842). Caviglia found fragments of the Sphinx's beard, the chapel with the Thutmose IV Stela as its centerpiece between the forepaws at the base of chest, and a monumental Roman stairway and viewing platform east of the Sphinx. Chapter 8 describes his findings in the chapel.

Directly east of the Sphinx remains of Roman period pavement still exist, extending from the forepaws. This pavement once led to a stairway, more than 12 m wide (Fig. 2.1). The stairway, which was removed during the Baraize excavations, narrowed as it rose in 30 steps to the platform. At the top, about 19 m east of the forepaws, stood a podium with a small set of four steps leading up to it on its east side (Vyse 1842, Pl. C). One would have looked down from the podium into the Sphinx sanctuary and to the altar between the front paws. The platform narrowed to 8 m behind the podium. The north wall then jogged northward increasing the width of the platform to 10.5 m as it continued eastward. Thirteen meters east of the first flight of 30 steps another flight of 11 steps descended from an even higher level to the platform. Another podium built into the center of this stairway faced the Sphinx ditch. On the basis of fragments found on the spot (Ibid.) Salt reconstructed both podiums with a pair of pillars. Salt observed:

> *That the spectator advanced on a level with the breast and thereby witnessed the full effect of the admirable expression of countenance, which characterizes the features, on either side, to the interesting object, for the contemplation of which, even when he had reached the bottom of the steps, a sufficient glance was allowed for him to comprehend the whole at a single glance* (Vyse 1842, 113).

Caviglia, in 1817, also excavated the small rock-cut tombs of the Saite Period in the western cliff of the NW corner of the Sphinx amphitheater. His results were included in Birch's (1852-53) report of Caviglia's work (Fig.2.2) Greek texts found on the Sphinx forepaws and on small stela, were published by Letronne (1842-1848).

Howard Vyse published his *Operations Carried Out at the Pyramids of Giza* between 1840 and 1842 in three volumes of diary format, but Vyse's work at the Sphinx was limited to boring a large hole down the back in search of cavities, just behind the Sphinx's head. When his drill rod became stuck at about 9 m depth, Vyse ordered gun powder, which he used freely to make exploratory tunnels through the core masonry of the pyramids, to free the drill rod. He reports that "being unwilling to disfigure this venerable monument, the excavation was given up, and several feet of boring rods were left in it" (Vyse 1840, I, 274-5). Vyse should have said “being unwilling to disfigure this venerable monument *further,"* because when the cavity created by his gunpowder was cleared in 1978 under Hawass, it contained not only his drill hole but also a large chunk of the Sphinx's headdress with its relief-carved pleating. Vyse (Ibid.) also cleared tombs in the north part of the Sphinx amphitheater and reached the water table in one of the vertical shafts in order to compare its level with several other measuring points across the plateau.

The Lepsius Expedition re-cleaned the chapel between the Sphinx's forepaw during three months of work at Giza from 1842 to 1843. The expedition produced sections and a plan of the chapel (Lepsius 1849, Pl. 30).

On September 15, 1853 Mariette began excavations at the Sphinx with the financial support of the Duke of Luynes. But that same year he lost patience with the problems presented by the enormous amount of sand and abandoned the work at the Sphinx to explore the Khafre Valley Temple, which was heretofore unknown. An early map of Wilkinson (1878, 360), drawn before Mariette's excavations, labels the mound covering the site of the Valley Temple, "pits, probably unopened."

When he resumed excavations of the Sphinx in 1858, Mariette cleared the sand down to the natural rock floor of the Sphinx and uncovered several sections of ancient protective walls around the site. He also found odd square masonry boxes on the body of the Sphinx. Today, two of these boxes exist on both the south side and north side of the Sphinx - a large and a small one on each side.

Mariette mentions finding three boxes on the north side of the Sphinx and speculated that they might have served as buttresses. However, after observing pieces of shaped stonework lying in debris around the large box on the south side behind the Sphinx's right elbow, Mariette concluded that the box had served as a base for a colossal statue of Osiris (Mariette 1882, 95). No published archaeological record of the Osiris statue exists. However a travelogue of R.P. Laorty-Hadji (1856) reports that Mariette found an Osiris statue:

> *Mais tout récemment, de 1851 a 1853, des fouilles plus complètes, très habilement dirigées par M. Mariette, ont produit des résulte importants. Ce jeune archéologue a trouve une statue colossale d'Osiris appuyée contre le flanc droit du sphinx…Le voisinage de la statue a Osiris, formée de vingt-huit morceaux qui rappellent en combine de parties son corps avait été divise, annoncerait le culte de cette divinité de l'Egypte, dont le grand sphinx lui-même ne serait qu'un simulacre naturel* (Ibid., 382.)

Mariette also cleared out an irregular shaft in the top of the Sphinx's back. He realized that this was the widening of a natural fissure that cuts through the Sphinx body. He thought that the Egyptians created the Sphinx body by shaping a natural rock formation already resembling the leonine body, that they finished the head from the natural rock and completed the body with added masonry. Mariette worked again at the Sphinx in 1880. He cleared completely the interior of the Valley Temple of Khafre but left the exterior walls piled with unexcavated debris.

Mariette published his Sphinx excavations in a brief communication in *Le Sérapéum de Memphis, Notes additionnelles, B, Grand Sphinx de Gizèh* (Mariette 1882). Some additional information about the excavations come from letters Mariette wrote from Egypt to his supporter, Vicomte de Rougé (Mariette and de Rougé (1854, 1860, 1862). In Les mastabas de l'Ancien Empire (1882, 551), Mariette provided a rough, thumbnail sketch of the Sphinx amphitheater. In it, the whole of the Sphinx's body is drawn but it is not true-to-scale. Some of the rock-cut tombs in the cliff north and northwest of the Sphinx are shown partially excavated.

During work on the Giza Plateau from 1880-82, Flinders Petrie took careful measurements of the interior of the Khafre Valley Temple; the outside had yet to be cleared. He published a detailed description of this work and a 1:200 plan in his *Pyramids and Temple of Gizeh* (Petrie 1883, 43-50).

In 1885, when he was Director of the Antiquities Service, Maspero began yet another attempt to clear the Sphinx. Maspero put Brugsch and then Grebaut in charge of the work. Much of what Caviglia and Mariette had found was buried again. Since the entire site had never been cleared, the cavity easily filled up with wind-blown sand. Logistical problems forced Maspero to finally abandon the clearing project after exposing the earlier work of Caviglia and Mariette. Grebaut (1891) and Maspero (1893) published brief reports, but the actual findings around the Sphinx were once again left undocumented.

The condition of the Sphinx following Maspero's work is seen in the earliest photographs (Pl. 5.1) and postcards of the Sphinx that were produced in the late 1800s.

2.3 Early 20th Century

In 1902 Maspero asked Reisner, Schiaparelli, and Steindorf to divide the Giza Plateau among themselves for excavation. Meeting in Mena House, with Borchardt representing Schiaparelli, they cast lots for the Western Cemetery of the Great Pyramid, dividing the field of mastaba tombs into three strips (Reisner 1942, 22-23). The Second Pyramid complex down to the Sphinx was given to the Germans. Reisner took the Third Pyramid complex, and Schiaparelli took the Eastern Cemetery of the Great Pyramid. The

Italian concession was taken over by Reisner on behalf of Harvard University and the Boston Museum of Fine Arts in 1905. The Antiquities Service retained control of the area immediately around the Sphinx.

At the behest of the Spanish Count Galarza, the Antiquities Service excavated a large mound of sand just south of the Sphinx and the Khafre causeway between 1907 and 1909. Kamal (1909) and Daressy (1909) co-directed the excavation and reported the results. They exposed parts of an 18th Dynasty mudbrick building with buttressed walls that Baraize later cleared and removed entirely but did not publish. Wine jar seals with the name of Amenhotep III occurred in association with this structure. In addition to other Old Kingdom tombs, the excavation came upon and cleared the tomb of Khamerernebti II, a daughter of Khafre and wife of Menkaure (Porter, Moss and Malek 1974).

2.3.1 Von Sieglin Expedition

In 1909 Hölscher, on behalf of the Von Sieglin Expedition, took on the German concession for the systematic excavation of the Khafre Pyramid Temples (Hölscher 1912). He continued Mariette's work at the Valley Temple by freeing the front of the Temple. Hölscher's work clarified the connection of the Pyramid Temple with the Valley temple via the causeway, the standard arrangement of the 4th Dynasty pyramid complex. The connection was already recognized by Petrie (1883, 43-50) in his description of the Valley Temple.

The enormity of the deposits that had accumulated over the ages around the Valley Temple is shown in Hölscher's photographs of the clearing operation at the north and south entrances (Ibid., 81, Abb. 71; 117, Abb. 170). In clearing 8 m of deposits down to the rock terrace in front of the temple, Hölscher (Ibid., 80-8) took care to distinguish the principal stratigraphic and architectural layers. The lowest layer was drift sand signifying a period of abandonment after the Valley Temple was destroyed. Upon this layer Hölscher found the remains of a "Privathaus" with a layout like those of the 18th Dynasty at Amarna. The back part of the structure was built against the ruined facade of the Valley Temple, and rose to a height almost equal to that of the Valley Temple. The floor level of the house stood some 5.60 m over the threshold of the Valley Temple entrances. A good deal of blue-painted pottery was further evidence that the structure dated to the 18th Dynasty. Holscher cleared only the west part of the villa along the front of the Valley Temple. A Late Egyptian or Hellenistic mudbrick structure stood above the south side of the 18th Dynasty ruin. This small building was square with limestone-paved rooms. At the north end of the 18th Dynasty ruin Hölscher found a massive mudbrick wall, 4.30 m thick, running eastward from the northeast corner of the Valley temple.

2.4 Baraize Excavation

In 1925 the Department of Antiquities under the direction of Lacau, began long-term clearing operations at the Sphinx supervised by the engineer Emile Baraize. From 1925 to 1936 most of the Sphinx Sanctuary and the Sphinx Temple were cleared out. In spite of the vast quantity and variety of cultural deposits that were uncovered during this eleven year period - not to mention the wind-blown sand that was removed - the only reports that were published are in the form of brief summaries (Lacau 1926; Gauthier 1933; Illustrated London News 1926).

The most valuable documentation of Baraize's work is a series of 226 photographs and some notes from the Archives of Lacau, now in possession of the Centre Wladimir Golenischeff in Paris: Centre Documentaire d'Histoire des Religions, Ecole Pratique des Hautes Études, 5e section, in Paris. These have been loaned to the ARCE Sphinx Project through the generosity of Jean Yoyotte, Director of the Center. Ricke (1979, Tfs. 1-6) included a selection of these photographs in his study of the Sphinx Temple.

Most of the photographs are dated. They present a pictorial year-by year record of the clearing operations, and show a considerable variety of architecture that was eventually completely dismantled by Baraize. Because so much of the architectural history of the site was removed during these excavations, in the paragraphs that follow I have attempted to reconstruct the stages of the excavation keyed to photographs that show the work in progress.

Campaign Winter 1925-26

Reisner (1942, 26) states that Emile Baraize began to clear the Sphinx in 1923. The first photographs in the series, however, are dated September 25, 1925 and they show the sand covering the Sphinx from the top of its rump and sloping down to the right front shoulder (Pls. 5.4, 5.5, 5.7). The Sphinx ditch and the chapel between the forepaws had filled in considerably with sand since Maspero's excavation in 1885.

Baraize began by uncovering the remains of the Roman Period approach to the Sphinx exposed by Caviglia in 1817 (Pl. 2.1). CI 8 (Pl. 2.1) shows the eastern part of the walkway as it was cleared of one or two meters of sand. A small section of the first stairway from the east remains; most of the pavement and the pillared podium that stood in the center of the stairway have disappeared.

By the middle of October the crew had re-cleaned the tops of the forepaws and had cut into a huge accumulation of sand north of the Sphinx. By the first week of November the forepaws were freed entirely from sand, and the floor of the Sphinx was cleared back to the Sphinx's elbows (Pl. 2.3). The chapel between the forepaws had deteriorated considerably since Caviglia's excavation (see chapter 8). Baraize built scaffolding around the Sphinx's head and shored up the lappets of the headdress with ceramic tiles, limestone slabs, and cement.

By December 4, 1925 Baraize had trenched back along both sides of the Sphinx and had found the large stonework box on the south side and the small box on the north flank. The photographs show many large stones lying loose near the large box on the south side (Pl. 2.4). Some of these stones are those that Baraize cut or recut for his repairs on the Sphinx. A gaping hole can be seen through the casing stones on the Sphinx body just inside the box.

The photographs (Pl. 2.4) also show two large pieces of sculpted limestone propped up on smaller stones beside the south forepaw. One has the form of a double crown, the other is a face with worn features. These pieces may belong to the statue of Osiris that Mariette said stood on the box. The pieces have stood by the Khafre causeway, neglected and worn by the elements, for many years since Baraize's excavation. The features of the face and the top of the crown are gone. The 1926 photographs are the only record of the pieces close to their original form (see the crown in the distance in Pl. 2.6)

The photographs show another square limestone structure two or three meters directly south of the box (Pl. 2.5). Steps on the east side lead up 2 m to a square landing. It is not entirely clear whether this is an ancient structure, or a temporary stairway and landing that Baraize built to move sand out of the Sphinx ditch. CI 41 (Pl. 2.3) shows another, higher stairway that accommodated basket carriers as they hauled the debris away. Baraize probably built this higher stairway. The lower platform possibly had a stairway on the west side as well as on the east; it appears to be ancient. It forms a kind of gateway with the large stone box, to the rear of the Sphinx ditch.

Baraize removed the double stairway structure in the course of his excavation. He also tore the walls of the large box away from the masonry on the body of the Sphinx in order to seal up the gap in the masonry (Pl. 2.6). He then rebuilt the walls of the box where they attach to the Sphinx body.

By December 24 Baraize had cleared the two hind paws and was digging the sand filling the back of the Sphinx ditch, following the curve of the rump down to floor level.

At the same time, Baraize cleared off the top of the Khafre causeway.

On January 13, 1926, Baraize exposed a massive mudbrick wall, three or four meters high, in the NW corner of the Sphinx ditch. The wall curved around the corner of the ditch (Pl.2.7) It rested upon a foundation of loose stones (Pl 2.8). He found an even larger wall that curved around the SE corner of the Sphinx ditch, from the Khafre causeway to the Sphinx Temple west wall (Pl 2.9). These wall segments were part of the system of ancient barriers against the sand.

The clearing of the deposits in these deep corners of the Sphinx ditch lasted through the end of January. By the 26th of that month the crew uncovered the floor in the SE corner of the Sphinx sanctuary. The mudbrick wall that turned the corner from the higher ledge of the Khafre causeway rested upon the large limestone core blocks of the Sphinx Temple SW corner as well on several huge core blocks that rested on or close to the Sphinx floor (Pl. 2.10). Here the wall was built upon a foundation of loose stones and mudbrick. From the floor of the Sphinx it stood to a height 8 m (the height of the debris at the front of the Valley Temple according to Hölscher 1912, 118).

By the end of February the entire floor was exposed on the east and south sides of the Sphinx sanctuary. Baraize built a massive limestone and cement wall to retain the sand along the north side of the Sphinx. This incorporated an ancient retaining wall (Pl. 2.11) that marked the north limit of the Sphinx sanctuary in Greco-Roman times. This wall continued eastward to hold back the sand from the broad stairway in front of the forepaws and from a smaller subsidiary stairway on its north side (Pl. 2.12).

Baraize finished his conservation work on the Sphinx's head and back of the neck by covering shoring materials with cement. He completed patchwork on the masonry veneer around the lower part of the leonine body and filled the large fissures cutting the top of the Sphinx's back with cement. The largest of these fissures opened to a width of two meters just at the narrowest part of the Sphinx (Pl. 5.63). It was lined on either side with limestone blocks and cement and left as an open shaft covered with an iron trap door. At the upper part of the Sphinx's rump, Baraize filled a broad opening between the ancient masonry veneer and the Sphinx core body with limestone chips and cement (Pl. 6.27, 6.30). This work continued until the end of April 1926, by which time Baraize was still clearing in the NW corner of the Sphinx sanctuary where he had exposed another large masonry box attached to the Sphinx's haunch (Pl. 2.13).

Campaign Winter 1926-27

When work resumed in December 1926, Baraize began clearing the debris in back of the great mudbrick retaining wall at the SE corner of the Sphinx ditch (Pl. 2.14). He also traced the continuation of the wall as it ran along the top of the monolithic limestone blocks forming the west wall of the Sphinx Temple. Here the mud retaining wall rested on a foundation, about 2.5 m high, that was composed of a core of limestone rubble and mud and lined on the side facing the Sphinx with small un-mortared limestone blocks (Pls. 2.15, 2.16). The width of this foundation was more than 5 m. The top surface of the foundation, after the mudbrick wall had been taken away from it, was fairly level and paved with mud (Pl. 2.17), as though it was the edge of a mud platform on which the massive mudbrick wall was later built.

Baraize quickly dismantled the large mud retaining wall. Underneath it was a smaller wall of well-laid limestone blocks (Pl. 2.16) that also ran along the west wall of the Sphinx Temple. This led northward to the broad flight of Roman period steps that ascended from the Roman pavement in front of the Sphinx's forepaws.

On the east side of the wall, Baraize began to dig deeply into the interior SW corner of the Sphinx Temple. The floor of the Sphinx Temple is built on Terrace I, about 2.5 m lower in the natural rock than the floor of the Sphinx sanctuary, so that the trenching along the inside of the Sphinx Temple walls carried the excavators much deeper than the floor of the Sphinx. At the same time, Baraize began to clear small mudbrick structures at the highest level of the mound covering the Sphinx Temple (Pl. 2.18) In the sandy debris filling the SW corner of the Sphinx Temple, Baraize found several large limestone pieces, and granite cornice blocks (Pl. 2.19). Ricke (1970) has shown these came from the adjacent Khafre Valley Temple.

Campaign Winter 1927-1928

Baraize continued excavating in the SW corner of the Sphinx Temple around September 28, 1927. By this time he had excavated the south rear (storage?) room of the temple. On top of the mound covering the Sphinx Temple Baraize cleared many small mudbrick walls that formed small rooms (Pls. 2.20, 2.21). We can only guess at the function of these structures; they are outside of and roughly contemporary with the taller mudbrick wall that lined the approach and viewing platform in front of the Sphinx (Pl. 2.20).

By October 1927 the team had re-cleaned the terrace in front of the Valley Temple as far as Hölscher had cleared it. Baraize began to attack the immense mounds of debris just off the NE corner of the Valley Temple, no doubt suspecting the existence nearby of the SE corner of the newly found Sphinx Temple.

The corner of the Sphinx Temple was found quickly. In front of it and equal in height to the tops of the temple walls, a mud stairway descended from south to north in broad shallow steps each of which were no more than 10 cm high (Pl. 2.22). The stairway was well formed of plastered mud-daub over a core of limestone rubble. There were rounded banisters on either side that ended in a roll at the bottom (Pl. 2.23). The stairway led from the 18th Dynasty villa that Hölscher found attached to the front of the Valley temple into a small courtyard defined by low rounded walls (Pl. 2.24).

Ten to fifteen meters east of the stairway, the crew cleared a large mudbrick wall that was built in sections about 8 to 9 m long (Pl. 2.25). The wall ran north-south to the to the east of the (still buried) Sphinx Temple east wall. The wall is typical of Late Period enclosure walls around other temple sites. It may have attached to a massive mudbrick wall that Holscher found extending from the NE corner of the Valley Temple. Together these walls enclosed the area of the viewing platform built over the Sphinx Temple ruins east of the Sphinx.

Campaign Winter 1928-29

By the fourth season of work, in 1928, Baraize had exposed most of the west wall and the exterior south wall of the Sphinx Temple. The corridor between the Sphinx Temple and Valley Temple was clean. A crew continued to dig laterally into the mound that covered the Sphinx Temple from the SE corner of that temple.

By late in October 1928 the top of the high western ledge of the Sphinx amphitheater (Terrace IV) had been cleared. A mudbrick wall, the second line of defense in the ancient system to hold the sand away from the Sphinx ditch, ran along the edge of the ledge. This wall had already been exposed by Caviglia's work and it appears in the stylized plan of that excavation published by Birch (1852-53) (Fig. 2.2). Two massive bastions attached to the west side of the wall just above the SW corner of the Sphinx ditch (Pl.2.26). Only a small patch of this mudbrick remains today. From here a thinner mud wall runs eastward along the shoulder of the causeway. Baraize built his own limestone and cement retaining walls along the western ledge a few meters west of the ancient mudbrick wall. These were removed when Selim Hassan continued the work in 1936.

By December 1928 Baraize had carefully cleaned the viewing platform at the top of the broad Roman stairway in front of the Sphinx. The pavement of the platform, as well as the podiums and altars, were badly damaged since Caviglia found them (Vyse 1842). In 1929 Borchardt did a 1:700 scale plan of the site at this stage of excavation that has never been published (Fig. 2.3). The plan includes the forepaws of the Sphinx, the area of the Sphinx Temple and the outlines of the Valley Temple. It shows the SW corner of the Sphinx Temple cleared north along the west wall as far as the Roman stairway in front of the Sphinx. Borchardt included the platform at the top of the stairs. He shows the mud stairway in front of the SE corner of the Sphinx Temple descending to a small court. An wall with buttresses or bastions on the west side encloses a wider area around this court. In some of the Archive Lacau photographs (Pl. 2.27) we see this thin mud wall coated with white plaster, standing high above the massive stonewall of the Sphinx Temple court after the rubble fill of the Sphinx Temple had been cleared away on either side. Below his plan Borchardt gives a N-S section showing the area from the mud stairway to the 18th Dynasty villa at the front of the Valley Temple. The complete floor plan of the villa is shown. Hölscher had extrapolated the floor plan from the part of the villa that he excavated along the front of the Valley temple. Borchardt seems to fill in the walls with solid shading where Baraize found additional parts of the villa. The thick mudbrick wall seen in the Arch Lacau photographs, running in a N-S direction east of the Sphinx Temple, attaches to the NE corner of the villa in Borchardt's plan. Borchardt must have sketched this plan after Baraize excavated beyond the area that Hölscher cleared in front of the Valley Temple.

Campaign 1930

By 1930 the SW part of the Sphinx Temple had been cleared down to the bedrock floor. The excavators found many granite cornice pieces and limestone ceiling plates - probably from the Valley Temple - toppled about in the debris (Pl. 2.28). Baraize cleared the SW corner down to the rock floor while leaving the rest of the temple choked with tall mounds of debris filling the northern two thirds of the temple and supporting the Graeco-Roman viewing platform and the mud stairway over the SE corner of the Sphinx Temple.

The viewing platform and stairway at this stage did not correspond entirely to the plan H. Salt produced during Caviglia's excavations. The broad limestone stairway was still mostly intact with 27 out of 30 steps (Pl. 2.29). Between its northern banister and the enclosure wall of mudbrick and limestone facing, a higher and narrower stairway descended to the Sphinx floor and the eastern end of a corridor formed by the north forepaw and the retaining wall along the north side of the Sphinx ditch (Pl. 2.12). At the top of the broad stairway there was a large patch where the pavement was missing (Pl. 2.30). There was no trace of the podium that Caviglia found here. Along the line marking the original top of the stairs, there was a remnant of a north-south wall composed of odd limestone pieces. The excavations had already taken away the south side of the broad stairway. The steps hung out over the slope of debris down to the Sphinx Temple floor.

Some pavement still remained farther east on the viewing platform. Most of it was composed of small square limestone slabs with a rough surface (Pl. 2.31). Long rectangular limestone slabs with a smoother and whiter surface remained of a higher pavement. The latter pavement is probably the one that Caviglia found. The pavement terminated on the east at a narrower walkway (Pl. 2.30), composed of limestone slabs similar to the lower pavement of the platform. Just at this termination, parts remained of the second stairway - the first from the east - that Caviglia found. There was also a trace of the foundation for the podium that lay in the middle of the stairway.

Caviglia's second stairway (Figs. 2.1, 2.2) descended from a level (Pl. 2.2) that Baraize had excavated away by the time panoramic views were shot that allow us to see the general area of the viewing platform (Pl. 2.30). The second stairway was part of a Roman Period reconstruction that probably included the second pavement on the viewing platform.

In the middle of the walkway, a square limestone structure opened to the west toward the Sphinx (Pl. 2.32). It was composed of five to six courses of limestone blocks that rose to a height of about meter. Caviglia's second stairway probably covered this structure, which is too far east to be part of his second podium.

Behind the limestone structure another square structure of plastered mudbrick straddled the south edge of the walkway (Pl. 2.33). The thick walls formed an angular U-shape that opened to the north onto the walkway. The structure was only about .40 m high. It may have been based on a lower level and the pavement built up around it. The pavement meets the walls, but it is not clear whether the structure was built before or after the pavement. The interior walls of the U-shape have a molding around the rim that give the appearance of a cornice (Pl. 2.34). Remains of painted graffiti were found on the plaster walls. This structure may have served as the basis for a shrine or naos on the way to the Sphinx.

Farther east, the paved walkway leads to the massive pan-bedded, mudbrick enclosure wall that runs N-S (Pl. 2.30). Either the wall terminated at the end of the walkway, or else a built-opening through the wall existed at this point. It is hard to tell because in the photographs the south side of this opening is still encumbered with sloping sand. However, limestone steps descend through the opening. These could be temporary steps that the modern excavators constructed, or very possibly a third set belonging to the Roman period approach.

Just south and slightly east of the two square structures about two to three meters lower in the accumulated deposits, the mud stairway with rounded banisters lead down to a narrow court that is defined by rounded railings (Pl. 2.30). The stairway and its landing probably date from a considerably earlier period than the viewing platform and walkway.

These structures were built on debris that filled and covered the north half and southeast corner of the Sphinx Temple. By 1930 Baraize cleared the southwest corner of the temple down to its bedrock floor.

Campaign Winter 1931-32

Already, by December 1925, Baraize had begun to clear the Khafre causeway as he excavated the south side of the Sphinx ditch (Pl. 2.3). As this clearing moved south of the causeway in 1931 Baraize exposed parts of the same buttressed mudbrick walls that Kamel and Daressy encountered in the Galarza excavation. These walls, which had bastions at regular spacing, were part of the retaining system apparently created by Thutmose IV. The excavation cleared the ends of other walls that ran north-south (see upper right of Pl. 2.27).

"Rest House of Tutankhamen"

As the clearing moved southward behind the Khafre Valley temple, the excavation revealed that the north-south walls south of the Khafre causeway belonged to a large mudbrick structure. Although the structure was apparently never mapped nor published, it was removed in the course of Baraize’s excavations (Pl. 2.35). The structure included a limestone doorframe inscribed with the name of Tutankhamen and his queen Ankhesenamen (Pl. 2.36 shows the un-inscribed backside). These names had been plastered over and that of Ramses II added (Van Dijk and Eaton-Krause 1986). Hassan (1953, 100 Fig. 73) published the door frame and suggested that the building might have been either a habitation for priests or a rest house for kings during their hunting excursions and stopovers at Giza. He mentioned that the building contained a bath for the "royal hunter." The building became known as "the Resthouse of Tutankhamen" (Porter and Moss 1974, 41). Zivie (1976, 51) noted that the foundation of the structure contained several pieces that were registered in the Cairo Museum under the single number, RT 27/5/36/1. These included the earliest New Kingdom inscription known from the Sphinx site, dating to Amenhotep I (Ibid.). Zivie (Ibid., 273, no. 2) believes these are votive objects and suggests that the mudbrick structure was a chapel that Tutankhamen built for Haroun, one of the divine names given to the Sphinx.

The nature and location of this structure can be determined from the Arch. Lacau photographs, which include both detail and panoramic views. The panoramic views are to the south, probably from the top of the Sphinx (Pls 2.37, 2.38). The structure was built upon loose sand three or four meters higher than the rock floor behind the Khafre Valley Temple (Pl. 2.39). The structure was rectangular, oriented north-south, about 12-13 m wide and 35 m in length. The walls stood at a height of one to 3 m. The north end of the building stood about 5 m from the south side of the Khafre Causeway. The south side was situated about 10 m east of the Mastaba of Kaw-niswt (Porter, Moss and Malek 1974, Pl. xxiii). The mastaba was excavated by the time that the photos were taken, but it lay much lower than the mudbrick structure (Pl. 2.37).

The building contained eleven rooms arranged on either side of a central wall. The rooms along the west were slightly wider than those along the east. There were two entrances to the building on the east. Inside the southern entrance a left turn (south) brought one before another doorway. The limestone doorframe of Tutankhamen stood here with the inscribed side facing north (Pls. 2.35, 2.36; the door is removed in Pls. 2.37, 2.38). The back of the doorway was rough and un-inscribed. There is some indication that the building north of the doorway was a later addition, so that the doorway stood originally as the main entrance for the rooms behind or south of it. After passing through the doorway, one turned right to face an entrance to a square room with two limestone columns of which only the bases remained (Pl. 2.40). The entrance was marked with a limestone threshold, as were all the other doorways in the building, and was aligned with the center between the two column bases. Two exits opened south of the pillared room.

In the antechamber, which was entered through Tutankhamen's doorway, one could pass the entrance to the pillared room and proceed south to two small chambers attached to the east wall of the building. These appear to constitute a bath (Pl. 2.41). The chamber to the south is 2 m square (Pl. 2.42). The floor and base of the walls were lined with limestone slabs while the rest of the walls (and probably the entire building in its original condition) was plastered. A limestone slab ran across the threshold, fronted by a small limestone porch, so that one stepped over the slab when entering the cubicle. A hole ran under the wall separating the two small chambers. This lead directly to a basin carved from a single piece of limestone sunk into the dirt floor at the base of the partition wall in the north chamber (Pl. 2.43). The hole and basin were for draining water from the adjacent chamber.

The entire building looks very much like a royal rest house of the kind that may have existed at sites to receive royal visits (Kemp 1989, 219).

Sphinx Viewing Platform

During the 1931-32 season Baraize cleared the debris filling the Sphinx Temple immediately to the west of the 18th Dynasty mud stairway that descended from the direction of the Khafre Valley Temple facade. To reiterate, the mud stairway led down to a landing limited on the north and south by a low rounded railing of white plastered mud. About 10 m west of the stairway and landing, stood a similarly plastered mudbrick wall with small bastions characteristic of the 18th Dynasty enclosure wall around the site (Pl. 2.27). This wall ran north to south parallel to the stairway and landing on debris along the tops of the limestone core blocks that form the east wall of the Sphinx Temple court. As the south vestibule and south antechamber of the Sphinx Temple were cleared out, this wall, as well as the mud stairway (Pl. 2.30), were left standing high above the Old Kingdom floor.

During the clearing, rail lines for Decauville cars ran eastward and south out of the Sphinx Temple for dumping beyond the front of the Khafre Valley Temple (Pl. 2.44). The progress of the excavation this season can be traced from a series of undated photographs from the Archive Lacau.

The broad Roman Period limestone steps in front of the Sphinx were stripped away from the bottom up (Pl. 2.45). Where they rose over debris burying the Sphinx Temple, they were built upon a layer of limestone chips, lime mortar and sand that capped the fill of the temple below (Pl. 2.46). Where the steps passed over the large limestone core blocks of the Sphinx Temple west wall (only on the south end of the stairway), sockets for the steps had been cut into the core block. Otherwise, the steps rested upon a thick layer of compact mud (Pl. 2.47). The subsidiary narrower stairway on the north of the broad stairway (Pl. 2.29) was left intact. It remained until 1982 when the limestone steps and banister were removed and the stairs were entirely rebuilt with new stones on the ancient mud foundation.

As the broad stairway and its mud foundation were removed, remains of a smaller stairway were found underneath (Pl. 2.48). Only the mortar, preserving the pattern of the steps, remained of this earlier stairway; the steps had been removed sometime prior to the construction of the broad stairway. The early stairway was on line with the Sphinx, built into the west wall of the Sphinx Temple just where an Old Kingdom core block was missing or had been cut away. The early stairway was about 2 m wide. On the south side of the early stairway a pattern of steps was cut into the core block of the Sphinx Temple wall for a width of .60 m (Pl. 2.49) The steps cut into the large core block more or less match the mud steps in the core block gap. The steps cut into the core block may be part of the same stairway, slightly higher because the rock of the core block sufficed as steps that were flush with those of laid limestone slabs beside it. On the other hand, it could be a later stairway, also missing, that was built at a slightly higher level than the mud and mortar steps. Across the rest of the core block southward, the broad Roman Period steps that Baraize removed left a shallower stepped pattern.

Ricke (1970, 15) discussed the early flight of steps in relation to the question of how, in the Old Kingdom, one reached the Sphinx terrace from the lower terrace of the Sphinx Temple. There is no evidence of such access. These stairs could not be Old Kingdom, as Ricke rightly concluded, since they are built upon the rubble fill of the Sphinx Temple. Ricke called attention to limestone slabs at the base of the stairs (Pl. 2.49) that form what looks like a landing This structure was covered by the broad Roman Period stairway. When the upper part of the Roman stairway was removed, Baraize found remains of another limestone platform at the top of the early stairway as well as the remains of a limestone wall enclosing the earlier stairway on its north side (Pl. 2.49). Just as the Roman arrangement consisted of a viewing platform and stairway down into the Sphinx sanctuary, so the structures underneath of it were part of a similar layout.

According to the notes in the Archives of Lacau (RC CI 37 *recto*) it was just at the top of the small stairway, and therefore at the location of the masonry platform, that Baraize found a limestone door jamb inscribed with the name and titulary of Thutmose IV (See Zivie 1976, 157-8, pl. 10). A photograph of the jamb in the Archives Lacau (Pl. 2.50) was taken on site, probably near the spot where it was found. As Lacau stated in his unpublished notes (RC CI 37), the *mn* sign in Thutmose IV's cartouche had been hammered out, it was probably taken for the name Amon during Akhenaten's reign, and subsequently replaced. Another photograph shows a doorframe with a limestone top inscribed with Thutmose IV's plumed cartouches (Pl. 2.51). The engraving of the hieroglyphs is very similar to the doorjamb, and *mn* is once again hacked out. This could have come from the same spot. The jamb itself indicates that a doorway of Thutmose IV stood at the top of the stairs and opened toward the passage descending into the Sphinx sanctuary.

A few meters farther east of the top of the stairs a square mudbrick construction was uncovered when Baraize removed the Roman stairway and viewing platform. It is earlier and lower in the stratification than those features. The south wall of this construction ran to the east aligning with the limestone wall at the top of the north side of the small stairway. Except for this mud wall, most of the east side of the mudbrick construction was disturbed by the time the Arch. Lacau photographs were taken; it looks like it may have formed a higher platform from which one stepped down to the limestone platform at the top of the stairs, possibly to go through the door frame of Thutmose IV. On top of the mudbrick platform, thin walls with white plastering form a square U-shape, a podium, open toward the Sphinx; this looks like an earlier version of the chapels or podiums that were built on the later viewing platforms higher in the depositional sequence.

The removal of the higher viewing platform revealed a lower terrace of packed mud on which the podium of plastered mud was built. This surface extended over most of the area east of the Sphinx; it was fairly level and uniform with only a slight slope toward the Sphinx. It extended from the mudbrick podium to the bastioned walls running N-S on the debris over the east wall of the Sphinx Temple court. The wall is about 12 m east of the podium. The mud surface attached to the top of that wall, was preserved, while the wall was laid upon another mud floor about one meter lower under loose clean sand. These two levels of mud paving show clearly in the great section that Baraize cut through the deposits filling the Sphinx Temple (Pl. 2.52), and in the section under the broad Roman stairway (Pl. 2.46). The lower mud floor was laid upon several meters of loose sand that filled the Sphinx temple all the way down to the Old Kingdom bedrock floor. These two mud floors are on approximately the same level as the landing at the base of the mud stairway in front of the SE corner of the Sphinx Temple (Pls. 2.27, 2.30 2.53).

As Baraize excavated between the podium and the bastioned wall to the east, he exposed the earlier floor upon which the bastioned wall was laid (Pl. 2.54). A thinner mudbrick wall extended westward perpendicular to the wall with bastions. This enclosed the area of the podium on the south while the bastioned wall sealed off the podium area from the east (Pl. 2.55), and from the direction of the mud stairway and landing. A faint trace of another thin wall ran westward from the bastioned wall to the location of the mud podium (Pl. 2.54).

The cut through these features indicated that the bastioned wall was contemporary with the lower mud floor, while the mud podium was contemporary with the higher mud platform. The excavation behind the podium showed that it rested on one to two meters of sand that had accumulated over the earlier floor (Pl. 2.54, 2.56).

When the mud floors, bastioned wall, and mudbrick podium were built, the limestone core blocks forming the third course of the Old Kingdom Sphinx Temple were already exposed just above the surface.

In May 1932 a series of *vues panoramiques* of the site were photographed from the top of the Sphinx's head. These show that Baraize had taken away the narrow stairway that stood through the gap in the Sphinx Temple west wall (Pl. 2.57). He had dug deeply down into the north back room of the Sphinx Temple just underneath the stairway and about one third of the temple had been cleared. Four meters of debris remained from the mud platform to the temple's bedrock floor. To the north, the excavations left a rough east-west section through eight to ten meters of debris above the mud platform. The only map of the site in the Archives of Lacau show this stage of the excavation (Fig. 2.4).

Sometime during this season (1932) Baraize found a foundation deposit of Amenhotep II. This was the first of three foundation deposits of Amenhotep II that are known from the site. Van Dijk (1989, 67) suggested that Baraize found two such deposits, one in 1928 and 1931, but this seems to be a misreading of Zivie (1976, 121) who states that Baraize found his Amenhotep II deposit between these dates. Only one deposit is shown in the Arch. Lacau photographs (Pls. 2.58a, b). It includes eight alabaster vessels inscribed with *nṯr nfr ꜥꜣ ḫprw rꜥ mr Ḥr-m-ꜣḫt,* "the perfect god, Aakheperure, beloved of Horemakhet." The deposit also included pottery vessels, an oval limestone piece with the same inscription, and copper implements. Hassan (1953, 21-22, Figs. 112-13, pls. VI-VII) published photographs of these objects along with the alabaster vessels.

Artifacts from another foundation deposit of Amenhotep II, almost certainly from the Sphinx area, came on the antiquities market in New York in 1936. According to Zivie (1976, 121) these must have come from a clandestine excavation between 1930-36. The cache included six votive pottery jars, three semi-circular plaques, and twelve blue faience plaques inscribed with the same text as the alabaster jars of the Baraize collection. This cache received a great deal of attention because six of the plaques are inscribed "beloved of Hauron-Horemakhet" (van Djik 1989, 66), although the transcription is uncertain (Zivie 1976, 122).The orthography of the plaques connecting the Semitic god Hauron with the Sphinx as Horemakhet is different from those mentioning only Horemakhet. According to van Djik (1989, 67):

> One might suggest that the plaques mentioning Hauron derive from a deposit from another structure of Amenhotep II, or perhaps a later addition to the temple of Harmakhis. No traces of either of these buildings have so far been found, however.

Hassan found (1953, 53) a third foundation deposit of

Amenhotep II mentioning Horemakhet under the SE corner of the Amenhotep II Temple as he dug out the corridor between the Sphinx Temple north wall and the bedrock ledge underneath the corner of the Amenhotep II Temple. Hassan does not illustrate the objects from this deposit but he says that "it consisted of over eighty different types of pottery vessels as well as two cylindrical alabaster vases bearing the cartouche of Amenhotep II and a semicircular piece of alabaster bearing the same name" (Ibid.).

The authors who have discussed these deposits to date, with the exception of van Djik, have assumed that they were all from the Temple of Amenhotep II that Hassan discovered during his 1936-37 season. Hassan states that Baraize recovered "some foundation deposits from the Temple of Amenhotep II that at that time was still undiscovered" (Ibid., 21). Later he says "we found part of a foundation deposit similar to that discovered by Baraize at the opposite side of the temple" (Ibid., 53).

Lacau, in his unpublished notes, mentioned a chapel of Thutmose IV and Amenhotep II when discussing the date the granite sheathing was removed from the Sphinx Temple walls:

> *Parmi tous les blocs éboulés dans les déblais il y en a plusieurs très intéressants. D'abord il est sûr après le plan de la chapelle d'Aménhophis II Thutmose IV que tout le parement avait été*

arraché avant cette date.... (RC CI, 32).

Later, Lacau appears to have meant to describe the mud platform, podium, and doorway of Thutmose IV at the top of the stairway before the Sphinx. In this context, he makes a note to himself to study the foundation deposit, presumably that found by Baraize during this season:

> *Le plateau (radier) de briques crues (2 épaisseurs seulement encore en place, prendre les dimensions des briques) est place à une hauteur montrant l'épaisseur du sable a l'époque d'Aménophis II. Il est assez près de l'enceinte du Sphinx pour que l'on voit clairement qu'a ce moment déjà toute la façade avait été dépouillée de son parement de granit. On a'aurait pas pu exploiter ce parement sans démolir ce radier de briques pose sur sable s'il avait déjà été pose.*
>
> *Étudier le dépôt de fondation.*
>
> *Le montant de porte de Thutmose IV un peu au-dessus, étudier les formules du protocole. Le signe est martelé par erreur comme dans le nom D'Amon. Il est taille dans le calcaire fin qui doit provenir di revêtement du mur de la 4e dynastie.*

The foundation deposit of Amenhotep II that Baraize found must come from the enclosure, mud floors, and podium in front of the Sphinx, possibly from the foundations at the top of the stairway that was removed in 1932 (Pl. 2.57). Eight to ten meters of debris still covered the Amenhotep II Temple that Hassan found. It seems unlikely that Baraize, or clandestine diggers, managed to sink a hole through this debris down to the foundations of that temple. Therefore, the Brooklyn foundation deposit of Amenhotep II probably comes from the 18th Dynasty architecture directly east of the Sphinx. The same may be true for the lintel of Amenhotep II that Baraize found. On the other hand, the fact that this lintel is identical to door 6 in the Amenhotep II Temple led Zivie (1976, 113, 120) to the conclusion that it came from the opposite door 7 in the temple, and that it was removed in ancient times. Lacau's parenthetical remark that the platform of the time of Amenhotep II is only two bricks thick refers to the lowest of the two mud floors, shown in one photograph of the floors in section, just above Baraize's temporary retaining of loose stones (Pl. 2.59).

Campaign Winter 1932-33

In late November 1932 Baraize cleared the area behind the Khafre Valley Temple. He exposed the bedrock floor immediately behind the temple and here he found several pieces of the temple's granite casing and many limestone roofing plates. He left a standing section, about three or four meters high on the west. The remains of "Tutankhamen's Rest House" stood at the top of this section, which was comprised mostly of drift sand. The photographs show another dark mud/mudbrick layer upon the bedrock surface on top of the ledge marking the limit of Terrace I (Pl. 2.39). This is probably the remains of Old Kingdom mudbrick structures, like those along the south side of the Valley Temple. Unfortunately, on the west side, there is no indication of their form.

Baraize continued to clear southward and eastward around the SW corner of the Valley Temple. He found the continuation of the mudbrick bastioned enclosure wall running southward from the SE corner of "Tutankhamen's Rest House" (Pl. 2.60). He dismantled the wall as his clearing progressed. He also took down the walls of the Rest House and eventually removed it altogether (Pl. 2.61). In the foundations he found many pieces of stelae dedicated to the Sphinx as Horemakhet and to Horus as the falcon with the name Horemakhet. He also found small limestone and faience sphinxes, small limestone and faience falcons, small blue “porcelain” ears, and many pottery vessels. Lacau noted that these were not foundation deposits, but *ex votos*; all were broken before interment. He further noted that it was not clear from the excavation whether they had been buried before or after the building was erected (RC CI 73).

In December 1932 Baraize continued clearing the front of the Valley Temple. Seven photographs (CI 170-76), all taken about the same time, show the stratification near the northern limestone entrance ramp of the temple. The large pan-bedded mudbrick wall that ran north-south in front of the Sphinx Temple was founded 10 m above the Old Kingdom rock floor (Pl. 2.62). Baraize shored up the debris at the front of the southeast corner of the Sphinx Temple. About 4 m below the pan-bedded wall Baraize found other substantial mudbrick walls (Pl. 2.63). These are the foundation walls of the 18th Dynasty "villa" that Hölscher had found attached to the front of the Valley temple. Just above the northern limestone entrance ramp of the Valley Temple, the mudbrick walls rested on about 2 m of loose clean sand. A large piece of the Valley Temple's granite casing protrudes from the sand layer. This is stratigraphic testimony to the fact that the Valley Temple had been stripped and abandoned before the 18th Dynasty - the date of the "villa." Baraize cut a section along the path of the entrance ramp straight through the mudbrick walls (Pl. 2.64; reproduced in Ricke 1970, Tf. 17b).

Baraize traced the northern stone entrance ramp of the Khafre Valley Temple farther east. The ramp slopes down from the terrace in front of the Valley Temple and then levels off for a width of a meter or two. On the east side of the level part deep cuttings may have been created for an entrance doorway. Two narrow bars are cut in raised relief just beyond the cuttings. From the bars, the ramp continues to slope downward to the east. This part of the ramp is pocketed by water erosion. It is not clear whether this marks the ancient water line of a harbor, or the action of the ground water over the ages. The ground water was already seeping into Baraize's excavation at the end of this trench (Pl. 2.64).

Farther east, under two to three meters of sand, Baraize found a continuation of the bastioned enclosure wall, most likely built by Thutmose IV, running north-south roughly parallel to the front of the Valley Temple (Pl. 2.65).

Season Winter 1933-34

The photographic record of the Baraize excavation ends with the 1933-34 season, for which there are only two photographs. They both show the excavation proceeding north of the Sphinx Temple. Baraize began to take down the enormous amount of debris that towered above the north side of the viewing platform with its mud podium in front of the Sphinx.

North of the Sphinx Temple, but very high up in the accumulated debris, Baraize found a square mudbrick building with thick massive walls (Pls. 2.66, 2.67). No plan or description of this structure has been published. The building is almost level with the base of the massive pan-bedded mudbrick wall that ran north-south out in front of the Sphinx Temple. The building measures about 14.5 m (E-W) X 17.6 m (N-S). The axis of the building is slightly west of south; it seems to point toward the mudbrick podium associated with the mud surface or viewing platform in front of the Sphinx. The south side of the building may have included a front porch encased with limestone slabs. The building is shown in an aerial photograph of the Sphinx site that Ricke (1970) published on the lower frontispiece of his Sphinx Temple study. The wider aerial view of the Giza Plateau that Ricke published in the upper part of his frontispiece shows the Sphinx site after the excavations of Selim Hassan. Here we see the earlier Amenhotep II Temple that Hassan cleared. The building from Baraize's 1933-34 season is slightly east of the position of the Amenhotep II Temple which lay partially underneath it. The Amenhotep II Temple was oriented west of south so that it pointed to the Sphinx's head. The correspondence in position and approximate orientation suggests that this building could have been a replacement for that of Amenhotep II.

The aerial photograph in Ricke's frontispiece indicates the condition of the site near the end of Baraize's work. A bastioned wall extended 48 m eastward from near the NE corner of the Valley Temple. At this point it turned ninety degrees and ran south about 27 m. This is the wall Baraize exposed in front of the Valley Temple (Pl. 2.65). It probably turned again and ran westward parallel to the south side of the Valley Temple and connected up to the bastioned wall that Baraize found extending from the "Tutankhamen Rest House." We know that from there the wall ran westward, then north to cross the causeway, and west again to the SW corner of the Sphinx ditch and amphitheater. Two very thick bastions were built at this corner against the part of the wall that ran northwards along the top of the western ledge of the amphitheater. This part of the wall and the bastions are clear in the aerial view. This photograph shows that Baraize was also beginning to clear the rest of the 18th Dynasty villa in front of the Valley Temple. He had already built massive cement and limestone retaining walls three meters in front of the Sphinx Temple, running the entire width of the temple to hold back the debris.

Although Baraize's record ends at this point, it is evident that he went on to excavate further before Selim Hassan took over the work in 1936. The condition of the site as it passed to his charge is not entirely clear from Hassan's (1953) report. He noted:

> Thanks to the work of M. Baraize, and the

> protective walls built by him, the actual Court of the Sphinx, as well as most of its temple, were comparatively free from sand, and merely needed some cleaning. But this was only for a very limited area, and the remainder of the surroundings of the Sphinx were wholly encumbered with sand, stones, and debris, the accumulation of ages; to say nothing of the ruins of mudbrick buildings of different periods (Ibid., 31).

Hassan's (Ibid., 20, Fig.10) photograph of Baraize's retaining walls in front of the Sphinx Temple show that the entire front of the Sphinx Temple had been cleared before Hassan began his work. In his Pl. XV (Ibid.) we see most of the interior of the Sphinx Temple cleared except for a pile of debris against the north wall.

2.5 Selim Hassan Excavation

Selim Hassan took over the excavations of the Sphinx area on October 4, 1936 on behalf of Cairo University. Most of the Sphinx sanctuary and Sphinx Temple had been cleared. Substantial deposits remained along the north side of the amphitheater, from the Sphinx ditch to the North quarry ledge, and northeast and east of the Sphinx Temple. Hassan's excavation reports (Ibid., 31-68; 1960) are neither structured nor comprehensive. We do not know, among other things, whether Hassan removed the large (Late Period?) mudbrick structure north of the Sphinx Temple that Baraize uncovered in his last season.

Season 1936-37

Hassan's clearing progressed, from October 4, 1936 to June 10, 1937, as follows:

1. The retaining wall that Baraize built north of the Sphinx was pulled down. Hassan began where Baraize had stopped at the higher levels immediately north and northeast of the Sphinx Temple. In what may be a reference to the large structure with the massive walls at this spot, he says: "There were also some later mudbrick structures at this spot which, after photographing, planning and recording, we were compelled to pull down…After a few days we came upon a part of the system of protective walls erected by Thutmose IV…" (Ibid., 31-21).

Hassan also had a team clearing the passage between the north wall of the Sphinx Temple and the rock-cut ledge. Here he speaks of coming to a mudbrick wall of Thutmose IV—perhaps the one immediately in front of the Amenhotep II Temple (see below). At the western end of the passage Hassan recovered a foundation deposit consisting of pottery and alabaster vessels, which was under the southeast corner of the Amenhotep II Temple.

2. On October 20 Hassan's men came upon the large limestone stela of Amenhotep II and began clearing it and the mudbrick temple of Amenhotep II. They worked through December

and found various stelae and limestone door elements. Just outside the main entrance of the temple to the west, Hassan found the ruins of later structures that had been added to the front of the temple. These included chambers containing ash and a circular oven. A stela of Thutmose IV worshipping the god Ptah had been reused in one of the walls. Hassan did not include these later structures in his plan of the Amenhotep Temple, even though they are shown in two photographs (Ibid., 47, fig. 34, pl. XXVIII). In the first of these photographs, there is a mudbrick wall standing to a height of about 1 m running along the ledge that steps down into the Sphinx Ditch immediately in front of the Amenhotep II Temple entrance. The wall runs east-west along the ledge and curves around to the south to make the corner with the west wall of the Sphinx Temple. This is the counterpart to the much more massive wall that forms the curve of the southeast corner of the Sphinx Ditch. That wall was exposed and torn down in the early seasons of Baraize's excavation (see above). A remnant of the wall in the northeast corner of the ditch still stands, although it has been rebuilt with modern mudbrick. It is interesting that although the entrance to the Amenhotep II Temple pointed toward the head of the Sphinx, one did not descend directly from the temple into the Sphinx Sanctuary, but turned left instead, perhaps to follow the wall toward the small stairway directly in front of the Sphinx.

3. In November Hassan began working in the northwest corner of the Sphinx Amphitheater where he found the walls extending from the western ledge and the rock cut tombs first excavated by Caviglia in 1817.

4. Hassan (Ibid., 54) cleared the cliff forming the north side of the Sphinx Amphitheater, working eastward to an indeterminate depth. He began to clear the rock cut tombs along this cliff. Some of the tombs were repositories of votive stelae dedicated to the Sphinx. "The east end of the cliff face was heavily encumbered with drift sand, and also with the ruins and debris of an accumulation of mudbrick structures of various periods… " (Ibid., 55).

5. Hassan (Ibid., 60) cleared down to natural rock (Terrace III) moving from the north cliff face southward toward the Sphinx Ditch.

6. By February 3, 1937, Hassan (Ibid.) was working along the north edge of the Sphinx Ditch in a "deep layer of undisturbed sand." A variety of artifacts, stelae, statuettes, and inscriptions, were found as the clearing progressed eastward. He found "private" votive stelae dedicated to the Sphinx as Horemakhet, in situ, embedded in the mudbrick retaining wall, probably of Thutmose IV, that

ran along the ledge (cf. Hassan 1960: 6).

7. On February 25 work moved north of the Amenhotep II Temple and progressed eastward. On March 6, Hassan reports finding the badly ruined foundations of another mudbrick temple. He assigns this one to Thutmose I without giving any reason for this identification. He wrote that the temple "was apparently entered from the west by means of a flight of steps leading down from a higher level of ground" (Ibid.: 1953: 67). He gives a plan (Ibid., fig. 60) of a simple two-room structure oriented east-west with entrances to the north and south. According to his scale, the structure is about 8.36 m east-west x 5.40 m north-south. However, in Hassan's general site plan the structure lying immediately north of the Amenhotep II Temple is of an entirely different form and size. Here it is about 23 m square, oriented roughly northeast-southwest like the Amenhotep II Temple, and divided into three parts. East of this structure, on the general site plan is another mudbrick structure, unidentified, about 12 m square. It is now under the modern paved road as is the greater part of the alleged temple of Thutmose I.[1]

8. The clearing reached the modern houses of Nazlet es-Semman, east-northeast of the Sphinx. Some of the houses were demolished.

9. By May 11, 1937, Hassan began to take down the retaining walls of Baraize south of the Sphinx. He was “able to lay bare the approach to the Sphinx. Here we removed the ruins of many late mudbrick structures, and mud debris until, at last, we reached down to the level of the original ground” (Ibid., 68). A photograph (Ibid., pl. XXXVII) shows the area in front of the Sphinx and Valley Temples. A thick mudbrick wall, founded on the bedrock surface, runs north and south from the base of the north entrance ramp of the Valley Temple. Other mudbrick walls lie immediately east of this wall.

One assumes that Hassan removed the massive pan-bedded wall, the bastioned enclosure wall of Thutmose IV, and the eastern part of the 18th Dynasty villa at the front of the Valley Temple as he cleared the approach to the Sphinx.

Season 1937-38

Hassan (1960) makes only brief mention of the results of his 1937-38 season of excavation around the Sphinx. In 1938 he moved his work to the south and west of the Valley Temple. He mentions a mudbrick "temple" lying southeast of the Valley temple (Ibid., iv). No plans or descriptions of this temple have ever been published, and there is no obvious trace of it on the site today. Hassan suggested that it was the Temple of Osiris, Lord of Rosetau, which appears on the Inventory Stela from the Temple of Isis at Giza. However, Hassan says nothing about the temple itself or its contents. The only objects Hassan published and identified as "found thrown in the mud deposits filling the mudbrick temple southeast of the Valley Temple of Khafra" were an alabaster libation basin of *K3-m-nfr.t* and an inscribed limestone fragment, both Old Kingdom. The appearance of the cult of Osiris, Lord of Rosetaw, is not known at Giza before the New Kingdom (Zivie 1980, 103-6).

In addition to the publication of his results in volumes VIII and IX of his *Excavations at Giza* (Hassan 1953; 1960) Hassan (1949) published a shorter version that was translated into French (Hassan 1951). Earlier, he devoted an article to the large stela of Amenhotep II (Hassan 1937) and another one to the small stela of Amenhotep II (Hassan 1938). Hassan's reports are vague about the provenance of the various texts and artifacts that he recovered. These items, as well as those from Baraize's and earlier excavations, are catalogued and discussed extensively by Zivie (1976) in her *Giza au deuxième millénaire.*

In spite of shortcomings in the map of the Sphinx area that Hassan published with his major report (Hassan 1953, pl. XVI), his final map of all the areas he excavated, including the Sphinx, is quite good. The map is found in volume IX of his *Excavations at Giza* (Hassan 1960a).

2.6 Recent Alterations and Research

In 1960 a Sound and Light system was installed in the Sphinx Sanctuary, the Amenhotep II Temple, and in the vicinity immediately east of the Sphinx Temple. The main building, support structures, and seating were built east of the Khafre Valley Temple. Channels for laying electrical cables were cut into the bedrock floor of the sanctuary and metal and cement boxes housing lamps were set up in several places around the Sphinx.

In the early 1960s, Maragioglio and Rinaldi carried out a visual survey of the Sphinx sanctuary, the Sphinx Temple, and the Valley Temple as part of their study of the Memphite Pyramids (Maragioglio and Rinaldi 1966, 134-40). Their plan of the site was arranged from plans of Petrie, Hölscher, Hassan, and their own survey. It was published at the odd scale of 1:222. The Sphinx is rendered in a highly stylized fashion and could not have been measured. The outlines of the ditch and the individual blocks of the Sphinx Temple are not rendered. The survey missed the angle north of west to the south wall of the Sphinx Temple and Valley Temple.

In 1969 a limestone terrace and sloping seating area was constructed for Cairo's millennial celebration at the front of the Khafre Valley temple.

2.6.1 Ricke's Sphinx Temple Study

From 1965 to 1967 the Schweizerisches Institut für ägyptische Bauforschung und Altertumskunde, under Herbert Ricke and Gerhard Haeny, conducted an exhaustive survey and recording of the Sphinx Temple (Ricke 1970). The Sphinx, the Sphinx Temple, and the Valley temple were accurately planned but the final plan that includes all three elements is published at the small scale of 1:1000, and so the sanctuary and Sphinx are lacking detail. Ricke produced photogrammetric elevations of the Sphinx Temple walls. Ricke published the elevations and master plan of the Sphinx Temple at scale 1:150. One of the reconstructions of the north side of the temple includes an elevation of the front part of the Sphinx. Details of the stonework at the bottom of the Sphinx and the contours of the statue are not rendered. The object of the study, the master plan of the Sphinx Temple, gives general outlines of the individual limestone core blocks. Ricke renders the cuttings in the bedrock floor in detail.

Ricke recognized that the temple was never finished. The exterior casing had never been completed beyond the immediate area outside the two entrances. This fact was already realized, but never published, by Lacau (Arch. Lacau RC CI, 40). Ricke identified three phases to the terrace below the Sphinx's paws: 1) a phase when the terrace was empty but served as a cult place beside the already existing Valley Temple; 2) a phase when the temple existed without northern and southern colonnades; 3) a phase when the temple was widened by pushing the north and south walls outward and building colonnades on the north and south to complement those on the east and west of the central court.

Ricke attempted to dig sondages in front of the Sphinx temple but numerous electrical cables from the Sound and Light system impeded his excavations. He recommended that a area at least 20 m wide be cleared in front of the Sphinx and Valley temples in order to recover the plan of the layout in this direction.

2.6.2 SRI Remote Sensing Survey

In February and March 1978, SRI International, in collaboration with the Egyptian Antiquities Organization Science Section, conducted a remote sensing survey of the subsurface of the Sphinx sanctuary and Sphinx Temple. This followed a preliminary survey performed in 1977 in collaboration with Ain Shams University.

During preliminary work in 1977, eight resistivity traverses (lines of electrodes) were measured at the Sphinx

(Dolphin et. al. 1977, 66, Fig. 47). The team found anomalies in front of the forepaws, one of which suggested to the researchers "a cavity or shaft as much as 10 m deep" (Ibid., 67). In the west and NW parts of the sanctuary, at the rear of the Sphinx, the resistivity indicated "an anomaly that could possibly be due to a tunnel aligned northwest to southeast" (Ibid., 64). Another anomaly was detected in the middle of the south side of the Sphinx near the larger of the two stonework boxes behind the elbow of the south forepaw. The results of the traverses were "typical of the behavior expected from a vertical shaft" (Ibid.).

In 1978 the SRI team conducted a more detailed resistivity survey using a grid of 1 m^2 electrode spacings over the entire floor of the Sphinx and Sphinx Temple. This permitted contouring the resistivity at 1 m intervals and the production of a three-dimensional map of subsurface anomalies (Fig. 2.5). Results were checked with acoustical soundings (Ibid., for technique). The team checked anomalies by core drilling and direct observation with a borescope camera hooked to a video monitor.

Five holes were drilled, two in the Sphinx Temple court, two in the SE corner of the Sphinx sanctuary just beside the Sphinx Temple west wall, and one diagonally under the south forepaw from near the front of the south side. Using the procedures described above, the researchers found no significant cavities. Anomalies that warranted drilling turned out to be concentrations of natural limestone cavities. An anomaly between the two masonry boxes attached to the south side of the Sphinx was diffuse and ill defined. The team did not drill the anomaly detected already in 1977 at the NW corner of the Sphinx near the rump.

During the last three days of the project, the SRI team used an "acoustic shadow sounder". A spark discharge transmitting device was lowered into an already drilled hole and immersed in ground water while a receiver is moved about on surface, or down another hole, to look for echoes from voids that do not transmit the sound waves produced by the transmitter. Several "blind spots" were found. "One significant blind spot lies beneath the cupola [the large masonry box] along side the Sphinx on the south side. Earlier we electronically searched for and failed to find a shaft there. The shadow sounder suggests that this area is still suspicious" (SRI 1978, 7).

Vickers (1981, 11) published a map of the resistivity contours to a depth of three meters below the Sphinx floor (Fig. 2.5 here).

During the SRI Project of 1978 I was in charge of cleaning the Sphinx sanctuary of drift sand that had accumulated from the time of the excavations of Baraize and Hassan. This clearing revealed undisturbed ancient deposits unexcavated by Hassan in a slope of debris in the NE corner of the sanctuary, just below the entrance of the Amenhotep II Temple.

2.6.3 1978 Hawass Excavations

In 1978 Zahi Hawass directed excavations NE of the Sphinx, across the modern road. Several excavation squares were dug in the high mounds of sand and debris that were just beyond the confines of Hassan's last excavations (Fig. 1.7). These new excavations documented stratified deposits of Late Period and Roman times. A square dug against the east face of the cliff exposed an Old Kingdom tomb that had been robbed and reused in Roman times.

Zahi Hawass also excavated a mound of debris in the NE corner of the Sphinx sanctuary (Hawass and Lehner, forthcoming). Hassan had left the slope of debris in this corner to support the SE corner of the Amenhotep II Temple, which juts out over the north ledge of the Sphinx ditch. I supervised the digging of a series of trenches here. We recorded stratified deposits connecting the remnants of the subsidiary flight of Roman stairs that had ascended to the Roman Period viewing platform along the north side of the broad stairway, the northwest corner of the Old Kingdom Sphinx Temple, and the 18th Dynasty Temple of Amenhotep II. We found a series of large limestone core blocks that were not part of the Sphinx Temple walls; these rested within and upon an Old Kingdom deposit. This work revealed exactly where the 4th Dynasty workmen had stopped cutting the north ledge of the sanctuary. When the ARCE Sphinx Project started in 1979, I continued to clear and map a series of holes and lever sockets that occur in the floor from the north ledge to the core blocks and to the unfinished northwest corner of the Sphinx Temple (Lehner 1980,8-10, Fig. 7). This evidence suggests that the 4th Dynasty builders took some of the last core blocks for the Sphinx Temple from the cutting that defined the north limit of the Sphinx Ditch.

2.6.4 The ARCE Sphinx Project

The ARCE Sphinx Project began in 1979 under the sponsorship of the American Research Center in Egypt. James Allen served as Director, and I was Field Director.[2]

The ARCE Sphinx Project was concerned primarily with the documentation of the Sphinx. Ulrich Kapp of the German Archaeological Institute in Cairo produced 1:50 photogrammetric elevations of the north, south, and front sides of the statue (Figs. 5.4, 5.5, 5.6). These elevations render each stone of the masonry at the base of the statue, and the contours of the bedrock core body at .25 m intervals. I produced a 1:50 master plan of the statue that renders each stone of the outer casing (Fig. 5.1), as well as a 1:50 plan of the bedrock core body contoured at .10 m intervals (Fig. 5.2). I mapped the Valley Temple and Sphinx Temple at scale 1:100 (Fig. 4.8a-b), and the greater Sphinx amphitheater at scale 1:200 (Fig. 4.2). I produced detailed studies of the stonework attached to the Sphinx, and its stratification, at scales 1:20 and 1:10. Some specific features in the chapel between the forepaws were cleared (see chapter 8).

K. Lal Gauri carried out a geological study and conservation study of the Sphinx from 1980 to 1982. The research has appeared in a number of publications (Gauri 1981a; 1918b; 1981c; 1984; 1986; Gauri et.al. 1986). Thomas Aigner joined the project in 1982. Data gathered during this time has appeared in several articles about the geology of the Giza Plateau (Aigner 1982; 1983a; 1983).

2.6.5 Egyptian Antiquities Organization Restorations

In the Fall of 1979 the Egyptian Antiquities Organization began restorations along the north side of the Sphinx. Workmen laid in new stone and fill along the ledge formed by earlier masonry against the natural rock of the Sphinx body. The work was suspended before many stones were added.

In October 1981, after veneer stones fell off the north hind paw of the Sphinx, the E.A.O. began a substantial restoration program in which much of the veneer masonry around the lower part of the Sphinx was removed and replaced with new stones and mortar. I took notes, photographs, and did profile drawings of some sections through the various layers of masonry on the Sphinx. I have used some of this evidence in this report. The EAO replacement work continued until 1987. In addition to the veneer replacement, the restoration work added buttresses of stone and mortar over most of the bedrock body of the Sphinx on the north side, part of the south side, and over the rump.

In 1988 this work was suspended. A new phase of restoration work began. The veneer replaced between 1981 and 1987 was taken off and replaced with smaller stones in an attempt to match the pattern that had existed prior to 1981. The Egyptian Antiquities Organization is using the elevations and plans that the ARCE Sphinx Project produced to help make this match. This work is now in progress along the south side of the Sphinx. This provides an opportunity, once again, to study ancient surfaces that were exposed between 1981 and 1987. Documentation of this evidence proceeds under the direction of Zahi Hawass, Director General for Giza and Saqqara.

Chapter 2 Notes

[1] *Ed. Note: A color photograph by B. Anthony Stewart, of the Sphinx, Sphinx Temple, and the Amenhotep II Temple after Selim Hassan reconstructed the mudbrick walls around its central rooms and large limestone stelae, shows the smaller mudbrick structures north-northeast of the Amenhotep II Temple.*

See https://www.natgeocreative.com/photography/banthonystewart (November 9, 2017), Picture ID: 911975. Unfortunately, the low angle of the view of the structures, the fact that the walls are preserved only centimeters high, and their deterioration does not allow a good sense of their layout.

[2] *Ed. Note: James Allen is now Charles Edwin Wilbour Professor of Egyptology at Brown University. In addition to James Allen, Mark Lehner, and Ulrich Kapp (photogrammetry), team members included: Christiane Zivie-Coche (Egyptology), Attila Vass (survey), Susan Allen (survey), Peter Lacovara (survey) and Cynthia Schartzer (archaeology, survey), K. Lal Gauri (geology), and Thomas Aigner (geology). I gratefully acknowledge the financial support of the Edgar Cayce Foundation.*

CHAPTER 3

The History and Role of the Sphinx

3.1 Old Kingdom

The Old Kingdom Fourth Dynasty date for the origin of the Great Sphinx at Giza is no longer an issue. Earlier suggestions that it might belong to the Middle Kingdom (Borchardt 1897; Daressy 1908), are simply out of the question, not only because of the physical context of the Sphinx and the associated archaeological deposits, but also because of stylistic considerations. The Sphinx dates specifically to the reign of Khafre because of its context within the Khafre pyramid precinct (see chapter 1), and because it was part of the same quarry and construction process as the two temples in front of it, one of which is the Khafre Valley Temple.

Although we are certain that the Sphinx dates to the 4th Dynasty, we are confronted by a complete absence of texts mentioning the Sphinx in the Old Kingdom. The monuments of the 4th Dynasty yield far fewer texts than those of later times, including the later Old Kingdom. But the absence of Old Kingdom texts relating to the Sphinx is also due to the fact that the temple in front of the Sphinx was entirely stripped of its finish stonework, which would have carried texts, by the New

Kingdom (Ricke 1970). The other temples associated with the Khufu and Khafre pyramids were likewise stripped and lack, with some exceptions, identifying texts.

Giza was an active necropolis for more than three hundred years after kings stopped building pyramid complexes there. The stone mastaba tombs of the 5th and 6th Dynasties (Porter, Moss, and Malek 1974) have furnished a large corpus of titles (Baer 1960), including those of the priests and priestesses of gods and goddesses (Hassan 1960b) and of the pyramids of Khufu, Khafre, and Menkaure (Wildung 1969; Hawass 1987). Yet not a single title can be identified with the Sphinx and the large 4th Dynasty temple that lies below its forepaws.

3.3.1 Ricke and Schott on the Sphinx

Ricke (1970) has demonstrated that the Sphinx Temple was never completed. The interior was finished and included granite wall casing, alabaster paving, an eastern and western niche for cult images, a colonnade of 24 monolithic granite pillars, and at least ten colossal statues of the king against central pillars surrounding an open court. But the work stopped just when the granite casing was applied to the exterior facade of the two entrance doorways; the rest of the exterior was left unsheathed. One might imagine that a cult could have already begun at this stage, but had yet to be worked out and a clergy assigned.

While doubting that services for the Sphinx Temple as a whole were ever begun (Ibid., 32), Ricke, suggested that a cult may have been carried out in the small chapels opposite the entrance doors of the Sphinx Temple. These were closed with double-leaf doors and must have contained some kind of cult image. Ricke compares these chapels to the niches just inside the entrances to the adjacent Valley Temple. Hölscher (1912, 17, Abb. 8-9) found inscriptions on the sides of the Valley Temple entrances saying that the king was beloved of Hathor (south) and Bastet (north). Ricke doubts that images of these deities were placed in the entrance niches because they are so high off the floor and they could not have been closed. The chapels opposite the Sphinx Temple entrances were low and could be closed. Ricke (1970, 38) cites false doors in the British museum, probably late 4th Dynasty, belonging to a Djedi, an official of Khafre's pyramid, and his wife, Dbyt, who held the titles, Priestess of Hathor, Mistress of the Sycamore, Priestess of Hathor in the House of Khafre, and Priestess of Neith in the House of Khafre (James 1961, Pl. Vi-VII, No. 157, A and B). The false door of *Wnst* from Giza, also 4th Dynasty, relates that the owner was priestess of both Hathor, Mistress of the Sycamore, and Neith, North of the Wall. According to Ricke, since there are no chapels of these goddesses known at Giza, "House of Khafre" may refer to the Sphinx Temple, where the goddesses were worshipped in the two chapels near the entrances. The temple as a whole may have carried the general designation, "House of Khafre," according to Ricke, because the main cult had yet to be organized.

The Sphinx Temple is situated directly in front of the Sphinx on a terrace cut 2.5 m lower into the natural rock. It would be stretching common sense to say that the temple had little or nothing to do with the Sphinx. Judging from the form of the temple, most who discuss it agree that it was designed for the worship of the sun (Ricke 1970; Schott 1969; 1970; Stadelmann 1985, 138). The large central court and the two niches on the east-west center axis certainly suggest a cult aligned to the rising and setting sun.

Ricke and Schott went further in their interpretation of the Sphinx Temple. Comparing the temple's features with the iconography in the mortuary chapels of Hatshepsut (Naville 1901, Pls. CXIV-XI) and Thutmose III (Ricke 1939, Tf. 8-9), Ricke and Schott concluded that the 24 pillars of the colonnade represented the 24 hours of the day and night. The two pillars in front of either niche (Fig. 4.1) could have symbolized the arms and legs of the sky-goddess, Nut, just as she is painted stretched across the ceilings of New Kingdom mortuary structures. She swallows the sun in the west at evening and gives birth in the east at morning (Allen 1988, 1-7). The niches, then, were the gates of the horizon. Ricke even worked it out that the 12 hours of the day were represented by the 12 colonnade pillars on the south of the temple axis while those on the north represented the night hours.

The transitions were at the niches, which had a cult day-barque and night-barque, with the prows pointed toward the court (Ricke 1970, 36-7).

The court of the Sphinx temple is very similar to that of the Khafre Pyramid Temple, with the exception that the Pyramid Temple has two court pillars on the north and south ends for a total of 12, whereas the Sphinx Temple has only one at the ends, for a total of 10. It is clear that there were large statues, probably of the king, in front of these court pillars (Hölscher 1912; Ricke 1970). Ricke noted that the statue sockets in front of the end pillars at the Sphinx Temple were slightly wider than those at the other pillars. While they could scarcely have held double statues, these statues might have been larger, or of a particular form that would make up the deficiency (Ibid., 37-8). Schott suggested that the 12 court statues could have symbolized the 12 months of the year (Schott 1970, 76).

With this interpretation of the temple, Ricke hypothesized that the Sphinx was already an image of the sun god when Khafre created it, just as it was perceived as the sun god much later in the New Kingdom. Ricke bases his interpretation initially on the text on the Thutmose IV stela, which calls the Sphinx Khepri-Re-Atum, i.e., the sun in all its aspects. Ricke also begins with an argument that the Sphinx originally had a long curled divine beard, as opposed to the king's short square beard. The long, curled beard that indicated the Sphinx was conceived to represent a god, and therefore the sun god (Ricke 1970, 33). Ricke, in the title of his report, called the temple the "Harmachistempel des Chefren," even though the name Horemakhet is not known for the Sphinx, nor in any other context, before the 18th Dynasty.

In Ricke's interpretation, the Sphinx Temple is dedicated to the Sphinx as its main cult image with additional cult images in the eastern and western niches on the center axis of the temple. It is curious that the center axis does not align with the Sphinx, but is 7.35 south of this alignment (Ibid. 8-9). As Anthes (1971, 53) pointed out, this makes Ricke somewhat cautious, if not ambiguous, about the relationship between the Sphinx and the temple.

As for the lack of alignment between them, Ricke stated: "*Es bestand demnach keine thematische Forderung, Tempelachse and Achse der Sphinx zusammenfallen zu lassen; anscheinend wollte man die Kultrichtung nach Westen ebenso unverstellte haben wie die Kultrichtung nach Osten*" (Ricke 1970, 9). Later, speaking of the unsolved problem of no apparent access to the Sphinx (Terrace II) from the lower temple (Terrace I), Ricke states: "*Für die Zeit des Chefren mag die Zugänglichkeit der Sphinxterrasse unwichtig gewesen sein, die Sphinx mag weniger al zu verehrendes Götterbild, mehr als Determinativ der ganzen Anlage angesehen worden sein*" (Ibid., 15).

In the end, Ricke suggested that an altar for offerings to the midday sun stood in the north end of the temple court aligned with the Sphinx, "und auf solche Weise die Sphinx formal und ideell mit dem Tempel verbunden hat" (Ibid., 35). This would compare with altars in the courts of later pyramid temples. In the Sphinx temple court, a large granite drain runs from the north end of the court and under the north wall of the temple. This is additional support for the idea that the Egyptians placed an altar here.

3.1.2 Anthes on the Sphinx

In his response to the study of Ricke and Schott, Anthes (1971) accepted the essentials of their interpretation of the Sphinx Temple. He disagreed with the idea, however, that the creators of the Sphinx saw it as Horemakhet, Harakhti, or any other form of the sun god such as Khepri-Re-Atum. Anthes points out that reading 18th Dynasty texts back to the time of Khafre is a methodological weakness. For reasons having to do with his own interpretations of Egyptian mythology, he doubts that the Sphinx could have stood for the sun god in any form during the Third Millennium B.C. For him it is incontestable that the Sphinx was created as an image of the king, Horus, because it wears the nemes headdress. Even if it was a god, because of the long curled beard, it was a representation of the king as a god (Ibid., 50). As for the later name, Hor-em-akhet,

> *"eine einleuchtende Erklärung des Namens für die Sphinx scheint mir vielmehr diese Annahme zu sein, das ihr Charakter als Horus von Ursprung an*

> *überliefert war, und das die irgendwann später da zugefügte Ortsbestimmung "im Horizonte" auf das Pyramdenfeld im Westen, nicht wie in 'Harachti' auf den östlichen Himmel sich bezieht"* (Ibid.).

As for the problem of the lack of alignment between the Sphinx and its temple, and the solution of the altar in the north end of the court, Anthes maintains that the whole arrangement becomes clearer if the Sphinx is understood as the presenter of the offerings taking place below in the open court to the sun. The Sphinx as presenter is the king as both the heavenly and earthy Horus (Ibid., 53). He concludes this argument, "*Eine andere Beziehung ist nicht erkennbar, und der Tempel was sicher nicht ein Tempel der Sphinx*" (Ibid., 54).

Finally, Anthes sees as the motive for building the Sphinx Temple Khafre's desire to promote the sun cult within the essentially Horus-oriented pyramid complex. According to Anthes, the King as Horus was under the control of high state officials, mainly members of the royal family, and the tilt toward Re represented some degree of freedom from Horian restraints (Ibid., 56). So, the Sphinx and the sun temple before it are related to the appearance of the title, Son of Re, in the royal tutelary about this time, and, later, the appearance of the compound divine name, Re-Harakhti, in the 5th Dynasty. Just as kings of the 5th Dynasty built special sun temples in addition to their pyramid complexes, already in the reign of Khafre, there was a need for a place to celebrate the sun within the pyramid layout:

> *Das geschah anscheinend schon in der Planung des Bezirkes durch die Einfügung eines Sonnenaltars, und dieser erhielt einen monumentalen Platz dadurch, das hinters ihm die vielleicht für ihn geschaffene Sphinx sich erhob als Bild des Horuskönigs, des Spenders des auf dem Altar dargebrachten Opfers, in offensichtlicher Unterordnung unter den neuen Herrn des Himmels* (Ibid., 57).

Anthes's objection to reading New Kingdom names and interpretations back to the time of Khafre is well founded. His suggestion that the Sphinx portrayed originally the king, or the king as a god, is reasonable. From there, however, the interpretation seems no more viable than any that might fit within the mythical motifs and iconography known for the Old Kingdom. Anthes pointed out that, "*Solange die Mythen lebendig sind, und diese Lebendigkeit können wir durch drei Jahrtausende verfolgen, entwickeln sich neue Kombinationen und neue Vorstellungen in ingebundener, fluktuierender Mythologie unter Beibehaltung auch der alten Vorstellungen und Bezihungen*" (Ibid., 52). Kemp (1989, 4) has pointed out, using just these studies of the Sphinx Temple as a prime example, that often Egyptologists, well versed in the ancient Egyptian *Vorstellungen,* are themselves carrying on this game of recombining old motifs in new configurations. When we attempt to explain ancient structures for which texts do not give clear indications, our interpretations might be eminently plausible even to the ancient Egyptians themselves, whether or not such meanings motivated them to create the structure in the first place.

3.1.3 The Sphinx and Atum

The cartouche of Khafre once appeared near the end of the preserved text of the Thutmose IV Stela at the base of the Sphinx's chest. This was recorded in the earliest copies of the inscription (Zivie 1976, 129). The text immediately preceding it was never recovered. That which immediately follows is *twt ỉr n ỉtm Rʿ Ḥr-m-ꜣḫt*,...", a statue made for Atum-Re-Horemakhet." Wildung (1969, 207) took this as a hint that the 18th Dynasty Egyptians were aware that Khafre was the maker of the Sphinx. This is the only text that makes a historical connection between Khafre and the Sphinx, and here the connection, if any, is problematic due to the lacunae in the stela (Zivie 1976, 145, 308, 322).

The mention of the statue - presumably the Sphinx - in connection with Atum (combined with Horemakhet, the more common 18th Dynasty name for the Sphinx) calls to mind Gardiner's (1916, 66-7) suggestion that the phrase *šsp ʿnḫ n ỉtm*, "Living Image of Atum," signifies the pharaoh in the form of the primeval sun god. Gardiner was attempting to demonstrate that the *šspw*, between which Sinuhe bowed his head, were sphinxes; he considered the word an abbreviation for the longer phrase. The word *šsp* was entered in the Wörterbuch as "*eigentlich wohl sphinxgestatiges Bild*".

Zivie (forthcoming) and Hornung (1967, 142) disagree that *šsp* or *šsp ʿnḫ* signify "sphinx in particular," rather than the more general notion "statue." *Šsp ʿnḫ* as a word for statue, perhaps of a particular kind, is known from the Old Kingdom. Fischer (1963, 24-28) suggested that it derives from "a statue as 'one who receives' offerings and other ministrations." While the more general sense for *šsp ʿnḫ* may be correct, the fact should not be lost that when the king is depicted as a "living image of Atum" (*šsp ʿnḫ n ʾItm*) it is in the form of a sphinx, as Gardiner illustrated with New Kingdom examples.

Since it is hewn out of the living rock, the Giza Sphinx would appear to be a good symbol for the god Atum (or the king as Atum), particularly in Atum’s aspect of a chthonic creator god. As his name, “completed one” (Allen 1988, 90), implies, the entire physical world came forth from Atum as the “primeval mass” (Ibid. 10, 14). In his study of Atum, Mysliwiec (1978, 12-13) discusses a notion from the Pyramid Texts, Coffin Texts, and Book of the Dead that the lion was the earliest form to emerge from the primeval mass within the primeval waters. This notion is played out in the association between Atum and Ruti, the double lion god. Mysliwiec concludes: “*Die Verbindung der Geburt Atums mit der Lowengestalt weist auf die* *ursprüngliche Form des Urgottes hin. Atum erscheint auf Erden als Löwe*" (Ibid.). The double lion allusion, it must be remembered, is to Shu and Tefnut, the first differentiation of Atum's being. (Allen 1988, 14-18). But Ruti is associated with Atum even before the actual birth of the next primordial generation: "I am the double lion, older than Atum" (Mysliwiec 1978, 12). Ruti is somewhat like a cell that has doubled its elements and begun to divide, before the actual split has occurred.

We don't know, of course, if the 4th Dynasty Egyptians thought of the Sphinx as an image of Atum. But even if the Sphinx was an image of the king, according to the Pyramid Texts kingship descended from Atum, through Shu, Geb, Osiris to Horus, i.e. the reigning king (Anthes 1959). It is possible that the pyramid was associated with Atum in Atum's capacity of the primeval mound (PT 1587a-d; Allen 1988, 10) and the ben-ben stone (Pyr.447a; Anthes 1959, 210). The Sphinx could have been associated with Atum as the primeval king in lion form emergent from the formless mass, as the Sphinx was hewn from the living rock, the royal head rising above the earthy pit.

This, of course, is playing the interpretation game that Kemp highlights as so typical of much Egyptological thought. In the absence of texts that indicate otherwise, Gardiner's conclusions about the meaning of the sphinx for the ancient Egyptians may hold true for the Giza Sphinx in the 4th Dynasty:

> There are four possible ways in which an individual sphinx might be interpreted, (1) as the king under the image of a lion, (2) as some powerful god under the image of a lion, (3) as a victorious king manifesting himself in the leonine form of a god, and (4) as a powerful god revealed in the dreaded person of the king. These views were in no way mutually exclusive, and it is probable that with regard to one and the same material sphinx of stone, the standpoint of the Egyptians tended to shift rapidly from the one opinion to the other (Gardiner 1916, 91).

Whether the Great Sphinx is more solar deity or pharaoh is a question which the Egyptians who made it could probably not have answered. (Id., 1912, 66-7).

3.1.4 The Sphinx in Khafre's Statue Program

We must see the Sphinx within the context of Khafre's statue program. It has not been appreciated the extent to which Khafre was the statue builder *par excellence* in the Old Kingdom. His reign is unequalled in terms of numbers and the great size of his statues until well into New Kingdom times. In addition to the Sphinx, Khafre had more than fifty-eight large statues within his pyramid complex.

It is likely that there were 10 large statues of the king around the court of the Sphinx Temple. Judging from the sockets cut into the rock in front of the court pillars, these statues must have been from 1.65 to 2.10 m wide and 3 m long at the base. Ricke (1970, 25-6) reconstructed seated statues of the king wearing the *nemes* headdress with back pillars 3.4 m high, and a total height of about 4.5 m (Ibid., Pl. 3), more than three times life size. The interior height of the temple was about 5.25 m (Ibid., 22)

In the T-shaped hall of the Valley Temple there were 23 statues along the walls indicated by the sockets that open in the alabaster floor. The size of the sockets, and the broken statues of Khafre that Mariette found in the temple, indicate that these were all about life size.

Statues of some kind must have stood in the high open niches inside the entrances to the Valley Temple. The niches were 1.5 m wide, 1.5 m deep, and 2.70 m tall. Ricke (1970) discussed the idea that statues of Hathor and Bastet stood here, since these deities were mentioned on the entrance inscriptions. He thought it more likely that the niches contained statues of baboons in the posture of greeting the morning sun when the great entrance doors were opened (Ibid., 28). He noted that Mariette mentioned finding part of such a statue in the Valley Temple, although, he stated, there was no trace of it. In fact a piece of black granite baboon lay in the south end of the Valley Temple vestibule until the E.A.O. recently had it removed. This could have been that statue fragment mentioned by Holscher (1912, 83) that he found high in the stratification.

On the terrace in front of the Valley Temple, flanking both doors, Hölscher (1912, 39) found a series of holes that were lever sockets for laying in objects with long rectangular bases with one rounded end. These lever sockets are identical to those around the base of the Khafre Pyramid for laying in the large blocks of the lowest course of granite casing (Lehner 1986, 49 Fig. 1). Hölscher's (Ibid., 15, 17, Abb. 5) suggestion is reasonable that the patterns of lever sockets beside the Valley temple entrances were for four sphinxes that flanked the doors although they could have been used for lion statues. In either case the statues would have been more than 8 m long and over 2 m wide (Ibid., 39), making them among the largest sphinxes or lions known from ancient Egypt excluding the Great Sphinx itself.

In Khafre's Pyramid temple 12 colossal statues may have stood around the open court. The sockets in front of the court pillars vary in width, but Hölscher reconstructs statue bases 1.50 m wide - (the width of the narrowest socket; the widest socket is 2.56 m wide) and about 1.65 m long. The height of the court statues in Hölscher's reconstruction is 6.38 m from the floor, plus 1 m thickness for the base, for a total height of about 7.38 m (Ibid., 77, Abb. 70). These are Osiride standing statues, wearing the north and south crowns on the north and south sides of the court respectively (Ibid., 28, Abb. 16). Although the traces indicate strongly that the colossal statues once stood here and were very carefully removed, not a trace of the statues was found (Ibid., 56), making the reconstruction of their form, so far, entirely speculative.

Ricke (1950, 50-3) revised Hölscher's reconstruction of the Khafre Pyramid Temple court. He cites evidence from Hölscher's ground plan of the temple that the statues stood within a niche in the court piers. On the basis of an inscribed block of Khafre's that was reused at Lisht, he reconstructed an inscribed architrave than ran above the statues and spanned the entrances to the court between the statue piers. This reconstruction allows for statues about 3.22 m off the floor with a total height, including the base, of 3.75 m. At this height, in conjunction with the dimensions of the floor sockets, the statues would have been seated to be proportional to their setting. Ricke reconstructs, therefore, seated statues of the king wearing the *nemes* headdress.

Colossal statues of the king probably stood in the Pyramid Temple at the back of the two long and narrow "serdab" rooms to the north and south of the broad entrance hall. Hölscher cited traces in the remaining surfaces that indicated a single block of granite, 1.35 wide, formed the entire back wall of these blind corridors (Hölscher 1912, 26-7, 53-5). He suggests that a colossal statue had been carved out of each of these blocks, thereby making the long dark rooms the royal equivalent of the serdab statue chambers in private tombs. These, he believed, explained the gaping holes in the 6 m thick core walls of monolithic limestone blocks. The holes exist in the north and south outer walls of the temple and break through to the ends of the serdab corridors. It is Hölscher's reasonable suggestion that someone wanted to take something vary large out of each of these positions without breaking it up, and each could well have been a colossal statue of the king.

Finally, it is widely agreed that the five oblong chambers just west of the statue court contained, as in many other pyramid temples to follow, five statues of the king, perhaps embodiments of his five official names (Edwards 1985, 129).

Most of these 58 statues, life size or larger, are evident in Khafre's pyramid complex from their architectural emplacements. As for those of colossal proportions, there is little or no evidence of the statues themselves. The total does not include the many smaller statues made evident by the fragments found during excavations (e.g. Borchardt in Hölscher 1912, 89-115). Reisner (1931, 126) estimated that Khafre's smaller statues may have numbered between 100 and 200. Menkaure had as many or even more, but nowhere near as many of colossal proportions as Khafre. Certainly later Old Kingdom rulers had statues in their pyramid complexes (Ibid.), but, at least as far as we know, not on the scale of Khafre in terms of size and numbers until well into the New Kingdom. It is within the context of this burst of statue building that we must see the origin of the Sphinx.

3.2 Old Kingdom to New Kingdom

So little is known of the Sphinx from the end of the 4th Dynasty until the beginning of the New Kingdom that it is possible to treat this 950-year span in a single section. Certain texts indicate that there was no dramatic political break in the transition from the 4th to the 5th Dynasty. Smith (1962, 34) pointed out that Khafre's son, Sekhemkare, recorded in his Giza tomb that he was honored by Khafre, Menkaure, Shepseskaf, Userkaf, and Sahure. An official named Neterpunesut was in favor from the reigns of Djedefre to Sahure (Ibid., Gauthier 1925, 178-80), while Ptah-shepses, High Priest of Ptah under Niussere, was brought up in the household of Menkaure and Shepseskaf and went on to serve under 5th dynasty kings (cf. Wildung 1969, 202).

Persons serving the priesthoods of Khufu, Khafre, and Menkaure are known from the 4th through to the end of the 6th Dynasties (Ibid., 152 ff.). In the 6th Dynasty there is a fall-off in 25 of the 73 estates known of Khufu, while of the 51 estates attested for Khafre, only one dates with certainty to the 6th Dynasty. This may indicate that, while individuals continued to hold titles connected with the Giza kings, the pyramid complexes of these kings ceased to have widespread economic power in the later Old Kingdom (Ibid.).

Nevertheless, these texts indicate continuity of service in the Giza temples through the 5th and 6th dynasties. Already Hölscher (1912, 80-1) used this kind of evidence to ascertain that the Khafre temples had remained in use to the end of the 6th Dynasty. He also noted that stones that once capped the tops of the walls of the Pyramid Temple showed strong weathering on their outer sides, whereas the sides of these pieces that joined to other pieces were un-weathered. This indicates that the temple stood intact to its upper parts for a long time.

At the Sphinx itself, a series of Old Kingdom tombs was begun in the North Cliff of the greater amphitheater. It is fairly certain that these were begun after the Sphinx was created (Hassan 1960, 11-12). Some of the higher tombs in the cliff were probably later, perhaps New Kingdom, begun when the lower tombs were buried in sand. Three of the total 18 tombs were inscribed and belong to Ankh-re, In-ka-f, and Kai-wehemu. In-ka-f was a Prophet of Sahure. The other two tombs could be either 5th or 6th Dynasty (Porter, Moss, and Malek 1974, 214-15). According to Hassan (1960, 11), all the tombs except that of Ankh-re were left incomplete.

The other principal cemeteries at Giza were augmented throughout the 5th and 6th Dynasties to the very end of the Old Kingdom (Zivie 1976, 19). This was true even though the sequence of royal pyramid complexes moved south to Abusir and Saqqara. At the end of the 6th Dynasty the Eastern and

Western cemeteries of mastaba tombs sanded up quickly. Prior to this, "a systematic and open plundering was carried out when the streets were only slightly encumbered with sand" (Reisner 1942, 14). Later offering places and burials intruded into the sand fill and mastaba cores of the cemeteries. These intrusive burials "were obviously later than Dynasty VI, but appeared to be generally earlier than Dyn. XII" (Ibid., 15).

The evidence indicates that during the entire Middle Kingdom and Second Intermediate Period no cult activity was carried out in any of the Giza temples; the cemeteries were abandoned, and no new construction was undertaken. Giza was largely neglected (Zivie 1976, 25-7). At the Sphinx the Middle Kingdom is represented by one small statue and one statuette, the provenances of which are vague (Ibid., 43-9).

3.3 Robbing and Abandonment

It is not clear exactly when the Sphinx was abandoned and when the Sphinx Temple and Khafre Valley temple were robbed of their stone finishes. This must be assessed in terms of the evidence for the Giza Necropolis in general. Certain archaeological findings hint at a fair amount of neglect and plunder of the Giza temples already in the 5th Dynasty.

Junker (1951, 40-41) found that structures attached to some of the mastabas of Cemetery GI-S, the mastaba row south of the Khufu Pyramid, were being used as makeshift workshops to hack up statues of Khafre for making stone implements and vessels. The mastabas probably date to the reign of Menkaure (Porter, Moss, and Malek 1974, 216 ff), but the reuse of the statues of Khafre probably occurred much later. Junker (1951, 40-41) thought that the statues were hacked up in the Khafre Pyramid Temple nearby, then the pieces were brought under cover for re-carving. He dated this activity to the end of the Old Kingdom or First Intermediate Period (Ibid.).

Reisner (1931), however, found that statues of Menkaure had been attacked in the 5th Dynasty. This was evident in a significant archaeological discontinuity in the pyramid temples of Menkaure. The core work of the Menkaure Pyramid Temple, and the platform of the Valley Temple, had been built under Menkaure in large locally quarried limestone blocks. The style of masonry, which Menkaure was unable to complete, was to have been like the Khafre temples, sheathed in granite. The temples were completed in mudbrick by Menkaure's successor, Shepseskaf. This temple appears to have been neglected soon after Shepseskaf completed it. Reisner concluded, "it is apparent from the plundering and decay of the crude brick inner temple, that the whole Pyramid Temple was neglected like the Valley Temple during Dynasty V. But in Dynasty VI, both these temples, for reasons which now escape us, became the object of a certain amount of pious attention (Ibid., 32). The Valley Temple was rebuilt, perhaps during the middle of

Pepi II's reign (Ibid., 54) on the destruction debris and surface decay of the first mudbrick temple. Menkaure's statues, that adorned the first temple, were already severely attacked in the interim between the two temples.

> It was...evident that the destruction of the statues had already begun in the period of the first plundering of the magazines. On the surface of decay of the first temple, and in particular on the southern wall of the temple, house walls had been built, and under these were numerous deposits of alabaster and slate chips made by the breaking up of the statues and statuettes (Ibid., 119).

Reisner (Ibid., 45) noted that the royal statues were broken up for making model vessels such as were common in 5th and 6th Dynasty mastaba tombs.

The structural and stratigraphic history of the Menkaure Valley Temple is complex. The temple courtyard became a crowded sacred slum as people of the pyramid town, exempted from imposts, built small houses and granaries up over the front walls and into the court (Kemp 1983, 92-4; 1989, 145-8). The site is more complex because the Khentkawes Town, a more orthogonally planned settlement parallel to the causeway running from the Khentkawes monument, turned 90° to extend south to the front of the Menkaure Valley Temple. Here, attached to the facade of the Valley Temple was another building, an Annex, with its own columned entrance and vestibule, which Selim Hassan (1943) excavated almost 25 years after Reisner's excavation. Hassan interpreted the attached building as the Valley temple of Queen Khentkawes. The relationship between the parts of the Menkaure Valley Temple that Hassan and Reisner dug respectively have never been worked out.[1] But one of the most interesting details of the so-called Khentkawes Valley temple is the pivot socket for a door at the base of the western side of the northern entrance into the Annex. The pivot is worn into the left foot of a broken diorite statue of Khafre inscribed with his Horus and *niswt bity* names. If this truly dates to the time of Khentkawes I, it indicates that statues of Khafre were already being broken up within a generation or two of his reign. It is more likely that the pivot relates to the second building phase of the town and temple, in the 6th Dynasty, when statues of Khafre and Menkaure had already been attacked.

The robbing and stripping of the Khafre temples, including the Sphinx temple, could have been carried out already in the Old Kingdom - at some point in the 5th Dynasty or toward the end of the 6th Dynasty - but the evidence marshaled above does not suggest this is true. The hacking up of royal statues and the plunder of the mastaba tombs are small-scale acts that individuals or small groups could have carried out gradually during times of slackening control. This vandalism might have been possible because a good deal of royal attention was focused elsewhere, while the non-royal cemeteries at Giza continued to be augmented, with local people, even caretakers, producing funerary vases from neglected royal statues.

The systematic stripping of all the granite and alabaster from the entire Sphinx Temple, exterior of the Valley Temple, and the Khafre Pyramid Temple, and the careful removal and hauling away of colossal statues that must have weighed many tons, was a systematic act that suggests royal power. The removal of what must have been colossal granite statues from the “serdab” chambers in the Pyramid Temple was effected by cutting gaping corridors straight through 6 m of solid limestone core work so that the statues could be dragged out sideways. Hölscher (1912, 53-4) rightly perceived the power, forethought and care that this implies. When were Khafre's temples carefully quarried for stone and statues?

The section Hölscher excavated along the front of the Valley temple established beyond doubt that the temple was stripped of its granite sheathing before the end of the 18th Dynasty. His lowest layer, Schicht I, consisted of 1 to 2 m of sand with pieces of the granite facade and small fragments of statues. The two entrances to the temple were each closed by a mudbrick wall that rested upon this sand layer. Schicht II was the 18th "Privathause" the floor of which was 5.60 m above the thresholds of the temple doorways (Ibid. ,82). The structure was built upon a casemate foundation that extended down to within 2 or 2.45 m above the Old Kingdom floor - that is, nearly to the level of the mudbrick walls that closed off the temple entrances (Ibid., Bl. XV). The house is dated to the end of the 18th Dynasty on the basis of its layout, and because "zahllosen" sherds of blue painted pottery characteristic of this time were found associated with it (Ibid., 82).

It is clear that the façade of the Valley Temple had been stripped of its granite sheathing before the house was built. The back of the house was taken up by a long corridor, the west wall of which was built directly over the already stripped limestone core blocks of the Valley Temple. It is worth noting that the base of the 18th Dynasty foundation walls is at the same level as the lower course of granite casing stones preserved to this day on the front of the Valley Temple (Ibid., Bl. XV). In fact, at the north end of the temple facade, the back mudbrick wall of the house rests directly upon the granite block flanking the entrance inscribed "beloved of Hathor" (Abb. 71).

Hölscher raised the interesting question of whether the interior of the Valley Temple was still accessible in the 18th Dynasty. When Mariette cleared the interior, he found that the great granite architraves had crashed to the floor, blocking passage through the chambers. Hölscher concludes that this, combined with the lack of a ceiling, indicates that the interior was not used, and had probably been choked with sand (Ibid., 83). The shafts in the SE core work of the temple, which served later burials (Petrie 1883, 45-6) indicate that the temple eventually filled to the point of only "pits unopened" in a great sand heap as shown in Wilkinson's (1878, 360) early map.

The evidence for the stripping of the Pyramid temple is not as clear. Hölscher (1912, 84) mentions that

"Horemakhet", the New Kingdom name of the Sphinx, was inscribed on one of the limestone core blocks of the temple, which indicates that it must have been stripped of its granite sheathing by the time that name was in use. Hölscher found a mudbrick ramp across the southern wall of the court. The ramp must have been used for hauling material from the Pyramid Temple. He suggests it dates to the New Kingdom without explaining why (Ibid., 84). The graffiti left in the NW terrace walls of the Khafre Pyramid by the Overseer of Works, May, during the reign of Ramses II, may indicate that the Khafre pyramid was quarried for stone at that time (Sauneron 1953).

The time of the systematic stripping of Khafre's Valley Temple is bracketed by the end of 6th Dynasty, by virtue of the textual sources, and the end of the 18th Dynasty, on the basis of the Valley Temple stratification.

Ricke (1970, 24-5) thought there had been two periods of robbing in the Khafre valley complex. The first was when all the granite and alabaster was taken away from the Sphinx Temple. The second was when the Valley Temple was stripped of its granite sheathing. He based this conclusion on the fact that when Baraize cleared the interior south end of the Sphinx Temple he found granite cornice pieces and limestone ceiling parts in the debris at a height equal to the top of the Sphinx Temple south wall (Pls. 2.19, 2.28). These sloped down into the court of the Sphinx Temple. Lacau noted on the back of one of the photographs showing these pieces that they had been ripped off of the Valley Temple north wall at a time when the adjacent Sphinx Temple was already stripped of its granite and filled with debris. The cornice pieces might have been rejected because they were irregular in shape. They were simply shoved into the lower Sphinx Temple.

Ricke did not assign a date to the second period of robbing. He mentions a red granite block inscribed with Khafre's name from Tanis, where it was allegedly taken in the time of Ramses II. He believed this could have come from the south wall of one of the entrance ramps of the Sphinx Temple (Ibid., 13, nt. 51). Ricke also notes that one of the pieces of the Valley Temple's granite cornice was found in 1934 in the Ptah Temple in Metrahina (Ibid., 28). He assigns the first period of robbing, when the Sphinx Temple was stripped, to Amenemhet I of the 12th Dynasty, on the basis of the blocks with the names of Khufu and Khafre that were found embedded in Amenemhet I's pyramid at Lisht.

The names of four rulers occur on the reused Old Kingdom blocks found in the mortuary complex of Amenemhet I at Lisht: Khufu, Khafre, Unas, and Pepi II. The blocks were most likely taken from the funerary monuments of these kings. Goedicke (1971, 153-4) thought that the blocks belonging to Khufu probably derived from his Pyramid Temple and Valley Temple. The single block with Khafre's name so far noted was found in the plunderers' passage on the north side of the Lisht pyramid. It is a part of a red granite architrave bearing the *nswt biti* name of the king, a falcon wearing the double crown - probably the top of the king's Horus name, a uraeus, and the back part of a falcon in flight with outstretched wings. Ricke (1950, 50ff) used this piece in his reconstruction of the Khafre Pyramid Temple statue court (see above), and there is little doubt that it came from this temple.

The nature of these reused pieces of Old Kingdom royal monuments does not suggest that Amenemhet I systematically plundered those monuments for a great bulk of raw material for his Lisht pyramid, at least from what has been documented so far. It rather suggests a picking up of odds and ends with royal inscriptions from several sites, perhaps from monuments already plundered. Goedicke (1971, 7) stated that none of the pieces show signs of having been "forcibly removed from its setting, though most of them are too fragmentary for this to be apparent if this had been the case." He mentions the literary tradition that the looting of the Old Kingdom pyramids took place in the First Intermediate Period and concludes: "Thus it appears probable, although it cannot be proved, that the destruction of the relevant Old Kingdom monuments occurred before the reign of Amenemhet I" (Ibid.).

The evidence marshaled so far does not allow us to answer another major question concerning so much granite and completed statuary - some of it in colossal proportions, stripped systematically and carefully removed.

Where was it reused? Could so many colossal statues have disappeared without a trace?

3.4 New Kingdom

From the time of the New Kingdom the site of the Sphinx comes alive and speaks to us through ancient texts for the first time. The Sphinx became a focus of visits and votive offerings by Kings, officials and, probably, by commoners. This attention to the Sphinx, under the name Horemakhet, "Horus in the Horizon," is first attested at the very beginning of the 18th Dynasty, in the reign of Amenhotep I (Zivie 1976, 51- 2).

Amenhotep II built a mudbrick temple with limestone fittings dedicated to the Sphinx. His son Thutmose IV erected the great granite stela near the base of the Sphinx's chest with the text describing how the Sphinx appeared to him in a dream to ask that Thutmose free the Sphinx from the sand and to foretell the prince's ascension to the throne. Tutankhamen left a chapel or rest house of some kind behind the Khafre Valley Temple. Ramses II must have built or added to this and other structures on the site, judging from the several pieces found inscribed with his name (Ibid., 192-201). Other rulers like Ay, Horemhab, Seti I, and Merenptah left stelae or inscribed architectural elements at the site. Hassan (1953, 125) provides a list of rulers connected with the Sphinx down through Roman times.

In addition to the royal inscriptions, there are scores of stelae in honor of the Sphinx left by officials, scribes, military leaders, builders and sculptors (Zivie 1976, 327-8, passim). Hassan (1953) excavated most of these from 1936-8, but some were found during the Baraize excavations, while even the early excavations of Hölscher and Mariette turned up "private" stelae dedicated to Horemakhet. These texts have been catalogued and assessed by Christiane Zivie-Coche in her *Giza au deuxième millénaire* (Ibid.). There were found, in addition to these, many small votive sphinxes and falcons, images of Horemakhet, either un-inscribed or labeled simply, "made by....." (Ibid., 255-57).

This is evidence of a long-term active cult, both royal and popular. It appears that royal interest in the site was strongest during the 18th and 19th Dynasties (Stadelamnn 1987, 448-9), but the cult of the Sphinx as Horemakhet continued through late New Kingdom, Third Intermediate Period, and down through Roman times (Zivie 1980, 94f.).

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3.4.1 Horemakhet

Zivie (Ibid., 307-8) emphasizes that the name and concept of the Sphinx as Horemakhet is an invention of the New Kingdom. The name remained at all times almost completely restricted to the Giza Sphinx. There never arose a generalized widely distributed cult of Horemakhet, because, in her view, this was a tradition invented for an already ancient statue, rather than the more usual statue carved to represent an ancient tradition. Of course in the ancient Egyptian view, Horemakhet was not something new; quite the contrary, according the Thutmose IV Stela, this was "the sacred place of the beginning of time..." (Urk IV). The Sphinx as Horemakhet is an example par excellence of the, in Kemp's (1989, 83-107) words, "ancient language game" of inventing tradition; or, as Zivie put it, this was a New

Kingdom theological reinterpretation (Zivie 1976, 307).

The name Horemakhet certainly bears an ideational affinity to the god Horakhty, or Re-Horakhty, "Re-Horus, the one of the Horizon." The Sphinx was sometimes labeled as Horakhty in the stelae. The two names, Horakhty and Horemakhet, often appear together on the same monument without ever being combined into a compound name (Assmann 1977, 992). Horemakhet, like Horakhty, was a celestial and solar deity (Zivie 1976, 316-317). This is spelled out in the stela of Thutmose IV where the Sphinx is called "a very great image of Khepri" (Urk. IV 1542), "Horemakhet-Khepri-Re-Atum" (Ibid.), and an "image made for Atum-Re-Horemakhet". This is to say that the Sphinx is an image of the sun god in all its aspects, rising (Khepri), zenith (Re), and setting (Atum). The assimilation of Horemakhet with Atum is attested on several of the small stelae: Atum-Horakhty; Re Horakhty...Atum, Lord of the sky; and Houroun-Atum, father of the gods. Zivie (1976, 316) sees this as an elaborate theological construction under the influence of Heliopolis.

Assmann (1977, 992) interprets the New Kingdom Sphinx cult as a local manifestation of the god, Horus. "In the horizon" is understood as “in the pyramid precinct of Giza,” known after the Khufu Pyramid as Akhet Khufu, "the

Horizon of Khufu" (cf. Zivie 1976, 307). It also indicates the cosmic horizon where the sun rises and sets. Assmann (1977, 992) notes that the Sphinx as a focus of personal piety, pilgrimages and votive offerings is typical for colossal statues. Stadelmann (1987, 439) points out that colossal statues on the scale of the Sphinx came only a generation after Thutmose IV, and then these statues were worshipped as forms of the sun god. The Sphinx, in fact, may have been the prototype for the association between colossal size and sun worship. It should be emphasized that the Sphinx actually precedes any other statues in this size class by 1,200 years.

Zivie (1976, 307) cautioned that the name Horemakhet should not be taken too literally. But the Sphinx must have presented a truly striking image in the early 18th Dynasty. The Thutmose IV Stela may contain some truth about sand covering the Sphinx until his time, and, anyway the excavations of Hölscher, Baraize, and Hassan revealed that by the 18th Dynasty a tremendous mound of debris covered the entire area. Approaching from the east-southeast, the direction of Memphis, the Sphinx would have appeared much as it did in 1798 when Napoleon came to the site: a royal head of gigantic proportions, distinguished by the *nemes* scarf of kingship, framed by the two large Giza Pyramids - literally a figure of

Horus-in-the horizon.

Zivie (1976, 323) points out that from all the inscribed New Kingdom monuments dedicated to the Sphinx, we find little mention of the actual 4th Dynasty kings who created the Giza Necropolis. We find no cult of these distant kings at Giza during the New Kingdom heyday of Sphinx veneration. Amenhotep II, on his great limestone stela, calls the Sphinx sanctuary the abode of Khnum-Khuf (Khufu) and Khafre, and mentions his wish to "make their names live" (Urk. IV 1285). Although he built his own mudbrick temple and although he probably restored the Sphinx statue with his son and successor, neither he nor his successors did much to revive the long abandoned temples of the 4th Dynasty kings themselves.

Stadelmann (1987, 439) believes that Horemakhet began as a "neu erkannter Gott der Volksreligion" that soon became the object of a royal cult as well. The folk worship brings in another name given to the Sphinx in the New Kingdom.

3.4.2 Haroun

Nineteen of the small stelae dedicated to the Sphinx, and a few royal monuments, refer to the Sphinx as some variant of Haroun, otherwise known as a Semitic deity. Various bits and pieces of information suggest that Haroun was a denizen of the deserts, associated with caverns and hiding places. He was a chthonic god who had power over snakes, demons, and forces of chaos. The name probably derives from the root *Hwr*, "depth" or "bottom" (van Dijk 1989, 59-62). In Upper Egypt Haroun was identified with the god, Shed, likewise a desert protector against snakes, and a "hypostatization of an aspect of Horus" (Ibid., 62). In the Delta Haroun was "associated with military outposts controlling desert routes" (Ibid., 63). Stadelmann (1987, 436-7) characterizes Haroun as an underworld god of battle.

The earliest reference to the god Haroun, other than as part of a personal name, comes from six of the faience foundation plaques of Amenhotep II that appeared on the New York antiquities market in 1936. These were inscribed with the king's name and "beloved of Haroun-Horemakhet." The other plaques and 6 model jars that were part of the same cache were inscribed with the name of Amenhotep II as "beloved of Horemakhet."

This generated considerable discussion (Zivie 1976, 311-16; van Dijk 1989 for refs). In the latest contribution to the question, van Dijk (Ibid.) expresses strong reservations about the six Haroun plaques. He points out that the name Haroun is on 19 of the small votive stela dedicated to the Sphinx; most of those that name Haroun are of the 19th

Dynasty. The name occurs in royal contexts on a door jamb of the Amenhotep II Temple added by Seti I (Zivie 1976, 111, 184-9), and on the door frame of Tutankhamen (Ibid., 176-7) which, as we have seen, comes from the mudbrick building behind the Khafre Valley Temple. The Amenhotep II foundation plaques are considerably earlier than the other royal mentions of Haroun. Only the name Horemakhet and not Haroun occurs in the Amenhotep II Temple inscriptions. The paleography and arrangement of the Haroun foundation texts are considerably different than those mentioning Horemakhet. For these reasons van Dijk questions whether the Haroun texts might be forgeries. He notes the possibility, however, "that the texts mentioning Haroun derive from a deposit for another structure of Amenhotep II, or perhaps a later addition to the temple of Harmakhis. No traces of either of these buildings have so far been found, however" (Ibid., 67). As we have seen in the last chapter, these buildings may indeed have been found, but never documented or published.

Zivie (1976, 315) and Stadelmann (1987, 438) review earlier suggestions of Albright (1941, 3) and Gardiner (1948, 216) that the Sphinx was identified with Haroun because of the assonance of their names, *ḥr* (Horus), and *ḥwr(wn)*. The earlier discussions confused the names *Ḥr* and *Ḥwr* as a word for the Sphinx, when, in fact, they were probably the name Haroun with the final n dropped by the Egyptian scribes (Zivie 1976, 312; already Posener 1945, 241-2).

Like Horemakhet, Haroun is designated in Giza stelae as *nṯr ꜥꜣ nb pt*, and, more rarely, *ḥḳꜣ ḏt*. Unlike Horemakhet, Haroun's cult was known over a wider area than just Giza throughout times following the 18th Dynasty (Zivie 1976, 314, nt. 2). On many of the stelae Haroun and Horemakhet are assimilated into a compound name (Zivie 1976, 313). Van Dijk rejects the idea that the two gods were assimilated on the basis of the assonance of their names. He believes "that the reason for the identification of Haroun with the Great Sphinx lies in the simple fact that the Sphinx was situated in the desert" (van Dijk 1989, 65). He notes that the accumulated debris left the Sphinx in a fairly deep depression by New Kingdom times, resulting in a kind of desert cavern, and this reminded Asiatic immigrants of their native god.

That Asiatic immigrants should be in this area in a capacity to come to the Sphinx to worship their native battle god hints at the important changes occurring in Memphis at this time.

3.4.3 Giza and Memphis in the New Kingdom

Asiatic immigrants who saw the Great Sphinx as an image of their native desert god, Haroun, were probably Syrians and Caananites brought to the Memphite area after the wars of conquest of Thutmose III and Amenhotep II (Zivie 1976, 314; Stadelmann 1987, 436-7). Haroun came to Egypt about at the same as the foreign deities, Reshep and Astarte, the first mentions of which are on the great limestone stela of Amenhotep II (Urk. IV 1282; Posener 1945). The latter two deities, along with Baal, were particularly associated with the *Prw-nfr* ("good going- forth"), the 18th Dynasty arsenal that Thutmose III established at Memphis (Säve Söderbergh 1946, 37; Stadelmann 1967,104; Zivie 1976).

The establishment of this arsenal was part of a general reemergence of Memphis as a military and administrative center, as well as a residence for kings and princes, and it is to this reemergence of the old capital city that Giza owes its renaissance of glory after a millennium of neglect (Zivie 1976, 259; Badawi 1948). Princes were ensconced at Memphis in training for their ascension to the throne, perhaps in charge of the *Prw nfr*. Thutmose I, Thutmose IV, Amenhotep III, Tutankhamen, Ramses I, Set I, and Ramses II all had endowed domains at Memphis (Ibid., 59-63; Zivie 1976, 260; Helck 1958, 88f.; 1962, 880f.). Structures, or additions to structures, are attested for four of these kings near the Sphinx. Hassan (1953, 67) may have had the list of these Memphite domains in mind when he assigned a poorly documented mudbrick structure behind the Amenhotep II Temple to Thutmose I, although he gives no evidence for this identification. As for Amenhotep III, it is possible that the mudbrick

"Privathause" with its Amarna-villa floor plan and quantities of blue painted pottery was associated with this king, for it is certainly late 18th Dynasty (Hölscher 1912, 80-8).

In the inscriptions of princes and kings found around the Sphinx it was a common motif for king or prince to come to Giza on a promenade and to pause at the pyramids and in the presence of the Sphinx. The motif is first attested the reign of Thutmose I when his son Amenmose, overseer of his father's army, left an inscription recording his visit (Zivie 1976, 52-5). The visit is associated with martial acts and hunting. The limestone stela of Amenhotep II is the grand example of the princely visit associated with acts of military prowess, particularly skill with horses, for which the Semitic goddess Astarte is said to rejoice (Urk. IV 1282). The text on the granite stela of Thutmose IV exalts his target shooting, hunting, and chariotry, "his horses being faster than the wind," with the "army rejoicing through love of him" (Urk. IV 1541). The same theme is expressed, again in association with hunting, horsemanship, and martial might, in the Stela of Seti I from the Amenhotep II Temple (Zivie 1976, 184-9). At least one fragment from the Sphinx actually shows a New Kingdom royal chariot with rearing horses and attendants (Hassan

1953, 61, Fig. 52).

There has been a fair amount of discussion about this royal motif, termed the "sportive tradition" (Zivie 1976, 262, nt. 3,4 for refs.). In the most recent discussion, Zivie (Ibid.) and Stadelmann (1987) see this theme in a different light (see below), but some topographical reason may account for the association of the royal "sportive" sorties with Giza, in addition to the proximity of Memphis and the *Prw nfr* arsenal. Kees spoke of the new age that began for Memphis in the New Kingdom and the connection with Giza:

> ...in the reign of Thutmose I, at the time of the first great Syrian campaign, the crown prince resided at Memphis as Commander-in-chief of the army, and particularly of the chariot guards who were organized on Asiatic lines and equipped with Asiatic horses. The broad and level stretches of land on the edges of the desert between Saqqara and Giza were available for maneuvers of horse-drawn units. A favorite place for excursions was the point where the Great Sphinx stood just below the Pyramids at Giza; there was probably a rest house of some kind there and the king and crown prince honoured it with their presence when archery practices were held (Kees 1961, 173).

While it may be hard these days to imagine chariot drives anywhere near the Giza Plateau, there was, until the 1930's a very flat tract of low desert immediately east and southeast of the Sphinx that stretched more than 400 m east of the escarpment and continued about

4 km to the south. It can be seen clearly in early photographs and drawings, such as that of Lepsius (1849, Bl. 18), and in views published by Reisner (1942, Pl. 4b, 5a, 6a). Perhaps this tract of land provided good ground for exercising ones skills with horses. Zivie (1976, 327) cited the fact that among the visitors who left stelae at the Sphinx, several show obvious military connections. Hassan (1953, 265-6) noted Asiatic characteristics in the names and dress on some of the Sphinx stelae. The name Haroun could have come to the Sphinx with former Syro-Palestinian captives who were integrated with the Egyptian military.

Although there may have been a topographic reason for the "sportive" and military allusions on the royal monuments at Giza, Zivie (1976, 322-4) and Stadelmann (1987, 440) agree that there is a much more profound meaning to these expressions of royal prowess. The place of the Sphinx was called *stpt*, "the Elect" the Sphinx is often given the epithet *ḫnty Stpt*, "the one who presides before the Setepet" (Zivie 1976, 286). The Sphinx was the guarantor and protector of royalty, which was conferred, for Thutmose IV, in a dream (Ibid., 263). Thus the royal cult, as opposed to the popular cult, was one of a colossal ancient image of kingship ordaining royal status. Stadelmann (1987, 440) states this in stronger terms. The princely promenades to the Sphinx, full of demonstrations of royal vitality, were pilgrimages to a place of primeval kingship for the confirmation of a prince's or king's status as god's sons. Stadelmann would read *stpt* as "place of choosing." The perpetuation of this royal confirmation led to the building of mudbrick chapels, like that of Amenhotep II and the "Rest House of Tutankhamen".

In accordance with this theme, we are told on Amenhotep II's great stela that when his father, Thutmose III, heard in the palace of his son's skill with horses, "he said in his heart, 'it is he who will be lord of the entire land...'" (Urk. IV 1282). The text relates that as soon as Amenhotep became king, he ordered the building of his temple to Horemakhet, with the stela relating his ascension to the throne. Similarly, his son, Thutmose IV erected his great granite stela at the base of the Sphinx's chest in the first year of his reign. And it was in turn, Thutmose's father, in this case his divine father, Horemakhet-Khepri-Re-Atum in the image of the Sphinx, who ordained, "like a father speaks to his son" (Urk, IV 1542), that Thutmose would become king. Ramses II left a stela somewhere between the Sphinx's forepaws or immediately in front of them in his first year of rule (Zivie 1976, 194-5). It may have been in his first year that Ramses II left his other monuments at the Sphinx, such as the two stela in the inner chapel that flanked that of Thutmose IV (van Dijk 1989, 64).

This cult of royal confirmation began at the Sphinx during a time when the Egyptians were building an empire, following their successful wars of liberation from the Hyksos (Zivie 1976). All over the native land new stone temples were built on the sites of ancient shrines, as is evident in the temple stratification at sites like Medamud, Elephantine, Hierakonpolis, Abydos and Coptos. Kemp (1989, 67-79) has called attention to this sequence as the overlay of New Kingdom "Mature Formal" temples over "Early Formal" Middle Kingdom temples which, in turn were built upon "Preformal" sanctuaries and shrines (which in the case of Medamud and Hierakonpolis were dominated by artificial mounds). It is striking that in all the above-mentioned sites except Abydos, it is an 18th Dynasty stone temple that is built directly upon the Middle Kingdom structures, and at Elephantine, Hierakonpolis, and Coptos the "Mature Formal" temple was first built by Thutmose III. His regional program of temple building is likewise attested by Minmose, Overseer of Works in the Temples of the Gods of Upper and Lower Egypt for Thutmose III (Urk. IV 1441) and perhaps later for Amenhotep II (Bryan 1980, 59). On his statue from Medamud he lists 19 temples for which the king placed him in charge of work (Urk. IV 1443).

This temple building is concomitant with what Kemp terms a court-directed codification of text, architecture and iconography, following, in the 18th Dynasty, successful wars of conquest external to Egypt's borders. This was the same kind of codification, albeit on a more massive scale, as that following the earlier conquests internal to Egypt's traditional borders that brought on the Early Dynastic and Middle Kingdom regimes. It was within the context of this program that the Sphinx was renewed as a cult object. The most striking parallel between the renewal of the Sphinx cult and the provincial program is the configuration at Elephantine, where the sanctuary of the stone Satet Temple built by Thutmose III was placed directly over the simple Old Kingdom shrine between the granite boulders. A shaft down through the temple foundations established a symbolic communication with the temple's origins (Dryer 1986, Abb. 1, 4, 7). Similarly, at the Sphinx, the sands were parted to establish contact with an image of primordial kingship *par excellence*.

3.4.4 Osiris, Lord of Rosetau

Included in the numerous texts of the New Kingdom and later times found around the Sphinx are several examples where the Sphinx is called simply "Horus" rather than "Horus in the Horizon" (Zivie 1976, 318). This allows an association between the Sphinx, as Horus, and Osiris, divine father and dead king. Just such an association occurs on a relief of

Ramses II, of unknown provenance, but probably from Giza (Ibid., 199-2010). The king offers *nw* jars to a hieracocephale sphinx named, "Horus, son of Osiris, [Lord?] of Rosetau" (Ibid., 318). The place name Rosetau (Ibid., 292-94), and the cult of Osiris, Lord of Rosetau, are attested on many of the New Kingdom and later monuments found at Giza.

Two places in the world of the ancient Egyptians were known as Rosetau. One is embodied in the Memphis Necropolis, the Giza Plateau, and in the area around the Great Sphinx (Zivie 1985, 305; 1980, 92, 103-105; 1976, 292-4; Yoyotte 1961, 59). The other Rosetau existed in the "After life" or Underworld, as a central focus of the Middle Kingdom Book of Two Ways, and as the place of Sokar in the 4th and 5th Hours of the Am Duat, the “book” of "what is in the Underworld" that decorated the long corridors of New Kingdom royal tombs (Zivie 1985).

There was a technical sense of the term, *rꜣ-sṯꜣw*. Gardiner (1964, 31) noted that *sTAw* used in the engineering problem discussed in Papyrus Anastasi I denotes an upward sloping ramp. Edwards (1985) points out that the pyramid causeway was called *rꜣ-sṯꜣw*, "Entrance of the Haul." But it was also used for the subterranean tombs of the New Kingdom. Carter and Gardiner (1917, 137) discuss the use of the term *rꜣ-sṯꜣw* as it occurs on the Turin plan of a royal tomb: *pꜣ rꜣ-sṯꜣw n mḥ 20*. . .

> The word *r3-sṯ3w* seems to be used here only in the technical sense of "sarcophagus slide," i.e., the subway cut below the level of the floor and leading down to the burial chamber.

Sṯʿ3w is a plural substantive from the verb *sṯ3*, "drag", "draw off", "pull"; of persons: "usher in", "admit", etc. (Faulkner 1972, 255). The *r3* element, "mouth", or "opening" forms a compound with *sṯ3w*, "passages" so that a simple translation might be "mouth of the passages", or "entrance into the underground galleries" (Yoyotte 1961, 59). Some have therefore rendered *r3-sṯ3w* "necropolis" in general. However, this "*est beaucoup trop imprécis el ne restitue nullement les connotations de l'égyptienne*" (Zivie 1985, 303-304).

Zivie (Ibid.) cites Derchain's (1964, 304) translation as the most certain: as with all names formed with the prefix, *r3*, *r3-sṯ3w* must designate a place: the "place of dragging." So the "place of hauling" or of "dragging" was elevated to the place name for a mythical domain of the Underworld, as well as for the Giza Plateau (cf. Gauthier 1925-29, Vol. 3, 126).

Perhaps the most explicit reference to Giza and the Sphinx as Rosetau occurs on the "dream Stela" of Thutmose IV, erected at the base of the Sphinx's chest. According to the text, the hour of rest for the king and his followers was spent in the *Śtpt Ḥr-m-3ḫt r gs Sḳr m R3-sṯ3w*; "sanctuary of Horemakhet beside Sokar in Rosetau" (Urk. IV, 1541). Sokar was, by New Kingdom times, intimately associated with Osiris (Gabala and Kitchen 1969). Sokar is already associated with the place name Rosetau in the Pyramid Texts (Sandman 1946, 123), and Sokar probably precedes and then merges with Osiris in the cult at Giza (Zivie 1980, 103). Certain documents (Id. 1976, **NE 58, 61, 63, 329**) show that Sokar and Osiris are parallel at Giza in the 19th Dynasty. The indications on the Thutmose Stela state literally that the place of Sokar in Rosetau is just next to the Sphinx.

More elaborate topographical directions to Osiris, Lord of Rosetau are given on the Stela of Cheops Daughter, probably of the 26th Dynasty, that Mariette found in 1853 in the Isis Temple, a Late Period adaptation of the 4th Dynasty mortuary chapel of Khufu's queen's pyramid, GI-c (Porter Moss and Malek 1974, 17-19). In designating what was probably the Amenhotep II Temple, the text specifies that "the Mound (*i3t*) of Haroun-Horemakhet is on the south of the House of Isis, Mistress of the Pyramid, and on the north of Osiris, Lord of Rosetau" (Zivie 1980, 96). The Sphinx precinct is said to be "north of Osiris, Lord of Rosetau," and the Isis temple is "on the northwest of the House of Osiris Lord of Rosetau." The topographical relations between the Isis Temple, the Haroun-Horemakhet Temple (of Amenhotep II) and the Sphinx sanctuary are generally correct in this text, and so we assume the same must be true for the missing Temple of Osiris Lord of Rosetau.

Zivie (1980, 104) therefore locates the temple south, southeast of the Khafre Valley Temple, in the area of low desert around the mouth of the main wadi separating the Moqattam Formation from the Madi Formation (Fig. 1.2), and stretching to the south as far as the South Field ancient cemetery at Giza (Ibid., Porter, Moss and Malek 1974, 296-7).

Zivie (1976, 329; 1980, 105) has shown that in the Late Period Osiris, Lord of Rosetau had priests and other functionaries with titles like *ḥry sštꜣw Rꜣ-sṯꜣw*, which was frequent in the Serapeum Stela (Malinine, Posener and Vercoutter 1968 105, 148, 149, 155, 176), *ḥm- nṯr* and *wꜣb* priests. One of the best sources for this information also gives some indirect evidence of the location of the missing temple for this New Kingdom Giza cult. The Saite cube statue of Senbef, unpublished but photographed by Yoyotte in the Cairo antiquities market in 1956, appeals to the *ḥmw nṯr wꜥbw ꜥr r ḥwt-nṯr nt Wsir nb Rꜣ-sṯꜣw*, the prophets and purification priests who ascend toward the temple of Osiris, Lord of Rosetau" (Zivie 1980, 105). The antiquities dealer told Yoyotte that the piece was found in the Coptic Cemetery at Giza, which is south of the large Old Kingdom boundary wall extending from the mouth of the main wadi (Fig. 1.2).

Zivie (Ibid., 104) then cites Hassan's (1960, iv) ambiguous remarks about finding the Temple of Osiris, Lord of Rosetau southeast of the Khafre Valley temple toward the end of his last season in the Sphinx area. As noted in chapter 2, Hassan gave no reasons for identifying the structure he exposed as this temple, and the only finds, for which he says this temple was the provenance, are Old

Kingdom. It may be that he thought this was the Temple of Osiris, Lord of Rosetau just because of the topographical indications on the Stela of Cheops Daughter.

There is ample textual evidence, the account of Pliny the Elder(xxxvi, 76) for example, that in Roman times there was a village at the base of the plateau known as Busiris. This name at Giza, as in several other localities in Egypt, developed out of the ancient *pr Wsir*, "temple (or house) of Osiris", here, the "Lord of Rosetau" (Yoyotte 1961; Zivie 1980, 92). This settlement was probably an continuation of *tꜣ wḥyt Rꜣ-sṯꜣw*, the village of Rosetau", attested on a stela of Ramses III (Ibid.). The textual sources further distinguish *Rꜣ-sṯꜣw ḥry,* "Upper Rosetau", and *Int r Rꜣ-sṯꜣw ḥr,* "Valley of Upper Rosetau" (Id. 1976, 292-4). These terms must refer to the plateau and the main wadi to the south and south east of the Moqattam Formation (Ibid.).

The cult of Osiris at this geographic Rosetau may have developed out of that of Sokar in the reign of Ramsis II. His son, Khaemwase, may have built a temple for the cult (Ibid., 328). Osiris then became a long-entrenched tradition at Giza in the area of the Sphinx. Zivie's prediction that the missing temple of this cult can be found in the low desert out to the southeast of the Sphinx may be correct. However certain documents suggest a close proximity of the two objects of worship. For example, the stela of Amenwahsu, of the reign of Ramsis II, shows the usual couchant Sphinx named "Haroun-Horemakhet who presides over the Setepet."

Immediately behind the Sphinx stands a falcon headed deity who is named "Ptah-Sokar-Osiris who resides in Rosetau" (Ibid., **NE63**, 209-211; Pl. 18). Similarly, on the relief of Ramsis II the hieracocephale Sphinx is called "Horus, son of Osiris, Lord of Rosetau" (Ibid., **NE56,** 199-201).

Completely ignored in the discussion of Osiris at Giza so far is the colossal statue of Osiris that Mariette said he found in 1853 around the large masonry box, perhaps its pedestal, attached to the south side of the Sphinx just behind its elbow (Mariette 1882, 95). The platform and stairway that Baraize cleared immediately south of the masonry box may have been part of a layout associated with this statue (see Chap. 2). Baraize, in fact, found in this general area the face and double crown of what could have been an Osiride statue. Although this is considerably closer to the Sphinx than one might have imagined for the Temple of Osiris, Lord of Rosetau, this location fits the topographic indications on the Stela of Cheops Daughter. Such a location for a large Osiride statue also calls to mind, as Mariette (Ibid.) noted, a line from the poem inscribed in Greek on one of the Sphinx's forepaws, to the effect that the Sphinx was "...protecting the regretted good Osiris..." (Vyse 1842, 114).

Chapter 3 Notes

[1] *Ed. note: We can now see that the building attached to the eastern front of the Menkaure Valley Temple very clearly was planned as a terrace in front of the temple. A steep glacis on the east of this Annex sloped down into what was probably a basin (now under a modern cemetery). A broad ramp on the north gave access into the Annex, which was rebuilt in the 5th Dynasty with a vestibule of four alabaster column bases that match the set of four such bases in the vestibule inside the center east main doorway of the valley Temple. See Lehner (2015, 246-251).*

PART II. DESCRIPTION

CHAPTER 4

Sphinx Terraces and Amphitheater

The Egyptians created four principle levels or terraces in the limestone bedrock around the Sphinx. The terraces provide the setting for the Sphinx, the Sphinx Temple, and the Khafre Valley temple.

4.1 Terrace I

Terrace I, at the general elevation of 8.00 to 8.50 m, supports the two large temples in front of the Sphinx, the Sphinx Temple and the Khafre Valley temple (Figs. 4.1, 4.2, 4.8). Terrace I is bounded on the north by a 5.25 m-high ledge that forms a corridor with the Sphinx Temple north wall. The west end of this corridor steps up 2.30 m to the level of Terrace II (Fig. 4.3). Terrace I is bounded on the west in front of the Sphinx by the west walls of the Sphinx Temple which, on this side of the temple, are cut out of the natural rock for a height of 2.62 m. In the corridor between the Sphinx Temple and the Valley Temple, Terrace I is bounded by a ledge, 1.55 m high. A narrow channel to receive the granite sheathing of the Valley Temple north wall cuts through the ledge here. Behind the west wall of the Valley Temple, Terrace I ends at a low ledge that slopes from the causeway wall on the north for more than 83 m to the south, gradually decreasing in height (Pl. 2.39).

The limit of Terrace I to the south is unknown; the bedrock surface has never been cleared in this direction beyond the low wall of large limestone blocks and mudbrick walls on the south side of the Valley temple.[1]

A modern limestone and cement stage covers the area immediately to the front of the Valley Temple right up to the granite casing of the temple facade. This stage was made in 1969 for performances connected with the Cairo Millennium celebration.[2] The two original limestone entrance ramps leading to the doors of the Valley Temple are exposed to both sides of the modern platform. These, and the terrace immediately before the temple facade, were cleared and mapped by Hölscher in 1909 (see chap. 2). The ramps meet the rim of the terrace, .70 m deep, before the temple. Here the terrace is 7.69 m wide. Hölscher mapped a series of levers sockets cut into the terrace. These form four elliptical patterns, two flanking each doorway of the temple. Hölscher recognized these as emplacements for Sphinxes flanking each of the Valley Temple doors. He interpreted a square pattern of holes and cuttings in the center of the terrace as an emplacement for a shrine that contained a statue of the king (Hölscher 1912, 37-8).

The floor of Terrace I at the east end of the corridor between the Sphinx Temple and Valley Temple is composed of enormous blocks of limestone laid flush with the surrounding bedrock (Fig. 4.8b). The channel running N-S before the Valley temple phases out here to merge with the general level of the rock floor. Hölscher did not clear the area of the Sphinx Temple at all, and Baraize only cleared to the east of the Sphinx Temple for about 6 or 7 m. He built a retaining wall to hold back the unexcavated debris from the front of the temple. Hassan took this wall down in order to begin to move the massive accumulation of debris here, but he only cleared the bedrock surface for 9 or 10 m east of the temple. In 1981-82 I cleared the sand that had drifted over the area Hassan cleaned at the east end of the corridor between the Sphinx Temple and Valley Temple. I re-exposed a 2.56 m-thick badly eroded mudbrick wall that was attached to the north side of the Valley Temple entrance ramp. I cleared the wall for a distance of 14 m to the north (Fig. 4.8).

The excavation of Hawass in 1980 confirmed that in front of the Sphinx Temple Terrace I slopes gradually to the east (Hawass and Lehner, forthcoming). Two probe trenches, 20.68 m and 35.7 east of the Sphinx Temple (Fig. 1.7), hit the surface of Terrace I under 2 m of sand at elevation 6.60. The bedrock surface is fairly smooth and finished. Terrace I thus extends at least this far east of the Sphinx Temple at a gradual slope. It probably extends no more than 10 or 15 m farther, considering the fact that the north ledge that bounds the terrace, runs 45 m east of the Sphinx Temple before it disappears under the modern road.

A core drilling done by the Institute of Underground Water of the Ministry of Irrigation in September and October 1980 indicates that the edge of Terrace I is about 50 m east of the Sphinx Temple. The drilling (labelled p1 in Fig. 1.7) was located on line with the Sphinx Temple axis and 20 m east of Hawass's excavation. The drill went through 16 m of sand and debris, much of it soaked in ground water, before hitting a hard surface (Fig. 1.8). From this surface, the core sampler pulled up fragments of red granite, which must have been imported to the site since granite does not occur naturally at Giza. This granite might have dropped to the bottom of a harbor basin fronting the Sphinx Temple and Valley Temple. It is hard to imagine an *in situ* granite monument on a terrace 16 m lower than Terrace I. The drilling indicates that Terrace I ends in a drop-off somewhere in the 20 m between Hawass's 1980 excavation and the drilling. This edge could be the ancient quay for docking boats at the front of Khafre's valley complex.

The creation of Terrace I was a major engineering feat on its own. It measures more than 80 m E-W by more than 150 N-S, an area of 12,000 m2. The terrace is very well levelled. The spot heights in the corridor between the Sphinx Temple and the north ledge are within 5 cm of 8.30. Those on the corridor between the two temples average 8.50, while the surface immediately south of the Valley Temple averages 8.50. There is a slight slope down to the east in these corridors, probably to carry rain water away from the temples. For the same reason, the strip of Terrace I behind the Valley Temple slopes to the south from the end of the Khafre Causeway, where a granite-lined drain runs under the south wall of the causeway (Fig. 4.8). The builders achieved a similar effect on a much greater scale at the Khafre Pyramid, where the rock floor was cut to a uniform slope away from the court and enclosure wall on all four sides of the pyramid (Lehner 1985c, 42-3).

Ricke (1970, 3-6) believed that the Egyptians utilized the terrace before they constructed the Sphinx Temple. They carved the west back rooms of the temple into the original face of Terrace I. Ricke pointed out several places where the original edge of Terrace I is preserved: the ledge at the west end of the corridor on the north of the Sphinx Temple (Fig. 4.3, A), the base of the small wall in the SW corner of the Sphinx Temple (B), the ledge at the west end of the corridor between the Sphinx Temple and the Valley Temple (C) and the edge of the bedrock incorporated into the north wall of the Valley Temple (D).

This original edge between Terrace I and Terrace II is oriented about 40 east of north. Curiously the orientation of the south wall of the Sphinx Temple and the north wall of the Valley Temple - which are parallel - strike perpendicular to this line (Fig. 4.3). The temple walls are 40^0 south of east. (Note that the Khafre causeway is 13^0 41' south of east). The unfinished north edge of Terrace II - the Sphinx sanctuary - is also perpendicular to the original west side of Terrace I.

Immediately at the base of the NE corner of the Sphinx Temple, the builders left a patch of rock unfinished from their finer grading and levelling of Terrace I (Fig. 4.8). It measures 3.20 m square and exhibits the "removal channels" (Clarke and Engelbach 1930, 30-31) by means of which the rock surface was worked away. This patch seems to indicate that the Egyptians carried out the fine levelling of the terrace as they carried out the finish work on the temple, since it was just about here that they stopped cutting back the limestone core blocks to add the granite sheathing on the temple walls (Ricke 1970, Pl. 1).

Just beside this unfinished patch, to the NE, a rectangular trench, 2.56 (N-S) X 11.52 (E-W) cuts into Terrace I at the base of the North Ledge. The trench was probably made for cutting the unfinished tomb that penetrates the rock ledge, extending north for 7.68 m. The entrance to the tomb is extremely rough and uninscribed, but features the characteristic drum roll over the doorway.

Most of Terrace I was taken over by the floor areas of the two Old Kingdom temples (Fig 4.8). That of the Sphinx Temple was cut into the terrace for a depth of about 30 to 60 cm. The bedrock floor of the Valley Temple is covered by the original alabaster pavement and modern cement fill. However, it is probably close to the general elevation of the Sphinx Temple floor, about 8.00, since the pavement is around elevation 8.60.

4.2 Terrace II: The Sphinx Sanctuary

The Sphinx sits in a U-shaped ditch, open to the east, which I refer to as the Sphinx sanctuary. The ancient builders quarried the sanctuary out of the natural rock while leaving a core that they sculpted into the Sphinx's lion body.

4.2.1 Perimeter

The outline of the Sphinx sanctuary gives clear indications of where the builders stopped their work before they completed cutting the sanctuary.

The north side of the sanctuary is a continuation to the west of the north ledge that begins more than 45 m out in front of the Sphinx Temple (Fig. 1.7). As described above, this ledge limits Terrace I on the north and runs past the Sphinx Temple north wall. Along this part, the face of the ledge is well-cut and fairly straight on an east-west orientation. The face of the ledge is still well-formed where it passes the step up to Terrace II (to elevation 10.59) at the west end of the corridor between the north ledge and the Sphinx Temple. The ledge passes under the southeast corner of the mudbrick 18th Dynasty temple of Amenhotep II. Here a small mound of debris that supports the corner of the mudbrick temple covers the ledge. In 1978 Hawass and Lehner excavated stratigraphic trenches into this mound.

Our trench R2, just below the Amenhotep II Temple entrance, cleared a shelf of natural rock that quarry workers left when they abandoned the quarrying to form the North Ledge (Fig. 4.3). The shelf of uncut rock is 4 m wide, 1.10 m above the Sphinx Sanctuary floor, and 2.11 below the top of the north ledge (Terrace III). Toward the west, the rock shelf narrows in width and rises in height to merge with the intended line of the North Ledge as it passes the length of the Sphinx sanctuary. While this intended line becomes somewhat irregular, it generally continues the east-west line of the ledge from out in front of the Sphinx Temple (Fig. 4.2).

In 1978 Hawass and Lehner (forthcoming) carefully cleaned the top of the unfinished rock shelf. This surface features rectangular protrusions and channels characteristic of the way in which ancient Egyptian masons worked away bedrock surfaces away from the top down. The channels were filled with compact sand and gypsum in which were embedded crude tools of chert - one with oxidized copper stains - and Old Kingdom crude red ware sherds. These are bits and pieces of the Sphinx builders' tool kit. It is evident that the builders were cutting the north ledge by working from the top down along the unfinished shelf, and by removing stone laterally from east to west along the face of the ledge.

At the west end of the sanctuary, behind the Sphinx's tail, the masons left the work in an even cruder, more preliminary stage. They probably intended to strike a 90^0 corner from the north to the west side of the ditch, and to cut the west edge back to the higher ledge behind the Sphinx. But they left the west side as an irregular massif of natural rock jutting out to leave only 2.60 m clearance to the Sphinx rump (Fig. 4.2). The massif rises about 4.5 m from the sanctuary floor.

The south side of the Sphinx Sanctuary strikes an angle of 13^0 41' to the east-west orientation of the Sphinx and the north side of the ditch (Fig. 4.3). This is the angle, south of east, of the Khafre Pyramid causeway. The last 100 m of the bedrock causeway foundation, as it slopes from west down to east toward the Valley Temple, forms the south side of the Sphinx ditch. Over this stretch the height of the causeway foundation above the Sphinx Sanctuary floor drops from 11.5 to about 3 m.

The south face of the ditch shows us, again, where the Egyptians stopped trimming back the sides of the sanctuary. They cut the face of the causeway embankment to a fairly uniform plane, though over the ages the softer rock strata have eroded into a series of deep recesses. Toward the west this surface becomes gradually more irregular, beginning about halfway back toward the SW corner of the ditch. In this corner, just opposite the south hind paw of the Sphinx, the hard lower bedrock stratum (Member I) was left to protrude 1 to 1.60 m from the south face of the Sphinx ditch (Fig. 4.2). This uncut rock slopes like a narrow ramp up to the surface of the unquarried stone just behind the Sphinx rump.

As indicated in the description of Terrace I, the east side of Terrace II was originally a simple drop of about 2.62 m down to Terrace I. The Egyptians built the western side of the Sphinx Temple into this edge.

4.2.2 Floor

The floor of the Sphinx Sanctuary is exposed natural rock except for a square patch of limestone pavement, 10 X 14m, in front of the forepaws (Fig. 5.1). The pavement is all that is left of the Greco-Roman complex in front of the statue (see Chap. 2). The NE corner of Terrace II is covered by a mound of debris that connects the SE corner of the Amenhotep II Temple with the NW corner of the Sphinx Temple (Fig. 4.8).

The Sphinx floor is relatively level at an average elevation of 10.62 (19.951 above sea level), with a 30 cm range (from 10.50 to 10.805). When they levelled the floor, the masons must have followed closely the cutting back of the sides of the ditch, for the floor is level right up to the unfinished face of the north ledge. However, it is apparent that they stopped their fine levelling work at the rear of the statue before it was complete. The ancient masons were working at all stages of quarrying and dressing at once as they moved from east to west into the dip or slope of the rock strata, which is from NW to SE. They also proceeded in this fashion, that is, against the natural dip of the limestone beds, for the much more difficult work of cutting and levelling the terrace around the Khafre Pyramid.

South Channel

A broad, shallow depression runs in the floor of sanctuary just beside the south large stone box attached to the south side of the Sphinx. This depression narrows to form a kind of channel, up to 50 cm deep, that runs eastward roughly parallel to the south forepaw. At a point opposite the front of the forepaw, the channel begins to phase out as it curves to the SE. The channel is a natural feature. It marks the contact of the lowest Member II geological layer with the lower Member I rock. These layers all dip between 3^0 to 6^0 through the Sphinx and its site from NW to SE (Fig. 4.5). The depression and channel formed where the sanctuary floor cuts the interface of Member I and Member II. The lowest layer of Member II (Bed 1) is a very soft marly limestone. On the floor, this has weathered away to leave the channel.

The fact that the channel runs over to the SE corner of the Sphinx sanctuary, where the contact between Members I and II disappears under the SW corner of the Sphinx Temple, probably explains the significant resistivity highs registered in this area by the SRI International team during their 1978 project (Fig. 2.4).

Major Fissure

Many fine fissures run through the sides and floor of the Sphinx Sanctuary. A series of fisuures run together to form what I have called the major fissure. It runs through the entire Sphinx body and the sanctuary on a NW-SE diagonal (Figs. 4.3, 4.4). The fissure can be traced from the top of the Khafre causeway, through the south side of the Sphinx ditch, along the sanctuary floor to the south hind paw, through the core body of the Sphinx, and across the north floor of the sanctuary. On the north side the fissure opens up to a gap or crevasse in the floor about 1 m long and 30 cm wide.

The 1978 SRI International cleaning of the sanctuary exposed the top of the crevasse in the north floor, to reveal that it was filled with sand and rubble. I partially cleared out the fill to a depth of 1.30 m on April 27, 1978. The fill consisted of brownish-grey dirt/sand with limestone fragments. Charcoal flecks, a few pottery fragments, and spots of damp clay and mud indicated that this fill was deposited culturally. The gap had not been cleared during previous modern excavations. All the pottery was saved, and the mud spots, carbon flecks, and soil matrix were sampled. These materials are stored in the E.A.O. magazines west of the Khufu Pyramid. Excavation could proceed no farther due to the narrowness of the space.

On February 11, 1979 I visited the site after three days of hard rain that left considerable amounts of water standing in depressions here and there in the floor of the Sphinx sanctuary. The rubble fill in the crevasse had collapsed; the fissure was open to a depth of 3 or 4 m. I examined the opening again during the first season of the ARCE Sphinx Project on July 7 and 11, 1979. I had myself lowered down, head first, into the fissure with a flashlight that I held out before me. At the bottom it narrowed to a width of a few centimeters and it angled to the east. I pushed sections of pipe down into the fissure for a depth of 5 m. At about 4.50 m the soil was wet, indicating the level of ground water.

Holes and Rectangular Cuttings

Here and there in the floor of the sanctuary are small rectangular cuttings and artificial holes. These have yet to be completely mapped. In the floor of the SE corner of the sanctuary, along the back wall of the Sphinx Temple, small holes, about 10 cm in diameter occur in rows and regular spacings of a little more than a meter.

In the NE corner of the sanctuary, I excavated and mapped a series of rectangular cuttings and small holes as a follow-up to the 1978 excavations of the larger mound of debris in this corner (Lehner 1980, 8-10, Figs. 6-7). The association of these features with large core blocks abandoned in this corner during the construction of the Sphinx Temple strongly suggests that they were for levers and ropes (on pegs in the holes) used for moving the multi-ton blocks. The full discussion of these features belongs with the report of the excavations in this area (Hawass and Lehner, forthcoming). Additional series of the rectangular cuttings, which are probably lever sockets, occur off the north flank of the Sphinx and in the NW corner of the sanctuary.

Keystone Shaft

A square shaft opens in the floor of the Sphinx sanctuary, slightly in and under the north ledge just opposite the north hind paw. The shaft was cleared during the 1978 excavations of

Hawass in the Sphinx area. It was not entirely clear whether the shaft had been excavated previously by Hassan or Baraize. It has never been published.

In 1978 the sand and debris had banked up enough against the north ledge to conceal the opening of the shaft. The ancient masons cut an irregular shallow trench, about 20 cm deep, into the floor along the face of the ledge to either side of the shaft, probably just before the shaft itself was cut. The trench cuts into either side of the shaft, the south rim of which is at the floor level of the sanctuary. The trench runs 4 m south and 6.20 m north of the shaft for a total length of 12 m. It varies from 20 to 60 cm in width. The shaft measures 1.42 (E-W) by 1.06 (N-S) and is about 2 m deep. At the top of the shaft, on the face of the ledge, a cutting is shaped like the lower part of a keyhole, upside down. I have dubbed the whole feature the "Keystone Shaft." A prominent fissure runs from N hind paw to the SE corner of the shaft and up through the north ledge.

The fill of the trench contained a few sherds and spots of compact mud. The mud very likely fell from the mud wall, probably built by Thutmose IV, that ran along the top of the ledge. A section of this wall still remains just above and to the west of the shaft. The fill was mostly sand with limestone fragments under a layer of whiter material with more gypsum, 3-4 cm thick. Upon this fill, just above the shaft, was a large, square, locally quarried limestone boulder along with other limestone pieces and chunks of mortar. On the east edge of the shaft, under 50 cm of rubble, rested a limestone block with a smooth angled side - perhaps a piece of mastaba casing. The fill around this was sandy with fine gravel lenses characteristic of water sorting, probably the result of rains. Among other large pieces of limestone, at the far east end of the trench, I found the top of a limestone offering stand cut in a lotus motif. The bottom of the trench exhibited quarry humps and depressions and was clean and white. It had not been exposed for any length of time.

In the shaft itself, under the upper layer of rubble, I found clean sand, followed by sand and limestone rubble. The rubble included a large piece of basalt (ca. 30 X 40 X 50 cm) with one side finished smooth. This rested upon a layer of sand with mud spots that phased into black compact mud mounding up in the SW corner of the shaft about 60 cm above the bottom of the shaft. It proved to be about 4 to 10 cm thick before it phased into a tan clayey mud-sand mixture, and finally to compact sand with spots of clay and charcoal flecks.

The shaft is probably an unfinished tomb. The narrow trench to either side is an unfinished effort to deepen the floor at the front of the tomb. This is what was done in front of the unfinished tomb before the NE corner of the Sphinx Temple. The fill of the shaft contained no modern inclusions, indicating that this feature may have been overlooked by previous excavators. The fill is characteristic of cycles of windblown sand and erosion off mudbrick walls which ran above the shaft along the top edge of the North Ledge.

Sound and Light Channels

Several channels for electrical cables belonging to the Sound and Light System at Giza were cut into the sanctuary floor. The most prominent of these is 17 cm wide and 17 cm deep. It begins at the cement box for housing lamps opposite the north forepaw and runs in a straight line to the NW corner of the sanctuary. Here it turns 90^0 to run straight to the SW corner, where it turns 90^0 to run straight to the east toward another cement lamp box opposite the south elbow of the Sphinx. The channel does not quite reach the south lamp box but phases out in the broad depression that narrows to the natural channel described above. Square holes were cut along side this artificial channel, at the east end of the north line. Apparently the channel and these holes were never used for the Sound and Light System. From the appearance of these features, I could not have said for certain that they were modern. However, Reis Mohammed And al-Mawgud, an employee of the Egyptian Antiquities Service, remembers that they were cut when the Sound and Light System was installed in the early 1960's.

Other, shallower channels cross diagonally the sanctuary floor in the NE and SE corners. These were for cables leading to lamp boxes that were later removed from those areas. Another prominent cable channel runs N-S parallel to the west wall of the Sphinx Temple in the SE corner of the sanctuary.

4.3 Terrace III: "The Sphinx Amphitheater"

Terrace III is the open surface north of the Sphinx sanctuary and Sphinx Temple (Fig. 4.2). It is bounded on the north by the higher ledge that I call the North Cliff. Beyond the cliff, farther north, is the Eastern Necropolis of the Khufu Pyramid, Reisner's Cemetery G7000 (Fig. 1.6). Terrace III is bounded on the west by the high ledge that runs from the Khafre causeway foundation to the modern road. Terrace III is limited on the south by the North Ledge of the Sphinx Sanctuary, which drops to Terrace II and, farther east, to Terrace I.

There is a bit of Terrace III, 4.6 to 9.3 m wide, behind the Sphinx. As mentioned in the description of Terrace II, the Sphinx builders had probably intended to quarry this away, back to the higher ledge, but they abandoned the work before they had finished. Hassan called the area within these boundaries, with the addition of the Sphinx Sanctuary and Terrace I with the Sphinx Temple, the greater Sphinx "amphitheater."

Terrace III is not, strictly speaking, a terrace. The surface slopes from a high point of 22.50 (31.83 above sea level) at the far NW corner formed by Terrace IV and the modern road, to 14.0 (23.33 above sea level) by the NE corner of the Sphinx Temple. The total slope of Terrace III within the Sphinx amphitheater, then, is more than 10 m.

The cultural and windblown deposits overlying Terrace III were the principle focus of Hassan's excavations in 1936. Over the centuries, a tremendous amount of debris and drift sand had accumulated. However, in the New Kingdom Terrace III was at least partially clear, since there are remnants of three ancient structures from New Kingdom or later periods founded on this surface.

Just above the NE corner of the Sphinx sanctuary is the ruined Amenhotep II mudbrick temple to Haroun-Horemakhet (Porter, Moss, and Malek 1974, 39-40). The axis of the temple is oriented about 44-45^{0} E of N so that its entrance is directed toward the head of the Sphinx (Figs. 4.3, 4.8). This area of Terrace III was obviously cleared when the temple was built, ca 1460 B.C., since the temple is founded directly upon the rock surface. The clearing of the terrace about this time may have been part of the Sphinx excavation alluded to by the son of Amenhotep II, Thutmose IV, on his granite stela erected at the base of the Sphinx's chest. On the other hand, Hassan shows on his final site map another structure of a ground plan, size, and orientation similar to the Amenhotep II temple and immediately to the NE of it. As mentioned in chapter 2, he elsewhere (Hassan 1953, 67) identifies this structure as the "mudbrick temple of Thutmose I (?)" and gives a completely different ground plan (Ibid., Fig. 60) than that on his site plans (Ibid., Pl. XVI; 1960, fold-out map).[3] If there was a structure built by Thutmose I on the terrace, it would indicate that the terrace was cleared much earlier than the reign of Amenhotep II.

Thutmose IV may have been taking credit for Sphinx clearings that were begun in the reigns of his forefathers. At least some of the mudbrick walls around the Sphinx precinct were stamped with his cartouche (Hassan 1953, 7, Fig. 4). These attest to his own efforts to keep the windblown sand away from the site. A small section of one of these walls still stands on Terrace III. It is about 60 m west of the entrance to the Amenhotep II Temple on the edge of the North Ledge of the Sphinx Sanctuary. The wall is partly founded on small limestone slabs that fill a crevasse in the ledge. The crevasse is part of the major fissure cutting through the Sphinx sanctuary.

Another, much larger, mudbrick wall still stands upon Terrace III. It is 4.07 m thick and 24.79 m long and extends perpendicular to the back western ledge of the Sphinx amphitheater. Hassan (1953, 6, Fig.2) labels it part of the protective walls built by Thutmose IV. He assigns "these walls" to Thutmose IV on the basis of the inscribed brick which he mentions and illustrates in proximity to his photograph of this particular wall. He also illustrates two typical late 18th Dynasty blue-painted vessels that were found beside or embedded in "these walls."

Baraize excavated another section of a similarly sized wall that ran E-W in front of the Sphinx Temple (Pl. 2.30). However, the wall in front of the Sphinx Temple was situated high upon wind-blown sand and cultural debris filling the area in front of the temple. The pan bedding of this wall is typical of massive late enclosure walls around temple sites. It is possible that the more massive wall on Terrace III, northwest of the Sphinx, was part of an enclosure around the site built much later than that of Thutmose IV.

The massive wall on Terrace III was also part of an architectural arrangement in front of four tombs cut into the Western Ledge at the NW corner of the Sphinx amphitheater. Caviglia cleared these in 1816; Birch (1852-53) published a plan of the arrangement (Fig. 2.2). Three flights of steps led to platforms extending from the mouths of the tombs. Of the four tombs, two have been identified as belonging to Ptahardis and Pedubaste (Porter, Moss, and Malek 1974, 291 Pl. VI), dated to the 26th Dynasty.

Another series of tombs opened south in the North Cliff, which rises some 7 to 10 m above the average level of Terrace III. Hassan, who cleared these tombs in 1936, noted that the 14 tombs he counted occurred in two levels (Hassan 1960, 5). He suggested that the higher tombs were cut at a time when the base of the cliff was covered by sand, which occurred at least as early as the New Kingdom, since some of the higher tombs featured New Kingdom graffiti and carved reliefs. The lower-level tombs date to the Old Kingdom. Three were inscribed and belonged to Anhk-re, In-ka-f, and Kai-wehemu (Porter, Moss, and Malek 1974, Pl. VI, 214-15; Hassan 1953, pl. xvi, 55-60; 1960, 11-37 and fold-out map). The most prominent of all these tombs is that of In-ka-f with its intact portico, architraves and columns. It may date to the 5th Dynasty reign of Sahure while the other two inscribed tombs may date to the 5th or 6th Dynasty (Hassan 1960, 11 suggests late 4th or 5th Dynasty). Although it is on the lower part of the cliff, the tomb of Ankh-re must have been accessible in the New Kingdom, as indicated by relief carvings of Amen-re and of individuals worshipping the Sphinx on its walls.

Hassan's 1953 (Pl. xvi) and 1960 (fold-out) maps do not agree on the layout of the cliff tombs. In Fig. 4.2 the tombs have been plotted according to the Hassan's fold-out map and on the basis of 200 points on the exterior doorways and other features that I surveyed. Several of the tombs are covered by the modern road and its embankment, and modern buildings belonging to the Sound and Light system, while the entrances to others have been sealed. I plotted the interiors of the tombs in Fig. 4.2 by adjusting Hassan's tomb plans (loose sheets with his 1960 publication and fold out plan) to my survey data. During my survey I counted a total of 18 tombs, combining upper and lower levels, and tombs that I did not see but that Hassan mapped. Hassan (1960, 11-12) observed that most of the tombs in this cliff appeared to have been left uncompleted.

The modern road that descends along the base of the north cliff leads to the parking area in front of the Sphinx Temple and beyond to the town of Nazlet es-Samaan. A modern wall runs along the south side of the road. The wall is just above head-height on the road side, but descends vertically to the much lower surface of Terrace III on the Sphinx side.

4.4 Terrace IV

Terrace IV is the surface at the top of the western ledge of the Sphinx 'amphitheater' and the top surface of the Khafre causeway foundation that limits the Sphinx amphitheater and sanctuary on the south (Fig. 4.3). This surface is not a true terrace. It slopes from elevation 29.0 (38.33 above sea level) at the NW corner between the Western Ledge and the modern road to 21.5 (30.83 above sea level) at the SW corner between the Western

Ledge and the Khafre Causeway. The shoulder of the causeway slopes from elevation 21.5 to 13.5 along the Sphinx sanctuary.

Although this fact is not readily apparent, the top of the western ledge behind the Sphinx is a roadway or ramp that slopes from the Khafre causeway up to the north. The surface of Terrace IV above the Western Ledge is several meters higher than the bedrock around the large square tomb shaft known as Campbell's Tomb which is the next nearest exposed bedrock surface to the west, about 40 m distant. Campbell's Tomb (LG 84; Porter, Moss, and Malek 1974, 290) is a large 26th Dynasty shaft; it is one of only three registered tombs in the vast area that extends from the Sphinx amphitheater to the Pyramid Temple and NW corner of the Khafre Pyramid, and from the Khafre Causeway on the south to the modern road and cemetery GI-S at the base of the Khufu Pyramid on the north.[4] Otherwise this trapezoidal area, measuring about 150 X 450 m, is entirely filled with debris that covers a quarry used for building the Khufu and Khafre Pyramids. The Khafre causeway is a ramp of natural stone that was left between this quarry and that of the Central Field farther south (Lehner 1985a, 124). Similarly, quarrymen left the top of the Western Ledge of the Sphinx amphitheater as a bridge of natural rock, from 5 to 15 m wide, running from the Khafre causeway toward the Eastern Cemetery (G7000) of the Khufu Pyramid. The continuation of this surface on the north side of the modern road is lost under the debris and the bedding of the road.

Hassan (1953, 162) noted that a trench runs alongside of the Khafre causeway foundation and breaks into the SW corner of the Sphinx sanctuary (Fig. 4.2). Although he did not show the trench on his maps, he wrote that it is cut in the natural rock for a width of 2 m and a depth of 1.50 m. The trench stops abruptly at the western edge of the cavity of the Sphinx. In the case of a heavy rainfall, this trench would act as a drain and discharge all its dirty water into the cavity of the Sphinx. Here, then,seems to be clear proof that the Sphinx was cut after the causeway, because had it existed before, the excavators would never have continued cutting the trench right to the edge of the cavity, it being unthinkable that the sacred enclosure of the god would become the receptacle for drainage water, even periodically. However, when the Sphinx was cut, this state of affairs was unavoidable, therefore the architects did their best by plugging the end of the trench with great blocks of granite; and it is this that forms a convincing proof that the Sphinx was a later addition to the Khafre Pyramid complex, but not necessarily belonging to it (Ibid.).

The intersection of the causeway trench with the Sphinx sanctuary is a prominent notch cut into the top of the western ledge at this corner. The notch is filled with limestone pieces that serve as a foundation for a section of mudbrick wall. This is probably part of the system of enclosure walls built by Thutmose IV. The wall at this corner is complete in the map of Caviglia's excavation provided by Birch (1852-53; Fig. 2.2 here). In 1989-90 the EAO recleaned the surface of Terrace IV around this spot. The mudbrick wall remnants were exposed and partially cut away. The trench along the causeway, and a single block of granite resting in the trench, were exposed.

4.5 The Geology of the Terraces

In chapter 1, drawing from Aigner (1983a), I described the Giza Pyramids plateau as a nummulite bank, formed in the middle Eocene. The bank supports the pyramids to the north-northwest. Behind this bank, to the south-southeast, a series of limestone beds was formed from a "back-bank" environment consisting of a shoal and coral reef and, upon this, a lagoon that laid down softer mud and silts.

Rushdie Said (1962, 98; Said and Martin 1964, 115) noted that the Sphinx was formed from three principle geological layers that make up the Mokkatam Formation at Giza. In the preliminary report on the Sphinx Project (Lehner 1980) I called these, from top down, Beds 1, 2 and 3. When Gauri carried out his geological study in 1980, we renamed these units from the bottom up, Members I, II, and III.

4.5.1 Member I

The reefal layer forms the lowest unit in the Sphinx sanctuary. I use the term "Member I" for this unit. Gauri (1984, 27), wishing to apply a place-name to Member I, called it the "Rosetau Member," after a New Kingdom term for the Sphinx area (see chapter 3). He characterized the layer as "a massive reefal (bioherm) limestone with a knobby surface having a relief of nearly one meter." Aigner (1983a, 355) described the same unit as consisting of "isolated patches of coral colonies that 'float' in a variable matrix of calcarenite to calciruditic reef debris, nummulites, large thick-shelled oysters (mostly disarticulated) and a variety of other bioclasts. Thin encrustations of coralinacean algae may occasionally be found". In practical terms, the Member I rock is extremely bumpy, hard, and brittle. It is highly resistant to weathering.

As the map indicates (Fig. 4.2), the slope of Terrace III is not particularly even. The surface is even more irregular than indicated by the 50 cm contour intervals. It is characterized by small hummocks, troughs, and basins, giving 1 to 2 m of relief. The small hummocks are fossilized aggregates of sponges, corals, oysters, and possibly stromatolites (laminated mound-like sediments produced by algae) on the shoal reef of the Eocene sea waters, ca. 50 million years ago (Aigner 1983a). The troughs and basins, of a hard, finer grain stone, are low seabed areas between the bioaggradations of the hummocks. The remarkable thing about Terrace III is that its surface is that of a fossilized shoal and coral reef (Fig. 1.4) nearly in original life position. This happened because the rock of Terrace III and below is extremely hard and brittle (Member I), while the higher rock that was quarried away to form Terrace III is much softer (Member II). The first limestone layer that formed upon the hard rock of Terrace III is a particularly soft yellow clay-like stone, Bed 1i of Member II (Fig. 4.5). Thus, the ancient quarrymen were able to strip off the overlying rock across Terrace III while leaving the natural plane of deposition of the shoal reef as it was 50 million years ago.

The Sphinx builders did, however, cut down into Member I to create Terrace II, the floor around the Sphinx. Consequently, the North Ledge and back, western end of the Sphinx sanctuary are cuts through Member I, where one can see, in section, petrified corals in life position. The layers of the Mokkatam Formation at Giza dip generally 3 to 6 degrees from northwest to southeast. The floor of the Sphinx, on the other hand, is generally level, cut into Member I all around the base of the statue. The leveling of the floor cut through the interface between Member I and Member II on the south-southeast part of the Sphinx sanctuary (Fig. 4.4). The weathering away of the first or lowest limestone layer of Member II (Bed 1i, see

Fig. 4.5), left the prominent channel running across the floor as described above.

Fig. 4.6 reconstructs, at 50 cm contour intervals, the original surface of Member I, which is at the same time, the contact plane with Member II. The reconstruction was done, under the direction of Gauri, by interpolating from the surface of Terrace III, from points on the Member I surface where it was cut by the floor in the south side of the Sphinx sanctuary, and from points on the body of the Sphinx.

The interface between Members I and II runs over to the SW corner of the Sphinx Temple (Figs. 4.2, 4.3). The interface must run for some distance almost exactly under the south wall of the Sphinx Temple since the lowest layers of Member II are exposed at the end of the corridor between the Sphinx Temple and the Khafre Valley temple (Fig. 4.2), while Member I is exposed immediately on the interior side of the Sphinx temple south wall. The entire bedrock floor area of the Sphinx Temple is cut into Member I, as is the North Ledge running past the Sphinx Temple.

The North Cliff of the Sphinx amphitheater (Fig. 4.2) is also Member I, although it is more characteristic of the shoal reef rather than the coral reef. According to Aigner's (1983a, 357-8) model, the reef become more shoal-like toward the higher north part of the formation (Fig. 1.4). The cliff is partly a natural rise that was cut back during the 4th dynasty quarry work. The cliff is considerably higher than the irregular surface of Terrace III. It may be what is left of an extreme hummock in the "hummocky relief" of Member I (Ibid., 355).

4.5.2 Member II

Member II is in general much softer stone than Member I. Member II is comprised of a sequence of limestone beds that alternate, beginning with Bed 1i (Fig. 4.5), soft-hard-soft-hard. The soft layers are tan or brown-colored with greater marl clay, while the hard layers are whiter (Aigner 1982, 381). This difference is due to a reduction in the clay, halite, and gypsum from the bottom to the top of each layer. The pattern of reduction in these materials, from bottom up, also holds for the whole sequence, so that the softer beds higher in Member II are not as dark as the soft beds at the bottom of the sequence (Gauri 1984, 27). These layers have been weathered differentially in the sides of the Sphinx sanctuary and Sphinx body, so that, in profile, the hard layers protrude, rounded and convex, and the softer layers recede, rounded and concave (Fig. 4.5).

The Member II sequence is exposed in the Western Ledge of the Sphinx amphitheater, in the causeway embankment, and in the major part of the Sphinx body. Gauri (1984) numbered the beds 1-6 with the softer marly beds designated "i" and the harder beds "ii."[5] In the sides of the amphitheater Member II is preserved only as high a Bed 4i and 4ii (Fig. 4.5). Gauri designates Bed 6ii as the top of Member II in the Sphinx body (Ibid., 30-31, Figs. 3a-b).

According to Aigner (1983a, 361), the layers of Member II were deposited in the relatively quiet "back-bank" environment behind the nummulite bank to the northwest. These layers quickly filled in the troughs and hummocks of Member I and carried the dip of the formation to the southeast in an even grade. This is illustrated in Fig. 4.7 in which the original contours of Member II have been reconstructed across Terraces II and III, where the Egyptian quarrymen removed Member II. The reconstruction was done through interpolation from points on Bed 3i in the sides of the Western Ledge and the Khafre causeway embankment.

Gauri called Member II the "Setepet Member" after the New Kingdom term for the Sphinx sanctuary. Aigner (1983a, 359) characterized the Member II sequence as "mudstones and wackestones" with macrofauna "dominated by burrowing echinids (Schizaster, Euspatangus, Echinolampas). Other frequent faunal elements include Serpulids (mostly fragmented), gastropods (Cerithium, Natica), Kuphus, oysters, Spondylus, Glycimerus, Lucina (mostly still in life position) together with some other burrowing bivalves, bryozoans, few corals, and fragments of regular echinids."

As Gauri (1984, 27) and Aigner (1983a, 359; 1982) observed, Member II stone comprises most of the quarries of the Central Field at Giza. Member III, the highest (youngest) layers of the Moqattam Formation on the site, are preserved only in the head and shoulders of the Sphinx and in the vicinity of the Khentkawes monument.[6]

4.6 Quarrying the Terraces

As noted above, the orientation of the following features is about 4 degrees east of north, or 4 degrees south of east (Fig. 4.3): The original edge between Terrace I and Terrace II before the Egyptians built the west side of the Sphinx Temple into it; the parallel south wall of the Valley Temple and the north wall of the Sphinx Temple; and the unfinished north ledge that drops from Terrace III to Terrace II.

The Khafre causeway is oriented 13^{0} 41' south of east. The causeway embankment is roughly parallel to the North Cliff of the Sphinx amphitheater and to the modern road that passes along the face of the cliff as it descends from the direction of the Khufu Pyramid. The road may follow the course of an ancient supply ramp for stone taken from the Sphinx amphitheater quarry when the Egyptians made the pyramids.[7] This is implicit in Reisner's (1942, 26) idea that the Sphinx is in the “old Cheops quarry.” There are reasons to believe, however, that the bulk of stone for the Khufu Pyramid came from the quarry directly to the south of the Khufu Pyramid, in the west part of the Central Field (Lehner 1985b, 121-2). The supply route from the Sphinx amphitheater could equally have served the construction of the Khafre Pyramid.

In either case, the evidence suggests that the Egyptians began a quarry in the area of the Khafre Valley complex which was oriented about 13 to 14 degrees south of east and north of west - that is, the orientation of the Khafre causeway embankment and the north cliff. The quarry SE of the Menkaure Pyramid (Fig. 1.2), that probably furnished most of the stone for that pyramid (Reisner 1942, 12), has a similar NW-SE orientation. When the Egyptians opened these quarries they removed the stone by working against the dip of the formation, which is to the SE. Eventually, they reached the harder stone of the shoal/coral reef and the nummulite bank. This happened in the Sphinx amphitheater where the quarry was bounded on the north by the North Cliff, which must represent a salient hummock of hard Member I stone. In the NW corner of the amphitheater, one can see how the soft Member II layers lense out against the rise of Member I (Figs. 4.2, 4.4). The result is an ever deepening quarry at the far NW end with the mouth left shallow for dragging out the blocks. The blocks could have been taken around and up the sides of the quarry toward the pyramids higher on the plateau.

The terraces, temples, and the Sphinx in the Sphinx amphitheater are oriented to the cardinal directions. As the Egyptians removed the surface to achieve the terracing, and to reserve a core of bedrock from which they could sculpt the Sphinx, they brought the alignment closer to the cardinal directions, probably in a series of successive approximations as better levelling allowed a greater precision of alignment. The original edge to Terraces I and II and the unfinished North Ledge might represent an intermediate stage in moving from the original orientation of the rough quarry to the final orientation of the terraces. The original orientation of the quarry was left on the south for the Khafre causeway embankment. The causeway is, in fact, a reserved strip of natural rock with quarries on either side for its entire length up to the pyramid. Why the builders left the angle to the south wall of the Khafre Valley temple and north wall of the Sphinx Temple is still an open question.

Chapter 4 Notes

[1] Goedicke cleared just south of these features in June-August 1974. He

[2] According to Ricke (1970, 3), who at the time was carrying out his work at the Sphinx, the millennium was celebrated on this stage by an English ballet troupe performing "Swan Lake." *Ed note: after this writing (1991), the stage was removed in 1993 by the Giza Antiquities Inspectorate under Zahi Hawass. Robert Kachinsky and Mark Lehner separately mapped features that had been covered by the stage. These included the remains of two mudbrick walls that abut to the ramps and define a corridor, with tunnels sloping down under the ramps. North of the northern ramp, the eastern wall is replaced by a broad mud-paved terrace. These features are included in Fig. 4.8.*

[3] See chapter 2, note 1.

[4] *Ed. note: Since this writing (1991), the Giza Inspectorate, under Zahi Hawass, excavated more Saite Tombs in this area, now designated the Central Field North. These have not yet been published, but see Lehner and Hawass (2017, 512-520).*

[5] *Ed. note: Thomas Aigner first numbered the beds starting with Beds 1-a-b-c in Member I and continuing in numerical sequence up to Beds 9 a-f in the head. K. Lal Gauri later asked that I designate the beds starting with number 1 as the lowest layer in Member II and continuing the numerical sequence with alternate soft, marly beds as sub Roman numeral "i" and the harder beds as sub Roman numeral "ii" in Member II, so 1i, 1 ii, 2i, 2ii, etc. This left the Sphinx head layers as 8-plus-letter rather than 9. I used Gauri's (1984, figs. 3a-c) numbering in most publications where Member II Sphinx beds are designated (Lehner 1991b; 1994); Hawass and Lehner (1994a, 46-47). Chowdhury, Punuru, and Gauri (1990); Gauri, Sinai, and Bandyopadhyay (1995); and Gauri and Bandyupadhyay 1999, 183-211 also use Gauri's bed numbers. For a forthcoming study of the Sphinx Temple core blocks, Aigner and I will revert to Aigner's numbering, since he and I surveyed the Sphinx Temple core blocks together after I drew and numbered all the blocks, and because we referenced Aigner's bed designations in our notes and comments for that study.*

[6] *Ed note: See Chapter 1 note 1.*

[7] It is not clear if this is the supply road "toward the southern part of the village of Nazlet-el-Semman" mentioned by Hassan (1960b, 19); cf. Maragioiglio and Rinaldi (1965, 172).

CHAPTER 5

The Sphinx Core Body

5.1 Introduction

The Egyptians carved the Great Sphinx from the limestone bedrock of the Giza Plateau. They carved the head of a king wearing the distinctive nemes scarf surmounted by the divine cobra on the body of a recumbent lion. The extent to which they finished the body from the natural rock, as opposed to leaving it rough or casing it with limestone blocks, is open to question. Today, layers of masonry cover the core body up to about two-thirds of its height on the south side and to one-third its height on the north side (both estimations as of 1983). This chapter will examine in detail the Sphinx's bedrock surface exposed above the masonry cover and parts near the base that have been revealed by the removal of the outer veneer.

5.2 Geological Layers

The principal parts of the statue correspond geberally with the principal geological layers, or members, from which it was formed. (Figs. 4.5, 5.7) The base is cut into Member I, a very hard layer; the body is shaped mostly in Member II, a series of softer beds; and the head is formed from Member III, a layer of intermediate hardness.

Members I and II have already been described in chapter 4. Those who mader the Sphinx cut the floor all around the statue into the hard Member I rock. They left some Member I rock in the lower part of the core of bedrock that they reserved for carving the statue. Due to the dip in the geological formation - from the NW to the SE of less than 6 degrees - Member I rock rises to a height of about 3.70 m in the rear of the statue (Fig. 5.11), but to a height of only 1.09 to 0.65 m in the forepaws and in the area of the chapel.

Aigner (1983a) did not distinguish layers of the Sphinx head from those of the body; the former are somewhat ambiguous in his depositional model of how the Giza limestone layers were formed (Fig. 1.4 here). However, he agrees that the Egyptians reserved a harder layer for the head. They seem to have actually spaced the forehead, eyes, nose, and mouth according to these upper layers, and according to the thin separation lines between them (Id. 1983b, 383-4, Fig. 8).

Said (1962, 98) distinguished the Sphinx head and neck layers as a bed distinct from the body. The upper layers are characterized by the abundance of the fossil *Operculina pyramidum*, the remains of 'trap doors' on gastropods. These fossils help make the head layers hard but not brittle – qualities of good building stone. The head is formed from the top of the Upper Eocene geological layer at Giza (Said and Martin

1964, 112, 115).

Gauri (1984, 33) gave these upper layers membership status, calling the unit the "Akhet Member", after the ancient Egyptian word for "horizon." He describes Member III as nearly nine meters thick, "the lower one-third of which, forming mainly the neck of the Sphinx, is a relatively softer limestone being richer in the clastic {clay} fraction. The upper portion is a massive limestone interlayered with four distinct partings, each nearly 10 cm thick, of somewhat softer limestone similar in composition to the limestone of the neck" (Ibid.).

I noted in the description of Member II (chapter 4) that the sequence is one of softer, more yellowish beds with greater clay content, interspersed with harder and whiter beds. The clastic (clay) fraction becomes less in each bed (eg. from 2i to 2ii) as well as from bottom upward throughout the entire sequence. Gauri attributes this layering to periods of sea turbulence that brought in more land-derived sediments interspersed with periods of sea tranquility (Ibid., 27). The fact that this interspersed pattern ceases in the beds above 6ii (Fig. 4.5) prompted Gauri to designate bed 7 as the beginning of Member III (Fig. 5.7). Nevertheless the pattern is repeated, though on a greater amplitude. Beds 7a-d (Pls. 5.1, 5.3, 5.6) represent the lower part of Member III with the characteristic higher clastic fraction, while beds 8a-f of the head are the harder upper layers originating in deposits under calmer sea waters. The head is of a much darker color than the neck and body because of a protective patina that forms naturally in the upper Member III stone. According to Gauri's analysis, this is due to higher amounts of gypsum (calcium sulphate) in the stone. "This gypsum presently forms the duricrust which gives the brownish appearance to the head region and has contributed to its durability" (Ibid., 33).

5.3 Dimensions

The total length of the statue from the tip of the masonry-covered forepaw (which extends .26 m further east than the north forepaw) to the masonry-covered tail at the rump is 72.55 m. Assuming that the small, brick-sized masonry at the tip of the forepaws is no more than 0.15 m thick and that the masonry covering the tail is about 0.50 m thick (as in the section through the masonry at the rump (see chapter 6), the length of the bedrock core is approximately 71.90 m. This would make the length of the bedrock reserved for the core body of the Sphinx about 137 royal cubits. The Sphinx measures 19.10 m across the haunches, its widest part (Fig. 5.1). It is thinnest across the waist, measuring 10.00 m at its masonry-covered base and only 3.6 m across at the top of the back. From front elbow to elbow the Sphinx is 18.50 m wide. It measures 12.70 m across the chest.

The total height of the statue, from its bedrock floor to the tip of the cobra on the forehead (as now preserved), is about 20.22 m, with some slight variation due to irregularities in the floor. The top of the back, at its highest point, is 12.38 m above the level of the floor.

5.4 Head

The head of the Sphinx is the only bedrock part of the monument that shows finished stages of sculpture, including smoothed surfaces and detail in fine relief. This finish, taken together with the head's darker color, leads many first-time visitors to the Sphinx to wonder if the head was added as a separate piece to the body. The variation in color results from the natural tendency of the Member III bedrock (of which the head consists) to develop a dark, protective patina, or "duricrust" (Gauri 1981a, 1981b, 457). Furthermore, the original polish of the head has helped to decrease the elemental surface abrasions that so fully characterize the exposed bedrock of the body. The Member II bedrock of the body retains its lighter color by continually cleansing itself through a cyclic weathering process of surface flaking and powdering.

The Sphinx's face is somewhat square in shape (Pls. 5.23, 5.38). The total width of the head, including the nemes headdress, is 10.30 m north-south and 9.78 m from the front of the mouth to the break at the tail of the headdress. The nemes headdress fans out approximately 3 m to either side of the face. The face alone is 4.45 m wide across the temples. The total height of the head, from the base of the chin to the top of the remains of the cobra, is 5.88 m.

The top of the head is generally flat (Pls. 5.4, 5.17, 5.30, 5.31, 5.32, 5.33) but, at close range, the surface is quite rough and pocketed (Pl. 5.39). Above this flat plane, the bedrock rises slightly to what remains of the top of the uraeus. There is another protrusion, measuring 0.67 m from north to south, toward the back of the head, 3.50 m west of the uraeus (Fig. 5.1). There is a hole cut into the top of the head between the uraeus and the protrusion, but I have not been able to measure these features on the spot. I measured the protrusion by triangulation. From Arch. Lacau photo CI 33 (Pl. 5.39), the hole appears to be as deep as the height of the man standing in it. This would make the hole approximately 1.75 m deep. The photograph suggests that the hole is between 1.50 m and 1.60 m wide north-south, and slightly longer east-west. Its position on the plan of the Sphinx (Fig. 5.1) has been estimated from CI 33 (Pl. 5.39) and from aerial photographs. During Baraize's work in 1926, the area around the hole was paved with cement and closed with an iron trap door secured with a fly-wing bolt.

Uraeus

At the center of the Sphinx's forehead are the remains of the divine cobra, or uraeus, worn by ancient Egyptian gods and kings. The head of the serpent is broken off at a point about 1.50 m above the head band of the nemes (Pl. 5.40), and chisel marks are still visible at the break. The uraeus measures 0.87 m across at its upper most point. In 1916, Caviglia found a large serpent head thought to be original to the Sphinx at the base of its chest (Pls. 5.41, 5.42, 5.43, 5.44, 5.45, 5.46, 5.47, 5.48). The piece was taken to the British Museum (BM 1204, 5.44-48) along with a fragment of the beard (see chapter 8). A plaster cast of the serpent head is in the Cairo Museum (TL 16/3, 29/1). It measures 61.7 cm in length and 45.7 cm in width, dimensions which approximately match the break of the uraeus at the top of the Sphinx's head (Fig. 5.1). Rough tool marks across the underside of the uraeus head indicate that the piece must have lain for most of its length on the bedrock of the head (Pl. 5.47). Chisel marks toward the back of the underside are similar to those at the top of the uraeus (Pl. 5.40). It is unclear whether the regular chipping on the underside of the uraeus head came from the break which dislodged it from the Sphinx or whether this is a piece that was carved separately and added later. A closer geological inspection of the piece could resolve this issue. If it was added later, the underside may have been left rough in order for the mortar to hold it better in place.

The head of the uraeus shows wide, round eyes and a closed mouth with full upper jowls. The surface behind the head is covered by a raised rectangle in carved relief. According to Johnson (1990, 98), traces of painted red gesso remain on the eyes, while flecks of white and black occur elsewhere on the piece. The hood of the uraeus on the Sphinx head is "proportionately large" (Ibid.). The ventral shields are shown by horizontal lines which form wider bands at the bottom and again at about half the height of the forehead. Vertical lines forming crescent shapes indicate the dorsal scales, which are divided by diagonal bands at about two-thirds the height of the hood.

Nemes

The nemes headdress rises to a height of about 1.70 m on the forehead from a band about 0.28 m wide. Relief-carved bands, showing a triplex pattern of wider bands (about 0.18 m wide) flanked on both sides by slightly thinner bands (about 0.15 m wide), render the pleating of the headdress. The pattern is seen best on the south side of the forehead (Pl. 5.49). North of the uraeus, a wide gash, which formed from the weathering away of a softer limestone layer, 0.50 m thick, mars the forehead and side of the head (Pls. 5.1, 5.2, 5.3, 5.4). The gash was filled with cement during the repairs of 1925-1926 (Pls. 5.26, 5.27, 5.28, 5.29, 5.30).

The top of the nemes follows the contours of the forehead back 3 m from the plane of the face on both sides. On the south side, a slight peak indicates the sharp upper fold of the scarf where it falls down over the back of the head. The gash has obliterated the corresponding feature on the north side. The fold falls off at an angle to either side of the face, forming vertical triangular planes perpendicular to the head in the traditional pattern of the royal scarf. These planes were not carved absolutely straight; they show a slight concavity from the outer point of the nemes and toward the neck (Pls. 5.36, 5.37). This inward curve is more pronounced above the ears in the upper corner of the fold of the scarf (Pls. 5.51, 5.58). The pleating occurs again in relief on these planes with the triplex pattern of a slightly wider band flanked by two thinner bands. The edge of the fold to the back of the head does not form a sharp corner on the south side; it appears to be planed off (Pl. 5.38). On the north side, this edge weathered away long ago and was covered by the restoration of the 1920s.

On the south side, a thin ridge along the horizontal baseline of the nemes triangle indicates where the lappets of the headdress would have protruded to fall down over the shoulders and chest of the Sphinx (Pl. 5.38). The extent to which these and other details were originally completed in relief on the bedrock needs more discussion. A protruding lump of bedrock just below the corner of the neck with the headdress on the south side may be all that is left in the natural stone of the original relief of the lappets of the scarf (Pls. 5.9, 5.38).

The nemes hangs fully at the back of the head in the traditional form. The pleating pattern on the back of the scarf is the same triplex series of wide bands flanked by two slightly thinner bands. The pleating is drawn together about 6.50 m behind the ears toward the lower back of the head where the nemes is traditionally knotted (Pls. 5.28, 5.29, 5.30, 5.31, 5.32, 5.33, 5.34, 5.35). The weathering away of the bedrock layers and the horizontal separation lines between these beds interrupts the pleating (Pls. 5.3, 5.5, 5.6, 5.7, 5.8). The most severe of these interruptions is in the uppermost layer (Bed 8d-3), where erosion has cut a gash that runs from the north side of the forehead, around the back of the head until it phases out on the south side (Pls. 5.2, 5.3, 5.4, 5.5). During the restorations of Baraize, these weathered discontinuities were filled with cement.

There is a prominent oval-shaped break where the pleating must have come together at the back of the head (Pls. 5.29, 5.30, 5.31, 5.32, 5.33, 5.34, 5.35). The break measures 2.10 m (4 royal cubits) in width, and about 1.40 m in height. The size and position of the break (in regard to the pleating) suggests that it is the point at which the tail of the nemes knotted the scarf at the back of the head (Fig. 5.6). However, the break is 3.40 m above the top of the Sphinx's back (Fig. 5.5), which seems too high if the nemes tail were to lie along the top of the back, as is the case with sphinxes from later times.

Face

Much of the face still retains the original smooth, sculpted surface. However, parts of the surface have weathered, resulting in some radical disfigurement. The geological bedding divides the head into five distinct bands: (1) Bed 8a just above the jawline to the separation lines between Beds 8a and 8b at mouth level; (2) bed 8b at the bottom of the nose; (3) bed 8c to 8d at the eyes, (4) bed 8d from the eyebrows tothe forehead; (5) bed 8e just above the headband (Pls. 5.3, 5.9).

Around the eyes and on the forehead, there are small, deep holes (Pl. 5.54). Some of the holes may be the result of natural fossils in the limestone that fell out when the stone weathered away, but others appear to be the result of projectiles shot at the Sphinx.

The eyebrows, eyes and cheek bones take up the width of one of the wider limestone beds (Bed 8c) from which the head was cut. A thin separation line between limestone beds passes through the face just at the eyebrows (Pls. 5.7, 5.8).

The eyebrows are rendered by rounded, relief-carved bands, 0.20 m to 0.30 m wide. They extend around the sides of the head and run parallel to the eye-liner bands, which extend from the corners of the eyes. The eye bands end just before the small relief-carved flap which drops from the headband against the temples immediately in front of the ears. The relief of the eyebrows and bands from the eyes is not very deeply carved (Pl.5.60). These features were accented by painting the adjacent surfaces of the face in red. Traces of ancient red paint remain on the sides of the face, although it is not known if this is an original application or a later treatment.

The eyes are 1.50 m (south) to 1.56 m (north) long and about 0.60 m wide. Together they span about 3.66 m and are separated by the bridge of the nose, which is 0.60 m wide. The surface of both eye balls is pocketed and rough (Pls. 5.50, 5.57). They appear to have been damaged by an intentional picking with a hammer, which could have accelerated any subsequent weathering. On the south eye, the upper rim and the lower part of the eyebrow are virtually destroyed.

Despite the damage, the original rendering of the iris can still be seen as a flat circular surface at the front of the eyeball. When the light strikes at an angle, a contrast between the shadowed iris and the lighted eyeball defines the iris in both eyes and produces the Sphinx expression (Pl. 5.10). This same lighting reveals a smaller and deeper depression at the center of each iris (Pls. 5.23, 5.24, 5.25, 5.37, 5.38). These depressions are not very regular and are probably the result of a later attack on the eyes, as opposed to a vestige of an attempt to render the pupil and aperture. Arch. Lacau Photo CI 75 (Pl. 5.61) is a close-up of the south side of the south eye. A piece of original molding on the eyeball can be seen on the lower lid toward the outside corner of the eye. Whether this fine detail is carved from the bedrock or formed from plaster has not been determined.

The cheekbones are distinct planes that separate the eyes from the cheeks (Pls. 5.23, 5.24, 5.25, 5.26, 5.37, 5.38). The angular inflection of these planes also helps set off the eyes.

The nose of the Sphinx is missing almost entirely. The complete original nose was about 2.20 m in height from its base to the top of the bridge, and about 1.20 m in width at the bottom. The base of the nose roughly corresponded to two of the more deeply weathered separation lines which cut the face (between Beds 8b and 8c; Pls. 5.9, 5.23, 5.62). What remains is the bridge of the nose between the eyes (Pl. 5.61) and a slight indication of the lower join to the face around the nostrils, particularly on the south side (Pl. 5.62). In the place of the nose, there is a deep and irregular break down the middle of the Sphinx's face. There are two deep crevasses within the break - one located at the top of the bridge of the nose, running vertically down through what had been the bridge for a length of about 0.65 m and a width of about 0.12 m; and the other at just below the corner of the north eye, running at an angle down into what had been the lower fold around the nostril (Pl. 5.23). It is clear that the nose was intentionally broken off, most likely by long chisels or wedges. One chisel was pounded down into the bridge and another deep in and under the north nostril, and the nose was pried off toward the south, apparently all in one quick operation.

The mouth of the Sphinx is 1.90 m wide and originally measured about .68 m in thickness. The upper lip was damaged, mostly at the center and south side, by the break which dislodged the nose (Pl. 5.55). The very fine relief-carving which rendered the lower lip, the line between the lips, and the inflection between the corners of the mouth and the cheeks remains on the south side (Pls. 5.55, 5.62). On the north side, the parting of the lips and the corner of the mouth are obscured by weathering along another of the softer, thin separation lines between the limestone beds from which the head was formed (Pl. 5.55). The line between the lips corresponds exactly to this thin line, which separates into two lines about 0.10 m apart around the south cheek (Pl. 5.8).

The weathered separation lines between geological beds cut the cheeks horizontally (Pls. 5.23, 5.24, 5.25, 5.26, 5.27, 5.35, 5.36, 5.37, 5.38). While some of the original smoothed surface remains on the front of the cheeks and retains red paint, the cheeks and chin show shallow pocketing (Pls. 5.51, 5.56, 5.62), in contrast to the more well-preserved smooth surfaces on the sides of the cheeks and jaw, and around the ears (Pls. 5.53, 5.57, 5.59, 5.60). Centuries of easterly *khamasiin* winds striking the front of the face may account for the pocketed weathering pattern. The sides of the face have been more protected, even from the northwesterly winter winds, by the wide lappets of the nemes headdress.

The ears of the Sphinx are about 2.00 m in height and about 0.85 m in width. The lobe and lower parts of the pinna are broken off on both ears but the folds and the hole leading to the auditory meatus are preserved (Pls. 5.51, 5.58, 5.60). The join of the lobe to the jaw and nemes is also preserved in both ears (Pl. 5.52).

A distinctive feature - a 0.55 m-square cutting in the surface of the neck - occurs just below the south ear (Pl. 5.52). The square is about 0.20 m deep on the west side where the cut is fairly straight and regular. The square is filled in the middle. Either the stone has not been cut away from the center of the square, or the whole cutting was patched with stone that fell away on the edges. Immediately to the west of this cutting, there is a smaller cutting: a thin, vertical notch. There are no similar cuttings under the north ear, although here there is a small, shallow, oval-shaped depression about 0.10 m high and 0.15 m wide (Pls. 5.27, 5.28).

On the south side, a subtle inflection indicates the lower jaw line running from the ear toward the chin where a bit of the original surface bridging the jaw and neck remains (Pls. 5.35, 5.36, 5.37, 5.38). There may be a faint indication of a painted beard strap leading up to the ear. On the north side, this line is not so clear, although part of it can be made out just below the ear. Here the line between the jaw and neck looks like it might contain a residue of gypsum (Pl. 5.28). Toward the front of the face and chin this sculpted line gives way on both sides to a sharp corner formed by the underside of the chin and jaw (Pls. 5.53, 5.56, 5.59).

The corner marking the lower limit of the face is not sculpted as such, even though it falls about where the jawline should be. Yet, it does not seem to be a forced break, which would have chipped more severely the lower part of the cheeks and chin. The jawline falls along the top of a thick, soft and badly weathered geological layer (Bed 7d) which also roughly defines the lower boundary of the nemes headdress around the back of the head (Pls. 5.2, 5.3). This geological layer is the uppermost of two soft and deeply weathered beds (7b, 7d) that are separated by a slightly harder and protruding bed (7c). The neck of the Sphinx was formed from these layers. The finished sculpted surface of the head, and of the Sphinx as a whole, extends no lower than Bed 7d in the bedrock. The north side of the jawline and chin is less complete than the south side because Bed 7d is slightly higher on the north, so that these features weathered away with the soft stone of this layer. The underside of the chin and jaw is rough, pocketed and scaly (Pls. 5.53, 5.56, 5.57, 5.59). There are no obvious chisel marks or other indications of deliberate destruction to this part of the face. The relevance of these facts to the questions about the beard of the Sphinx will be discussed in chapter 9.

One final point about the face: after a hard rain, the water always runs down the south side of the nemes and forehead, down the right eye, over the cheek and across the mouth before drenching the whole face.

5.5 Neck

The neck consists of stone from geological beds 7b, 7c, and 7d. Bed 7c is slightly harder and was left protruding by the weathering away of 7b and 7d (Pls. 5.1, 5.2, 5.3, 5.4, 5.5, 5.6, 5.7, 5.8, 5.9). A small lump of 7c still shows from under the cement cover made during 1925-26 at the back of the neck. The neck is the thinnest part of the statue and it corresponds to the softer beds in Member III. Consequently, the neck had been severely weathered by the time of the 1925 restorations. In addition, the Sphinx has been buried up to its neck in sand and excavated at least twice during its existence. The action of the wind and sand during the time the Sphinx body was buried may also account for the severe weathering of the neck. The thickness of the neck, excluding the supports and cement cover constructed by Baraize, is 6.70 to 7.30 m from west to east, and 4.80 to 6.70 m from north to south. Figure 5.2 shows the contours of the Sphinx core body without the head, and gives the area of the neck with the modern supports, about 7.30 m (E-W) by 9.00 m (N-S). In addition to the geological bedding, the neck is also characterized by distinctive *Liesegang* rings - brown wavy lines which resemble the grains of wood. These fan out from joints in the bedrock and take their color from the iron content of the stone. They pass through the neck in a horizontal pattern.

5.6 Chest

The chest of the Sphinx measures 12.70 m across at its widest point. Since it is almost entirely bare of masonry, it provides a good profile of the geological sequence from which the Sphinx was carved. According to Gauri's (1984, 31, Fig. 3B) distinction, the division between Members II and III occurs as a thin separation line passing through the upper, squared corners of the shoulders, about 3.15 m below the chin (Pl. 5.1, beds 6ii-7a). At the same time, this line, like all the beds visible in the chest, slopes slightly from the north to the south because of the dip in the whole formation. Beneath this line, a succession of alternately harder and softer, more marly limestone beds constitute the rock of most of the body. Because of this sequence, the entire exposed bedrock core of the Sphinx has been weathered into a series of rolls and recesses, or ledges and troughs, as the harder beds have weathered less than the intervening softer beds. Wavy brown *Liesegang* rings run through the sequence of the bedding, more or less perpendicular on the chest and sides.

Corners that are fairly square with the sides of the body define the chest (Figs. 5.1, 5.2). From the neck down to about 6.25 m below the chin, there is a slight recess or concavity to the center of the chest, and a slight projection at both the north and south sides. These projections correspond to the position of the hanging lappets of the nemes headdress on other royal statues.

There is a prominent boss fashioned in the bedrock at the center of the chest, 6.25 m below the chin (Pl. 5.10). The boss protrudes 0.84 m to 1.25 m from the plane of the chest (Figs. 5.1, 5.2, 5.3, 5.4, 5.5, 5.6, 8.8). The boss measures 4.00 m high and 2.30 m wide. The boss - like the rest of the Member II surface of the Sphinx - has been weathered differentially, so that the recesses caused by the weathering of the two soft beds at its top and bottom have left a kind of head, belly, and base. The boss aligns with the chin almost exactly on a vertical plane (Fig. 5.1).

The plane of the chest descends at an angle of roughly 57 degrees for a vertical distance of 14.30 m to the floor level of the Sphinx between the paws. Here, a small ledge has been cut into the surface of Member I (Fig. 8.8, No. 136). Masonry obscures the join between the chest and the tops of the forepaws.

5.7 Back

The top of the Sphinx's back is mostly made from bed 6ii (Member II), except for a residue of bed 7a (Member III), thinning out behind the head (Fig. 5.1). Bed 7a is easily distinguished by the way it weathers, forming a dark, crusty surface (Pls. 5.3, 5.6) as opposed to the smoother, more homogenous, white and yellow beds of Member II. Bed 7a (Member III) can be traced from the top of the Sphinx chest around the back of the head to phase out 15.00 m behind the neck. A thin separation marks the line between beds 6ii and 7a (Pls. 5.3, 5.4, 5.7, 5.8, 5.9). This again marks the fact that the upper part of the Sphinx - the head and neck - corresponds to the natural upper division, Member III, of the Mokkatam outcrop at Giza, while the body corresponds mainly to Member II.

The top of the back rises to 12.38 m above the floor level of the Sphinx sanctuary. The uppermost surface is 28.85 m longfrom the back of the head to the end of bed 6ii at the rump; 9.5 m wide behind the head; 3.6 m wide at the narrowest part of the waist where the large fissure cuts the statue; and about 8.5 m across the top of the rump.

The surface of the back is fairly flat. The rump rises .10 m higher than the surface just behind the head (Fig. 5.2). Between the rump and the back of the neck, a dip of about .40 m forms a very subtle trough about 8.9 m behind the neck. The surface also dips about 40 cm at the waist on the modern cement fill of the large fissure which cuts the core body. In addition to this surface relief from east to west, the top of the back shows a marked dip from the north to the south which causes the Sphinx to appear almost tilted when viewed from behind (Pl. 5.5). The slope is due to the natural dip of the geological formation from the NW to the SE. This is one of several indications that when the Sphinx and its site were constructed, the limestone was quarried along the slope of its natural geological layers.

A large fissure cuts the core of the body of the Sphinx and opens at the top of the back, 17.5 m behind the head (Pl. 5.63; Fig. 5.1). It is part of the main fissure that cuts across the Sphinx sanctuary (Fig. 4.2). The fissure opens into a shaft down through the Sphinx body at the waist. This was first excavated by Mariette in 1853. He recognized this opening as a natural feature, although others had thought it was a funerary shaft (Mariette 1882, 95). The fissure runs through the entire core body of the Sphinx, Member II, and down into Member I, through the floor of the sanctuary (Pls. 5.15, 5.20).

The fissure is formed from a series of smaller joints that traverse this part of the formation and run together at the Sphinx (Omara 1952; Gauri 1984, 49-41). At the top of the back the fissure opens more than 2 m wide (Pl. 5.63). This space was roofed with iron bars, limestone pieces, and grey cement by Baraize in 1926. The width of this roof varies from 2.3 m to 4.0 m. Baraize built an iron trap door into the roof (Pl. 5.64), blocked up the interior sides of the fissure, and sealed it off from the outside. It is possible to descend by rope vertically down the shaft, from the trap-door at the top of the back through the body of the Sphinx. The interior sides of the shaft show the unweathered bedrock surface and sporadic patches of Baraize's stone-cement blocking. The bedrock might have been squared artificially; however, no chamber, as such, is cut at the bottom, which is about 11.50 m from the top of the back, or about 1.0 m short of the outside floor level of the Sphinx sanctuary. The bottom is irregular bedrock with a much narrower crack continuing deeper, although the situation is obscured by grey cement spilled during the Baraize operation.

Two other large fissures, or joints, cut the back and the core body, although they do not open nearly as wide as that at the waist. The first cuts across the back about 0.40 m to 0.50 m from the back of the neck, and the second cuts across the back another 9.3 m to 9.5 m further to the west (Fig 5.1). The first of these may be the reason that the tail of the nemes headdress is missing entirely; it must have split off exactly along the line of this fissure.

A large hole exists in the top of the back, 1.20 m behind the head (Pl. 5.65, Fig 5.1). This has been called "Perring's Hole," after the engineer working under Howard Vyse who ordered drilling into the body of the Sphinx. The operation began on February 23, 1837; was suspended on March 2 of that year; and resumed on May 22. On May 26, 1837:

> The boring rods were broken owing to the carelessness of the Arabs, at the depth of twenty-seven feet in the back of the Sphinx. Various attempts were made to get them out, and on the twenty-first of July gunpowder was used for that purpose; but being unwilling to disfigure this venerable monument, the excavation was given up, and several feet of the boring rods were left in it (Vyse 1842, I, 274-5).

The hole behind the head measures 3.10 (E-W) by 2.00 m (N-S) and is about one meter deep. Vyse's bore hole is at the bottom (Fig. 1). It appears as though the large hole was created when Vyse tried to free his boring rod with gunpowder. In 1978, the hole was cleared of sand, modern cement, and ceramic fragments (used in 1925-6 support of the head) at the direction of Zahi Hawass, who was at that time Chief Inspector of the Giza Pyramids. The debris included a fragment of the Sphinx's nemes headdress (Pl. 5.66). This fragment appears among the limestone pieces on top of the Sphinx's back in Arch. Lacau photo CI 52 (Pl. 5.63).

5.8 Sides

North Side

The north forepaw of the Sphinx is covered completely in masonry. On the elbow the masonry cover rises to about half the height of the shoulder, and it covers about one-third the height of the north side of the body (Fig. 5.6, Pls. 5.13, 5.14, 5.15). Toward the northern rear haunch, stonework covers the core body for about two-thirds of its height (Pl. 5.16).[1]

The exposed bedrock of the north side of the core body is recessed from the shoulder by 2.14 m. The rear haunch protrudes 3.27 m from the bedrock sides of the body. From this protrusion, the bedrock arcs around to the west to form the curve of the upper part of the rump (Figs. 5.1, 5.2).

The exposed bedrock on the north side shows marked differential weathering, resembling that of the chest (Pls. 5.13, 5.14, 5.15). *Liesegang* rings traverse the bedding. The upper edge of the north side is very crusty and weathered into irregular knobs (Pl.5.63 in 1925). A dark brown patina or "duricrust" exists in patches on the surface of the limestone beds here and there on the north side. The patina occurs principally along the lower part of bed 1ii toward the center; on bed 2ii at the shoulder (just west of the masonry cover); and on beds 3ii to 6ii at the large, roughly triangular-shaped piece of bedrock just behind the shoulder (Pls. 5.13, 5.14, 5.15). This piece appears in danger of separating because of two joints that run behind it; one of these joints is the prominent fissure that cuts the entire Sphinx body just behind the head.[2] Other prominent fissures are visible on the north side: one (which splits into two joints) is located just at the center of the body (Pl. 5.14). Another is the main fissure that runs through the waist of the Sphinx (Pl. 5.15). The latter does not open on the side as wide as on the top of the back, but splits into two main vertical joints separated by bedrock. In 1925-6, Baraize blocked these joints with limestone pieces set in grey cement. Another fissure, running NE-SW, cuts across the northern haunch of the Sphinx and splits it at the top (Pls. 5.15, 5.16, 5.63, Fig. 5.1).

These joint intersections occurring near the surface of the Sphinx tend to separate large pieces of bedrock from the core body. One example is the large separated piece behind the shoulder (Pls. 5.13, 5.14). Other examples are found in bed 2ii around the curve of the north rear haunch (Pls. 5.15, 5.68). The plane of the eastern face of the haunch tends NW-SE, which approximates the trend of the western branch of the main fissure cutting the Sphinx's waist. Large boulder-like pieces are nearly separated from the surface along bed 2ii. In this same bed, just under the outer most point of the haunch, a large duricrusted boulder has separated along the joint-line, only to be shored up by the earliest masonry built onto the core body of the Sphinx (Pl. 5.68, Fig. 5.9).

There is one final detail to be noted on the north side of the bedrock core body: a recess into the surface of bed 1i on line with, and 2.5m above, the small stone box attached to the masonry cover of the north side (Figs. 5.6, 5.10; Pl. 5.14). The recess is 2.5 m wide and 0.40 m deep. The box is about 2.5 m wide. It is uncertain whether the recess is artificial. The surface of this featured shows a heavy efflorescence. A faint reddish tint toward the west side may be red paint.

South side

The south side of the Sphinx is covered by masonry up to two-thirds of its height (Fig. 5.5). The masonry cover falls away at the front shoulder, but the elbow, forepaw and hind paw are covered (Pls. 5.17, 5.18, 5.19, 5.20, 5.21).

The south side of the bedrock core body is recessed from the shoulder by about 1.30 m, measuring from the upper geological beds. Although this recession is from a higher point on the body than for the corresponding feature on the north side, the south side recess is 0.84 m less. Thus, there is a slight lack of symmetry to the core body of the Sphinx. The north side might be more recessed due to greater weathering or loss of stone along the joints at the surface. The south side probably bulges out even further under the masonry veneer. The line of bedrock at the waist is recessed 2.8 m from the shoulder, and some of this may be due to loss of stone at the main fissure which runs through the waist. The haunch protrudes 3.25 m from the plane of the south side of the core body. An excess of stone is left on the inner east side of the haunch (Figs. 5.1, 5.2; Pl. 5.67), probably to accommodate the tail, which traditionally swings up against the haunch in Egyptian sphinxes.

The differential weathering, which brings out the individual limestone beds in a series of rolls and recesses, is also marked on the south side. This side, however, does not appear quite as jointed as the north, and the patterns of weathering are slightly different. The upper edge of the body is not so knobby and crusted: the edges of the individual beds are more rounded (Pl.5.63). There is not much patina on the bedrock, except for a slight amount on beds 5ii, 6ii, and 7a just behind the head. As on the north side, neck and chest of the Sphinx, *Liesegang* rings run throiugh the bedrock exposed on the south side.

The three main fissures cutting the core body appear on the south side: (1) just behind the head, (2) at the middle of the body, and (3) the largest fissure at the waist (Pls. 5.18, 5.19, 5.20). The latter is thinner on the south side than on the north side, and the bedrock around it does not appear as jointed. Baraize's cement blocking exists at the top (Pls. 5.19, 5.20) and down the side where the opening thins. The fissure is sealed over by bedrock just above the masonry veneer.

5.9 Rump

At the back of the Sphinx on both sides, the masonry cover rises to bed 3ii - about two-thirds the height of the core body. At the very back of the Sphinx, toward the center of the rump, the stonework has been removed to form a masonry ledge at a little more than half the height of the core body (Fig. 4.11, Pls. 5.21, 5.22, 5.70; Figs. 5.1, 5.5, 5.6).

The profile of the bedrock rump has weathered more severely than the chest and sides of the Sphinx (Pls. 5.11, 6.30). The harder beds (3ii, 4ii and 5ii) protrude beyond the intervening soft beds. On the rump ledge, Baraize filled the space between the earliest masonry veneer of large blocks (Phase I) and the bedrock core with cement and limestone chips in 1925-6 (Fig. 5.1). The filled space is adjacent to the hard bed 2ii (Fig. 5.15). Above 2ii, bed 3i has weathered into a large recess up to 1.50 m in height and 0.80 m in depth (Pl. 5.70). At the north and south sides of the rump ledge, it is evident that the core body was severely weathered before the earliest addition of the masonry veneer because the veneer fills in deep recesses caused by the weathering of the softer beds (Pls. 5.22, 5.70; Figs. 5.12, 5.13).

As on the north side of the Sphinx body, the joint patterns on the rump have nearly separated boulder-sized pieces of the core along bed 2ii (Pls. 5.22, 5.70). The largest of these has separated from the body and rests at an angle in the cement fill of Baraize just north of the center of the rump (Pl. 5.69; Figs 5.14, 5.15). This boulder measures 1.60 x 1.25 m and is about 1.20 m thick. The way it abuts to a large Phase I block suggests that the boulder may have been dislodged before the masonry was erected. I excavated the fill between this boulder and the bedrock core (Fig. 5.14). The fill consisted of (1) fine stone flakes (probably from the weathering of the core); (1b) a very thin layer of fine clay or gypsum with fine stone flakes; (2) fine sand with separation (drying) lines and limestone fragments at the bottom; (2a) loose fine sand; and (3) tan clay with large limestone chips, some mortar fragments, and charcoal bits embedded in the surface (contact with 2a). The material of layer 3 is found associated with the ancient phases of masonry as filler between the masonry and the core body.

I might note one final indication of the weathering of the core body. There are places where lines of modern cement, probably applied as part of the preservation efforts of 1925-26, protrude from joints and fissures. The surrounding stone has since flaked away sufficiently to leave the harder cement protruding as a mould of that part of the joint obliterated by weathering.

5.10 Forepaws

While some have claimed that the forepaws of the Sphinx are disproportional to the rest of the statue due to later masonry additions (Montet 1968, 298), this definitely is not the case. In certain patches where the masonry cover of the paws has been removed, the veneer at the base of the paws is not very thick over the bedrock. Thus, the baseline dimensions of the bedrock paws are probably not much less than those which include the masonry.

The south forepaw is 5.70 m wide across the front four toes. If the masonry veneer is not much more than 0.25 m wide on either side of the paw, the width of the bedrock paw is roughly 10 ancient Egyptian royal cubits. The width across the paw, including the back inside toe is 5.76 m, and at the rear outer toe the width across the paw is 5.73 m. The length of the south forepaw is 17.05 m from the toes to the masonry casing the lower part of the chest, and about 18.00 m to the exposed bedrock of the chest. The height of this paw is 3.37 m at the west end by the chest, about 2.70 m just behind the toes, and about 2.30 m at the toes.

The north forepaw is 5.35 m wide across the four front toes, 5.74 m wide across the paw at the inner hind toe, and about 5.50 m wide across the paw at the rear outer toe. The length of the paw is 17.40 m to the base of the masonry casing on the lower part of the chest. The height of the paw is 3.50 m at the far west end, 2.90 m just behind the front toes, and 2.34-.40 m at the toes.

In late 1983 and early 1984, the EAO restorations exposed patches of bedrock on the outside (south side) of the south forepaw.[3] The bedrock surface exposed at the south elbow is fairly regular. However, it is not smoothed (Pl. 5.79). This surface is stained a deep red. The bedrock appears to be Member I, although it was hard to tell in the small incremental exposures. Higher up on the elbow, as the veneer was removed and replaced, the background was laid masonry (Pl. 5.71). It appears that the lower natural rock of Member I juts out to fill the contour of the elbow, and then recedes considerably to the rock of Member II (Pl. 5.71, just above the masonry). If this is the case, then masonry packing, built upon the ledge of Member I rock, fills in the recess to make up the finished contour of the statue.

Further east on the side of the paw, the veneer removal also revealed bedrock close to the floor level. A patch just behind the outermost toe showed a bedrock surface that was fairly regular from the corner with the floor to a height of about 1.5 m (Fig. 5.16). The surface of the bedrock is rough-textured, and it exhibits a subtle inward curve which may mark the phasing out of the back toe along the side of the paw. Here again, the bedrock is stained red or dappled with red powder and white mortar. The red powder against the bedrock behind the outer veneer was sufficient to stain the new blocks and the floor nearby during the replacement operation.

The EAO 1983-84 restoration also replaced the masonry veneer at the front toes. I was unable to examine closely the exposed background, except for a small patch which appeared to be the rough unfinished Member I bedrock surface. In addition, some veneer was removed and replaced at the base of the inner side of the south forepaw near the front. As on the outer side and on the elbow, the bedrock surface was not smoothed, but finished off to a fairly regular plane.

Moving back to the west into the area of the chapel between the forepaws, a patch of bedrock is exposed on the lower ledge of the inner side of the south paw, about 4 to 5 m east of the chest (Figs. 5.1, 7.5; Pl. 5.72). In 1980, a small excavation along the face of the bedrock exposure removed the packing between it and the large slabs of stone that line the side of the paw at this place (see chapter 8, Fa3). The bedrock profile is Member II, beds 1i and 1ii (Figs. 8.10. 8.22). Bed 1i, which makes the contact between Members I and II, is extremely soft, yellow and marly. As elsewhere on the Sphinx, bed 1i on this side of the paw is weathered drastically into a recess of 0.40 m deep. This loss occurred before the masonry and packing was laid into the recess (Fig. 8.22). At some point Member II at the base of the paw was cut back to leave a ledge (136) in the harder Member I stone. The ledge is 0.63 m tall and 0.75 m wide. The large slabs (64) encasing the side of the paw sit on this ledge.

At the join of the south forepaw with the chest of the Sphinx, a small patch of bedrock lies exposed immediately to the south of the cubicle of large-block masonry behind the granite stela of Thutmose IV (Figs. 8.5, 8.6, 8.9). The inner bedrock side of this end of the paw is obscured by the large blocks forming the cubicle, but removal of one small block at the base revealed that the ledge (136) formed on the surface of Member I continues to the inner corner of the paw and Sphinx chest (Fig. 8.9). Here the ledge is roughly 0.65 m high and 0.45 m wide. The ledge has also been formed on the Member I bedrock along the west side of the cubicle at the very base of the chest (Pl. 5.73; Fig. 8.8) where it is 0.60 m high and 0.40 m wide. Here the vertical face of the ledge does not form a good corner with the floor but falls as a hump to the average floor level.

The ledge is visible also from a large area of exposed bedrock at the west end of the inner side of the north forepaw, just beside the Granite Stela (Pls. 5.74, 5.75, 5.76; Figs. 8.10, 8.13, 8.22). Here the ledge is 0.82 m high and 0.60 m wide. This ledge has thus been formed on the natural depositional (geological) surface of Member I in a 5.5 m square area, between the forepaws at the base of the chest where the chapel was later built from masonry. The ledge is .20 m higher on the north forepaw than on the south due to the natural dip of the limestone strata to the south-southeast.

The large area of bedrock at the inner side of the north forepaw (Pls. 5.74, 5.75) was exposed sometime after 1817, if one can trust the plate showing Caviglia's excavations of the chapel (Fig. 8.2). While certainly not to scale, this view shows the inner side of the paw and its join to the chest with the masonry casing complete and much of the walls of the chapel still standing. At some point before the 1925 Baraize excavation, these walls were torn down and the veneer on the north paw was removed until the bedrock was exposed (Pls. 5.74, 5.75).

As Arch. Lacau photographs CI CI 40 and 77 and (Pls. 5.74, 5.75) show, the masonry cover on the top of the back part of the north forepaw is no more than 0.20 m to 0.40 m thick. The bedrock surface curves gradually to the vertical inner face of the paw. Here it forms the recess and lower level that curves inward on the sides of both forepaws; the furche or paw furrow (Evers 1929; II, 86, No. 587). This rebate or furrow on the inner sides is characteristic of the paws on ancient Egyptian lion statues and is a stylized representation of musculature. The exact join of the paw with the chest is covered by some stonework, but a large rounded hump of bedrock protrudes from this masonry (Pl. 5.75; Figs. 8.9, 8.12). It is not clear whether the hump has weathered to its shape or is part of an original attempt to render detail of the musculature.

The section made by the east side of the forced break through the masonry to the bedrock of the north forepaw shows much modern overlay (Pl. 5.76; Fig. 8.22). However, enough of the ancient fill exists to show that, here again, either the profile of the bedrock was left extremely rough, or differential weathering of the bedding occurred (bed 1i recessed), before the ancient veneer was laid over the bedrock. Bed 1i, as is typical of its contact between Members I and II, is extremely soft and clay-like, and is flaked away easily. Considerable loss of stone at this exposure has taken place since the time of Arch. Lacau photographs CI 40 and CI 77 (Pls. 5.74, 5.75).

In the top of the north forepaw, 2.80 m east of the join with the chest, a hole, 1.30 x 1.27 m wide and .90 m deep (Pl. 5.77; Figs. 5.1, 8.13 no. 135), was forced through the masonry cover and into the bedrock for a depth of 0.40 to

0.47 m. The hole is almost round and fairly regular. Some of the in situ ancient veneer stones of the upper layer appear to have been broken at the edge of the hole, as though when the hole was made, it was forced down through the veneer and into the bedrock. On the other hand, some of the ancient veneer stones at the edge of the hole have been laid perpendicular to the other courses of masonry, as though they were meant to frame the hole. The hole may have been cut during the original carving of the paw and sealed by masonry veneer which was later broken through.

Arch. Lacau photo. CI 11 (Pl. 5.78) shows a large patch of veneer missing from the front of the inner side of the north forepaw. Here again, bedrock is exposed, shaped in a general sense, but left without a fine finish. Toward the bottom of this exposure, some joins are discernable that may be masonry packing in a gap in the bedrock surface. Since the inner paw has not been well cleaned in this view, the photograph does not provide conclusive evidence.

On the front of the outer (north) side of the north forepaw, veneer patches were removed for the 1983 EAO restorations. These operations revealed very rough, hard and red-stained bedrock (Member I) at the lower part of the paw (Pl. 5.79), and ancient masonry packing of limestone pieces and mortar only 0.31 to 0.45 m higher on the paw. The veneer was 0.35 m thick over the bedrock, and 0.18 to 0.23 m thick over the ancient packing. These configurations indicate that the Member II strata recede inward above the Member I rock, and that ancient masonry fills the eroded-out recesses of Member II.

Slightly farther west on this side of the paw, the EAO veneer removal revealed stratified masonry and packing about 1 m above floor level. Ancient masonry layers with a thickness of 0.14 to 0.25 m were exposed under modern (1926) veneer. Little more than a meter further west at about the same level off the floor, veneer removal revealed flint-hard bedrock near the bottom of the exposure, but mottled red powder and white mortar with limestone packing toward the top. Farther to the west, a patch of veneer around the rear outer toe revealed hard crystalline bedrock with a rough red-stained surface at the lower part and up to 1.10 m above the floor. Above this, there was ancient mortar and limestone packing for an outer veneer layer that seemed to have fallen away; Baraize replaced it in 1925-26. The outer layer was 0.11 to 0.20 m thick. Again, this indicates that the ancient packing material is built upon a kind of shelf of the Member I bedrock, left after the erosion back of the lowest Member II layers.

The 1982-3 veneer removal and replacement progressed in small patches at a time; therefore, it was difficult to get an overview of the situation of the bedrock and the ancient deposits behind the veneer. The overall picture is pieced together from the small incremental exposures.

On the elbow of the north forepaw, the removal of three courses of ancient veneer left bedrock exposed at a depth of 0.24 to 0.28 m in from the outer casing (Pl. 5.80). Above these courses, veneer 0.16 to 0.25 m thick was removed from the Baraize repairs. The combined removal exposed a ledge of Member I bedrock that rises 0.95 m off the floor, at which point it recedes inward and has ancient masonry built upon it (Fig. 5.17). This bedrock is extremely rough and pocketed. A recess in the vertical face measures 0.23 x 0.17 m. The bedrock here does not closely resemble finished sculpture except, perhaps, for the lower 0.25 m of its profile. This lower face is fairly regular and forms a good corner with the bedrock floor. What is unclear is whether the original bedrock was roughed up artificially or was weathered into the irregular hump.

In sum, Member I bedrock protrudes laterally from Member II bedrock at points around the base of the forepaws and chest. At the south elbow, bedrock extends close to the outer baseline of the statue as it is formed by the masonry veneer, up to a height of 1.5 m. From here, it must recede considerably to the Member II layers exposed a few meters higher (Pl. 5.71). On the inner sides of the forepaws in the area of the chapel, a ledge was formed, perhaps cut deliberately, on the Member I stratum, which varied 0.60 to 0.82 m in height. Along the outer side of the north forepaw, the rough Member I bedrock has been exposed to a height of about 1.10 at the rear outer toe, and as a receding hump about 0.95 m in height at the elbow. Upon this projection, the contours of the statue have been built up and filled out with packing and masonry veneer subsequent to the cutting back or weathering away of the Member II layers.

5.11 Hindpaws

In 1981, a patch of masonry veneer, 1.80 to 1.96 m in height and 2.75 m in length, collapsed from the side of the north hind paw, revealing ancient packing and the original bedrock face of the paw (Pl. 5.81). The collapse did much to prompt the extensive EAO restorations of 1981-86. From 1981-82, most of the masonry veneer on the north hind paw was stripped off and replaced with new stone blocks, offering an opportunity to examine the construction of the veneer and the condition of the original bedrock paw.

The old veneer collapsed at the back part of the paw where the thin casing of brick-sized blocks and its packing had a combined thickness of 0.36 to 0.40 m over the hard Member I bedrock (Fig. 5.18). The vertical face of this part of the original paw is fairly straight, but the surface is rough and pocketed, and apparently it was never finely dressed. A thin vertical fissure passes through the bedrock here. This fissure is part of the joint system that makes up the large fissure that opens in the Sphinx's back. At bottom, the bedrock paw forms a good corner with the bedrock floor.

The examination of the old veneer at the top of the original gap created by the collapse revealed that the upper inward curve of the paw becomes more irregular and very rough (Fig. 5.18). The vertical fissure opens to 0.25 m and is filled with ancient stone-mortar packing. This fill and the outer veneer built up the top of the paw by about 1.10 m on this upper edge (Pl. 5.82). The EAO removal and replacement of the old veneer was taken up to the top of the paw at the far west end, beside the large Phase I blocks forming the corner with the large masonry box (see chapter 7) attached to the north back haunch (Fig. 7.1). Here, the exposed bedrock showed that the division between Member I and Member II of the bedrock core corresponds with the top of the paw and its corner with the haunch (Fig. 5.19). The large Phase I blocks that encase the side of the paw were laid directly upon the Member I stone at the top of the paw and upon the marly bed li, which is the beginning of the Member II sequence.

The old veneer became thinner eastward across the side of the paw toward the front, measuring only 0.17 to 0.26 m thick. The newly exposed bedrock face was not as vertical as that just to the west. It showed a slight concavity, which may be the result of an original attempt to show musculature and sinew along the side of the paw as on later sphinxes. Also, stripping away the veneer revealed another large fissure that starts as two thin joints toward the bottom of the paw, and then widens to 0.22 m about 0.80 m to 0.90 m above the floor. The fissure was filled with an ancient packing of tafl, a tan sandy clay, at the bottom, and with limestone chips, mortar and a large limestone piece (0.33 x 0.17 m) where the fissure widens. Higher up, the fissure opened to half a meter. It was filled with rectangular limestone packing blocks and a large limestone boulder of Turah quality, not locally quarried (Pl. 5.83).

The stripping exposed a third bedrock fissure in the side of the paw farther toward the front. While the face of the paw is fairly regular but rough, the curve inward at the top of the paw becomes more irregular and knobby.

On February 14, 1982, work began on the toes of the north hind paw. The old veneer and Baraize's packing were stripped from the top of the innermost toe, exposing the original bedrock. Baraize found the top of this toe exposed to the bedrock (Pl. 5.84). Although the Member I bedrock here appeared to be very bulbous and unfinished, the claw pattern was fashioned crudely in relief on the front of the two inner toes. Ancient packing covered the relief work. The packing was 0.35 m thick at the top of the toe and from 0.20 m to 0.32 m thick at the bottom. In 1982, the third toe (from the inside) was next stripped of its relatively thin veneer (0.08 to 0.10 m thick). Again, the bedrock was extremely rough with the claw crudely fashioned in high relief at the front of the toe (Fig. 5.20). The claw measured 0.36 m wide and was raised 0.20 m from the original bedrock core (Pls. 5.85, 5.86). The lower part of the claw was hacked away during the 1982 restorations. The relief work phased out toward the top of the toe where the faint upper curve of the claw measured 0.48 m wide. Only the top of the veneer was stripped on the outer toe, exposing once again very rough and irregular Member I bedrock. No trace of the nail or claw was visible. It appeared as though the bedrock top of this toe had been removed to a depth of 0.20 to 0.25 m. If the bedrock were removed - or even if it weathered away - it happened before the ancient Phase II and III masonry was added because pink mortar adhered in the recess.

On the top of the paw, the veneer and packing was only 0.10 to 0.16 m thick. The stripping process began with the removal of a panel from the corner of the paw with the masonry side of the body. The bedrock is the same hard Member I rock that was exposed on the sides and front of the paw. The crevice marking the separation of the two inner toes on the top surface of the paw is cut into the bedrock 0.10 to 0.12 m deep and about 0.16 m wide. It runs from the toes back along the front of the paws for about 3.50 m. This is the sole detail on the otherwise rough bedrock surface. Moving from the center of the paw toward the top of the toes, the bedrock displayed a considerable hump, rising about 0.20 to 0.30 m above the surface near the center toes. This may have been an original attempt to render in the bedrock the rise of the knuckles

Since the restorations in 1982 did not strip away the masonry cover of the south hind paw, very little can be said about it.[4] Arch. Lacau photographs CI 31 and CI 215 (Pls. 5.87, 5.88) show the paw's condition when Baraize first excavated it in 1925. The paw appears to be reconstructed almost entirely of the large Phase I blocks. In these views, some of the masonry is out of place. A hump of bedrock shows through the gap on the upper side of the outer toe. It should be noted that while the north hind paw is carved entirely into the hard rough Member I stone (with a very thin veneer over most of its surface), the corresponding Member I layer should be lower in the south hind paw due to the dip of the bedrock strata to the southeast.

5.12 Tail

Beginning in June 1984 the EAO team replaced the masonry veneer in sections of the tail. They exposed Member I bedrock under about 0.40 m of veneer at the back part of the tail (Pls. 5.89, 5.90). Here, Member I bedrock showed a fairly regular, vertical face, but is unsmoothed. The tail projects out about 2.0 m from the side of the Sphinx body. Where the tail swings up against the haunch, the piece by piece veneer removal indicated that it was constructed from masonry (Pl. 5.91), although a bedrock tail might have been carved in relief underneath this masonry.

5.13 Summary and Conclusions

Although no smoothed, finished surfaces exist on the Sphinx bedrock core body (as opposed to the head) today, the core still approximates the general shape of a lion body, including such features as the narrowing at the waist, and the shape of the rear haunches and the rump. When compared to the north haunch, excess rock was left where the south haunch joins to the body - just where the tail would rise along the curve of the haunch to lie slightly above the back, as in other sphinxes. About 12 m behind the front shoulders, the upper edge at the top of the bedrock back drops on both sides, an inflection which appears to be part of the original sculpture intended to render the shoulders.

All these features indicate that the present, gross shape of the bedrock core body represents, for the most part, the bedrock body as left by those who fashioned it. Evidently, a considerable loss of stone has taken place from the lower beds of Member II, which left the top of the hard and brittle Member I stone protruding as a kind of shelf. If all the masonry veneer were removed, the bedrock core body must appear in profile much like Fig. 4.5. To a height from .5 to 1.5 m off the floor, the masonry that protrudes at the bottom around the Sphinx's elbows is not very thick over the bedrock of Member I. From here, the veneer masonry was largely built upon the protruding Member I shelf. Near the rear of the Sphinx, particularly on the north side, the Member I bedrock was much higher. Most of the north hind paw was carved directly from it.

The Member II limestone beds weathered differentially in a series of rolls and recesses. The weathering was less differential – softer beds eroded more than harder beds - higher in the sequence because the clay content of the softer beds decreases gradually upward (Gauri 1984, 27; Chowdhury et. al. 1990). The head of the Sphinx (Member III) has weathered much less than Member II. Considerable loss of stone had happened in the limestone layers of the neck by the time of Baraize's restorations, but the head itself had weathered along thin separation lines between beds, and in a deeper and wider gash at the top of the north side of the head. Nevertheless, fine detail like the bands of the eyes and eyebrows still remain, because the limestone beds from which they were cut develop a protective patina and are less subject to flaking.

If we reconstruct a profile from the Member I surfaces at the base of the statue, up and nearly tangent to the outermost rolls of the Member II layers, to the surface of Beds 6ii and 7a at the top of the front shoulders and upper back of the Sphinx, this will be very close to the profile cut in the rock by the 4th Dynasty builders.

Chapter 5 Notes

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[1] The condition of the Sphinx is described as it was in 1979 when the plans, elevations, and profiles were made for this study. In 1981 a patch of veneer stones fell from the N hind paw. This prompted EAO restoration efforts wherein major parts of the outer masonry veneer were removed and patched with newly cut stones and mortar. Evidence of the bedrock core body of the Sphinx that was retrieved from this operation is described in the last part of chapter 5. The operation progressed intermittently from 1981 until 1986. Beginning in 1987, another operation began. The veneer that was added during the preceding period was itself removed and replaced with stones selected for size to match the masonry that had existed prior to 1981. This work began on the outer side of the south forepaw and progresses westward at the time of this writing (1991). The EAO is matching stones to the pre-1981 veneer on the basis of the photogrammetric elevations produced from the ARCE Sphinx Project.

[2] *Ed note: Since the 1979-1983 Sphinx Project photos, and after this writing (1991), all of the bedrock of the north side of the Sphinx core body was covered in stepped masonry and mortar to shore up this triangular-shaped piece of bedrock just behind the shoulder and the overhangs of the harder beds due to the erosion of the softer beds.*

[3] I was able to observe only intermittently in small patches the conditions behind the outer veneer on the south forepaw because this work was carried out after the my field work at the Sphinx. The veneer restorations of 1989-90 revealed larger exposures of the surfaces underlying the outer veneer. This seemed to show masonry of large blocks behind the thin outer veneer toward the top of the paw, with much red stain, probably from ancient paint. Zahi Hawass is collecting the evidence gathered from the post-1989 EAO restorations.

[4] Zahi Hawass informs me that in recent weeks (February 1991) work has begun on the veneer of the south hind paw and that the pattern of the claws occurs on the original bedrock. *Ed. note: The bedrock and ancient packing forming the south hind paw was further exposed during this work, and recorded in architectural drawings by the team working under Zahi Hawass, Mahmoud Mabrouk and Adam Henien. From 1989, this team redid, with greater care and higher quality, much of the the veneer replacement undertaken during 1981-1982. See: Hawass (1994) and http://guardians.net/hawass/sphinx2.htm.*

CHAPTER 6

The Masonry Veneer

6.1 Introduction

Major repairs to the Sphinx were made in ancient times. The head was left as finished sculpture in the natural rock, but the leonine bedrock body was covered with various kinds of limestone masonry. Consequently, the Sphinx body is stratified like any archaeological site. The layering of the masonry veneer, and the way that it adheres to the bedrock core body, offers insights into the history of the Sphinx.

The restoration work falls into two broad categories, ancient and modern, which are easily distinguishable. Masonry of three ancient phases differs in stone quality, block size, surface tooling, structural configuration, and the appearance of the mortar used for bonding to the bedrock or to the underlying stonework of an earlier phase. I categorized the ancient masonry as Phase I, Phase II and Phase III in order of age, Phase I being the oldest. Occasionally, it is difficult to tell whether masonry belongs to Phase I or Phase II, especially when structural relations are unclear and the size of the blocks falls between the averages for the two phases. As a general rule, the blocks decrease considerably in size from Phase I to Phase II. Often, Phase II and Phase III are difficult to distinguish from each other.

Modern veneer covers or replaces much of the ancient work. Baraize's restorations, carried out during the major excavation of 1925-6, are the most extensive to date, although additional work was done in the late 1940s-50s, the early 70s, 1979, 1981-89, and 1990-present.[1] During Baraize's excavation, workers picked up many of the blocks found on the ground in the Sphinx sanctuary and mortared them back in place on the core body. In most cases, the replaced blocks could be identified by the cement mortar used by Baraize.

6.2 Phase I Masonry

The earliest ancient masonry on the Sphinx consists of large slabs of limestone abutting directly onto the bedrock core or to a fill of limestone chips, mortar and sand between the blocks and the core (Figs. 5.12, 5.13, 6.1, 6.2, 6.3, 8.7). As the blocks fit the contours of the body, they vary in length (average 1.8 m, ranging from 0.50 m to 2.0 m) and height or thickness (average 0.38 m, ranging from 0.27 m to 0.77 m). Where the Phase I blocks are exposed (in the plan) at the top of the rump (Fig. 5.1), the widths range from 0.98 m to 1.55m.

The Phase I limestone is massive, fine-grained and homogenous - characteristic of Turah or Turah-quality limestone, named after the ancient quarry in the cliffs on the east bank of the Nile, opposite Giza to the southeast. The ancient Egyptians used Turah-quality limestone for the casing on the Old Kingdom pyramids and mastabas and for finer sculpture and relief carving. Phase I stone develops a brown patina, or "duricrust" (Gauri and Holdren 1981), which protects it against weathering. The mortar used in Phase I veneer varies from hard to soft and is white, buff or pinkish in color. As of 1979 to 1981, Phase I masonry could be seen on the following parts of the Sphinx:

1. The upper part of the north shoulder. The Phase I veneer was recut in shallow steps for the addition of overlapping Phase II and Phase III veneer (Fig. 6.1; Pls. 5.13, 6.4, 6.5, 6.6).

2. The lower part of the north elbow and the lower part of the north flank and belly where the blocks have a thick duricrust. (Pls. 5.13, 6.8).

3. The side of the body just above the north hind paw (Fig. 6.2; Pls. 5.15, 6.22).

4. The north wall of the north small masonry box, assuming (as is likely) that this dates to Phase I (Fig. 7.2; Pls. 5.14, 5.15).

5. The north rear haunch. The whole of the upper part of the extant veneer is Phase I (Figs. 5.9, 6.3, 7.1; Pls. 5.16, 6.25). The addition of the overlapping Phase II (Pl. 7.26) and Phase III (Pl. 7.25) layers resulted in the cutting away of from 0.15 m to 0.25 m of the original casing surface.

6. The north large masonry box and its attachment to the body of the Sphinx (Figs. 5.8, 7.1; Pls. 5.16, 7.1, 7.2, 7.3).

7. Around the curve of the back of the rump. The recut face of Phase I is filled with small blocks of modern veneer (Figs. 5.12, 5.13, 5.15; Pls. 5.22, 6.30).

8. Covering most of the south rear haunch. Much of the original Phase I surface remains intact. The rebate created by the recutting during Phase II is visible (Pl. 6.30). The slabs become quite thin at the top of the Phase I casing as the profile of the casing comes close to that of the core (Pl. 6.29).

9. The lower and upper parts of the tail where it swings up along the curve of the haunch on the south side (Pls. 5.20, 6.30, 6.35).

10. The side and top of the south hind paw (Pls. 5.20, 6.36). Arch. Lacau photo CI31, which shows the paw during the 1925 excavation, gives the impression that practically the entire paw consists of Phase I, giving it a rather cubical form.2 The Phase I blocks on the side of the paw near the back retain their original outer face.

11. The south flank and belly. Patches of Phase I show through the overlay of Phase II and 20th century (1940s, 50s, and 70s) restoration work (Pls. 5.19, 6.37).

12. The south small masonry box, provided that it was built in its entirety during Phase I (Fig. 7.4; Pls. 5.19, 7.34).

13. The base of the south large masonry box - south wall. Seven blocks of the lowest course are probably Phase I (Fig. 7.3; Pl. 5.18).

14. On the top of the south forepaw. The broad (but relatively thin) slabs probably date to Phase I (Fig. 8.5, 8.6; Pl. 6.2; see chapter 8).

15. The base of the chest on the north and south sides (Figs. 8.5, 8.7).

Before the modern patch work and fill covered it, Phase I masonry appeared over much larger areas of the body. At the time of the 1925 excavation, Phase I showed over the entire rump, rear haunches and south flank. Its recut surface was visible (Pls. 5.67, 6.30). Subsequent restoration efforts have filled in the recutting on the south flank. Large blocks on the front toes of the south forepaw are probably Phase I (Pl. 5.10). Phase I-sized blocks showed through on the corresponding part of the north forepaw when Baraize excavated it. Finally, as shown in

Arch. Lacau photos CI 17-20, most of the extant masonry on the lower north flank was Phase I (Pls. 6.8, 6.9, 6.10, 6.11, 6.12). From these photograhps, it appears that Baraize replaced many of the Phase I blocks that had fallen off the north flank of the core body. The photographs also indicate Baraize's workers broke through the Phase I veneer to a kind of niche or passage cut into the bedrock core body at the center base of the north flank, just east of the north small masonry box.

The Phase I masonry included mortises for dovetail cramps, measuring from 0.06 m to 0.10 m in width and from 0.25m to 0.30m in length, between some adjacent blocks. The mortises are visible at several places around the statue where Phase I is exposed in plan (Fig. 5.1): at the northwest haunch (Pl. 6.22) around the rump (Pl. 6.27), and at the base of the south shoulder (Pl. 6.39). In most cases, the mortises contain a residue of mortar and are cut to a depth of a few centimeters into the bedding surface of the blocks. One mortise at the northwest haunch contained a clay-like fill which appeared slightly ferrugineous (Pl. 6.23). Dovetail mortises and cramps appear in Egyptian masonry from the Old Kingdom to late antiquity, but they are more common during the Middle Kingdom and later. (Arnold 1991, 124-7). Those from the reign of Khafre were found in the Valley temple for making the connection between the granite pillars and architraves

(Hölscher 1912, 43, Abb. 26). Egyptian masons used cramps for especially unusual or delicate masonry, or when they perceived, correctly or not, special stresses in the masonry (Arnold, 1991, 125). The dovetail cramps, of wood, lead, copper or stone, were used for stabilizing the blocks between the time the blocks were laid and before the mortar was set. Once the mortar bonding the blocks dried, the actual dovetail peg could have been removed, leaving a mortar residue in the recess (Clarke and Engelbach 1930, 112-13).

Where the original surface of the Phase I casing is preserved, such as on the rear south haunch and flank, it is fairly smooth and regular, though somewhat worn (Pls. 6.30, 6.35, 6.37). However, the surfaces of the Phase I veneer close to floor level have developed a very thick duricrust composed of salt efflorescence, primarily gypsum (Gauri 1981a, 37; 1981b, 15) (Pl. 6.8). In places where the original surface of Phase I was cut away, most likely during Phase II, the cut is 0.15 m to 0.25 m deep. The recut face shows shallow steps and panels that mark the courses of the missing Phase II slabs (Pls. 6.4, 6.5). The recut face is rough and pocketed to receive the mortar that bonded the overlapping Phase II masonry (Pls. 6.30, 6.31, 6.32, 6.33, 6.34, 6.35). The residue of Phase II mortar, itself very brown and crusted, adheres in small patches over the recut face of Phase I.

As mentioned in chapter 5, it is evident that the Member II bedrock of the core body was severely differentially weathered by the time the Phase I masonry was set in place. In those places where the denuded Phase I casing gives a good vertical exposure and profile through the veneer to the bedrock core, the weathering is particularly apparent. Examples of this occur at the north side of the base of the chest (Fig. 8.7), at the upper part of the north shoulder (Fig. 6.1; Pl.6.7), at the rear north haunch (Fig. 5.9; Pls. 5.68, 6.22), at the upper part of the rump (Figs. 5.12, 5.13, 5.15; Pls. 5.22, 5.70, 6.28), and at the lower part of the south shoulder (Pl. 6.39). Phase I masonry always fills in deep recesses in the core body caused by the weathering away of the softer layers of limestone.

The upper part of the Sphinx core body must have been exposed for a long period without a masonry cover after the ancient layers masonry fell away (near the end of the Roman era?). Yet, parts of the core body under the Phase I casing also show extreme differential weathering. These surfaces could not have weathered once the Phase I casing was built over them. But there is not a much greater degree of weathering in the upper part of the core body than in those parts covered by Phase I veneer. It must be the case that the greater part of the Sphinx core body fashioned from Member II weathered more from the time that the Sphinx was carved until Phase I than it did from Phase

I until now. The weathered recesses in the core body are not appreciably deeper where Phase I veneer is gone than where the core has been protected since the Phase I encasement.

At the time Phase I began, large boulder-sized pieces of the core body had already separated from the body due to joints at the surface of the rock. On the northwest haunch, the Phase I masonry shores up a large separated piece of the core (Fig. 5.9). A similar situation occurs on the upper rump (Figs. 5.13, 5.15; Pls. 5.69, 5.70, 6.27, 6.28).

When the Egyptian masons left a gap between the Phase I casing and the bedrock core body, they often filled it with dumped limestone debris, mortar and sand (Figs. 5.12, 5.13, 8.7). Occasionally, tafla - a concentrated tan clay - occurs in thin layers or pockets within the fill (Fig. 7.1).

On the rear south haunch of the Sphinx, the masonry covers the core body to a height of 8.65 m above the floor level. A lone Phase I slab sits on a ledge weathered from bed 4ii at a height of 8.15 m above floor level or about three-quarters of the height of the Sphinx body. Another Phase I slab rests on bed 4ii in the center of the south flank, 8.15 m above floor level (Fig. 5.5). These single slabs, plus the fact that Phase I blocks cover the lower one- to two-thirds of the Sphinx body, indicate that when completed, Phase I masonry probably encased the body all the way up to and over the top of the back, finishing off the lion body of the Sphinx.

6.3 The Passage Under the Sphinx[2]

A passage forced through the core body of the Sphinx underneath Phase I casing on the north side of the rump gives a clear profile of the relationship between Phase I and the geological layers, Members I and II, of the Sphinx core body (Fig. 5.11). The passage was hidden underneath the outermost layer of veneer composed of small brick-sized stones, until I opened it in 1980 under the supervision of Zahi Hawass, then Director General of Giza. The existence of the passage was suggested to us by three elderly members of the EAO who remembered it from the Baraize excavation. One of these, Mohammed Abd al-Mawgud, showed us a few brick-sized stones to move (Pl. 6.31). Like so much of Baraize's work, the passage went entirely undocumented and, since it was covered with masonry, it was nearly forgotten.

On October 16, 1980, my assistant, Abd el-Gadar and I removed a single small slab and exposed grey cement packing. After forcing a small hole through the packing, we found a large empty cavity where the bedrock floor dropped off immediately under the slab. We removed several other brick-sized slabs and exposed a round opening that led to an artificial shaft dropping down below the floor and under the body of the Sphinx (Figs. 6.4, 6.5, Pl. 6.31). Baraize had used a large limestone slab behind the brick-sized veneer and cement/limestone packing to bridge the opening of the passage. We removed the bridge, allowing easier access to the passage, and found two larger slabs set end-to-end across the opening (Fig. 6.6, a view of the covering of the passage looking up; Pl. 6.31).

6.3.1 General Description of the Rump Passage

The passage opens at the base of the Sphinx on the north side of the rump just beside the beginning of the tail, about 15 m from the west side of the north large masonry box (Pl. 5.22).

The passage consists of an upper and lower part, which lie roughly 90 degrees to one another (Figs. 6.4, 6.5). The lower part descends from a circular hole in the floor where it meets the rise of the bedrock core body. The passage slopes downward at a very steep angle toward the northeast, for a distance of 4 m and a depth of 5 m to terminate in a cul-de-sac in the natural rock (Fig. 6.7; Pl.6.32). Just inside the entrance, the passage is 1.30 m wide. It narrows to 1.07 m near the bottom, about 0.50 m above its lower end. The sides of the shaft show long, stroke-like tool marks made with a pointed chisel, and small, half-cup-shaped footholds. We found the bottom of the passage clogged with debris.

The tool marks and foothold cuttings continue along the upper part of the passage and end 1 m from the top of the exposed bedrock profile of the rump (Fig. 6.7). The upper part of the passage rises to height of 4 m above the Sphinx floor and ends in a niche about 1.0 m wide and 1.80 m in height. It is about 1 m wide at the lower end and measures 1.80 m in width just before the niche. The passage runs along the curve of the bedrock profile of the statue but is covered by large Phase I blocks and a thin application of Phase III and modern cement (Figs. 6.6, 6.7). Otherwise, it would be an open trench in the core body (Pl. 6.33). It is interesting to note that the point at which the passage is sealed off corresponds to the division between the hard Member I and soft Member II geological layers (Fig. 5.11).

Inside the passage the Phase I blocks are visible in a small space between the cement patch and the Phase I fill in the south-southwest side of the roofing of the niche (Fig. 6.6, Pl. 6.34). Although it is difficult to know for certain, it seems most likely that the Phase I blocks do not entirely seal off the passage. The cement probably spilled down into the passage from the filling of the space between the Phase I slabs and the bedrock core on the ledge of masonry at the upper part of the rump (Fig. 5.11; Pls. 5.22, 6.30), about 3 m above the passage. The passage provides a valuable profile of both the Phase I veneer and the condition of the core body of the Sphinx as it was left by the original builders. The bedrock profile in the passage shows that the curve of the rump was generally shaped but not dressed smooth or finely finished (Fig. 6.7).

6.3.2 Excavation and Detailed Description

I delineated four main areas in the passage for the purposes of description: (1) the niche at the top of the upper shaft (the topmost point), (2) the shaft leading up to the niche, (3) the shaft descending immediately from the floor-level entrance, and (4) the cul-de-sac pit at the bottom of the lower part of the passage (Figs. 6.5, 6.7).

Area 1: The patch of (modern?) cement is .30 to .35 m thick. It seems to adhere to the underside of the adjacent Phase I blocks at the top of the niche (Figs. 6.6, 6.7; Pl. 6.34). The material is a cement or sandy mortar containing limestone fragments, spots of tan clay, and many carbon spots that are probably charcoal. It appears to be the same cement mixture that fills the wide space between the Phase I slabs and the bedrock core on the rump ledge 3 m higher (Figs. 5.11, 6.7). The cement patch runs over the bedrock cutting at the upper west end and sides of the niche, except on the south-southeast where a space between the cement layer and the bedrock cutting exposes the Phase I slabs (Fig. 6.6). At the south front corner of the niche, the cement layer rest upon an irregular limestone fragment which in turn rests upon the corner of a protruding Phase I block (Fig. 6.7). Along the west edge of the cement layer (facing in to the passage), the cement hangs free on its edges and underside but is attached to the underside of the broad Phase I slabs above it (Fig. 6.6; Pl. 6.34).

The bedrock at the top end of the niche (SE side) is a layer of very marly clay-like bedrock, 0.20 m to 0.26 m thick. This is Bed 1i, the first layer of Member II, marking the division between Members I and II. A layer of loose sand, fine limestone chips and mortar about 0.16 m thick lies between Bed 1i and the Phase I slabs that rest on the top of the niche.

The foothold cuttings appear on all three sides of the niche, two on each side (Figs. 6.5, 6.7). As noted, they occur to within a meter of the top of the niche. They measure about 0.10 - 0.18 m in height and width and they are cut to a depth of about 0.10 m.

A ledge, about 0.80 m to 1.0 m wide, marks the bottom of Area 1. On the ledge, we found a deposit about 0.30 m deep consisting of loose fine sand and limestone fragments. We cleared the ledge and sieved the sand, discovering numerous isolated small bits of charcoal, small ceramic particles and flakes, 2 small snail shells, more limestone fragments and a several fragments of grey cement of the type that seals off the niche. At the edge of the ledge, several limestone fragments were mortared in place (Figs. 6.5, 6.7). The largest of these is a squared piece that measures 0.32 m x 0.15 m at the south side of the ledge. The pieces were laid two courses, with one of the lower slabs also squared.

After we removed the sand, the bottom of the niche appeared to be covered by a thin layer off buff-white gypsum, which passed to and under the limestone pieces set across the threshold. A thin application of mortar on the bottom of the limestone pieces held them in place. Although gypsum also partially filled fissures on the north and south back corners of the niche, some doubt was cast upon whether this was gypsum, because elsewhere in the passage a similar surface seemed to be more likely a softening of the bedrock surface where it had been covered with deposits.

We found that one of the larger limestone fragments in the sand and limestone-chip fill (located behind and slightly under the larger pieces on the ledge) showed blackening as if it had been scorched. The loose sand might have remained on the bottom of the niche from Baraize's work. Perhaps his workers used the sand for the cement application closing off the top of the niche. Or, it may have poured down gradually from the space between the Phase I blocks and the bedrock core body. If the latter is true, the blocks which seem to have been mortared into place on the ledge are actually the remains of packing or fill for the Phase I casing.

Area 2: Area 2 consists of the 2 meter-long section of the shaft between the niche and another ledge, 0.64 m below the floor-level entrance to the passage (Fig. 6.7). This semi-circular-shaped ledge, about 0.90 m deep and 1.0 m wide, marks the lower boundary of Area 2 (Figs. 6.4, 6.5, 6.7). On this lower ledge, we found a small deposit of loose quartz sand with small bits of charcoal, pottery, ancient mortar and cement (probably modern). After we removed the sand, we found that the ledge showed a thin layer of off-white gypsum which matched the place where the deposit had covered the ledge. We wondered whether the gypsum layer was merely a chemical reaction of the bedrock surface with salts in the sand.

Area 3: The bottom of Area 2 opens onto the shaft leading down below the floor level of the Sphinx. Area 3 ends at a third ledge, 0.85 m wide, 2.08 m below the ledge at the bottom of Area 2 and 2.76 m below floor-level (Pl. 6.32). The passage is 1.22 m wide at the bottom of Area 3.

The Area 3 ledge also contained loose sand; although here, it was a darker color than the sand in Areas 1 and 2. The deposit contained one cut limestone piece (0.08 m x 0.12 m x 0.22 m) along with small limestone fragments, bits of charcoal, one alabaster chip, one granite chip, the base of a modern ceramic water jar, and a small bit of tin foil.

Area 4: Area 4 extends 2.26 m below the ledge of Area 3 and narrows from 1.52 m wide at the top to 0.60 m wide at the lowest point (Fig. 6.7). The long stroke-like tool marks continue down the sides to the bottom of the shaft and are most prevalent on the face of the drop from the Area 3 ledge. When we opened the passage, very damp debris clogged the bottom for a depth of 1.46 m. This turned out to have been deposited entirely by Baraize, as it included metal foil, modern cement, and two old shoes. After the debris was removed entirely, ground water filled the bottom .39 m of the shaft.

6.3.3 Phase I Masonry in the Passage

The large slabs of Phase I masonry that cover the upper part of the passage are clean, white and cut from homogeneous fine-grained Turah-quality limestone. The exposed surfaces of these slabs show no appreciable secondary breakage; on the interior of the passage these slabs are projected progressively inward in increments ranging from 0.20 m to 0.66 m to meet the upward curve of the Sphinx's rump (Figs. 6.6, 6.7; Pls. 6.33, 6.34). Six or seven of the slabs covering the passage are not supported by the natural rock of the core body at the sides of the trench but instead rest entirely on the blocks below them. Fig. 6.6 is a drawing or "plan" of the underside of the blocks roofing the passage.

We measured the total breadth of four slabs: 0.60 m, 0.80 m, 0.96 m, and 1.16 m. Smaller slabs bridged the mouth of the passage at the floor level of the Sphinx. Baraize probably split these smaller slabs off a Phase I block that was originally 0.36 m thick. The in situ Phase I slabs at either side of the opening are also 0.36 m thick (vertical measurement). Above these blocks, the thickness of three courses of thicker blocks, measure 0.47 m, 0.63 m and 0.67 m from the bottom up on the SW side and 0.42 m, 0.62 m, and 0.67 m respectively on the NE side. At the next highest level, six courses of blocks measure only 0.31 m to 0.36 m thick. Finally, judging from the profiles obtained outside and inside the passage (Figs. 5.11, 6.7), the Phase I blocks in the passage range 0.30 m to 0.60 m in width perpendicular to the Sphinx body.

On the underside of the blocks that hang out over the middle of the passage we found residual patches of limestone chips, calcareous tan clay, charcoal flecks, and flat mortar. At one time, the slabs must have been bonded to other slabs or to a fill of the adhering material between the slabs and the natural rock core.

The space between the Phase I blocks and the bedrock core on either side of the passage contains a fill of clean quartz sand packed with concentrated limestone chips with sharp edges - probably produced by the trimming of the blocks when the

Phase I casing was built (Fig. 6.7). We also found a few small spots of grey mud in the loose fill. Larger fragments of limestone (e.g. 0.35 m x 0.09 m x 0.14 m) occurred loosely in the sand between the cement patch and the surrounding Phase I blocks at the top of the niche in Area 1 (Fig. 6.6).

At the northeast side of Area 2, we found a fragment of red granite, 0.06 m x 0.13 m, in a triangular space formed by two Phase I blacks and the curve of the natural rock (Fig. 6.7). The granite was in the characteristic packing of limestone chips, sand and mortar.

We carefully checked the surfaces of the Phase I blocks for incised or painted marks but found none. Two blocks showed chiseled lines, probably marking where the block was to have been cut. A few others featured a red patina on the bottom but we never determined whether it was paint or merely the result of iron oxide in mortar which had fallen away from the surface of the blocks.

6.3.4 Date and Significance of the Passage

We need to consider several facts in determining the date and significance of the passage:

1. The footholds that occur from the lowest to the highest parts of the passage look like the footholds found in the sides of ancient tomb shafts.

2. The top of the passage corresponds to the boundary between the weathered Member II and the hard Member I bedrock layers in the Sphinx core body (Figs. 5.11, 6.7).
3. On the ledge formed by the removal of masonry veneer, three meters almost directly above the top of the passage, a boulder has separated from the core and lies wedged against the back of the Phase I blocks (Figs. 5.11, 6.4; Pls. 5.22, 6.30).
4. A shallow channel runs from the top of the haunch down over the weathered core body roughly in the direction of the core boulder on the masonry ledge (Fig. 6.4). During a hard rain, water would flow down this channel and onto the ledge.
5. The backs and underside of the Phase I blocks are not damaged but have an occasional residue of mortar, limestone chip, sand and clay packing.
6. The limestone pieces on the ledge of Area 1 are solid in their position and may be mortared to the floor of the passage (Fig. 6.5).

It is possible that the passage was cut after the ledge had already been created higher on the rump by the removal of the masonry veneer. Thus, the shaft may have been cut from the top down beginning at the ledge. Perhaps the large core boulder had separated earlier and attracted attention as though it concealed an opening (Fig. 6.4). Subsequently, an explorer may have channeled behind the casing through the bedrock on the curve of the rump rather than stripping off the large blocks of the Phase I casing. The lower part of the Sphinx could have been encumbered with debris; it was simply easier to cut down behind the casing than to mount a large excavation and strip the veneer.

There is some indication that the explorer may have been Howard Vyse. During his aggressive explorations at Giza in 1837, Vyse drilled and tunnelled through the pyramids, using gun powder where he deemed necessary. In his report, Vyse's diary-style entries begin with a series of headings on the work done each day. On February 23, Vyse lists "Sphinx. Boring" and comments: "I began to bore through the shoulder of the sphinx, in order to ascertain whether or not it is hollow..." (Vyse 1842 Vol. I, 168, 170). During this procedure, he bored into the middle of the back just behind the head for a depth of 27 feet until his boring rods became stuck. Subsequent attempts to free the drill rod created the small crater just behind the head (chapter 5).

Undaunted, Vyse resumed his boring activities on February 27 and 28, reporting in his diary "Sphinx. Boring near the shoulder, and near the tail." He did not discuss the boring near the tail; the location of this boring has not been identified. We must suspect that Vyse could have been cutting the passage in the rump. We might compare the passage to the "gallery" Vyse cut into the north side of the Third Pyramid and down through its core, as illustrated opposite page 198 in Volume I of his report (Vyse 1840). Vyse also refers to this as a "boring" and notes additional explorations in the pyramid: "I also ordered Paulo to hire for a passage in the lower chasm, behind the granite blocks that form the base of this pyramid" (Ibid., 158). In a similar manner, Vyse may have ordered a boring down behind the blocks which form the casing of the Sphinx.

Whether or not Vyse or some other explorer created the passage, it is remarkable that the tunneling did not damage the backs and underside of the Phase I blocks. The mortar and packing residue on these surfaces suggest that the blocks were originally bonded to either the natural rock core or a packing and fill of the passage. If explorers channelled down behind the Phase I casing, they may have found nothing from the ledge down to the floor level where they broke through the lowest course. Then, they may have turned their probe to the NE to tunnel under the base of the statue. After the passage was made, rain water would have run down one side of the rump, onto the masonry ledge and through the passage to the bottom.

A less likely alternative is that the passage was forced down from floor level in two directions, upward behind the Phase I casing and downward under the floor. This is a very difficult and impractical way to cut the upper part. The tool marks on the sides of the passage suggest that the excavation work proceeded from the top down.

It is possible that the blocks mortared onto the threshold of Area 1 are all that remain of a masonry packing of the passage. The passage could be a trench from the first attempts to isolate the massive bedrock core from which the Sphinx's body was sculpted. If so, the passage may have remained because it was cut too deeply and therefore had to be filled when Phase I casing reconstructed the body. The case for such an early date for the passage would be stronger if we could see past Baraize's cement packing at the top of the passage, and see if the Phase I blocks seal off the top.

This patch of cement may itself be the clue that the passage is earlier than the Phase I masonry. Baraize's workmen must have poured the cement from 3 m above the passage when they used it to fill space between the Phase I masonry and the bedrock core on the rump ledge (Fig. 6.7). It is hard to understand how this thick patch of cement could have hung freely at the top of the passage (Fig. 6.6) unless the passage was filled to the very top of the niche when the cement was poured from above.

Baraize began his repairs on the Sphinx before he had cleared the base of the statue. He began repairing the head, for example, as soon as he started his excavation in the area of the forepaws (Pl. 2.3). The most likely explanation for the cement patch is that Baraize filled the rump ledge with cement, between the Phase I slabs and the bedrock core, before he had discovered the passage. At that time the upper part of the passage was filled with ancient masonry and packing. The cement that the workmen dumped in from above ran down onto this fill. Later, probably when he cleared the base of the rump, Baraize found the opening at floor level and proceeded to clear out the passage, removing the ancient packing from the upper part. This left the patch of his own cement fill hanging at the top of the passage, partly adhering to the underside of adjacent phase I slabs. This sequence would explain why there is a residue of sand, ceramic and charcoal bits, and limestone fragments adhering to the underside of the cement patch, and why there are traces of mortar on the underside of the Phase I slabs that bridge the passage. The blocks mortared into place at the threshold of Area 1 are remnants of the Phase I packing of the passage. This implies that the passage predates the Phase I masonry on the rump.

Perhaps the most significant aspect of the passage is the view it provides of the Phase I veneer and the condition of the natural rock core body as the original builders must have left it. The bedrock to which the large Phase I slabs abut is Member I, which does not weather like the softer Member II limestone. At the north ledge of the Sphinx sanctuary and on other surfaces cut into Member I, exposed Old Kingdom quarry and tool marks are still preserved. The profile of the core body in Member I in the passage indicates the curve of the rump was fashioned only roughly and left without a smooth finish dressing of the surface (Figs. 5.11. 6.7).

From the profile obtained in the passage (Fig. 6.7) it appears that, while the Member I rock preserves the original bedrock surface, up to 1.5 m was weathered away from the profile in the Member II rock. This happened before the Phase I masonry was laid down, since the Phase I blocks bridge at least part of the top of the shaft (Fig. 6.6) as they reform the profile of the rump. Just as in the case with the bedrock profiles at the front of the Sphinx, by the time of the Phase I restorations, the Member I rock jutted out, in a shelf pattern, from the weathered back profile of Member II.

We should take into account also that three courses of Phase I casing next to the bottom course, are thicker than the blocks immediately above them. The lower blocks are within the same size range as the large blocks exposed by recent veneer removals around the curve of the rump beside the north large masonry box (Pls. 7.10, 7.11, 7.12, 7.13, 7.14; see chapter 7). These large blocks lie behind the brick-sized veneer stones at the west side of the north large masonry box, around the curve of the body, and extend to the opening of the rump passage. This indicates a uniform construction of the blocks from the masonry box to the beginning of the tail for the lower three or four courses (Pl. 7.19).

In profile, the lower veneer of large blocks looks like the masonry casing on Old Kingdom mastabas at Giza, especially the casing that Reisner (1942, 179, Figs. 84-5) typed "x" and "y." The condition of the core body in Member I and the nature of the earliest casing at the rump passage (as at other points on the statue) suggests that the lion body was shaped only roughly from the bedrock. A casing of fine Turah-quality limestone blocks completed the sculpture of the body.

The blocks above the lower three or four courses, are thinner, but they also have the appearance of Old Kingdom casing; the range of their thickness is matched by that of slabs forming the walls of the Khafre causeway near where it meets the Valley Temple (0.36-38 m is a common thickness). Nothing in the profiles exposed in the passage suggests a structural break between the thick lower courses and those above. The Phase I casing, seen from within the passage, is continuous with the Phase I veneer exposed on the upper part of the north rear haunch and the masonry ledge at the upper rear of the Sphinx (See Pl. 5.22). The same casing forms the back upper curve of the rump where it is exposed in section (Figs. 5.12, 5.13); here the casing abuts to the deeply eroded part of the core body carved from Member II. As discussed in chapter 5, it is clear that the natural Member II bedrock of the core body was differentially weathered before the application of Phase I casing. A major obstacle in assigning Phase I to the 4th Dynasty as the finish work for the Sphinx body (see chapter 10) is that Phase I masonry fills in the deep recesses caused by the weathering away of the softest beds.

It is also clear from a detailed study of the Sphinx chapel, located between the forepaws, that the earliest phases of masonry on the statue. including Phase I masonry on the chest and very large blocks behind the granite stela of Thutmose IV, are, in fact, 18th Dynasty. At this time the Sphinx was excavated, found in weathered condition, and its lion body reconstructed. The 18th Dynasty restorers probably took the Phase I blocks from the Khafre causeway, in effect taking apart the monument of Horus User Ib, to reconstruct the Sphinx as Horus-in-the-Horizon.

6.3.5 Additional Passages

The Arch. Lacau photos show another spot where it appears that there might be a passage cut in and under the Sphinx. Arch. Lacau photos CI 17-20 (Pls. 6.9, 6.10, 6.11, 6.12) show the north flank of the Sphinx when Baraize cleared the debris down to floor level in 1925. The workers found a large number of Phase I-sized blocks toppled about in the debris at the base. CI 19 (Pl. 6.10) shows a close view of the base of the north belly where they found a large gap in the Phase I casing. A man is standing below floor level in what may be a niche cut into the bedrock core body; another man stands on a small mound of sand just outside the gap. I identified this same spot on the basis of fissures showing in the core body above the casing. It is sealed off now by large stones, some of which are replaced Phase I slabs, sealed with grey cement.

The Arch. Lacau photographs indicate that another large gap existed in the lower masonry veneer inside the south large masonry box where it attaches to the body of the Sphinx. CI 63 (Pl. 7.27) shows the box being cleared in 1925. Two large stone blocks lie in sand just inside the gap in the masonry. One of the blocks is semi-circular in shape, which leads one to believe that the stones may be part of the Osiride statue, perhaps the torso, that Mariette claimed to have found near the box. Arch. Lacau CI 194 (Pl. 7.28) shows the natural rock core body just underneath the Phase I and Phase II casing stones around the top of the gap. None of the records show the condition of the core inside the gap closer to floor level. By the time of the ARCE Sphinx Project in 1979, the gap was closed by limestone patching with modern mortar (Pl. 5.18).

In 1853 Mariette cleared enough of the north flank of the

Sphinx to discover the masonry boxes attached to the statue. He mentioned three boxes on this side (Mariette 1882, 95). It is plausible that Mariette himself created the gaps in the masonry on both sides of the Sphinx. Nor should we rule out Howard Vyse, who would have had no qualms about making a gap in the core body. However, Vyse seems not to have excavated the flanks of the statue to any depth. It is possible that the passage in the north side of the Sphinx, like that at the rump, is ancient.

6.4 Phase II

Phase II is essentially a patching of Phase I. In Phase II, workers cut away .15 m to 25 m from the face of Phase I over large areas to lay in the smaller slabs of Phase II. Like Phase I, Phase II limestone is fine-grained, massive, homogeneous, Turah-quality and develops a brown protective "duricrust" on its outer surface. Phase II, however, differs from Phase I in block size and the tooled finished of the surface.

Distinct features on Phase II include the finish of uniform vertical tooling, resembling corrugations, on the outer surface, and bevelled edges on most of the blocks. In certain places, the finish may be a plaster or mortar veneer over the face of the masonry (Pl. 6.38, just above the south hind paw). In one spot on the rear haunch, vertical tooling on a plastered surface continues over the adjacent blocks, suggesting that the finish was applied over the entire masonry surface of the Sphinx body to make Phase I and Phase II appear continuous rather than patched. If this is the case, it is surprising that more of the tooling or plaster finish does not survive on the uncut Phase I surfaces.

The blocks of Phase II vary considerably in size, but average around .54 m in length, .19 m in height, and range from .20 to .43 m in width or thickness.

The Phase II mortar is usually slightly pink to buff in color, fairly hard, and crusted where long exposed.

As of 1982-3, Phase II masonry could be seen on the following parts of the Sphinx:

1. The base of the north forepaw. As the Phase II tooling is not very visible and the blocks are of intermediate sizes, Phase II here is hard to distinguish from Phase III (Pl. 5.12).

2. The north shoulder (Pls. 5.13, 6.4, 6.7). The blocks abut directly to the recut face of Phase I. They are well within the Phase II average size range and have bevelled edges.

3. The curve from the north elbow to the lower part of the north flank (Pl. 6.8). These blocks are heavily crusted.

4. The toes of the north hind paw. Arch. Lacau photo CI35 (Pl. 5.84) shows the front of the inner toe with Phase II-sized slabs covering the bottom. The lower part of the claw is cut in relief on the veneer to match the upper part of the claw cut in relief in the rough Member I bedrock.

5. The north flank above the north hind paw (Pls. 5.15, 6.22). The lowest course of blocks at the base of the paw may also be Phase II but here again, it is hard to distinguish between Phase II and Phase III.

6. The forward part of the north rear haunch (Fig. 5.9; Pls. 5.15, 5.16, 6.24). These are "classic" Phase II blocks, mortared directly over the recut Phase I casing.

7. The north side of the rump (Pl. 5.16, 6.26). Phase II and III merge and the sizes of Phase II become smaller, making it hard to distinguish the two phases. The Phase II blocks are characterized by their bevelled edges.

8. Small patches on the south side of the rump before the tail (Pl. 6.35). The Phase I casing remained uncut on this surface.

9. The top of the south hind paw (Pl. 6.36). A few slabs of Phase II remain here. Before 1925-6 and recent additions of veneer, Phase II showed on the front toes of the hind paw (Pl. 5.87).

10. The south side of the belly and just above the south hind paw (Pls. 5.20, 6.37). This "classic" Phase II masonry fills in the rebates cut into the surfaces of Phase I. The Phase II slabs have a relief-carved line just above the south hind paw to render the underbelly of the Sphinx (Pl. 5.20). The line extends into the surface of the Phase I blocks at the haunch up above the hind paw. Two meters east of the paw, and 3.25 m above the floor, a band of red with a dark border was painted over the Phase II patchwork (Pl. 7.25). The paint may be the vestige of a painted design of a wing folded back against the flanks of the Sphinx, as shown in some stylistic depictions of the Sphinx on New Kingdom stelae.

11. Patches above and west of the south large masonry box on the flank (Pl. 5.18). The Phase II masonry is situated beside the 1973 veneer and Phase I slabs.

12. The masonry composing the square upper part of the south large masonry box (Pls. 7.27, 7.28, 7.29 for the box as first excavated by Baraize).Although I have some doubt, I classified this as Phase II. These blocks conform to the average size of Phase II, yet their outer faces are not dressed.

13. Inside the south elbow (Pl. 5.18). The faces of the blocks are heavily encrusted.

14. The south side of the south forepaw, principally toward the east end. The ancient masonry of small-blocks at the middle part of the paw is Phase II but the bottom part is Phase III (Pls. 5.10, 5.17). I categorized the blocks on the basis of bevelled edges and vertical tooling, and because they approach Phase II

in size. Not all Phase II masonry featured the distinguishing finish. Modern cement and mortar (most likely from Baraize) smeared into the seams of the ancient masonry blurred the distinction between Phase II and Phase III even further here.

15. On the front of the forepaws (Pl. 5.11).[3] Here I encountered more problem in delineating Phase II and Phase III. During Caviglia's 1817 excavations, some of the ancient slabs were removed from the front toes because they bore Greek inscriptions on their outer surface. Salt rendered the longest of these inscriptions on the second digit of the north forepaw (Vyse 1842, 118, Pl. E). Although the sizes of these slabs are similar to Phase III, they have the vertical tooling characteristic of Phase II.

16. A few patches of the ancient masonry showing on the tops of the forepaw (Pl. 6.2). I coded these patches as Phase II, mostly on the basis of a slight bevel in the edges of the blocks. Again, it was hard to distinguish Phase II from Phase III. Small-slab masonry added in the restorations of 1925-6, 1940s and 1950s covers parts of the tops of the paws. Baraize’s workers tuck-pointed modern cement into the seams of the ancient, mostly Phase III veneer, obscuring the distinctions.

17. The inner sides of the forepaws (Pls. 5.74, 5.76, 5.78) where small patches and isolated slabs of Phase II remained in 1926.

6.5 Phase III

Phase III was a patching and replacement of parts of the Phase I and Phase II veneer. Phase III used white, relatively soft and friable limestone for small slabs. Unlike Phases I and II, the surface of Phase III flakes and powders and only developed a protective patina or crust close to the floor. The stones average 0.36 m in length (range: 0.25 m to 0.50 m), 0.13 m in height (range: 0.09 m to 0.20 m) and 0.18 m in width or thickness (range: 0.08 m to 0.33 m). The mortar is white, buff, pink and sometimes orange. As in all the ancient phases of masonry, tan calcareous clay (tafla) is often found in the packing behind the outer Phase III veneer (Pl. 6.20).

In 1925-6, Baraize apparently picked up many loose brick-sized Phase III blocks at the base of the statue and put them back into place on the body. Although they are bonded by Baraize's grey cement, the brick-sized masonry looks old and worn as though they were cut in ancient times. Baraize also did a lot of “repointing” or "tuck-pointing" - smearing modern cement into the seams of the Phase II and Phase III masonry. As a result, it is often hard to tell if the masonry is in situ or if it has been replaced by Baraize (Figs. 5.16, 5.17, 5.20). When I color coded the various phases of the masonry veneer on the master elevations of the Sphinx, I attributed the areas of masonry containing grey cement to Baraize in 1925-6.

As of 1981-83, the Phase III masonry could be seen at the following locations on the Sphinx:

1. The lower part of the north forepaw. Phase III is found along the zone between the crusted and deteriorated stone, back to the elbow (Pls. 5.12, 5.13, 5.79). When Baraize cleared this area, and before recent additions to the veneer, much more of Phase II and Phase III were exposed on the side of the forepaw.

2. The upper part of the north shoulder (Pls. 5.13, 6.3). Phase III is more to the west, with smaller blocks than those of Phase II.

3. The north hind paw. Phase III covers the side of the paw for about two-thirds of its height and half of the top of the paw (Figs. 5.9, 6.2; Pls. 5.15, 6.14, 6.15, 6.16, 6.17). Phase III covers most of the toes and looks very much like the Phase II covering the rest of the toe area.

4. The north haunch and rump. Patches of Phase III show through the slabs replaced by Baraize (Fig. 6.3; Pl. 5.16). In some places, Phase III slabs replaced the Phase II masonry, lying directly over the recut face of Phase I (Pl. 6.25).

5. The top of the tail. Here Phase III blocks remain *in situ* with their original pink mortar (Pl. 6.30). Phase III slabs cover most of the tail but are bonded with the grey cement characteristic of the 1925-6 work. Baraize probably squeezed cement into the seams of the *in situ* ancient veneer. Some of the masonry here is composed of newly-cut slabs from the 1940s-50s operation.[4]

6. The lower south side of the rump (Pl. 6.35). Here are four or five patches of brick-sized Phase III veneer remain.

7. The side of the south hind paw toward the west end (Pl. 5.20). Although these slabs are the size of Phase III, they show faint, irregular vertical tooling and slightly bevelled edges. The slabs could be Phase II.

8. On the body, above the forward part of the south hind paw. Two patches of Phase III interrupt the line carved in relief on the faces of the adjacent Phase II slabs marking the underside of the belly (Pl. 5.20).

9. Along the base of the south forepaw where the stones are severely weathered (Pls. 5.17, 5.18). Phase II and Phase III masonry covered the side of this paw when Baraize first cleared it (Pl. 5.10).

10. The front toes. Some of these Phase III blocks may patch Phase II veneer (Pls. 5.11, and, as found by Baraize, 6.40).

11. Large areas on the tops of the forepaws (Pl. 6.2 just after the Baraize restorations). Since modern cement from 1925-6 and the 1940s-50s fills the seams of the masonry, the Phase II-Phase III borders are difficult to distinguish.

12. The inner sides of the forepaws, particularly towards the bottom (Pls. 5.74, 5.76, 5.78). Undoubtedly, the sides of the forepaws were probably once covered entirely with Phase II and III veneer.

6.6 Summary and Conclusions

As I concluded in chapter 5, it is clear that the greater part of the Sphinx natural rock core body carved from the Member II strata was already severely weathered before the addition of Phase I casing. Phase I was the largest restoration effort ever carried out on the Sphinx. This masonry is composed of the largest limestone blocks added to the Sphinx's core body. It provided a continuous cover all around the body and probably over the top of the back. It reconstructed completely the form of the lion body. Around the lower part of the statue, the hard Member I rock preserved the original 4th Dynasty profile. In places, such as the toes of the N hind paw, there is the suggestion of finished detail, such as the claw patterns. Elsewhere, such as in the profile of the rump in the passage cut through the core body, the Member I surface is rough and irregular. Phase I was built over the bedrock adding thickness to the overall dimensions of the Sphinx body.

Phase II was an extensive patching of Phase I. Large areas of the Phase I surface were cut back for the reception of the Phase II patching stones. The masons of Phase II applied plastering and vertical tooling to the patched veneer, perhaps to blend the surfaces of the old and new masonry. A faint residue of paint above the S hind paw indicates that sometime during Phase II the lion body was decorated with a motif of wings folded back against the flanks.

Phase III was a patching of Phase I and II. In some places the Phase II slabs, and even those of Phase I, were removed and replaced completely by the brick-sized stones of Phase III laid over a thick packing layer of mortar and rubble. This was the situation on the N hind paw where the Phase III packing and veneer built up the outer contours of the paw directly over the original natural rock paw after earlier veneer layers were stripped away. Phase III covered the greater part of the forepaws. At the time of the Phase III restorations, the masonry of the Sphinx body was a patchwork, with Phases I and II showing on various parts of the statue.

Chapter 6 Notes

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[1] See Chapter 5, note 1.

[2] *Ed. Note: Much of this section on the Rump Passage was published by Hawass and Lehner 1994b).*

[3] The masonry on the front of the forepaws was replaced almost completely during the 1981-86 restorations.

[4] The masonry described on the tail is now gone completely, replaced during the 1981-86 restorations.

CHAPTER 7

The Masonry Boxes

7.1 Introduction

Four square or rectangular masonry boxes protrude from the veneer-covered flanks of the Sphinx at floor level (Fig. 5.1). There are two each - one large and one small - on both the N and S sides. However, Mariette (1882, 95), who was the first to clear the Sphinx westward along the flanks of the statue, mentioned three boxes on the N side. The N large box is attached to the rear haunch (Pl. 5.16). The N small box is attached to the side of the body one meter in front of the N hind paw (Pls. 5.14, 5.15). On the S side, the larger box is attached to the flank just behind the elbow of the forepaw, and the small box attaches to the belly 3.5 m west of the south large box (Pl. 5.18).

Despite their prominence and anomalous appearance on the statue, very little information about the boxes exists in the literature.

7.2 The N Large Box

No one has investigated the interior of the box attached to the N rear haunch. It is a closed cube of masonry, 4 m wide, 2.7 m tall and 2.9 m (bottom) to 3.4 m (top) long, jutting out from the side of the haunch. The box consists of six courses of some of the largest blocks attached to the Sphinx. Except for the top course, the courses become thicker from bottom to top, measuring (in thickness) 0.33 m, 0.36 m, 0.44 m, 0.56 m, 0.68 m, and 0.36 m respectively (Fig. 7.1, Pl. 7.1, 7.3). The blocks vary greatly in length, up to 1.25 m. The thinner slabs closing off the top of the box have irregular, nonparallel joins, not unlike Old Kingdom paving in the pyramid temples (Pl. 7.2).

Loose clean sand appears in the crevasses and seams of the box. When the spaces are cleared, more sand pours out of these small openings. It is likely that the sand simply penetrated the cracks while the box was buried but it is not impossible that the box is filled with sand.

The brown efflorescence characteristic of Phase I encrusts most of the E and N sides of the box. Surfaces of stones on the top and the upper part of the W side are flaking and powdering (Pl. 7.1). The stones that form the upper NE corner of the box might have been cut or worn away. In the center of the two lowest courses of the N face of the caisson, a patch of excess stone remains from the final dressing of the surface (Pl. 7.1). This patch indicates that the dressing of the sides of the box occurred after the blocks were set in place with roughly dressed outer faces. Further evidence of this comes from the way in which the stones on the west side of the box make the corner between the box and the masonry of the haunch (Pls. 7.12, 7.13). In other words, the dressing of this part of the Phase I casing of the haunch and the dressing of the box are part of the same operation.

Other factors also indicate that the N large box originated as part of the Phase I casing of the Sphinx core body. On its E side, the stones of the box abut directly to the large-sized Phase I blocks, but without making the corner with the casing of the haunch (Fig. 7.1; Pls. 7.1, 7.7). The slabs that pave the top of the box also abut directly to the original surface of the Phase I casing. A patch of modern veneer conceals the Phase I surface for a height of about 1.50 m above the join of the box with the haunch of the statue. Above the modern patch, Phase I (with recut face) shows again. Thus, the north large box appears to be built onto, and as part of, the earliest casing of the bedrock forming the rear haunch of the Sphinx.

7.2.1 Veneer Removal on the E Side of the N Large Box

The relationship between the box and the Phase I casing of the core body was further clarified during the EAO's 1981-82 program of removing and replacing deteriorated masonry veneer.

On October 19, 1981, restoration work began at a patch of veneer that fell from the side of the N hind paw (Pl. 5.81). Figs. 5.9, 5.18, and Pls. 5.15, 6.16, 6.17 show the veneer before the collapse. Pl. 6.16 shows how the east side of box abutted to the large crusted stones of Phase I, which were partially concealed by the small brick-sized veneer masonry of Phase III and Baraize. Pls. 6.18, 6.19 show the side of the paw after the collapse of the outer veneer. This left a thick layer of mortar and limestone packing that had filled the space between the outer veneer and the bedrock underneath (Fig. 5.18)

As the EAO team removed the mortar-limestone packing and veneer from the side of the gap (Pls. 7.4, 7.5), they exposed the ends of the Phase I blocks to which the N large box abuts (Fig. 7.1, section 21a; Pls. 7.6, 7.7). These Phase I slabs abutted, in turn, to the natural rock of the Sphinx core body. Only one of the four large Phase I blocks - the second to the bottom - retained its vertical join face. The top block shows parallel crude chisel marks, probably left by a large pointed chisel applied to its lower corner. As the later veneer concealed the missing join faces, the effacement occurred before or during the Phase III operation. Apparently, if any Phase I casing existed on the side of the N hind paw, it was completely stripped before the Phase III veneer was added. Since this later veneer is much thinner than Phase I, a thick layer of packing was necessary to fill out the side of the paw (Fig. 5.8; Pl. 7.8).

A space of 5 cm to 10 cm separates the Phase I stones at the W end of the paw from the bedrock. It contained a fill of mortar, limestone chips, and pockets of tafla. Tafla appears to be a secondary ingredient of the packing of all phases of masonry on the Sphinx.

7.2.2 Veneer Removal on the W Side of the N Large Box

The second major area explored during the veneer removal and replacement work of 1981-2 was the northwest haunch. The EAO restoration team began at the west inner corner of the north large box and the Sphinx core body. The old masonry at the bottom of the haunch was almost entirely original Phase III and Phase III-sized pieces replaced by Baraize (Pl. 7.9). The exceptions were the two large Phase I blocks which form the lower corner between the box and the Sphinx body. Workmen began to strip the old veneer in this area on February 23, 1982.

The workmen first removed a patch about 1 m in height (Pls.7.10, 7.11) and extending west for 2.50 m. Underneath the outer veneer, they found large square blocks, so large that they exceeded the average for Phase I. Their sizes match that of the large blocks - classified as sub-Phase G - located immediately behind the Thutmose IV Stela at the base of the Sphinx's chest (see chapter 8). The larger blocks of the N large box and the lower courses of the Phase I blocks inside the passage in the rear of the Sphinx (Fig. 6.7) are comparable in size.

The large blocks of the N haunch are white (after the team scraped the crust and patina off their faces), massive and homogeneous, like the blocks in the chapel and rump passage.

The blocks retain their original faces, which are quite smooth (Pls.7.13, 7.14). They do not follow the intended contour of the Sphinx body; rather, they lie in at various depths from the outer casing (Pl. 7.12). Thus, they appear to be the backing of a casing which was removed before the Phase III additions. The Phase I slabs that make the corner with the N large box are all that is left of this casing at this spot, as shown in the sectioned obtained by the removal of the Phase III veneer (Fig. 6.3, section 19a; Pls. 7.12, 7.13). As on the side of the N hind paw, the Phase III masons added a thick layer of packing to bring their small-block veneer out to the original contour of the missing Phase I outer casing (Pls. 7.15, 7.16).

The lower course of the large backing blocks recedes 0.80 m from the outer face of the Phase I blocks, and the second backing course recedes by another 0.70 m (Pl. 7.13). The longest of the large blocks, located at floor-level on the west side of the gap, is over 1.63 m in length. Two others measured 0.93 m and 1.0 m in length (Pl. 7.11). All of these blocks are over 0.72 m in height. The large size of these backing stones indicate that the bedrock core body must recede greatly from the bedrock ground line at the N hind paw and in the rump passage (Fig. 6.7). When I compared this masonry to the corresponding configuration on the opposite (E) side of the N large box, I found that the casing on the E side was only 0.45 m thick at the most over the bedrock (compare

Figs. 7.1 and 6.3, section 19a).

The joins between the large backing stones are very fine. A white speckled mortar occurs in places in the seams but the seams are not completely filled with mortar. The lower course blocks sit on 2 cm to 6 cm of tafla with pockets of gypsum mortar and limestone chips. The blocks showed traces of red color in roughly horizontal streaks along the lower edges of their faces (Pl. 7.14 just behind the scale). I cannot determine whether the streaks are marks left by the builders or a residue from elements in the mortar (which was scraped off the blocks before my examination).

After the EAO team filled the gap created by the first veneer removal, they removed a panel of crusted Phase III stone from higher above the Phase I blocks that jutted from the corner with the N large box (Pl. 7.17). Here the outer face of the Phase I casing was cut away along the third course above the floor. The cut blocks exhibited the same crude parallel tool marks as those on the east side of the N large box.

In small increments, the workmen extended the first removal patch to a level above the top of the N large box where the Phase III-stripping and replacement continued (Pl. 7.18). As the work proceeded piece-by-piece, it was difficult to ascertain the relation between the large backing stones exposed at the base and the outer Phase I casing exposed higher on the haunch. The profile obtained from the veneer removal (Fig. 6.3, section 19a) indicates that the large stones exposed in the upper patch are on the same plane as the backing stones near the floor level. Thus, they are part of the backing of very large blocks for Phase I, and not really its outer face.

On March 18, 1982, the EAO team stripped another patch of veneer from the haunch, 4.5 m to 7.6 m west of the N large box, around the curve of the rump (Pl. 7.19). They exposed more large blocks that were more irregular and crudely fashioned than those of the first removal (Pl. 7.20). The work proceeded in increments, stripping old masonry and adding new veneer. Higher in this same patch of repair, the underlying large blocks had fine joins and smooth faces that were flush from one block to the next (Pl. 7.21). This surface is probably the original outer face of the Phase I casing. This face can be compared with that on the lower Phase I blocks seen in profile in the rump passage (Fig. 6.7) just a few meters to the SW around the curve of the rump (In Pl. 7.21 the entrance to passage is covered with loose stones). In the removal/replacement operation, the very large blocks with a good finish were exposed to a height of 2 m above floor level (Pls. 7.22, 7.23).[1]

7.3 The N Small Box

The N small masonry box attaches to the body of the Sphinx in front of the N hind paw (Fig. 5.1; Pl. 5.14). It extends perpendicular to the body for a length of 2.30 m

(N-S) and is 2.45 m wide (E-W). The box rises 1.75 m above floor level. As with the N large box, the sizes of the in situ blocks of the N small box correspond to those of the Phase I additions to the Sphinx.

When Baraize cleared this part of the Sphinx on December 3, 1925, much of the box had been dismantled already. In Arch. Lacau photo CI 20 (Pl. 6.11), the excavation is beginning to reveal the N side of the box in front of the Phase I casing on the flank of the statue. It appears as though the entire E side of the box, except for a single block, is missing. Baraize reconstructed the E side, merely by setting Phase I-sized slabs loosely upon one another. He also reconstructed the W side of the uppermost course, bonding it with his characteristic grey cement. Thus, the two lower courses, the center blocks of the upper three courses of the north wall, and part of the interior fill are what remain of the original structure. It is unclear whether the box was dismantled in ancient times or by Mariette when he excavated in 1853.

In 1979 the sand that had filled the box was temporarily cleared out. Only a single course of limestone blocks ranging from 0.40 m to 0.50 m thick remained from the original est and west sides of the box (Fig. 7.2). The heights of the individual *in situ* blocks of the five courses of the north wall measure, from bottom up, 0.38 m, 0.36m, 0.34 m, 0.33 m, and 0.27 m. The blocks vary in length up to 1.10 m, falling well within the size ranges for Phase I masonry.

Inside the box, I found several limestone boulders, cut blocks and granite fragments. Some of these pieces were mortared together and appeared to have been *in situ* since ancient times. However, in Arch. Lacau photo CI 96, which shows the side of the Sphinx after the Baraize excavation, the box looks almost empty. We can see that the N wall is composed of six courses of blocks. The lower courses are in place on the E wall. Unfortunately, in this view the box is seen from a considerable distance out in front of the Sphinx. But the large piece of local limestone against the interior north wall is barely visible, while the features of the interior recorded in the plan and profiles (Fig. 7.2) are in shadow. Gauri (personal communication) analyzed three mortar samples from the mortared joins of the interior pieces and found that the percentages of carbonates, sand, and silt fall within the range for Phase I mortar samples.

A large boulder of local limestone is attached to the inside of the N wall (Pls. 7.25, 7.26). It measures 0.95 m x 0.50 m x 1.15 m. A crude step is carved into its side facing into the box. Concentrated limestone chips and gypsum fill the top of the space between this boulder and the inside of the N wall, and dark damp sand mixed with grey mud fills the bottom (Fig. 7.2). The sand-mud mixture also fills the spaces between the first boulder and the other limestone pieces at the bottom of the box. Also, small fragments of compact black mud occur in the sand fill of these spaces, and the sand fill under the large boulder contained one red granite fragment. Two other large and irregular limestone pieces occupied the bottom W side of the box. These measure 0.80 m x 0.53 m and 0.70 m x 0.53 m. A thin lens of grey mud overlays the floor under these two center limestone boulders and, like the fill of limestone, sand, and mud, this deposit appears to have been undisturbed by the earlier excavations of 1853 and 1925. Between the third limestone boulder and the masonry casing of the Sphinx body, we found large granite fragments, up to 0.25 m in thickness or diameter. Two flat slabs of limestone, 0.30 m to 0.35 m thick, remain in situ upon the second and third limestone boulders, forming a fairly even upper surface. The slabs are mortared to the masonry casing of the Sphinx body (Pl. 7.27). Their lower surface is level with the step cut into the first large boulder against the N wall. Probably, the step was meant to receive the next slab of a course of masonry of which only the two flat slabs remain.

Seven ancient courses of casing remain where the box attaches to the body of the statue. These measure, from bottom to top, 0.40 m, 0.38 m, 0.44 m, 0.50 m, 0.42 m and 0.40 m in thickness - well within range of Phase I. These blocks on the

Sphinx body are contiguous with the Phase I masonry encasing the core body in Arch. Lacau CI 20 (Pl. 6.11). The second and third courses of the body masonry inside the box extend out from 0.17 m to 0.11 m over the course below (Fig. 7.2). The top of the third course is level with the top of the flat slabs covering the irregular boulders and other fill (Pl. 7.26). The casing courses above this level are not as regularly stepped out. The surface of the higher courses appear to have been weathered or cut away. Immediately above the location of the box, the sixth and seventh courses above the floor (just under the modern replacement in Fig. 7.2, profile A-A') protrude 0.20 m to 0.25 m from the masonry lining the side of the Sphinx (Fig. 5.10). Above the Phase I blocks, Baraize set two slabs to retain a fill of grey cement and limestone that form a ledge 1.20 m wide at a height of 3.22 m above the floor.

There is a recess in Bed 1ii of the Sphinx core body approximately on line with the N small box, 2.5 m above the top of the box (Fig. 5.10). The recess is about the same width (2.5 m) as the box, and it is 0.40 m deep.

In order to explain the purpose of this box, we must take into account the flat slabs, which appear to be all that remains of a course of blocks which sealed off the fill underneath. The boulders, smaller limestone pieces, granite fragments and sand built up the floor level to make a platform on the interior of the box. The crude step cut into the side of the boulder against the north wall was meant to receive the course of more regular blocks forming the surface of the platform. Since the upper part of this boulder would have risen above the floor, it must have been left as part of the core of the north wall of the box, which would have been about 0.85 m thick - double the thickness of the upper course (Fig. 7.2, profile A-A').

One suggested purpose of these boxes is that they served as a base, or plinth, for a statue or some other structure against the flanks of the Sphinx. Given a thickness of 0.85 m for the N wall of the box and the outward curve of the casing on the flank of the Sphinx, there is room for a platform 1.25 m in length (N-S) and about 1.50 m in width (E-W).

7.4 The Missing N Box

Mariette claimed that three stonework boxes attached to the north side of the Sphinx. He called them buttresses (see below). The third and missing box might have been located on the masonry veneer 9.30 m to the east of the N small box (Fig. 5.1; Pl. 5.14). At this spot, two Phase I blocks protrude from the surrounding overlay of modern veneer from 1925-6 and 1973. The blocks may mark the corner between the missing box and the masonry veneer. Arch. Lacau photo CI 17 shows the spot as first excavated in 1925-6 (Pl. 6.19, immediately to the right of the scaffold legs). The large Phase I stones underneath the protruding blocks are recessed and broken away. Scores of the large Phase I slabs lay along the base of the N flank of the statue. Mariette may have dismantled entirely the third box, or it may have been removed at some point between his excavations and those of 1925.

7.5 The S Large Box

The S large box attaches to the body just behind the elbow of the south forepaw (Fig. 5.1; Pl. 5.18). It extends 4 m (N-S) from the side of the body and has a width of 5.26 m (E-W), - 10 royal cubits. The total height of the box is 3.29 m, which makes the top about level with the top of the S forepaw. The box is in the form of two squares, one atop the other. The lower, broader cube has a rounded top, or coping, where it meets the upper narrow square. The interior of the box is empty down to the bedrock floor of the Sphinx sanctuary (Fig. 7.3; Pl. 7.32). The space at the bottom interior of the box measures 1.85 m x 2.60 m. The total thickness of the walls is 1.90 m on the E, 2.00 m on the S, and 1.70 m on the W.

Mariette exposed the S large box for the first time in 1853. He noted that it is the same height as the paw and thought at first that, like the boxes on the N side, it was a buttress to support the under slope of the masonry on the body of the Sphinx. He concluded, however, that the large box was the plinth for a large Osiride statue, based on pieces of the statue that he found on the spot:

> Les côtes du Sphinx sont nécessairment renflées. Comme elles sont formées de maçonerie, trois lourdes contrefort disposés sur le flanc gauche de l'animal pour les soutenir. Sur le flanc droit, et précisément a la hauteur de l'épaule, est une construction qu'au premier abord on prendrait pour un autre contre-fort. Un examen plus attentif m'a fait voir que ce massif est une base de statue colossale. Nous avons en effet retrouvé les débris de cette statue, qui était construite par blocs superposés et qui representait Osiris. Le Sphinx est appelé par l'inscription métrique sont nous avons déjà parlé: "Ce suivant sacré de la déese Latone, le guardien du divin et beinfaisant Osiris...". La relation entre Armachis et Osiris est évidente, et c'est à la statue adossèe à l'épaule droit du Sphinx que l'inscription fait allusion.

This is practically all that exists in the literature on the boxes. The Osiride statue is not mentioned anywhere else, as far as I have been able to determine. When Baraize first cleared the S large box in 1925, it was mostly intact, although a big hole had been forced through the Phase I masonry against the part of the body enclosed by the box. Inside this hole, two large pieces of shaped limestone, as indicated in Arch. Lacau photo CI 63 (Pl. 7.28), may be parts of the Osiris statue. The piece with one rounded side could be part of a torso. The photographs show what appears to be the bedrock of the core body behind these limestone pieces (Pl. 7.29).

Baraize ripped away the ends of the E and W walls of the box where they joined the body of the Sphinx (Pls. 2.6, 7.31) in order to patch the hole in the body masonry. He then rebuilt the ends of the walls. The lower part of the box was in a fairly ruined condition when Baraize cleared it (Pl. 7.30). Restorers of the 1940s or 1950s encased the bottom with small stone slabs (Pl. 5.18).

Limestone pieces inside the box (Pl. 7.32) are probably what remains of loose masonry that once filled the box. At the bottom, five large blocks were set in two courses (Fig. 7.3). These are Phase I-sized blocks that remain after the packing inside the box was removed and the gap was broken through the masonry of the Sphinx body. The large blocks measure, from bottom up, 0.37 m and 0.36 m in thickness - the same thickness as the two lowest courses of blocks on the Sphinx body on the interior box. The bottom of masonry that Baraize applied to close the gap in the body casing begins on top of the two courses of large Phase I slabs. The bedrock floor is bare for a distance of 1.55 m between the large blocks at the bottom of the box and those against the core body.

It is possible that the five large blocks are all that remains of an original Phase I core, or smaller box, that the Phase II masons enlarged during their restorations. However, the large blocks of the bottom course of the exterior S wall of the box also look like Phase I (Figs. 5.5, 7.3; Pl. 5.18), which suggests the ground plan of the box was always as large as it is now. Futhermore, Arch. Lacau photos CI 22 (Pl. 7.30), CI 79

Pl. 5.10) and CI 194 (Pl. 7.29) show the exterior prior to the modern sheathing, and all of the bottom courses of the S wall are the size of Phase I. As on the body casing, these have been cut or weathered away at the surface and filled in later with the smaller Phase II blocks that still cover the E end of the S wall and the E wall of the box. The Phase II masonry forms the curved top of the lower half of the box (Pl. 7.30).

The squared upper part of the box consists entirely of Phase II-sized blocks set in ashlar courses. The exterior faces of the upper part were never smoothed; the individual blocks still retain the excess stone that the masons intended to shave off (Fig. 7.3). The guidelines for cutting the excess stone are still visible on top course (Fig. 7.3, plan).

Although the structural relations of the S wall of the box are not entirely clear, it looks as though the original Phase I wall consisted of exterior and interior casings of typically large block and a fill of smaller, more irregular limestone slabs and mortar between core and casing. As far as I can tell from the archival photos and intact structural relations, the walls of the box originally abutted to the Phase I blocks lining the Sphinx body without forming the corner with the body casing.

The walls of the upper half of the box are 0.75 m thick. The blocks range in size from 0.50 m to 0.62 m in length, 0.17 m to 0.30 m in width, and 0.16 m to 0.24 m in thickness. The fourth course down from the top on the interior of the S wall juts out 4 or 5 cm from the inner face of the wall (Fig. 7.3). This could be the remains of an level surface that extended across the interior of the box. It is possible that this is the bottom of a socle for the Osiride statue mentioned by Mariette.

In 1977, a team from the Radio Physics Laboratory of SRI International used resistivity sensing on the rock floor around the Sphinx and detected an anomaly "typical of the behavior expected from a vertical shaft" immediately beside the S large box (Dolphin et. al. 1977, 64). The team returned the following year for a thorough resistivity survey of the Sphinx floor, this time also recording acoustical measurements of any detected anomalies (Fig. 2.5). They could not confirm the indications of a shaft beside the box. However, an "advanced acoustical probe" used only at the end of the project indicated that "one significant blind spot lies beneath the cupola (S large box) alongside the Sphinx on the south side" (SRI 1978, 7; cf. Vickers 1981, 11).

Although the SRI team did not drill the anomalous area under the S large box, on May 9, 1978, the upper two of the five large stones at the bottom of the box were moved under the supervision of the author and Zahi Hawass, who was at that time Chief Inspector of the Giza Pyramids (Pl. 7.34). The material that filled the space between these blocks and the smaller packing blocks of the wall adhered to the wall after the removal of the blocks. The fill consisted of a mixture of sand and soft pink crumbly mortar over a sloping thin layer of grey mud or clay which, in turn, rested on a layer of soft sand and limestone fragments. We lifted the large blocks of the lower course, revealing only the bedrock floor underneath.

If Mariette was correct in claiming that the S large box was once the base of a colossal statue of Osiris, we should expect to find other architectural evidence of the cult connected with this image - perhaps that of Osiris, Lord of Rosetau (see chapters 3 and 9). Several of the Arch. Lacau photographs (Pls. 2.3, 2.4, 2.5, 7.30) show the S large box soon after Baraize's workmen have cleared it; as their excavation progressed to the W and S. At the time of these photographs, they had either exposed or composed a flight of eight steps about 3 to 4 meters south of the box. The steps ascend in an E-W direction to a platform about 2 m off the ground. In Arch. Lacau CI 28 and CI 22 (Pls. 2.5, 7.30) it is evident that workmen are ascending the opposite, west side of the platform, which means there was probably a stairway on that side as well. The blocks that compose the steps are the same size as the Phase II blocks on the S large box.

As mentioned in chapter 2, there is some doubt whether this is an ancient structure or whether it was constructed temporarily by Baraize from ancient Phase II blocks found lying about in the debris. The stairs appear to have been better composed that the temorary stairs Baraize’s workers sinatalled elsewhere. We see the stairs and platform in a close view to the W dated Dec. 3, 1925 (Pl. 2.5, CI 26), and again in wide general view to the SW of the Sphinx dated Dec. 24, 1925 (Pl. 2.3, CI 41). CI 36 and CI 38 dated Dec. 24, 1925, like CI 41 (Pl. 2.3) of that same date, show two sets of higher stairs ascending the sandy debris up to the south.

On the balance, it is possible that the stairway is ancient. Baraize dismantled it almost as soon as he had cleared it, apparently with no more documentation than these photographs. In a view of the excavations to the E, dated January? 3, 1926 (Pl. 7.31, CI 64), the stairs are gone, but two roughly rectangular massifs, a lower and a higher one, of harder material (clay or mudbrick?) project from slope of sand and debirs that ocvers the Khafre causeway embankment. Could these be the foundation and fill for a stairway, like the mud core of the Graeco-Roman period stairs east of the Sphinx forepaws? Just in front of the S large box the workmen are digging into a mound of darker, more compact soil. This could be a mud core upon which the limestone platform and stairway were built. The Graeco-Roman stairs east of the Sphinx were similarly built. Higher in the sloping sand and debris, CI 64 shows another solid form of compact soil or mud, about on line with the lower form and with the S large box. Perhaps this was the core of a stairway that descended from the Khafre causeway embankment to the platform at a time when the causeway walls were removed completely and the causeway embankment was encumbered with sand and debris.

As for the missing statue of Osiris, built in pieces according to Mariette, the Arch. Lacau photographs offer some evidence. Two shaped pieces, one of which could be a torso, were found in the gap through the Sphinx body masonry inside the S large box (Pl. 7.28). Several of the photographs show, in addition, a limestone double crown and face that must have been found near to the S large box. These pieces sat, for some time, near the S forepaw (Pls. 2.6, 6.2, 7.31). The head or face piece is obscured in these views, though it can be seen in Pl. 2.4 set up on stones just to the W of the crown. The features of the face are worn badly. During my work at the Sphinx, these pieces sat on the floor in the SE corner of the Sphinx sanctuary at the base of the Khafre causeway. Their surfaces had worn considerably since 1925 - they are barely recognizable as a double crown and a face. A third piece at this location may represent the knee and shin of a statue. In chapters 8 and 9, I discuss the form, dimensions, and original context of these pieces.

7.6 The S Small Box

The S small box lies at the base of the Sphinx belly, 3.60 m west of the S large box (Fig. 5.1; Pls. 5.18, 5.19). The box extends 2.40 m from the Sphinx body and has a width of 1.9 m. Curiously, it has very nearly the same dimensions as the empty space on the interior of the south large box. The S small box abuts to Phase I blocks and probably dates to the time of the Phase I casing.

The S small box consists of four courses of Phase I blocks, each about 0.36 m thick. Originally, there may have been a fifth course as indicated by Arch. Lacau photographs CI 22 (Pl. 7.30) and CI 28 (Pl. 2.5). In these views, large blocks lie loose on the S end and E side of the box shortly after its excavation. Today, the faces of the three lower courses are heavily encrusted, and the upper course is flaking and powdering severely. The upper course on the E and W sides of the box are higher than the fill of the interior which, composed of limestone blocks and mortar, makes a platform that is level with the top of the third course of exterior blocks (Fig. 7.4). Thus, the upper course forms low "walls," 0.60 m thick on the west and 0.33 m thick on the east. The mortar on the platform between these "walls," is flattened, indicating that something has been removed from the space, perhaps another block. However, if the box is really a plinth or base, the flat center may be the bottom of the socle for whatever it supported. All that remains of the fourth course on the S end is a patch of limestone chips, sand and mortar rubble.

7.7 Summary and Conclusions

The masonry boxes attached to the Sphinx statue are odd structures that defy immediate and easy explanation. Even odder is the fact that they have received little comment except that of Mariette (1882, 95). His suggestions that the boxes on the N are buttresses for the casing of the Sphinx body is unlikely; a buttress need not be in the form of a box that extends so far from that which it supports; columnar supports of masonry would suffice.

Mariette's suggestion that the S large box is a base for an Osiride statue, on the other hand, must be taken more seriously, particularly since pieces of statues were in fact found by Baraize near the spot, 72 years later. If the platform with a double stairway in front of the S large box is ancient, it could suggests a cult layout of some sort for the statue that may have once stood on the box, against the shoulder of the Sphinx.

Like the S large box, both the S and N small boxes show evidence of use as plinths or bases - flat socles built upon a fill of limestone and mortar. However, there remains some doubt. The notion of the Sphinx flanked with smaller statues on pedestals here and there against the leonine body might seem, at first, bizarre. The N large box is covered with masonry and has never been dismantled. It does not seem well constructed or properly located as a pedestal for a statue.

Chapter 7 Notes

[1] *Ed. note: During the later restoration project that started in 1989 under Zahi Hawass, Mahmoud Mabrouk and Adam Henien, the veneer stone replaced in 1983 was removed and again replaced. They were able to update architectural drawings and photographs of the masonry behind the modern veneer.*

CHAPTER 8

The Chapel

8.1 Introduction

The evidence of chapters 5, 6 and 7 demonstrates that the part of the Sphinx body carved from Member II layers was already badly eroded before Phase I casing was added to it. The date of Phase I is unknown. It is reasonable to suggest that the 18th Dynasty kings, Amenhotep II and Thutmose IV, were responsible for reconstructing Phase I when they had the Sphinx cleared from the sand during their reigns (chapter 3).

When Caviglia undertook the first major excavation of the Sphinx in our era, in 1817, he found a small chapel tucked between the statue's forepaws at the base of its chest. The centerpiece of the square chapel, forming its back wall, is the 3.5 m-tall granite stela of Thutmose IV, dated to Year One, Month three of Inundation, Day Nineteen of his reign (Porter, Moss, and Malek 1974, 37). With reasonable accuracy, we can assign to this regnal year the absolute date of 1400 B.C. (Bryan 1980, 35; most recently: Kitchen 1987, 52). When Baraize began the final clearing of the statue in 1925, he found that much of the chapel had been destroyed, but the Thutmose IV stela still stood and it remains in situ to this day. Sufficient masonry remained around the stela so that is was possible to document the structural relationships from the stela back to the Phase I masonry *in situ* against the chest of the Sphinx. The primary question arising from our study of the masonry on the core body of the Sphinx was the absolute date of Phase I. One of the purposes of documenting the remains of the Sphinx chapel was to investigate whether or not the structural stratigraphy here would help date Phase I.

8.2 The Chapel as Caviglia Found It

H. Salt described the condition of the chapel as Caviglia found with an essay and drawings published in an appendix by Vyse (1842, 107-119). Birch (1852-53) provided a more complete schematic map (Fig. 2.2 here), drawn by Ricci, and a briefer summary of Caviglia's excavations.

The chapel between the forepaws was the focus of an extensive architectural arrangement built during the Graeco-Roman Era, on top of the mound of debris that filled and buried the Sphinx Temple. This arrangement is described in chapter 2. The viewing platform with its altars led westward to a broad flight of thirty steps that descended to the limestone pavement in front of the forepaws (Fig. 2.1). This pavement still exists in badly weathered condition (Fig. 5.1). The chapel proper begins between the front toes of the forepaws.

Screen walls composed of variously sized limestone slabs projected perpendicular from both forepaws, at the front of the back toes. This closed off the area between the forepaws

(Fig. 2.1, hh). A crudely carved lion with turned head and crossed forepaws was found nearby and may have been one of a pair that rested upon the walls (Vyse 1842, 110, Pl. A, Fig. 3). According to Salt, an opening was left left between the two walls (j), but the threshold of this opening, a window or doorway, was raised some 2 feet (.61 m) above the pavement. A granite altar (k) stood immediately in front of the opening. The base of this altar remains in situ and measures .85 m square and 1.17 m tall. Salt drew the altar with a limestone tableau surmounted by horns at the four corners (Ibid. Pl. D, Fig. 1). This piece went to the British Museum. Salt reported that "the altar yet retains the marks of fire - the effects, probably, or burnt offerings" (Ibid., 110).

The area inside the front walls, between the forepaws, was paved entirely with limestone (e e). Judging from Salt's perspective sketch of the inner chapel (Fig. 8.2 here), this pavement was in excellent condition. The limestone paving appears to match the masonry cloaking the paws, which appears in the sketch complete and unbroken. However, we must use caution in accepting these impressionistic views as evidence. Another pair of short walls (c c) jutted out from the inner sides of the forepaws to define the entrance to the inner chapel. In Salt's sketch a molding defines a band near the tops of these walls, with a cornice, set back to form a narrow ledge. A small stone lion sat between these walls, with its face toward the Sphinx (Fig. 8.2).

The inner chapel measured "10 feet long (N-S) and 5 feet broad (E-W)" according to Salt (Ibid., 109; 3.05 m X 1.52 m). The western wall was taken up entirely by the red granite Thutmose IV Stela. The N and S side walls were formed of limestone masonry, which appears in Salt's sketches to have been uniform with the floor pavement and with the cladding of the forepaws. The pavement continued into the inner chapel. The northern and southern walls of the chapel were built against the inner sides of the forepaws, but already when Caviglia exposed them, the upper half of the northern wall had toppled. Stelae of Ramses II worshipping the Sphinx had been set into the upper face of both walls. The southern stela remained, while the northern stela had fallen into the inner chapel, where Caviglia found its lying on its side. In Salt's sketch (Fig. 8.2), the southern wall is capped, just above the Ramses II stela, by a decorative series of rounded crenels. This feature, and the low front walls, which together make certain there had been no roof, confirm that, as Birch (1852-53, 32) surmised, this was a hypaethral chapel.

In Vyse's (1842, 117) publication, Birch illustrates the southern Ramses II stela in a drawing, which, though valuable, is far from a facsimile. Birch's drawing and Salt's perspective sketch show a vertical band of hieroglyphs on either side of the southern stela that are absent from the stela today. In the drawings the band on the left is damaged at the top and bottom; the one on the right begins with "the Horus, Strong Bull, Beloved of Maat" followed by:

nbty mꜥk kmt wꜥf ḫꜣst Ḥr...

"Two Mistress, Protector of Egypt and Subduer of Foreign Land(s), Horus..."

The Ramses stelae ended up in the Louvre with the designations B18 (S) and B19 (N). Piankoff (1932, 156) published a facsimile of the northern stela and discussed the pair. Zivie (1976, 196-98, Pl. 14) published photographs, a bibliography, and a discussion of both stelae. The flanking vertical bands of inscription were apparently sawn off when the pieces were extracted from the Sphinx. Salt's more distant sketch-view of the chapel and the front of the Sphinx (Fig. 8.1 here) seems to show B19 lying on the sand, already hauled out of the chapel with the sides sawn away (Vyse 1842, plate opposite 107). As Zivie (1976, 198) noted, Salt's sketch of the chapel (Vyse 1842, opposite 110) shows a vertical line of hieroglyphs on the E-facing edges of the stelae. If these existed, they probably disappeared when the stela were cut for removal.

Piankoff describes both stela as "white limestone, very friable and damaged by salt, which has loosened and flaked off the surface of the relief in the upper right hand part of B19, leaving only vague outlines of the scene; the left half of B18 has suffered in the same way. Both are painted red to resemble granite and so to harmonize with the Dream Stela" (Piankoff 1932, 155). Salt mentions that, not only the stelae, but also the pavement, walls, and even "other lions, rudely carved, and the head and shoulders of a sphinx" that were found in the chapel were all painted red (Vyse 1842, 110).

On both stelae the Sphinx faces outward, toward the E, and, like the double Sphinx on the Thutmose Stela, sits upon a high pedestal decorated with the palace facade motif. On both stelae Ramses, and his ka behind him in the form of a standard holding his Horus name, face the Sphinx. On the S, Ramses holds out a censer and an offering, while on the N he raises his right hand toward the couchant sphinx and holds the censer in his left hand, arm extended at his side. As Piankoff's facsimile of B19 shows, the cut that took off the sides went right through the Ka standard behind the king. Inscription at the tops of both stelae give the kings name, titles and optative phrases to the Sphinx as Horemakhet and to Horus Behedet (Piankoff 1932, 155-56, Zivie 1976, 196-98). Piankoff (1932, 155) suggests that the king wears the nemes headdress on both stelae, but Birch's drawing and Zivie's photograph show the blue crown on the southern stela. Above the king on both stelae is the solar disk flanked by two uraei, each of which wear the Red Crown of Northern Egypt on the S stela and the White Crown of Southern Egypt on the N stelae. This curious reversal is probably explained by the idea that the stelae are themed according to the directions they face rather than the positions they occupy. Set into the tops of the side walls of the chapel, the figures of Ramses were brought to a height nearly equal to that of his predecessor, Thutmose IV.

Salt's plan shows, just behind the Thutmose IV stela, some kind of rectangular enclosure, and then a pair of additional, thinner, rectangular constructions that run off the edge of the plan (Fig. 2.1). The first structure renders, though far from true to scale, the large block of masonry against which the Thutmose IV Stela actually rests. Salt does not mention this feature in his text. The two thinner structures must be columns of masonry built against the Sphinx's chest. The column on the S is shown in Salt's sketches as a stack of limestone masonry reaching up to the prominent boss on the lower center of the chest (Figs. 8.1, 8.2). Salt refers to this column of masonry when he speaks of finding pieces of the Sphinx's beard - the first objects to come up in Caviglia's trench down the chest of the statue. Salt illustrates four large pieces of this beard (Vyse 1842, opposite 108; Fig. 8.3 here). Three of the pieces have plaiting on a front edge and relief carving on the surface that attached the plaiting - the beard proper - to the chest of the Sphinx. On the two largest fragments (A, B), which almost join at the break, a kneeling pharaoh wearing the nemes and uraeus holds up the broad collar (*wsx*) sign toward the Sphinx. Behind the pharaoh a sign group reads: *anx zA HA.f* "life and protection around and behind him." The third piece down from the top in Salt's illustration (8.3, C) shows another figure of the pharaoh in relief with remains of the same inscription as that on piece A-B. The direction of plaiting, and the fact that this pharaoh faces left while the former faces right, indicate that this piece is from the opposite side of the beard than A-B. These pieces clearly belonged to a long, curled divine beard such as the sphinx wears on the chapel stelae. The thick lower piece (D) was sent to the British Museum. Salt mentioned another piece of stone inscribed with the cartouches of Ramses II (Vyse 1842, opposite p. 109 Pl. A, Fig. 5) that was found with the beard fragments. He related this to the masonry column which he saw as the support for the divine beard:

> The rest of the beard was found in the sand, together with a stone inscribed with a double row of hieroglyphs, that appeared to belong to a wall or pillar, upon which the beard was supported, and some of which yet remained (Ibid., 109).

8.3 The Chapel Between 1817-1925

The Sphinx chapel was cleaned of drift sand at least three times between Caviglia's excavation and 1925 when Baraize began his work. The first time was when the Lepsius Expedition stayed at

Giza from November 10, 1842 to February 10, 1843 and made the first facsimile of the Thutmose IV Stela (Lepsius 1851, 68). The profiles and elevations of the chapel that Lepsius produced indicate that the N and S side walls had already been dismantled down to waist-high, and the pavement had been stripped off the floor, except for the slab upon which the Thutmose IV Stela rests. The front walls, projecting from the sides of the paws, appear to have remained intact (Lepsius 1849, Bl. 30)

In 1853 and 1858 Mariette excavated around the base of the Sphinx, but he quit when he discovered the nearby Khafre Valley Temple. Maspero's excavation in 1885 exposed again the chapel area after it had become sanded in after Mariette's work. The condition of the chapel in subsequent years, around the turn of the century, is seen in photographs (Pl. 5.1) and postcards that were popular at that time. In these views, much of the forepaws was exposed, although a dry-stone wall ran along the top of the N forepaw to hold back sand that tended to pour in from this direction. The sand slopes into the area between the forepaws and buries the floor and lower part of the Thutmose IV Stela. The front and side walls of the inner chapel are gone, except for a remnant of the S side wall. The granite altar remains, devoid of its limestone superstructure. The outer screen walls also remain projecting from the front inner sides of the paws just behind the altar (Pl. 5.1).

The chapel at this point was probably in much the same condition as Baraize found it and as we find it today, with the exception of minor modern restorations. Most of what was removed was probably taken at the time of, or shortly after, Caviglia's excavation.

8.4 The Chapel as Baraize Found It

The condition of the area between the forepaws when Baraize began his work, is shown in Arch Lacau photograph CI 11 (Pl. 5.78). The view is toward the E from the front of the forepaws. The sand slopes up several meters from the granite altar which has just been cleared. A workman leans on the front walls (hh in Fig. 2.1) that project from the back toes.

8.4.1 Architecture

It is curious that the entrance between the walls, about on line with the altar, was later blocked up, probably in antiquity but possibly from the time of Caviglia's excavation. The pavement between the forepaws was removed entirely. Had it remained, the blocking would only have risen the two feet that Salt mentioned was the height of the raised entrance threshold between the walls. The front walls have been reduced in height from that indicated on Salt's general sketch (Fig. 8.1). They were removed completely during Baraize's work.

The front walls of the inner chapel were gone by 1925. The lower part of the southern side wall remained to a height of 1.36 m. Not only was the N side wall removed, the masonry covering the side of the paw had been stripped down to the original bedrock paw (Pl. 5.75). This revealed, in plan and section view, a layer of large-block masonry that had been covered by the brick-sized masonry in Salt's drawing (Fig. 8.2). The removal of the upper part of the southern side wall revealed a frame of large limestone blocks for the Thutmose IV Stela. The corresponding framing blocks on the N side were ripped away when that paw was attacked.

Baraize immediately set about repairing damaged areas. The main repair in the chapel was the inward curving, lower ledge; the furrow (Evers 1929, II, 86, No. 587), which is a stylized rendering of musculature, at the inside back part of the paw (Pl. 5.74). The side and top of the ledge was built up with limestone pieces and modern cement under a large slab that was replaced close to its original position (Fig. 8.22, no. 104). Arch Lacau photograph CI 56 (Pl. 6.2) is a view of the forepaws, and the chapel area at the completion of Baraize's work. Large limestone slabs cover most of the back part of the top of the S (Sphinx's right) forepaw. These are earlier than the brick-sized masonry, Phase III and modern, covering the rest of the forepaws. Whether the large masonry on the paws is the same as Phase I on the body is one of the questions addressed by the following study of the chapel. The construction of large limestone blocks behind the Thutmose IV Stela, with a rectangular opening, as indicated on Salt's plan (Fig. 2.1, f-f) was later covered by an iron beam and cement roof with a trap door above the opening.

8.4.2 Beard Fragments

In CI 56 (Pl. 6.2), the two large beard pieces (A-B) with the kneeling pharaoh that Caviglia found are lying on N side of the construction behind the Thutmose IV Stela. Pieces A-B were since split into four or five parts. The upper part of the plaiting and the signs *ʿnḫ* and *zꜣ*, as well as the pharaoh's head and the broad collar that he offers, are missing. Fig. 8.4 presents A-B as found by Baraize next to the same pieces as illustrated by Salt. Nearby, at the very bottom of the photograph (Pl. 6.2) is a piece entirely covered with plaiting (E) that Salt did not illustrate. A shorter, thicker piece of plaited beard is on the inner ledge of the south forepaw (F) it is also not included in Salt's illustration. Another piece of the beard pieces is at the front of the south forepaw in Arch. Lacau photograph CI 26. This could be the missing part of the larger pieces (A-B), but it is not possible to know.

Some six months after CI 56 (Pl.6.2) was taken, CI 102 (Pl. 8.1) shows the beard pieces set up in the SE corner of the Sphinx sanctuary against some core blocks fallen from the Sphinx Temple wall. The larger pieces with the relief of the kneeling pharaoh (A-B) have been joined. (Pl. 8.2, from The Illustrated London News, May 1, 1926). The pieces missing in CI 56 (Pl. 6.2) are still missing. Of the other two pieces illustrated by Salt (Fig. 8.3, C, D), the bottom one (D) had been sent to the British Museum by the time of Baraize's work. There is no trace of the other piece (C) with the relief carving of a pharaoh. The two pieces that Salt does not illustrate (E and F) are lying on the core blocks in CI 102 (Pls. 8.2, 8.3, 8.4). These two pieces, the incomplete A-B, and D, are the remains of the Sphinx beard now on display in the Cairo Museum (Fig. 8.4).

8.5 Masonry Configurations

During the ARCE Sphinx Project, the masonry of the chapel was still in the condition that Baraize left it in 1926. I drew detailed 1:10 and 1:20 profiles and plans of the remains and distinguished five different configurations in a preliminary analysis. I have indicated these by hachuring in Fig. 8.5 where I also locate the profile and elevation drawings that follow. Note that the profiles in Figs. 8.12 and 8.22 are oriented as though one faced away from the Sphinx while those of Figs. 8.9, 8.10, are drawn as though one faced the Sphinx, with N on the right. I assigned a number to each major element in the chapel area. These are given on the plan in Fig. 8.6. These numbers and the masonry phases are also designated on the profiles. The individual numbers are given in parentheses when reference is made to them in this text. I have excluded from these plans configurations A, modern repair and reconstructions; B, Phase III small-slab masonry, probably of Graeco-Roman date; and C, Phase II masonry which occurs mainly on the N and S sides of the body of the Sphinx. I attempted to trace the sequence of elements from that which is known - the date of the Thutmose IV Stela - to the unknown, the date of the Phase I masonry at the base of the chest.

Group D is comprised solely of the remains of the S side wall of the inner chapel that supported the Ramses II Stela (Fa2). Group E includes the Thutmose IV Stela, the limestone frame blocks on its S side, the limestone slabs on which it rests, and the limestone slabs resting on Group G behind the stela (Figs. 8.5, 8.6, 8.13). Group F is the masonry of large blocks and slabs that covers the bedrock of the paws, or at least parts of the paws (Figs. 8.10, 8.13, 8.22). Group G comprises the three courses of large limestone blocks behind the Thutmose IV stela, bridging the space between the stela and the bedrock ledge at the base of the chest (Figs. 8.8, 8.12). Group H is the masonry that I have characterized elsewhere on the statue as Phase I, composed of large limestone slabs that reconstruct the severely weathered natural rock core body of the Sphinx. This masonry exists on the N (Fig. 8.7) and S (Fig. 8.11, Pl. 8.12) sides, while it is missing from the center of the base of the chest.

8.6 Features Fa1, Fa2, and Fa3

Three specific places in the chapel area were investigated during the time the ARCE Sphinx Project was in progress. I gave these places feature numbers, Fa1, Fa2, and Fa3. These features are described in turn.

8.6.1 Fa1

Behind the Thutmose IV Stela three courses of some of the largest blocks to be found anywhere on the Sphinx form a solid construction (G). The blocks measure about .70 m thick; the largest is 1.20 m long. These G blocks are laid so as to leave an irregular but roughly rectangular open space or cubicle against the base of the Sphinx chest (see Pl. 6.2). This could be the result of someone robbing the middle blocks. Block no. (12) in Fig. 8.6 is missing its inner corner; however, the inner faces of the three blocks on the north (16, 17, 18) are not damaged the way we might expect had a hole been forced through contiguous masonry. The interior of the G block of masonry could have been filled with small limestone pieces, as in the case of Fa3 (see below), or with limestone rubble, which was later removed. Sometime after Baraize's work, a cement roof with an iron trap door was built over the G block. The roof is partially indicated in Figs. 8.5 and 8.6 by crosshatching. The upper part of the G masonry on the south side is obscured by the modern cement supports of the cement roof (Fig. 8.8).

Feature *Fa1* consists of a small plug-like block at the bottom, interior south side of the G-group (Fig. 8.8, no. 10). The plug block was inserted between one of the large blocks (9) of the G group and the bedrock ledge (136) at the very base of the Sphinx chest (Pl. 8.6). The bedrock ledge turns a 90 degree corner to run E-W along the south side of the cubicle, behind the G blocks (Fig. 8.14). Another large block (8) was above the plug block and rests on the bedrock ledge (136) behind it (Fig. 8.9). The plug block (10) made a fine join with the block (9) on the east, while there was a fist-sized space between block (10) and the bedrock ledge (136) to the immediate west (Fig. 8.8). This space was filled with clean sand that phased into a moist, compact, tan colored clay (*tafla*) farther back into the crevasse. Beneath the plug block, the face of the ledge (136) sloped down to the irregular bedrock floor at the interior bottom of the cubicle. When block (10) was removed, it measured .63 m long, .26 m high, and .24 m in height. The floor just under (10) was has a prominent hump that gives way to a pronounced irregular cavity, or recess in the corner of the floor and the face of the ledge (136) (see Figs. 8.9 and 8.14, section 31).

Because the plug block protruded from the face of the bedrock ledge behind it, there was a space of about .14 m width, .47 m breadth, and .46 m height behind it. This space was entirely filled with *tafla*, as were the seams around the block. Tan-colored sandy clay, or *tafla,* also provided a bedding for the blocks on the opposite side of the interior of the G masonry cubicle (Fig. 8.14, section 31, no.s 16, 17, 143). The fill (144) behind the plug block (Fig. 8.14, plan) and between adjacent block (9) and the bedrock ledge, contained one large non-diagnostic, low fired, black sherd and one broken green faience disk bead (Fig. 8.18, no. 17a). When the sand and *tafla* fill from behind the plug block was sieved, it yielded 17 small round flat beads, about 3 mm in diameter (Fig. 8.18, no. 17b); about 17 very small bone fragments, two chips of basalt or dolerite, assorted irregular limestone fragments, one round quartz pebble, small ceramic particles and one small rim fragment of a ceramic vessel. There were also small grey (alluvial) mud spots and a few small spots of charcoal.

As mentioned above, it does not appear that large blocks have been robbed from the center of the G masonry. Neither does the interior look like a functional room of any sort. The purpose of the G masonry seems to be to form a solid and substantial mass - certainly it supports the back of the Thutmose Stela very well - which could have been completed by simply filling the cubicle with smaller limestone pieces and rubble. The plug block was simply inserted to fill a large gap between the masonry and the bedrock face. There is a similar small block (14) plugging the space between the large blocks, (12) and (18) against which the Thutmose Stela leans (Fig. 8.12).

8.6.2 Fa2

Fa2 is the lower part of the chapel's S wall that supported a stela of Ramses II worshipping the Sphinx (Pl. 8.7). It is preserved to a height of 1.34 off the bedrock floor. Something close to its total length, about 2 m, is preserved. The wall is .55 wide.

The core of the wall was a fill of limestone chips, sandy clay, and other materials in a rectangular space formed by a long broad limestone slab set parallel to the inner side of the Sphinx forepaw (Figs. 8.10, 8.15) and tall vertically placed slabs at either end. The outer faces of the wall were built of limestone slabs of a size slightly larger than bricks. The W end of the wall abuts directly to the large limestone blocks framing the Thutmose Stela (Fig. 8.15). The wall, including the debris fill, rested on a foundation of two large limestone blocks

(Fig. 8.21, Section 32), which rest in turn on other limestone pieces (Fig. 8.10; Pl. 8.6). The foundation blocks are at the same level, approximately, as the large limestone slab on which the Thutmose Stela sits. This level, .46m above the bedrock floor, must be that of the original paving of the chapel.

Baraize rebuilt the narrow exterior E end of the wall, using grey cement. He also added some limestone pieces and cement in a recess in the outside base of the wall, just on the bedrock floor (Pl. 8.21, Section 32). The recess was probably left when the adjacent pavement was ripped out.

The western half of the rubble filling the interior of the wall was cleared in 1978 and replaced. This was cleared out again in 1980 when the rubble filling the eastern half of the space was also excavated. On both occasions it was my conclusion that the rubble fill was ancient and previously un-cleared, although there was some question about this. There are no good close views of this feature in the Archive Lacau photographs, but CI 86 and CI 87 (dated April 7, 1926) show the wall from a distance in a general view of the Sphinx. The rectangular interior of the wall appears to be empty to some undetermined depth. In CI 96-97 (dated April 25, 1926), the interior of the wall is filled to the brim with sand or other material. This matter is discussed below.

8.6.2.1 Clearing Fa2

1978

The evidence of the Arch. Lacau photographs for the fill of Fa2 was not noted when the west half of the box-like enclosure was cleared in 1978. Samples were extracted by picking the material by hand as the fill was cleared down to a depth of 50 cm along the face of the broad slab (53) that forms the interior north side of the feature (Fig. 8.16). I considered the fill ancient and undisturbed, although, on the evidence cited in the previous paragraph, the upper part must have been deposited during 1926.

The salient feature of the fill was small fragments of Egyptian blue with a calcite backing, and ceramic sherds with blue powder adhering to one face. Otherwise the fill consisted of brown sandy soil and limestone fragments. At the 50 cm depth the exposed surface of the fill was cleaned and photographed. A limestone piece larger than those already encountered lay at the 50 cm depth. From this point on down the fill was darker and contained a higher concentration of limestone fragments, including broad pieces that were wedged against the large block (65) that formed the side of the forepaw. The flimsy blue-on-calcite fragments became fewer but still occurred sporadically. At a depth of 76 cm below the top of the feature, the clearing exposed the rectangular limestone (61, 62) pieces that run under the large slab forming the side of the forepaw (Fig. 8.17). The fill material that had been taken out from this half of the wall was replaced.

This replaced fill was taken out again in 1980. I noted that the fill now contained modern material: bits of newspaper, wire insulation fragments, etc. The 1978 material was sieved to yield these modern inclusions, as well as additional small blue-on-calcite fragments missed in 1978, small granite fragments, pottery bits, and particles of blue (frit) which did not have calcite backing.

1980

The appearance of the fill in the east half of the wall, not excavated in 1978, increased confidence that, under several centimeters of loose sand, the material was undisturbed from the time the wall was constructed. It consisted of sand pockets in dirt and clay, mottled brown and dark brown, packed with many large limestone fragments. These ranged from small chips to pieces 20 cm broad. The fill contained more sherds, including some with blue frit powder adhering to the surface, and irregular quartzite fragments, a smooth shiny chert pebble, small granite chips, and many fragments of blue pigment with a calcite backing. Fine fibers appeared to have served as a kind of temper in the calcite backing. The fill against the side of the paw was a finer material, more powdery, and stained red (Fig. 8.16). At the bottom, a plain rectangular limestone fragment lay loose in the fill. The fill continued down into a seam between the foundation block (51) of the wall and the bedrock ledge (136) on which the F masonry (65) forming the side of the forepaw rests (Fig. 8.16). This seam was packed with a large thin limestone flake (59).

Section 32a (Fig. 8.16) was drawn when the top part of the fill - likely deposited in 1926 - was removed and a section was cut through the remaining fill (the location of the section is given in Fig. 8.17).

Earlier I noted that the narrow exterior east end of the wall was rebuilt with modern grey cement. However, the 1980 clearing of the east part of the fill, revealed that the interior vertical slab (54) was ancient (Figs. 8.16, 8.17, 8.21 section 32), thus suggesting that the fill had not necessarily been contaminated by the reconstruction on the exterior end. This possibility was confirmed by ancient mortar bonding the vertical end-slab (54) to the block (65) forming the side of the forepaw. Embedded in this ancient mortar were many of the same blue-on-calcite fragments that were distributed throughout the fill. The red powder (58) against the side of the paw also continued up between the mortar and the face of the block (65). The red powder was deposited when higher surfaces were painted, and the paint ran down into the seam between the mortar and the masonry, and into the fill of the wall.

The condition of the inner side of the forepaw, underneath the Fa2 wall, as revealed by clearing this fill, has been rendered in Fig. 8.17. The original surface of the large F blocks (64, 65) forming the side of the paw is well preserved where the Fa2 wall covered it, and exhibits a hard brown patina. But the upper surface of the same blocks, which the Fa2 wall once covered before its upper part was removed, is flaking and badly weathered. The large F blocks rest upon smaller limestone slabs (61, 62) and mortar, which rest in turn upon the bedrock ledge (136) that is cut into the rear inner base of the paws and that runs back to the base of the chest. The face of this ledge is extremely rough, hard grey bedrock of Member I. Large irregular limestone flakes (59) were mortared here and there against the face of the ledge and the masonry packing above it (Figs. 8.16, 8.17). The face formed by the ledge and the mortar and limestone packing (61, 62) is not a finished surface. This surface was left in the rough because it was masked by the construction of D, the Fa2 wall.

8.6.2.2 Material and Artifacts

Blue Frit: The Fa2 fill included blue particles other than the blue-on-calcite fragments. Minute blue frit particles were embedded in the calcite backing of some of the blue-on-calcite fragments.

Granite: Many small chips and one larger fragment (3x4x6 cm) were recovered from the Fa2 fill, as well as one small chip of basalt.

Quartzite: The fill included seven pieces of quartzite (Fig. 8.18, 19b-h). The largest of these, no. 19c, shows green flecks, probably oxidized copper, on both faces. No. 19b was covered with a layer of gypsum over much of its surface and on this gypsum there was a splash mark of red paint. The hand that last held this object must have been covered with wet gypsum. Object 19e was characterized by a sharp quartz crystal at its point. Its face was worked flat and fairly smooth. Objects 19d, 19g, and 19h were formed of pink quartzite while the other pieces were brown quartzite. The latter are small and may have been used as scrappers for working fine detail.

Consolidated Sand(?) Objects: I thought that objects 19a, and 19i-k were formed of sandstone. However, they could be sand consolidated with gypsum. Under a x10 magnifier, a white gypsum matrix appears to bond sand particles. These objects are off-white in color. Their rounded edges indicate that they functioned as sanders or rubbers, or perhaps as consolidated abrasive for working stone. The flat side of 19a is covered with a thin patina of yellow that might be paint. The edges of 19a exhibit a red patina that could be paint, or the result of its use burnishing red pottery. Examination with the x10 magnifier revealed two small green spots on the edges of 19i and a similar spot on the surface of 19j. This is likely oxidized copper. This again suggests that these pieces could be consolidated abrasive for use with copper tools in working hard stone. Green-tinted sandy material, compacted with what might be gypsum, shows in saw cuts through the basalt blocks of the Khufu Mortuary temple (cf. Petrie 1917, Pl. 52; Arnold 199, 267).

Fragments of worked limestone: The object drawn in Fig. 8.18, No. 26 was recovered along with two other objects of similar appearance, although smaller, with a flat smooth face. The worked surface of No. 26 and these fragments has a tan patina characteristic of fine limestone that has been exposed for some time, as opposed to the white unconsolidated surface of limestone chips. Very minute blue flecks, seen only with a magnifier, occur on the surface of the upper part of No. 26, above the inflection. The backsides of these fragments result from rough, irregular breaks. The fragments are from 0.3 to 1.3 cm thick.

Ostraca Fragments: The limestone fragments drawn in Fig. 8.18, numbers 18 a-g are 0.2 to 0.4 cm thick with irregular breakage on the backs. In addition faded black ink, traces of yellow show on the surface of 18d.

Pottery: 104 pottery sherds were recovered from the Fa2 fill. Many of the sherds were badly effloresced with salts. Numbers 1 and 2 (Fig. 8.19) belonged to a base and rim respectively. Numbers 3 and 4 retained a slight indication of the inflection between body and neck. Only 16 total joins were found. All the sherds were red ware, except 4 small fragments that look like the dull dark brown hard ware characteristic of Roman amphorae.

Fifteen of the sherds probably came from one vessel with a wall 1.2 to 1.4 cm thick and a thin red wash on the exterior. Judging from the several sherds with a thick coating of gypsum on the interior wall, this vessel had contained mortar or plaster. In the fracture, the core fabric was a thin grey band phasing to red and red-brown at the exterior wall. This thick-walled vessel could be the bottom of No. 4, of which there were 8 joins. The fabric in the fracture and the surface are the same in 4 and the thick-walled vessel. No. 4 would be the middle to the upper part of the body of the vessel. One of the sherds of No. 4 retained a gypsum spot dabbed on with a fingerprint. A splash of red paint that showed on mortar adhering to one of the thick-walled sherds was applied after the sherd broke, since the paint partly covers the fracture.

A total of 12 to 13 sherds with 10 joins compose part of a thinner-walled red ware vessel that must have contained blue paint. These all have blue powder adhering to the interior wall (Fig. 8.19, No. 3a-d). This blue powder was also found on 10 smaller sherds of similar ware but thinner wall. These could be from the upper part of No. 3.

The sherds from Fa2 comprise mainly 2 or 3 vessels. The high total comes from counting even tiny fragments. These vessels appear to have been used as containers of gypsum mortar or plaster and blue paint.

No. 5 (Fig. 8.19) once formed the lower part of a jar or bowl with orange wash on the exterior wall, which shows a great deal of carbon that was probably deposited before the vessel broke. The edges of the sherd are worn as though it was reused after the vessel broke.

No. 6 (Fig. 8.20) is carbonized, or has carbonized material adhering to the interior wall. That this carbonization occurred after breakage is shown by the fact that the carbon completely covers one fracture edge. The exterior wall shows some traces of black carbon, as well as faint traces of yellow, blue, and white (gypsum?).

Finally, the fill included 4 small non-diagnostic fragments of a dull brown ware not unlike that of Roman amphorae. The largest of these is only 3.6 X 5.7 cm with a wall thickness of 0.8 cm. Another, measuring 2 X 4.8 cm, is badly worn after breakage.

8.6.2.3 Fa2: Interpretation

From Salt's drawing of the chapel as it was found by Caviglia (Fig. 8.2), it is clear that Fa2 is the remains of the S wall of the chapel built against the inner side of the S forepaw. The upper part of the wall, long missing, provided a back and support for the southern stela of Ramses II, one of a pair. The wall was constructed with broad slabs forming an open rectangle, around which small limestone blocks form the exterior faces. The debris that was excavated, including the objects and materials described above, was probably dumped into the core of the wall during its construction. The wall stood on a foundation of large limestone blocks at the same level as the limestone slabs on which the Thutmose IV Stela rests. This is probably the level of the chapel pavement at the time the Fa2 wall was built.

One would expect that the materials dumped into the core of the wall lay nearby at the time the wall was built. The quantity of limestone chips is itself indicative of building activity, probably the result of cutting stone for the wall itself and other elements of the chapel at this stage of construction. Some of the materials could be from finished surfaces of earlier structures that were taken down, or had deteriorated, by the time the Fa2 wall was built.

There is ample evidence of the use of blue paint, in the fragments of blue-on-calcite. These might have resulted from a pot that was first used to contain calcite mortar, and then reused to contain blue paint. When the paint dried and the pot broke, the small fragments of blue-on-calcite were scattered. On the other hand, these fragments could represent a plastered and painted surface that had been broken up before Fa2 was constructed. Analysis (see below) showed that the white backing was CaC03, calcium carbonate, and not CaS04, calcium sulphate or gypsum. The fiber inclusions (as temper?) give the impression that the calcite is a prepared backing as one would expect of a plaster application to a wall surface. Sherds 3a-d are from a vessel that contained blue paint (without calcite), suggesting that painting was in progress close to the time that Fa2 was constructed. It was possibly an offering jar with rim, or a hole-mouthed jar, such as were common in the New Kingdom (Kelly 1976, pls. XIV, XV).

There is also ample evidence for the use of red paint in the debris of Fa2: the vertical band of red powder against the side of the forepaw (Fig. 8.16); red traces on the consolidated and object (Fig. 8.18, 19a); red splash marks on the gypsum coating of the quartzite piece, 19b; and red the gypsum adhering to the sherds of the thick-walled vessel. We know that, at some point, the two Ramses stela were painted red (Piankoff 1932, 155) and many of the items in the chapel as Caviglia found it were also painted red (Vyse 1842, 110). The vertical band of red powder along the inner side of the debris fill (Fig. 8.16) most likely results from paint that ran down through the masonry seams when a higher surface - the wall or the Ramses Stela itself - was painted.

Faint traces of yellow that might be paint show on several of the objects from Fa2. Carbon on sherds No. 5 and No. 6 could have been used for black paint (Lucas and Harris 1962, 339-40).

Was the painted surface represented by these odd bits and pieces an earlier chapel wall, or perhaps a stela? Selim Hassan noted of several New Kingdom stela found embedded in a mudbrick wall near the Sphinx that they exhibited colors; one bore traces "of brilliant blue and yellow paint" (Hassan 1953, 64). It seems unlikely that the blue-on-calcite fragments derive from a broken up stela because, for one thing, the calcite backing looks more like a plaster application with its fibrous temper, if that is what it is. No. 18 (Fig. 8.18), limestone fragments with black strokes, are most likely bits of an ostracon. Object No. 26 and two smaller fragments are the only pieces of limestone with worked faces, or indications of a surface with finish. The scant traces of blue on the surface of no. 26 may come from loose blue powder in the debris - this powder adhered to the fractures of many sherds - and was probably attached after deposition in Fa2. Though the evidence is meager, we can guess that the chapel itself, of which Fa2 was a part, and the Sphinx itself, were painted at the time the Fa2 wall was constructed.

The pieces of consolidated sand, or sandstone (?), appear to be ordinary quartz sand consolidated in a gypsum matrix. Their rounded edges suggest a function as sanders or burnishers. They might have been used for grinding pigment. The minute traces of green - probably oxidized copper - indicate contact with copper tools. They may have served as consolidated abrasive for cutting and sanding stone in conjunction with copper and stone tools (see Clarke and Engelbach 1930, 198, 204 regarding polishing powder).

The fragments of quartzite may have been used as crude tools. The oxidized copper flecks on the largest, 19c (Fig. 8.18), indicates its contact with copper tools, possibly as a whetstone or pounder. The partial gypsum coating of 19b could result from being held in a hand wet with gypsum. The smaller quartzite pieces could have been used for cutting fine detail or relief in hard stone. Clarke and Engelbach (Ibid., 202, Fig. 245) point out that fine detail in hard stone was achieved by boring small holes in the pattern of the desired detail. This rough incision would then have to be fine sanded with a material harder than the stone being worked. Could this latter stage have been done with small, sharp-edged quartzite pieces? The sharp quartz pebble in the point of 19e would have served nicely as a cutting point.

Perhaps the granite fragments indicate the kind of hard stone that was being worked about the time that these materials were sealed up in the S wall of the chapel. This, of course, brings to mind the large granite stela of Thutmose IV just beside the Fa2 wall. It also leads to the question of the relative dates of the various elements and masonry groupings in the chapel - considering that the Fa2 wall held a stela of Ramses II. Before dealing with this sequence, I will describe the last place that the masonry of the chapel area was probed during the ARCE Sphinx Project.

8.6.3. Fa3

I designated as Feature Fa3 is a packing of small limestone slabs (66) on the inner side of the S forepaw. The slabs fill a space between an exposed part of the original bedrock paw and the large blocks (64, 65) built onto the side of the paw. Fa3 is located just above and behind (S) of Fa2 (Figs. 8.5, 8.6). Fig. 8.15 is a large-scale plan that includes Fa3. The large blocks (64-65) complete the outer contour of the paw. They are part of the F masonry which restores the top of the S forepaw back to the chest of the Sphinx where this masonry meets the H masonry (Phase I) built against the natural rock of the chest (Pls. 5.72, 8.7). The packing of smaller limestone pieces was exposed when the large slab that must have covered this small area was removed from the surface of the lower ledge or paw furrow that runs along the back inner side of the paw. Blocks (72, 73, 74, 78, 79, 80, 81, 82) are the remains of this covering masonry (Fig. 8.6). The area of Fa3 was already stripped of this masonry when Baraize worked at the Sphinx (Pl. 6.2).

8.6.3.1 Clearing Fa3

During the time of the ARCE Sphinx Project, the packing blocks were removed from between the bedrock and the F blocks in a small patch measuring .86 m (E-W) by .34 to.48 m (N-S). As the slabs were removed, I took notes on the sizes of the stones, surrounding material and gave the packing stones sequential numbers and (1,2,3...) and designations of their level in the packing (i, ii, iii...). Fig. 8.15 maps this patch at the outset of the operation. Each time a level of packing stones was removed, I drew a new plan of the locus (Fig. 8.21). The packing blocks in the upper part of the fill ranged from 9 to 11 cm in thickness, 13 to 18 cm in width and 29 to 46 cm in length. Like many of the blocks that followed, these were roughly squared with one or more straight faces that exhibited characteristic light vertical tool marks, probably from dressing with a flat chisel (Pl. 8.9). This dressing was done before the slabs were cut from a larger piece. These packing slabs were formed from fine white Turah-quality limestone. When the first layer was taken up, there was exposed a thin layer of fine compact tan clay (*tafla*) that crumbled on drying. The clay layer had been wet at one time; when it dried it separated into large curled pieces, like fine soil and clay on a dried pond or lake bed. In some places the clay retained the impressions of small pods (Pl. 8.10). Red stains showed on this clay mortar and interspersed packets of sand, which also included many particles of blue frit and minute particles of red pigment. At the level of blocks 24-27viii, the blue frit occurred in pieces large enough to be called fragments. The packing slabs were laid fairly tightly, and with some care. Block 9iii (Fig. 8.21, C) was cut to fit around one corner of the large vertical block (64).

These characteristics of the limestone packing slabs and the fill around them continued down through the lower layers. A few spots contained clumps of gypsum mortar; however, no mortar other than the tan-colored clay (*tafla*) bonded the packing blocks.

At the level of blocks 14-16v (Fig. 8.21, E), the face of the bedrock on one side of the space became very rough and heavily effloresced. The efflorescence adhered to the *tafla* filler as it was taken away, and when it was pried off the bedrock face, crystalline growths - probably salts – adhered on the under side where the bedrock was now yellow and rather soft like that exposed on the back inner side of the opposite forepaw, which was long ago stripped of all its cover masonry. (Pl. 5.75). At a depth of .70 m from the top of the packing the face of the bedrock recedes inward about .48 m. This recess (7), .60 m. in height, corresponds to geological bed 1i of Member II, that is, it is the first bed of the Member II sequence overlying the much harder rock of Member I. This bed is a particularly soft, clay-like, crumbly stone. It is weathered drastically everywhere on the Sphinx and the surrounding walls of the Sphinx amphitheater. The bottom of the recess is the bedrock ledge (136) already seen in the removal of Fa2 (Fig. 8.21, Section 32). The top of the ledge corresponds to the top of geological layer, Member I. The ledge also corresponds to the ledge cut on the back inner side of the opposite, N, forepaw (Fig. 8.10) where it is somewhat higher because the top of Member I slopes naturally up to the N.

After the packing (66) was taken down to the bottom of the Fa3 space, that is, to the surface of the ledge (136), it was confirmed that the block of F masonry (64) sits upon a foundation block (62) which rests upon the ledge (Fig. 8.21, section 32). The backside of the block (64) was cut straight and smooth, while the front side had been curved to make the contour of the forepaw before it was so drastically eroded at the top.

The packing masonry continued into the recess of the bedrock face. The bottom limestone packing slabs (30ix -m 40 xi) were larger and more irregular in shape than those higher in the sequence (Fig. 8.21, I and J). Two of them appeared more like locally quarried stone than the white Turah-quality stone. The masonry packing stopped at the level of the F masonry foundation block (62). Underneath this level the packing consisted of limestone flakes in mottled brown sandy soil with tan clay (*tafla*) and some chalky buff-colored gypsum. Included in this matrix were grey alluvial mud spots, blue frit and red pigment particles, a few small carbon flecks, two non-diagnostic sherds, and bones small enough to be of a bird or an extremely small animal.

The packing to both the E and W of the Fa3 space was somewhat different, as indicated in the section views created by the Fa3 removal. Immediately to the E, the section showed more solid masonry packing and less of the *tafla* fill (Fig. 8.22, right). On the W two very large limestone pieces were set vertically into the space to be filled (Fig. 8.10, left). The upper piece measured .47 X .36 m and the lower measured about .58 X .35 m. *Tafla*, brown sandy soil, and limestone chips filled the space between these pieces and the bedrock face.

8.6.3.2. Correspondence to the North Forepaw

Fa3 allows us to know what the masonry missing from the inner side of the opposite forepaw was like. The ledge (136) formed on the top of geological layer Member I is also found there (Figs. 8.10, 8.13, 8.22; Pls. 5.74, 5.75). While the F masonry encasing the inner side of the north forepaw is missing, the foundation blocks (101, 102, 103) yet remain upon the ledge. Where the N inner chapel wall, the mate to Fa2, is missing, the rough and unfinished bedrock face is exposed close to the floor (Pls. 8.15, 8.16) with a few of the vertically placed filler slabs Fig. 8.22, no. 107) mortared against the bedrock, just like those exposed in Fa2 (Fig. 8.17, no. 59). The face of one of the F masonry foundation blocks (103) has been recut in shallow steps to receive the small blocks of a later casing (Pl. 8.15). The lowest five or six courses of this later casing are still in place, with red paint on the outer face. The lowest slab is a typical Phase II block, with the vertical tooling (Fig. 8.22, no. 108). The upper part of the masonry section here was entirely replaced by Baraize.

This break through the masonry cover on the bedrock of the N forepaw is just opposite the end of the Fa2 wall on the opposite paw. The break thus corresponds to about where the east front walls of the inner chapel would have jutted out from the side of the paw. When the N wall of the inner chapel was ripped down, the attackers continued to gouge out the underlying F masonry until they reached the blank bedrock of the original paw.

8.6.3.3 Fa3 Interpretation

Fa3 and Fa2 give a good picture of the earliest extant masonry restoration of the Sphinx forepaws. That it was a restoration is clear from the fact that the F masonry, like Phase I on the body of the Sphinx, filled in and restored the contours of an already severely weathered surface. The surface of Member II, Bed 1i, on the inner side of the forepaw had weathered into a deep recess underneath the most ancient masonry on the paw, just as this same bed 1i is weathered on the side of the Khafre causeway, or in the natural rock wall behind the Sphinx. Both of the latter surfaces were long exposed to the elements. The Sphinx amphitheater walls and the Sphinx core body weathered together, and must have been sealed about the same time by drift sand.

Just as with Fa2, in Fa3 we see evidence of painting with blue and red pigments around the time the F masonry was laid over the original bedrock paw. In addition to the blue and red particles throughout the fill in Fa3, blue particles and red powder occur in the interstices of the F blocks covering the top of the south forepaw back to the base of the Sphinx chest (Fig. 8.11).

8.6.4 "Tan Clay"

The "tan clay" as I called it in the field, was found as filler in Fa1, Fa3, and as loose fragments in Fa2. I use the term "clay" in a very general, colloquial sense, along with the popular Arabic term, *tafla*. This material is found in the rubble packing of masonry elsewhere on the Sphinx, for example, between Phase I casing and the Sphinx core body near the N large box (Fig. 7.1), and in the packing and mortar between Phase III blocks (Pl. 6.20).

Tafla appears to have been used widely at Giza at all times as fill or packing behind masonry, as mortar between blocks, and, perhaps, as lubricant in moving very large stones. In the NE corner of the Sphinx sanctuary *tafla* occurred as a upper layer in the fill of small artificial holes cut into the bedrock floor (Lehner 1980, 8-10, Figs. 7-8). On the basis of the few embedded diagnostic sherds, and finely disintegrated granite, (perhaps from work on the granite sheathing of the nearby 4th Dynasty Sphinx Temple), the fill from these holes is probably of Old Kingdom origin. Deposits very likely left over from unfinished Old Kingdom construction covered some of those holes. These deposits are part of a slope of debris left by modern excavators in this corner of the sanctuary because the debris partially supports the SE corner of the 18th Dynasty Amenhotep II Temple (Hawas and Lehner, forthcoming). Concentrated layers of consistent, compact "tan clay" were also found under large limestone core blocks that the 4th Dynasty builders left in this area when worked stopped, just before the blocks were to be put in place on the Sphinx Temple walls (Lehner 1980, Figs. 6, 7).

The blocks rest upon a deposit 45 cm thick, of which the bottom 20 cm is concentrated tan clay over the bedrock floor. The tan clay may have been used as lubricant for maneuvering the large core blocks.

Tan clay from the masonry of the chapel and from the NE corner of the Sphinx sanctuary looked the same. It was a tan or light brown material, of fine consistency, that cut like cheese when wet, and dried to a fine powder.

Samples of this material were sent for analysis to Dr. Jihan Ragai of the Material Science Department of The American University in Cairo. The samples included one each from Fa1, and Fa3, three from the bedrock holes in the NE corner of the Sphinx Sanctuary, one from the deposits under the displaced core blocks in this corner, and one from the Old Kingdom deposits under the SE corner of the Amenhotep II Temple. Ragai analyzed the samples with X-Ray diffraction. The semi-quantitative results indicates that in all but the sample from the deposit under the Amenhotep II Temple the major components were the non-clay minerals calcite (the largest component), gypsum and quartz, while the clay minerals kaolinite and halloysite were present as minor components (Ragai, forthcoming). This is what might result from taking a sandy, clayey limestone - not unlike that of the softest Bed 1i in Member II of the Sphinx - grinding it, wetting it, and making a paste while mixing in some sand.

Even today masons will look for nearby deposits of *tafla* in order to prepare such a mixture. Those working on the Sphinx restorations in the early 1980's scraped the surface of Terrace III just east of the Amenhotep II Temple to obtain some *tafla*. In this spot the tafla is probably a residue of the yellowish clayey Bed 1i that overlay the Member I surface of Terrace III, which the ancient Egyptian quarrymen almost completely scrapped away. Another place at Giza where *tafla* is abundant is on top of the prominent knoll, *El-Qibli el-Ahram*, some 300 m south of the Sphinx (Lehner 1985, 123-4) on the Maadi Formation (Figs. 1.2, 1.4). The small animal or bird bones found within the tafla fill of Fa1 and Fa3 could be rodent or bird bones taken up with the *tafla* when it was mined off a surface that included snake and rodent holes. Surfaces rich in tafla, with small animal and snake holes, are found at the Qibli el-Ahram.

8.6.5 Egyptian Blue

Four samples of what I had called Egyptian blue were submitted to Ragai for analysis. Sample ioE41 was from the "blue-on-calcite" fragments found in Fa2; ioE57 was blue powder from one of the sherds found in Fa2; ioE48 consisted of blue particles from Fa3; and ioE56 consisted of blue particles embedded in sand and mortar between the Thutmose IV granite stela (28) and the limestone frame blocks (43) on its south side (see Fig. 8.12). The X-Ray diffraction analyses of these samples were compared to that from analyses of Egyptian blue by Pabst (1959) and Saleh et. al. (1974). All the samples were confirmed as Egyptian blue (calcium copper tetrasilicate). Sample ioE41 is Egyptian blue painted on a calcite backing. The backing was analyzed separately (Ragai, forthcoming; cf. Lucas and Harris 1962, 340-44, 495).

8.7 Sequence and Date in the Chapel

The relative sequence of the extant masonry configurations in the chapel area is clear. The sequence is best traced by *in situ* elements from the dated Thutmose IV stela, along the back of the S forepaw, to the Phase I (H) masonry at the S side of the Sphinx chest (Pls. 5.72; 8.7). Like Phase I elsewhere on the statue, H masonry fills in a surface on the Sphinx chest that is severely recessed from weathering (Pl. 8.12).

8.7.1 Relationships along the South Forepaw

The following relationships are pertinent to the building sequence on the area of the Sphinx chapel:

1. Group D, the remains of the S wall (Fa2) of the chapel, is certainly later than groups E and F. The wall abuts perpendicularly to the large vertical limestone frame block (44) on the S side of the Thutmose IV stela (Fig. 8.13), which is part of the E masonry contemporary with the Thutmose IV stela. D (Fa2) was also built over the face of the F masonry (62, 64,

in Fig. 8.10; 138 in Fig. 8.13; 65 in Figs. 8.15, 8.16), and is, therefore later than the F masonry.

2. The E masonry (42, 43, 44, 45), which frames the granite stela on the S, was certainly set up after the completion of F (72, 137, 138), which forms the contour of the inner side of the forepaw (Fig. 8.13). No. 45 in E consists of small limestone pieces and mortar packing that make the fit between E and F. No.s 42 and 45 of the E masonry were broken (46) and small limestone pieces (47) were packed against the break at a later period (Figs 8.12, 8.13). When complete, the E masonry comprised a limestone screen wall or partition that ran from the top of the granite stela to the tops of the forepaws. On the S, the E masonry would have joined to blocks 87 and 88 (Fig. 8.15).

3. The F masonry is later than the H (Phase I) masonry at the base of the chest. On top of the south forepaw, the F masonry consists of two courses of broad slabs that continue to the back of the paw where they meet H (Fig. 8.11). The interface between F (block 85) and H (blocks 113-115) is a space jammed with the worn remains of small limestone slabs and mortar (110). The face of H was recut in a stepped pattern (111) to receive small limestone slabs as a later casing. The original face of H (112) is preserved on the bottom block (115), which rests directly upon the original bedrock paw. Farther toward the center of the chest, another lone, *in situ*, H block preserves

its original straight face (Pl. 8.12; Fig. 8.8, no. 112). In the profile view of the rear end of the paw (Fig. 8.11) it appears that blocks (77) and (85) of F might have been laid down after the re-cutting of the face of H took place. This is probably not the case, because across most of the join of F to H along the top of the paw the original face of H is well preserved (Pl. 8.13). The limestone slab packing (110) at the section view (Fig. 8.11) was tucked into the join when the later casing was added, which saw the re-cutting (111) of the face of the H masonry. This packing (110) is distinguished from the sand, limestone fragments, and mortar (109) in the space under the end block (85) of F, which is probably contemporary with F.

In summary, on the south side of the chest, the face of the H masonry was finished straight and smooth down to the bedrock surface of the paw. The F masonry covering the top of the south forepaw was added after H was in place.

The three configurations described above might suggest that the Thutmose IV Stela is two phases later than the Phase I masonry, which restores a severely weathered Sphinx body. In this case, when was the most ancient and massive restoration of the Sphinx done? Would it have been earlier in the 18th Dynasty? For it can hardly have been in the late Old Kingdom or Middle Kingdom. The degree of stone loss on Member II of the Sphinx core body indicates long-term weathering during a time when the

Sphinx body was exposed to the elements, a time sufficiently long for this to happen and then sufficient following time for the sand to cover the body of the statue, as it was when Thutmose IV came along, if we can believe the text on his granite stela. If Phase I was the work of this king, or his father, Amenhotep II, a little more than half a millennium passed during which the Sphinx core body eroded to the condition that exists under Phase I restoration masonry (Lehner 1980, 18-19).

However, the relationships described so far do not warrant the conclusion that the masonry groupings represent distinct historical periods rather than parts of the same construction project. Smaller bits of evidence tie the masonry of the chapel together, and to one major period of activity.

8.7.2 An Old Kingdom Chapel?

The G masonry - three courses of large blocks behind the Thutmose IV Stela - is matched in size by no other masonry attached to the Sphinx, except the blocks of the N large masonry box, and the large blocks exposed during the 1981-82 restoration works immediately beside it on the west (see Chap. 7, Pls. 7.9, 7.10, 7.11, 7.12, 7.13, 7.14, 7.15, 7.16, 7.17, 7.18, 7.19, 7.20, 7.21, 7.22, 7.23). Is the G-block of masonry the foundation of an original Old Kingdom chapel at the base of the Sphinx's chest? It is similar to the foundation for the chapel of queen's pyramid GI-c in the Eastern Field at Giza (Jones and Milward 1982). When one stands on the highest course of the G masonry, there is a view out over the top of the Thutmose IV Stela to what must have been the intended level of the Sphinx Temple roof to the east, as indicated in Ricke's (1970, pl. 4) reconstruction.

In pursuit of the idea that this G-block of masonry is the beginnings of an original, Old Kingdom chapel, I make the following observations about the original use of the Thutmose IV Stela. It has long been known that the great slab of granite was originally an Old Kingdom lintel. As illustrated in Fig. 8.12 and Pl. 8.14, the backside of the stela is cut (29) in two levels. A double-leaf door once closed against this edge, as indicated by the two sockets (30A, 30B) cut deeper into the slab alongside the edge. The same pattern occurs on all the *in situ,* granite lintels in the Khafre Valley Temple (Hölscher 1912, 44-5, Abb. 29, 30). Thutmose IV must have found this lintel nearby and set it up in order to inscribe his story of how the god, in the form of the Sphinx, chose him to become king (Urk. IV, 1539-44).

The distance spanned by the two sockets on the back of the stela, measured from the centers of the pivot holes, is 1.15 m, and from the far end of one pivot hole to the far end of the other, 1.98 m. The latter is the exact length of a groove or channel, c10 (“cutting” 10), in the bedrock floor of the chapel, 3 m to the east of the G block of masonry (Fig. 8.23).

This channel appears to mark a threshold. A small hole in the center of c10 could have been for a vertical bolt in a double-leaf door, although door bolts in ancient Egypt were usually of the horizontal kind - the hieroglyph for the letter *z* (see Hölscher 1912, 19, Abb. 10; Koenigsberger 1936, 79-80). There are no bottom, floor, pivot sockets off the ends of the c10 channel, like those often found for double leaf doors. The channel itself could have been a closure device. When the door was closed it was sealed by a stone slid down into the channel that could have been mortared into place (Ibid., 36-37). This might imply infrequent, i.e., extremely specialized, use of the chapel. Between visitations, the chapel entrance was sealed, all but permanently. This might also be implied in the kind of blocking found in place across the entrance through the outer chapel walls near the front of the forepaws (Pl. 5.78). If so, entrance on special occasions was actually a dismantling of a stone and mortar blocking.

If Salt's view of the chapel as Caviglia found it (Fig. 8.2) can be trusted, c10 would have been covered by pavement and dysfunctional in the last days of the chapel; no door or jambs are shown. The low, front walls to the inner chapel are anyway not suited for doors (Fig. 8.2). However it might have functioned, the threshold channel, c10, must relate to an earlier chapel entrance.

The height of the Thutmose IV stela, 3.60 m, corresponds to the original length of the granite piece when it was used as a lintel. The distance between the forepaws in the chapel area, measured between the faces of the bedrock ledge cut into their inner sides (Fig. 8.22), is 3.50 m. Thus, while the distance between the socket cuttings on the backside of the stela match the length of the threshold cutting, c10, the height of the stela, that is the width of the lintel, is 10 cm greater than the distance between the forepaws. This 10 cm could allow an overlap of 5 cm on either side to any frame or doorway flush with the original bedrock sides of the paws. However, we might expect such a frame to be built up against the inner sides of the paws, slowing greater overlap. Is it possible that Thutmose IV found the G masonry remaining from the foundation of an Old Kingdom chapel, and reused the lintel of this chapel for his "Dream Stela"?

Against this, I must point out that the threshold cutting, c10, is 3 m out in front of the G masonry platform. Moreover, the distance of 3.50 m between the bedrock paws leaves little for the massive lintel, at 3.60 m width, to rest upon if the walls of the hypothetical Old Kingdom chapel were built up on the ledge on the inner sides of the paws. Again, tt could be that the lintel rested upon a masonry frame that has disappeared. However, considering the immensity of the granite slab - a quick check on site indicates it is broader than any of the *in situ* lintels in the Khafre Valley Temple - it is doubtful that it would have been appropriate for a small chapel tucked between the forepaws. We would expect any chapel here to be unroofed, so that attention could be directed up to the Sphinx visage, as was the case in the hypaethral chapel found by Caviglia. The channel in the floor, feature c10, indicates that the chapel was modified, probably in the Graeco Roman period when the low front walls were added.

8.7.3 Thutmose IV's Reuse of an Old Kingdom Lintel

It is probable that Thutmose had the granite slab dragged into the area between the forepaws. Other features in the bedrock floor offer evidence about how this was done.

The maximum width of the granite slab is 2.26 m, while the distance between the forepaws narrows to 2.50 m toward the front between the inner back toes (Fig. 8.5). This leaves a clearance of only 12 cm on each side, which is little room to maneuver if the massive slab were brought in lying broadside up. The workmen brought the slab in on its narrow side, probably using rollers for short intervals. I suggest that the cuttings in the bedrock floor, features c4-7, are sockets for their levers to get under the eastward end of the slab and push it forward (westward) incrementally, and over against the N forepaw (Fig. 8.23). When they had the eastward end of the lintel at c6, the workmen turned the slab to run parallel to the side of the N forepaw. They cut features c8 and c9 so that they could run rope under the length of the slab, as well as around its width. They might have used deep and narrow notches in the bottom of c8-9 for temporary supports and levers in the next stage of the operation. They lifted the W end of the slab up onto its limestone base (38) and down on the face that would carry the inscription of Thutmose IV. There is just enough space between the forepaws required for this maneuver - the width of the slab plus its thickness. However, the slab would not line up with the center of this space, and so the workmen must have shifted it the required 12 cm back northward. They then lifted the slab to rest against the block of G masonry. They used a small notch in the limestone base (38) at the lower N corner of the stela for a final adjustment (Fig. 8.23). The workmen stuck handy pieces of quartzite and basalt (36) in the front base of the stela, particularly at this corner, to keep it from tipping forward (Fig. 8.13, Pl. 8.16).

An alternative is that the slab was set down on its face when its eastward end was at c7 and c11 (Fig. 8.23). These two features are spaced about the width of the stela. In this case the workmen moved it forward until its E end corresponded to features c8 and d1 and its W end was at the lifting line on the limestone base (38). c8 and c9, with their deep notches could have been for levers that pushed along the rollers or beams that carried the slab. They cut a shallow “lifting runnel” into the limestone base slab (38). Once the operation was completed, the workmen inserted the small slab to the north (39) to complete the limestone base. Craftsmen must have cut the relief scenes and inscriptions for Thutmose IV after the stela was set in place.

If Thutmose IV had the granite lintel dragged in from outside the Sphinx sanctuary he must have taken it from the nearby Sphinx Temple, Khafre Valley Temple, or from the Khafre Pyramid Temple a quarter of a mile up the plateau. Hölscher's (1912), Ricke's (1970) and my mapping of these temples indicate that the doorways vary in size around three more or less standard widths as measured by the extant lintels and/or *in situ* threshold sockets, or by the cuttings in the natural rock for the threshold and sockets. The width between the pivot holes on the backside of the Thutmose Stela, 1.15 m corresponds to smaller double leaf doors, 1.15 to 1.20 m wide, in the Valley Temple. For example 1.15 m is exactly the width of the doors from the antechambers to the vestibule based on my mapping and Hölscher's (1912, Bl. XVII) plan. However, all the lintels for the doorways of the Valley Temple are intact, except for the outer entrances, and these were not only 2.4 m wide, they were single-leaf doors, judging by the fact that each entrance features a single floor socket on the north side in both entrances (Ibid.). The eastern entrances to the Sphinx Temple also had single-leaf doors, planned originally to be 1.57 m (3 cubits) wide and later enlarged to 2.10 m (Ricke 1970, 13, 26, Plan 1). The double-leaf doors to the cult niches facing the entrances in the Sphinx Temple are too wide for our lintel (Fig. 4.1). The doorways at both ends of the N and S corridors leading to the Sphinx Temple court and ambulatory are narrower, but still around 1.50 m in width, and these are all single-leaf doors except the court-side one in the N corridor (Ibid., 17, Abb.6, Plan 1). Thutmose IV most likely took for his stela a lintel from the upper Khafre Pyramid Temple where the double-leaf doors at the entrance from the causeway to the temple were about 1.20 m or less in width, as is evident by the threshold pivot holes.[1] The double-leaf door to the five magazines behind the five statue niches, was about 1.20 m wide, and so were three similar doors in the corridors around the magazines, which corresponds to the pivot holes on the backside of the Thutmose Stela.

I noted in chapter 6 that many of the Phase I limestone slabs casing the Sphinx body are in the range of .36 to .38 m thick, and that this is also a common thickness of the limestone slabs in the remains of the walls of the Khafre causeway, close to the Valley Temple rear exit (Fig. 4.8b). The distinct possibility emerges that the 18th Dynasty kings took apart the walls of the Khafre causeway for effecting the Phase I reconstruction of the Sphinx. During the operation, Thutmose IV may well have appropriated the lintel from the causeway entrance to the Khafre Pyramid Temple for his “Dream Stela.” Or, his stela could equally have come from the other Pyramid temple doorways mentioned above. The mudbrick ramp at the south side of the temple, which Hölscher (1912, 71-2, Abb. 58-9) documented and dated to the New Kingdom, may in fact, remain from this operation.

8.7.4 Identity of the Masonry Configurations

Certain details indicate that all phases of masonry in the chapel were parts of the same construction project, rather than different periods of work widely separate in time.

1. Fragments of basalt and quartzite were inserted under the front base of the Thutmose IV Stela, probably to steady it at the time it was erected (Fig. 8.13; Pl. 8.16). Other basalt fragments (105) were wedged into the seam of the limestone block (101) with the bedrock ledge (136) immediately beside the Thutmose IV Stela on the inner side of the N forepaw (Fig. 8.13). This block (101) and blocks 102 and 103 are all that remain of the F (Phase I) masonry that once covered the side of the paw here. They are the counterparts of block 62 on the south forepaw (Figs. 8.10, 8.22). While basalt fragments

could have been lying about at any time for such uses, their occurrence under the F blocks and the Thutmose IV stela lend credence to the idea that both were erected about the same time.

2. Blue frit particles occur throughout the fill between the F blocks and the bedrock side of the S forepaw in feature Fa3 (Fig. 8.21) as well as in the interstices of the F slabs covering the top of the S forepaw (Fig. 8.11). Similarly, there are blue frit particles embedded in the mortar between the S side of the Thutmose Stela and the E masonry that frames it (Fig. 8.12, sample ioE56). It is possible that blue frit, like basalt, might have been scattered about when both the E and F masonry were erected, even if at widely separate times, but again the blue frit in the interstices of both masonry configurations tends to support the idea that both were part of the same construction process.

3. Concentrated tan clay-like soil, *tafla*, occurs as the fill between the F masonry and the bedrock in feature Fa3 (Figs. 8.10, 8.21) as it does between the G masonry and the bedrock in feature Fal. Analysis shows the material from both spots to be very similar in the major and minor components (Ragai, forthcoming), however, the composition of this material was also very similar to *tafla* samples from Old Kingdom deposits elsewhere in the Sphinx precinct (Ibid.). A more detailed similarity between Fa3 (F) and Fa1 (G) is that tiny bones were

found in the soil of both features.

4. One of the blocks (19) of the G masonry is cut to make the corner between the G masonry and the F masonry that once formed the side of the north forepaw (Fig. 8.6). Fig. 8.13 illustrates this block (19) in a general elevation view of the Thutmose Stela and the inner sides of the forepaws. The faces of G blocks 19, 21, and 23 are exposed because the E masonry that framed the Thutmose IV Stela is missing on the N side. The right side of the corner (20) cut into block 19 is curved to reconstruct the curved side of the forepaw. Thus, block 19 is the equivalent of blocks 137, 138, and 72 reconstructing the curve of the inner side of the opposite, S forepaw. Block 19 is a clear link between G and F masonry, making them part of the same construction.

5. The details described above suggest strongly that the Thutmose IV Stela, the masonry that framed it, the earliest masonry reconstructing the forepaws, and the large blocks at the base of the Sphinx chest were all part of the same construction effort. There is no certain indication, along the lines of that described in the last paragraph, of the link between the H masonry at the base of the chest and the F masonry on the paws, that is to say, between Phase I and the constructions of the chapel. What is clear from feature Fa3 is that the F masonry was put up at a period when the surface of the south forepaw was

severely weathered, so that the softer Bed 1i of Member II was drastically recessed from the lower Member I and from the harder Bed 1ii of Member II above it (Fig. 8.10, 8.22). Given the fact that this masonry is composed of large blocks that abut directly to a drastically weathered surface, like Phase I everywhere on the Sphinx body, it is probable that F is of the same period as Phase I.

In addition to the Thutmose IV Stela, there are other hints of the absolute date of the larger masonry configurations in the chapel. The particles of blue frit in the interstices of the E and F masonry are suggestive of the New Kingdom, since the characteristic deep Egyptian Blue becomes more common in faience objects, from the 11th Dynasty (Kaczmarczyk and Hedges 1983, 150-51), while in the New Kingdom there was "an explosion in the use of this pigment in tombs and temples" (Jaksch et al. 1983, 526). Further analysis of the Egyptian Blue from the Sphinx could indicate whether it is in fact New Kingdom or later; the presence of tin oxide, probably from the use of bronze filings in the recipe, is common in Egyptian Blue from the reign of Thutmose III and later (Ibid.). Faience lenticular disk beads, like that found in feature Fa1 (Fig. 8.18, 17a) of the G masonry "were exceedingly common in Dynasty 18 and continued to be popular down to Ramesside times" (Eaton-Krause 1982, 239). But the major indicator is the Thutmose IV Stela itself, and the above listed articulations with the other features of the chapel.

The only structure left out of the relationships discussed above is D, the remains of the southern sidewall of the open-air chapel. I have already mentioned that the materials excavated from the interior of that wall suggest that the wall was made about the time work was in progress on the adjacent Thutmose IV Stela. A sufficient quantity of small granite chips were recovered to fill a medium sized plastic bag, the largest chip measured 3 x 4 x 6 cm. The only granite element in the inner chapel is the Thutmose IV Stela, although the base of a granite altar near the front entrance is also granite and could have been shaped before its use in the Roman Period. The small chips from Fa2 could be from cutting the relief and inscriptions on the stela, while the large chips could be from beveling (33) its frontal edges (Fig. 8.13). The seven quartzite fragments are very similar to those wedged under the base of the stela (36), along with pieces of basalt. One small basalt chip was also recovered from Fa2. Attributes of the quartzite pieces from Fa2 suggest they were used as tools. The smaller pieces, like 19e (Fig. 8.18) might have been used for detail in the granite, along with sand-gypsum abrasive such as objects 19i, j, and k, in the way described by Clarke and Engelbach (1930, 202, Fig. 245) for working small detail in hard stone.

Of course, the wall of which the D masonry was a part once supported a stelae of Ramses II, and this forces us to consider that it might have been built during his reign, about a hundred years after Thutmose IV. However, the way the wall is constructed around a debris-filled core, formed of broad slabs, allows the possibility that Ramses simply set his stelae into place at the tops of earlier walls. It is also the case that the side of the forepaw exposed after the debris was cleared out of Fa2 is only the raw surface of the F masonry (61, 62) on the rough bedrock ledge (136), and this does not present a finished surface suitable for Thutmose's chapel (Fig. 8.17). But Ramses could have rebuilt the wall, or perhaps just its exterior. Two texts of his reign mention stone for *Pr-Ḥwrwnꜣ* (pSallier IV vs. 4,6) and for *Ḥwr m Mn-nfr* (pTurin 1882 vs. 3,3; Caminos 1954, 454-64). These might suggest construction activity at the Sphinx (Stadelmann 1987, 441). It is also true that alterations could have been done to the chapel down to its use in Roman times - the repaving of the floor, for example.

But the analysis of the chapel makes it clear that the major building period at the base of the Sphinx's chest took place in the 18th dynasty, as a framework focused upon the stela of Thutmose IV. The evidence suggests strongly that it was also largely in this period that the Sphinx was reconstructed. Bequeathed to the conquering kings of the period of empire by the pharaohs of the pyramid age, the Sphinx may have become a functioning cult object - an image of Horus in the Horizon - only when it was finished, 1,200 years after it was first envisioned.

Chapter 8 Notes

[1] *Ed. note: On February 27, 2012 I had the opportunity to measure on site the doorway from the causeway into the upper Khafre Pyramid Temple. The width between approximate center points on the pivot sockets is 1.20 to 1.25, with some leeway because of approximating the centers of the pivot sockets, each of which is .15 m wide. The pivot sockets are spaced, edge-to-edge, 1 m apart. The passage leading from the east to this doorway is 1.20 m wide. The passage widens to 1.05 m at the eastern edge of the pivots sockets, and then it widens to 1.40 from the pivots sockets to the west.*

CHAPTER 9

Theoretical Reconstruction

9.1 Introduction

The true-to-scale, contoured drawings of the Sphinx make it possible to attempt a reconstruction of its ancient appearance. Evidence of the previous chapters argues that the Sphinx - a lion body in the bare rock - left by its Old Kingdom builders, differed significantly from the Sphinx as reconstructed in Phase I during the 18th Dynasty.

The finished surfaces preserved on the head are original 4th Dynasty sculpture; not New Kingdom re-carving. This is common Egyptological opinion (e.g. Smith 1949, 35), but it is not a conclusion derived from an exhaustive art historical study of the Sphinx itself. Such a study is now assisted by scale drawings. I make my observations and reconstructions here from an archaeological and architectural point of view, with results that may imping upon art history, are primarily.

My procedure in this preliminary reconstruction of the Sphinx was to draw various fragmentary elements, such as the pieces of the beard and the uraeus, to scale, and to match these to the finished surfaces in the scale drawings of the Sphinx. I repositioned these parts, and other elements that are missing entirely, such as the breast lappets, by projecting slide photographs of several other sphinxes and royal statues onto the side and front elevations of the Sphinx. By simply using the zoom lens I could match proportionally the Giza Sphinx and all or parts of other royal sculpture. This proved very useful and offered several insights about relative proportions of statuary. There are pitfalls and shortcomings to this technique, not the least of which is the lack of a true eye-level or straight-on photograph of the projected sculpture. Ideally, such comparisons would be carried out using true-to-scale photogrammetric renderings of all pieces. This could be done for a more exhaustive art historical assessment in the future.

Eventually, I arrived at a reconstructed side and front view of the Sphinx, with the 4th Dynasty head and face, and New Kingdom additions to the body. My preliminary reconstruction is true-to-scale in the form-line drawings that I present here. Computer graphics enabled three dimensional modeling and rendering of the reconstruction, with various possibilities. I describe the details of the procedure below. This work is still in progress, but it has already produced a three dimensional working model that helps us to conceive the appearance of the Sphinx in antiquity.

9.2. General Proportions

The head and body of the Sphinx are respectively well proportioned, but the size of the head in relation to the body, is much different than on most Egyptian sphinxes.

The head itself must have been sculpted from a reserved block of limestone almost exactly 20 X 20 royal cubits square.[1] Fig. 9.1, in which the grid squares are each 1 royal cubit, illustrates this point. In plan, the head is symmetrical with a fair degree of accuracy. The block reserved for the head was not, however, a cube; the height of the head is a little under 12 cubits, as illustrated in Fig. 9.2 where each grid square is 2 cubits. The division of the face and head into cubits corresponds remarkably with the upper hard layers of Member III bedrock (Fig. 4.5) and even with the distinct beds into which Member III is subdivided (Pl. 5.9). The front elevation likewise shows good symmetry, although in the face itself a subtle discrepancy appears to exist between the axis of the head and that of the facial features.

The body of the Sphinx is also quite symmetrical, as shown in Fig. 9.3 where every grid square is 4 cubits. The base outline in this illustration is that of the masonry veneer, but as is indicated in chapters 5 and 6, the veneer does not alter significantly the general proportions of the lion body. The total length of the body is 138.2 royal cubits with the masonry veneer and nearly a round 137 cubits without it. Perhaps more significant is the fact that the length of the lion body, from the base of the chest to the end of the tail is close to 55 m. Subtracting 2.2 m for the width of the tail at the rump, the body length is 52.80; it is probable that a round 100 cubits (52.5 m) was intended.

In sum, the head and body of the Sphinx are individually symmetrical, and the front elevation is fairly well-proportioned between head and body. Commenting on the sphinx-form, Russman pointed out that:

> Usually a sphinx lies peacefully recumbent, but its body is massive, with muscular shoulders, a rib cage like a barrel, and hindquarters ready to spring. A human head on this body, if it is not to look ridiculous, must be disproportionately large. The Egyptians perceived this, and they also realized that the royal pleated headcloth, the *nemes*, gave needed width to the head, framing it in a setting not unlike a mane (Russman and Finn 1989, 82).[2]

The photogrammetric elevations and the overlay comparisons with 18th sphinxes make it abundantly clear that the 4th Dynasty builders did not achieve this proportionate relationship between lion body and human head. This is the case even though the head does wear the *nemes*, and in spite of the fact that they carved the human head to a scale of about 30:1 and the lion body to the smaller scale of 22:1.[3] The reason has primarily to do with the length of the body, upon which the above-mentioned scale is based.

When the front view of the red granite sphinxes of Thutmose III, (Schweitzer 1948, 58-9, Tf. 10,3) are projected over the front elevation of the Giza Sphinx so that the heights of the statues correspond, the relative proportions of the head and body are close (Fig. 9.4). However, even in the front view, the head of the Giza Sphinx is small in comparison to its 18th Dynasty counterpart, both in the overall width of the nemes and in the height of the head. It is perhaps to be expected that proportions between sphinxes of the 4th and 18th Dynasties would differ, since so may other stylistic details of the nemes headdress changed over the centuries (Evers 1929, II, 7-17).

As an aside, it is interesting to note in this projection that on the Giza Sphinx, the Thutmose Stela takes almost the exact form and place of the royal cartouche that commonly appears on the center of the chest between the incised lines of the cape (*Umhang*) that hangs over the shoulders (Evers 1929, II, 90, No. 608).

It is the profile along the length of the body that reveals the truly anomalous proportions of the Giza Sphinx (Fig. 9.5). The sphinxes of Hatshepsut (Porter and Moss 1972, 370-1) and those of Thutmose III may be taken (loosely for the moment) as "classic" Egyptian sphinxes; they are fairly true to the natural form of the lion's body, with the massive shoulders, a barrel rib cage, and back that slopes to lower haunches. If we take the measure of the head from the nose to the back of the nemes where the scarf is tied, the bodies of these sphinxes are four heads in length, from the base of the chest to the end of the rump where the tail begins (Fig. 9.5, Pl. 9.1). The forepaws are a little more than one head in length from the base of the chest to the tip of the paws. The body of the Giza Sphinx, on the other hand, is five heads in length and the forepaws are a little under two heads long (Fig. 9.5). This is giving some allowance to the head of the Giza Sphinx for the missing nose and back of the nemes.

In other words, the body and forepaws of the Giza Sphinx are both about one head-length too long, making the head itself too small. It is also the case that the top of the Sphinx's back is almost level for most of its length, whereas the "classic" sphinx/lion body slopes from high front shoulders to a much lower level between the rear haunches (Fig. 9.5). The Sphinx back is actually .10 m higher between the rear haunches than behind the head (Fig. 5.2). The Sphinx head is drastically smaller for the length than for the frontal height of the body.

What are the reasons for this? The Sphinx body itself was not finished smoothly in the natural limestone. But the 4th Dynasty workmen did not intend to cut away extra bedrock from the rear of the statue, because they were careful to leave bulk stone for the rear haunches, rear paw, and tail. Also, the body is very close to 100 cubits in length, which suggests that this length was well planned.

It is interesting to speculate that the 4th Dynasty Egyptians may not have yet worked out the canon of proportions between the royal head with the *nemes* headdress on the lion body. The Giza Sphinx might be seen as a prototype of this form. Except for the Louvre head of Djedefre (Chassinat 1921-22, 59-60, Pls.8-9), no nemes-coiffed sphinxes earlier than the Great Sphinx of Giza are known (Zivie 1984, 1138). The Louvre head of Djedefre is thought to have been part of a Sphinx because of the very slight outward turn to the rear base of the nemes (Smith 1949, Pl. 11a). The hypothetical lion body is missing, so we do not know its proportions. Whether or not the Giza Sphinx is a prototype, the disparity between body and head is due to the length of the lion body, which is too long for sphinx or lion. Therefore it is doubtful that this is because of a lack of canon; the Egyptians were carving smaller scale lions in the round since the 1st Dynasty, and in relief since the Predynastic (Schweitzer 1949, Tf. III-IV), and some of these are reasonably accurate in their proportions.

Geological constraints may account for the head-body size relationship of the Sphinx. If the body were the “normal” four heads in length, the back of the rump would have fallen about where the Sphinx's waist is situated (Fig. 9.5). Just here the most serious flaw in the bedrock, the major fissure, cuts through all layers and opens to more than 2 m wide at the top of the back (Pl. 5.63). The Egyptians may have wanted to extend the body by one head length in order to bypass this flaw which otherwise would have disturbed the outer contours of the sculpture. As for the thickness of the head in relation to the height of the body, although here the Sphinx builders were closer to the proportions of later sphinxes, they may have reduced slightly the thickness of the head to keep it within the harder upper layers of Member III (see chapter 5). These beds allowed them to carve the fine detail in the natural rock in the only part of the statue where this was necessary; the lion body was more massive and lacked fine detail.

It is very possible that the craftsmen used separate grids to carve the Sphinx body and head. There appear to be separate grids for head and body on an elevation of a sphinx that has come down to us in tattered condition from the Graeco-Roman era (Schäfer 1986, 329, Fig. 325; 1923, 141, Abb. II). On the other hand, a cubit grid laid over the front elevation suggests a high degree of harmony between the Sphinx head and body (Fig. 9.2). We must consider, in this regard, that it was just this front view that was most important for the cult the Egyptians intended to carry out in the temple on the terrace below the statue. In the 4th Dynasty, the walls of the Khafre causeway would have made the common tourist view of today - from the S-SE - impossible. The body of the Sphinx would have been partially obscured from the W and N because the Sphinx sits down inside a rock-cut sanctuary.

9.3 *Nemes*, Head and Face

It is not surprising that it proved frustrating to attempt to reconstruct the original form of the Sphinx's *nemes* by projecting the front views of New Kingdom sphinxes, like those of Thutmose III, Hatshepsut, or the alabaster sphinx at Mit Rahina (Anthes 1965, 42-3. Pls. 54-5), onto the scale-drawing of the Giza Sphinx.

A much better match was achieved by projecting a nearly straight-on view of the Khafre diorite statue (Saleh et. al. 1987, No. 31) onto the front elevation of the Sphinx (Pl. 9.2). It was immediately clear that the two statues have different proportions between their headdresses and faces. When we match the outline of the scarves, the Khafre face is smaller in relation to its nemes than the Sphinx face in relation to its nemes (Fig. 9.6). In spite of this, the outline of the flaring side folds, the *Seitenflügel* (Evers 1929 II, 7), of the two statues match very well.

Some differences were obvious. The height of that part of the nemes that covers the skull, from the headband to the top of the head, is higher on the Sphinx than on the Khafre statue. The extent to which this is the case in Fig. 9.6 is partly, but not completely, a function of the point of view in the projected photograph of the Khafre statue; it was slightly below eye-level, as in Pl. 9.2 (although not this far below eye-level; cf.

Saleh et. al. 1987, No. 31 where the photograph is close to eye-level). The Khafre *nemes* is slightly peaked at the folds above the triangular side panels, which creates a slightly concave outline on either side of the *uraeus*. Evers (1929, II, 14) suggested this peaking is a hallmark of Middle Kingdom royal statuary after Senusert I, but it is quite pronounced in the Khafre statue. The upper *nemes* line on Sphinx, on the other hand, was slightly convex, a trait Evers (Ibid.) cited as characteristic for the Old Kingdom. The upper fold does not peak like the Khafre nemes. This is shown on the south side of the Sphinx head where the fold above the side panel is preserved (Pls. 5.1, 5.37, 5.38).

The inverse of the head-*nemes* relationship between the Khafre statue and Sphinx is, of course, that when the facial features of the two statues are matched for size, their corresponding nemes outlines do not match (Fig. 9.6). This relationship may have something to do with the colossal size of the Sphinx, and with the fact that the sculptors increased the face-*nemes* ratio to make the head more proportionate to the massive lion body. However, as discussed above, the head and *nemes* together could have been significantly larger to achieve the proportions of most other sphinxes.

The comparison of Khafre and the Sphinx highlights other characteristics of the Sphinx. The eyes, nose, mouth, chin, and headband of the two statues matched fairly well, but only by turning the Khafre statue off its vertical axis (Fig. 9.6 bottom). This is because the Sphinx's left eye (N) is higher than the right (S), and the mouth is slightly off center of the frame of the face. The axes of the Sphinx's facial features and that of its head (ear to ear) do not quite match.

In the reconstruction drawing that resulted from this exercise (Fig. 9.11), I adhered to the facial features still preserved on the Sphinx (Fig. 5.4), and completed the missing parts with those of Khafre. I did not take these from the diorite statue, but from the alabaster face in the Museum of Fine Arts (MFA 21.351; Smith 1949, Pl. 12). The match of the eyes, eyebrows headband and mouth on this piece with the traces of the same features on the Sphinx, when the widths and heights of the two faces were equal, was better than the match with the face of the Khafre diorite statue. The nose is of particular interest, since this is missing entirely on the Sphinx. The right wing of the nose, which seems to be indicated on the photogrammetric elevation of the Sphinx (Fig. 5.4), is substantially lower on the face than the nose wings on the alabaster face, but I am not sure that the right nose wing is actually preserved and correctly rendered in the former view. I added the rims around the eyes in the alabaster face to the Sphinx reconstruction. These rims are missing on the Sphinx's eyes, yet a scant trace of the lower rim on the Sphinx's right (S) eye indicates that the lids were once modeled in this way (Pl. 5.61).

Variability between the 18th Dynasty sphinxes, the Khafre statues and the Giza Sphinx was also apparent in constructing the side view of the Sphinx's former appearance. In this case I used a good eye-level side view of the Khafre diorite statue (cf. Smith 1949, P. 5; Russman and Finn 1989, 22), but the head in the corresponding N elevation view of the Sphinx (Fig. 5.6) is a little shy of a true profile because from the N side of the sanctuary the Sphinx head was slightly beyond the range of correction for the photogrammetric system. On the S side the camera could be stationed on the much higher Khafre causeway, and the perspective distortion could be corrected, so that the S elevation (Fig. 5.5) presents a truer profile. The profile of the top of the head is completed in the N elevation on the basis of the S elevation. The facial features are, unfortunately, slightly distorted; however, the discrepancy is slight.

It is of particular interest to know how the bands of the nemes came together in the characteristic tail at the back of the head. The nemes tail is missing completely. We have no way of knowing which of the various possible forms it took (Evers 1929, II, 10, No. 48). The tail of the Sphinx nemes presents a puzzle, because the relief-carved pleating appears to be headed toward a knot that would have been 2.5 to 3 m above the top of the back (Lehner 1980, 19). Yet the tail of the nemes lies on the spine of the back in other sphinxes. At the same time it seems unlikely that 2 to 3 m of natural rock are missing from the top of the back behind the head. The Sphinx makers could have raised the top of the back with masonry, but the break at the back of the head makes it likely that they carved the tail of the nemes at least partly from the natural rock.[4]

I projected the Thutmose III sphinx so that the profile of the back of its nemes matched that of the Giza Sphinx, even though this brought all other head features out of any alignment with the Giza Sphinx. This showed, nonetheless, that the bands of the nemes at the back of the head could have dropped, with a slight bend, 2.5 m to a tail lying on or close to the natural rock surface of the back (Fig. 9.9). The pleating in the reconstructed side elevation holds true to the patches of pleating still preserved on the head (Figs. 5.6, 5.7). In order to make the bend of the pleats less severe as they fall toward the rear, I reconstructed a rather thick (2.20 m) nemes tail so that the pleats would not have to drop so far. The nemes of the Thutmose III sphinx has a tail that is proportionately thinner and longer (Fig. 9.9).

This exercise raised another problem, which concerns the fold of the nemes side panels (*Seitenflügel*) to the breast lappets (*Brustlappen*) and how this fold is drawn back from the outer corners of the nemes, over the Sphinx shoulder, to the tail of the nemes. The position of the fold in the Sphinx reconstruction is unalterable, since part of the fold is preserved on the S side (Pls. 5.1, 5.37, 5.38). The fold is marked in the front view by the horizontal line from the nemes outer corner to the neck (Fig. 9.6). Because the fold is so high with respect to the low level of the back of the head, a considerable gap is left where the fold passes over the Sphinx shoulder (Fig. 9.9). We see this gap on any sphinx, but it is less so on the aforementioned 18th Dynasty because the shoulders are drawn up under the fold, higher than the sloping back on which the nemes tail rests (Fig. 9.5, Pl. 9.1). The back of the Giza Sphinx, as noted, is flat from the shoulders to the back, leaving the gap with the fold of the nemes.

This is one of several observations that leads me to wonder if the 4th Dynasty Egyptians had not already intended to encase the rough form of the lion body with masonry that would have filled in, for example, the heights of the shoulders.

As noted in chapter 5, the top of the Sphinx head is fairly flat and horizontal (Pl. 5.28). The top of the nemes of the Thutmose III sphinx, as seen in profile, is much higher and rounder than that of the Sphinx (Fig. 9.9). This difference was also obvious when I projected a straight eye-level photograph of the relief-carved depiction of the Sphinx from the Thutmose IV Stela onto the N elevation of the actual Sphinx. Given the extreme difference in scale, it was quite surprising that the small relief-carved sphinx, when blown up and superimposed, provided the best match with the greatest number of features of the head of the Giza Sphinx. The nose, mouth, chin, headband, lower jaw, neckline, and back of the nemes all matched in the superimposition (Fig. 9.9). The major difference in the basic lines was that the top of the nemes of the relief-carved sphinx was much higher and rounded than the Sphinx it depicts. The baseline of the stela sphinx was also much higher, which is to say its body is not as tall.

The flat-topped Sphinx head has, perhaps, its best parallel in the small 4th Dynasty seated royal statues from Mit Rahina, CG 38 and 39, attributed to Menkaure, and especially CG 41, attributed to Khafre (Borchardt 1911, 37-9, Bl. 10-11; Johnson 1990, 87, No. 344, 89, No. 36).

I drew the nose into the reconstruction on the basis of the profile of the Khafre diorite statue. Like the front view, I achieved the match of the facial features when I superimposed the Khafre side view on the Sphinx side view. In order to achieve the match, however, the view of the Khafre statue had to be tilted back about 3.5 degrees from its vertical axis. This may indicate that the head of the Giza Sphinx, like the heads of sphinxes of the New Kingdom (Lindblad 1984, No. 5, 23-4, Pl. 10; No. 7, 37-8 Pl. 20), is tilted slightly upwards. On the other hand, this tilt in order to match facial features left the Khafre ear behind and below the ear of the Sphinx (Fig. 9.9).

The length of the Khafre nemes is substantially less toward the back of the head than the Sphinx nemes. The dashed line of the Khafre nemes is slightly extended downward in Fig. 9.9; in actuality the Horus falcon obscures the lower part.

Finally, the breast lappets on the Khafre diorite statue were not long enough for the height of the Sphinx chest, even when the respective nemes were matched. It is reasonable to expect that the lappets would have hung slightly lower than the beard, based on other nemes-coiffed statues, and on the Mit Rahina alabaster sphinx, which also sports a divine beard. I discuss the beard of the Giza Sphinx following a few observations about the *uraeus*.

9.4 Uraeus

In the side view of the Sphinx reconstruction (Fig. 9.9) I have placed the head of the uraeus that Caviglia found in 1817 so that it projects straight forward from the break of the relief-carved body of the uraeus at the top of the forehead. As I noted in chapter 5, in 1926 chisel marks showed on the forehead break (Pl. 5.40), which are similar to some chisel marks on the bottom of the uraeus head (Pl. 5.47). Nevertheless, the unfinished parts of the uraeus head do not match neatly the rough break at the top of the forehead. The back of the uraeus head is a sheer cut, almost square with the axis of the body (Pl. 5.46). The entire underside of the head is rough and pocketed, as though the head once lay flat at the top of the head for the entire length of this piece of the uraeus (Pl. 5.47). The roughness of the underside does not look like a break from the natural rock. Rather it is similar to pocketing on surfaces that were meant take mortar to hold the piece in place.

Careful observation and analysis of the stone of the uraeus head would clarify whether this is the same rock as the Sphinx head, or a piece that was separate and added. I suspect that the latter is the case. The uraeus head is not very similar to the known Old Kingdom uraei heads, for example, that on the bed canopy of Hetepheres, which is one of the most detailed depictions in relief (Johnson 1990, 77, No. 27). Most of the uraei heads on statuary are broken, but the indications are that they were quite small (Evers 1929, II, 22, No. 138). The alabaster head, MFA 09.203, is the only one with the uraeus head intact (Johnson 1990, 108, No. 50; Reisner 1931, 112, Pl. 53). The heads of the cobra frieze in the Djoser complex (Johnson 1990, 73, No. 24), which are largely restored, are stouter and more triangular than the Sphinx uraeus head.

The fact that the back of the Sphinx uraeus is broken and the underside is worked indicates that both surfaces were at one time joined in some way to the Sphinx head. Before it was broken, the top of the uraeus hood may have flared outward from the forehead, so that the head of the uraeus could lie on top of the hood and its connection to the forehead. The uraeus on the Amenemhet III head from Hawara (Lange 1954, Pls. 40-41) is an excellent example of this configuration. Evers (1929, II, 25, No. 161) cites the graywacke Thutmose III statue as an example of a similar arrangement (Legrain 1906, No. 42053, Pl. 30). The pronounced cranium and thick neck of the uraeus head on the Thutmose III statue are very similar to the same features on the Sphinx uraeus head. However, the eyes of the Thutmose III uraeus are rendered by recesses instead of the wide raised circles of the Sphinx uraeus eyes. The back of the neck of the Thutmose uraeus attaches to the vertical surface of the White Crown. It is possible that, if the Sphinx uraeus is an addition of the New Kingdom, it attached similarly to a crown that was fitted by means of the hole in the top of the Sphinx head (Fig. 9.1; Pl. 5.39). Many of the New Kingdom stelae found on the site show the Sphinx wearing a crown above the nemes. Since major features of the Sphinx differ in these sources, they are not reliable guides to the kind of crown, if in fact it existed (Zivie 1976, 309, n.2).

In summary, the uraeus head probably did not attach in the manner illustrated in Figs. 9.9 and 9.10. Rather than being simply stuck onto the forehead, the cobra head probably lay higher and farther back on the hood of the uraeus, which flared slightly forward. Until further analysis of the uraeus head in the British Museum, the evidence favors the conclusion that, like the outer skin of the lion body, the cobra head was an 18th reconstruction of a 4th Dynasty bedrock carving.

9.5 Beard

The fragments of a long, braided, and curled divine beard that Caviglia found at the base of the Sphinx's chest were central to Ricke's (1970) argument that the Sphinx was conceived as an image of the sun god, as opposed to the king, already in the 4th Dynasty. He argued that the pieces of the beard are the same limestone as the natural rock of the Sphinx body. There is no evidence, he maintained, that it had been replaced. None of the pieces shows traces of joins. Furthermore, it would have been technically impossible to construct a beard from masonry 5 to 6 m high. The fragments show no evidence, Ricke maintained, that the divine beard was adapted from a straight square royal beard (Ibid. 33).

In chapter 8 I distinguished the separate pieces of the beard that Caviglia found and that Baraize retrieved more than a century later. I examined the beard fragments on display in the Cairo Museum and took photographs on several occasions. Edna Russman and I took measurements and notes during one of these visits. As mentioned in chapter 8, the top part of fragment A with the relief-carved kneeling pharaoh is missing (Figs. 8.3, 8.4). Piece C is also missing. D is in the British Museum (EA 58) and a cast is in Cairo. E and F were not rendered by Salt in his account of Caviglia's work, but they do appear on-site in the photographs of Baraize's work (Pls. 8.1, 8.2, 8.3).

By using the measurements, I produced 1:20 scale drawings from the photographs of the fragments in the Cairo Museum. These are good eye-level photographs except for fragment E, which is mounted high on the wall. I tried to correct for distortion by using the photograph of this fragment from the Arch. Lacau (Pl. 8.3), but there may be some error in the rendering of E in Fig. 8.4. In the drawing, I restored the upper part of fragments A-B (Fig. 8.4) by adjusting the scale of Salt's drawing (Fig. 8.3), which was already close to 1:20.

Fragment A-B preserves part of the side of the beard with its braiding, as well as the flat plane that connected the beard back to the chest of the Sphinx (Pl. 8.2). Measuring horizontally across the angle of the beard-plus-bridge, the width of the combined pieces in its current state is about 1.60 m. The thickness of the side of the relief-carved beard itself is .27 m. The width at the front of the beard is .22 m, but this is only a fraction of the original width of the front of the beard. The piece (A-B combined) is plate-like. The backside is not the surface of a break, rather it has been completely worked with a rough texture. The stone is very similar to that of bed 7a, the lowest layer of Member III in the natural rock of the Sphinx (Pls. 5.1, 5.2, 5.3). Thus, it appears to contain many operculina, the tiny spiral fossil that is abundant in this bed (Aigner, personal communication; cf. Said 1962, 98; Said and Martin 112, 115; and chapter 5 here). The individual relief-carved braids range in width from 4.4 to 7 cm.

Fragment D. We took measurements on the cast of the British Museum fragment in Cairo. The height is .75 m, the total thickness of the side of the beard to the bit of bridge plate remaining on the top is .35 m. Again, the total width of the front side of the beard is not preserved, but the present width is .37 m at the top and .30 m at the bottom. The part of the bridge plate preserved at the top of the fragment is about .12 m wide. The braids range in width from 7 to 10 cm.

Fragment E (Pl. 8.3). The backside of this fragment, like A-B but unlike D, is worked. The side with relief carving preserves part of the corner of the beard and just behind this corner there appears to be a rough break. The backside of the broader part of the fragment was worked, making it like a plate. As can be seen in the shadow of Pl. 8.3, one edge of the corner was similarly reworked. The thickness of the "plate" is .20 m or less. The width of the whole piece is about .60 m, and the length or height is about 1 m. Although we could not examine E closely, the stone appears similar to A-B and to the operculinid limestone of bed 7a in the chest of the Sphinx (Pls. 5.1, 5.2, 5.3). The braids ranged from 5 to 7 cm in width. There are traces of red paint on the braids on the side of the piece.

Fragment F. This fragment resembled D in that it was thick and its backside was not reworked. F is the most massive of all the fragments, .45 m in height, .33 m thick, and around 1.14 m wide. It was clear that F must be nearly the total width of the upper part of the beard. The stone is similar to that on the neck of the Sphinx. At the top of the piece, as it sits in the museum and in Fig 8.4, there is a residue of yellowish marl-rich rock similar to that of beds 7a, and 7d. This is actually the bottom of F as I have positioned it in the reconstruction of the beard (Fig. 9.7). There are also thin brownish *Leisegang* rings, running through F, like the grain of wood. We see similar lines on the neck of the Sphinx (Pls. 5.1, 5.2, 5.3). Like D, a small bit of the bridge plate remains preserved on F for a width of about .03 to .05 m. Relief-carved braiding remains on a little less than half the front surface of F, as well as on the side. Scant traces of red paint remain.

It is indisputable that fragments A-B and E have been worked on their two broad sides, the front with the relief-carved pattern of braiding, and the back in a rough texture that suggests it was intended to be mortared onto another surface. These pieces are thin plates, less than 30 cm thick. At the same time the stone of all the beard fragments is similar to the natural rock layers in the neck and upper chest of the Sphinx, although this point should be confirmed by more careful geological observation. Pending this confirmation, we can only conclude that the divine beard is original to the 4th Dynasty sculpting of the Sphinx, that it broke into large pieces at some time, and that these pieces were later reassembled by re-cutting the backsides of some of them and mortaring them into place.

Saleh (1983) studied the beard fragments and attempted a graphic reconstruction on the basis of the photogrammetric profiles produced by the ARCE Sphinx Project. I have compared our measurements to Saleh's and I have also followed Saleh in attempting to fit the fragments back into their original position in the beard. Saleh's reconstruction was inspired by the change in the dimensions of the rectangular braids, which become thinner from top to bottom. My own attempt departs from the thickness of the side of the beard, minus the bridging plate, the angle of slope, and the most likely proportions of the beard length to that of the face.

If long divine beard is original to the Sphinx, and carved from the natural rock, it is odd that there is no trace on the bedrock core body of its attachment by means of a bridge to the chest. The contours of the chest are fairly flat from the neck to about halfway down the chest (Fig. 5.4). In fact, the upper chest is almost concave between subtle protrusions to either side, and these could be vestigial of the breast lappets (Fig. 5.2). At the bottom of the chest, on the other hand, there is a very prominent boss, as described in chapter 5. The boss lies exactly on line with and slightly forward from the chin of the Sphinx (Figs. 5.5, 5.6). Whether or not the 4th Dynasty sculptors succeeded in carving the rather thin divine beard and its even thinner bridging plate from the natural rock, the chest boss only makes sense as a base for a masonry support of the beard.

I established the angle of the beard by extrapolating the slope of the face from the cheekbone (or yokebone; Lindblad 1984, 10, Fig. 1) to the chin. I established the length of the beard on the somewhat arbitrary basis of the ratio of beard length to head height on the Mit Rahina Sphinx, the only good example of another sphinx with a divine beard. Again, I took this measurement off a slide photograph of a front view of the Mit Rahina sphinx, in which there was some perspective distortion, although the view was distant enough that the distortion was not too great. As a check, I took the same measures off the photograph of the same sphinx in Lange and Hirmer (1975, Pl. 122). The respective span of the beard was .68 of the head in both photographs. I took this as the vertical (as opposed to slope) length of the beard.

The bottom of the beard would then be about 2.5 m above the top of the boss on the chest (and about 2.5 m forward from the surface of the upper chest and neck). It is unlikely that the beard extended down so far as to rest on the top of the boss because, for one thing, this would have made the beard almost vertical. Instead, there must have been a masonry support built around and on top of the boss. The end of the beard as established above is directly above the top of the boss (Fig. 9.7). Ricke (1970, fold-out) came up with a similar, albeit more sketchy, reconstruction of the beard in which it was 3 m above the top of the boss for a length that is .55 the span of the Sphinx head.

The next task was to place the fragments within the span established for the beard (Fig. 9.7). I did so on the basis of the diminishing thickness of the relief-rendered side of the beard. This measure decreases from .38 (D) to .26 (bottom of A-B). As Saleh (1983) noted, fragment A-B is close to, or part of, the bottom of the beard where it begins to curve outward to make the end loop. The relative positions of the pieces are also indicated by the thickness and lengths of the braids, which, according to our notes, decrease from as wide as 10 cm in D to as thin as 4.4 cm at the bottom of A-B. The relative placement of the fragments agrees with Saleh's (Ibid., Fig. 3), although he did not place D. There appears to have been a single weave along the sides and, judging from fragment E, three vertical lines of weave down the front.

Again, the strongest argument that the divine beard is original to the Sphinx is the similarity of the stone of the fragments to the natural rock of the Sphinx chest. In fact, E and A-B are in just the right positions in the reconstruction for bed 7a, the operculinid limestone that they resemble, while F is situated at the height of the softer layer with salient yellow lines that actually appear in F (Pls. 5.2, 5.3). Nevertheless, a geologist should check this match, for it is strange that hardly a trace of the beard or its bridge is left on the upper chest and neck.

Sphinxes with divine beards are not common, and divine beards on statues may be unknown in the Old Kingdom, although they occur on gods in reliefs from the 5th Dynasty.[5]

9.6 Chest Statue

The preceding discussion of the beard failed to mention the distinctive relief carved on both sides of the bridge plate, as it is depicted on fragments A-B, and, from the opposite side, C (Figs. 8.3, 8.4). A kneeling pharaoh wearing the nemes lifts the broad collar, *wsḫ*.[6] The two vertical lines that Salt drew at the top of the loop (Fig. 8.3) must represent the break between the two ends of the collar. Such a presentation is well known from the New Kingdom (eg. Calverly et.al. 1933, Pl. 13 and passim; Feucht 1977a, 732). The collar is sometimes, as here, shown in plan on a presentation platter that is shown in elevation (Brovarski 1982, Fig. 1, and n. 10 for refs). Hence, in its abbreviated form, it appears similar to the *šn* hieroglyph. The broad collar could be ascribed to various deities; here, perhaps it is the *wsḫ* of Horus (Feucht 1977b, 934). When the relief was in place, the pharaoh was just below the Sphinx's chin, lifting the broad collar up toward the huge visage of the god.

Below the pharaoh's arms a broken sign group probably read *zp* 4 (?), i.e. "repeated 4 times."[7] Behind the pharaoh, as mentioned in chapter 8, a group reads *ʿnḫ zꜣ ḥꜣ.f*, "life and protection around and behind him." Ricke (1970, 33), who wanted the beard to be original to the Old Kingdom, had to concur that the relief and inscription on its side plate dates to the New Kingdom on stylistic grounds.

The preposition *ḥꜣ* is derived from a noun, "back of the head" and is translated "behind," and "around" (Wb III.1, 8-9). *Zꜣ ḥꜣ*, Gardiner (1969, 130) noted, means "'protection around' a person, where there may be a sense of enveloping from behind, as with wings, etc." The Khafre diorite statue is an explicit reification of the concept; the Horus falcon, god of kingship, envelops the back of Khafre's head with its wings. This signifies a merging of identities between god and king. The motif is known elsewhere in the Old Kingdom: a fragmentary alabaster head in Boston (Smith 1949, Pl. 5a), the small limestone figure of Reneferef from Abusir (Saleh et al. 1987, No. 38), the Brooklyn alabaster statuette of Pepi I (Smith and Simpson 1981, 144), and, from the New Kingdom, the small diorite statuette of Thutmose III wearing the Red Crown with the falcon's enfolding wings behind.

In the New Kingdom, beginning in the early 18th Dynasty, the same concept was expressed in large statues of a divine animal, with long outstretched body, and a small figure of the king tucked against the chest and under the chin (Scharff 1949, 312-19; Rössler-Köhler 1978, 123-5). The best known of these is the statue of the cow goddess, Hathor, protecting Amenhotep II (Lange and Hirmer 1975, 89, Pls. 146-7), or the king between the forepaws and under the chin of the sacred ram (Scharf 1949, 314, no. 4 for examples). Scharf (Ibid.) sees the motif as a hallmark of the 18th Dynasty, in which the king is linked with, but subordinate to, the deity who is represented on a much larger scale. He points out that in comparison with the known Old Kingdom examples where the king is larger than the god, in the New Kingdom it is the god who looms above the king.[8]

In reference to the Sphinx beard inscription, we might interpret it to mean that the Sphinx is the protector and ask, "around and behind whom?" Certainly in the New Kingdom, when the pharaoh visited the chapel between its long outstretched paws, the Sphinx that towered above was *zꜣ ḥꜣ.f*, "protecting around and behind him." The architectural configuration of the chapel and the base of the Sphinx chest make it eminently possible that the concept was made dramatically more explicit by the erection of a royal statue above the chapel and below the Sphinx's divine beard. It is a persistent idea that a royal statue once stood at the base of the Sphinx's chest, like the figures of the king below the chins of the ram-headed sphinxes of Karnak. Hölscher (1912, 18) suggested that the boss on the chest is a badly weathered figure, but thought it could have been carved later than the 4th Dynasty. "Dann wurde die Statue einen König darstellen, der im Schutze des Harmachis stände. Andernfalls natürlich umgekehrt ein Götterbild, das der König vor sich halt" (Ibid.). Evers (1929, II, 86, No. 584) suggested that it was a figure of a god that stood at the chest of the Giza Sphinx. Schweitzer (1948, 35) also took the boss as a weathered figure, probably of a New Kingdom pharaoh, and suggested that it might have been Amenhotep II. Ricke (1970, 33) understood the boss on the chest to be a remnant of the supporting bridge for the beard. He notes that several of the New

Kingdom stelae showed the Sphinx with a royal statue before it, although those of Thutmose IV and Ramses II in the chapel, and many other small stelae do not. Nevertheless, Ricke thought here, perhaps, stood a statue, for which there is room enough behind the Thutmose IV stelae. He suggested that the vertical stack of stones against the chest of the Sphinx alongside the boss in Salt's drawings (Figs. 8.1, 8.2) might have been the remains of a naos to protect the statue (Ibid., 34).

Six, possibly seven, of the New Kingdom "private stelae" show a royal statue at the chest of the Sphinx. Zivie's (1976, 61; Hassan 1953, 71, Fig. 62, Pl. 67) NE5, could date as early as Thutmose III, although it is more likely that, as she points out, the cartouche on this stela encloses the name of Thutmose IV and not Thutmose III, depending on the last sign, either plural strokes or the *r* of *ḫpr* (Pl. 9.3 here). The latter would be an unusual writing of ***Mn ḫhr Rʿ***. The cartouche must label the king shown as a statue striding forth from between the paws of the Sphinx.

Three of the stelae, NE8, 9, and 10 date to the reign of Amenhotep II. Hassan (1953, 84-8, Figs. 67-9) designated these A, B, and C. They belong to princes; that of stela C names the prince as Amenemipet, whom Hassan thought must be the owner of the other two as well. Bryan argued (1980, 81-96) that the owner of A and B is Webensenu, who must have been older than Thutmose

IV, and who, like the prince on the stelae, was a Chief Master of Horses. The stelae have received a great deal of comment because the names and other inscriptions were intentionally erased on A and B.

We are completely dependent on the poorly reproduced photographs in Hassan's publication for details of these stelae since they have not been located in the Cairo Museum or in the Giza storerooms (Zivie 1976, 94). On stelae A the statue of the king wears the blue crown (*ḫprš*). His arms hang down at his sides, possibly palm down. He wears the triangular skirt associated with the royal *Gebetshaltung* (Evers 1929, II, 40, No. 283-4; Lange and Hirmer, 1975, 73, No. 107). That the figure is meant to be a statue and not the king in person is indicated by a low socle on which the figure stands. Above the figure an inscription gives the name and titulary of Amenhotep II. The figure and accompanying inscription are incised much more lightly than the rest of the relief.

In stela B a statue between the forepaws of the Sphinx is once again shown on a socle, wearing the triangular skirt, with arms hanging straight. An inscription above the statue once again identifies it as Amenhotep II (Zivie 1976, 97). The difference is that the statue wears the nemes rather than the blue crown.

Stelae B differs from most of the stelae depicting the Sphinx; here the Sphinx faces left, instead of right. Perhaps this is because the sphinx tails swing up around the right haunch before the Late Period (Evers 1929, II, 88-9, No. 598), and from this view this characteristic feature may be rendered correctly.[9] However, it is also the case that most of the stelae are rendered as though, in the actual topography of the Giza Sphinx, the observer is S of the Sphinx looking N. It may be that in the New Kingdom, when the walls of the Khafre causeway were dismantled, the causeway embankment provided a good viewing platform for visitors to view the Sphinx from the S-SE. The New Kingdom viewing platform and approach from the E (see chapter 2) was probably reserved for royalty. But many of the stela were set in the mudbrick wall that ran along the N side of the Sphinx sanctuary, so another reason for the orientation of the Sphinx to the right may be that in the N wall, the sphinx on the stela faced east in the same direction as the Sphinx itself.

In stela C only the lower part of the statue between the Sphinx forepaws remains, and given the poor quality of the published photographs (Hassan 1953, 88, Fig. 69) we have to take Hassan's word that the figure is present in the relief. A text above the back of the Sphinx expands upon the *zꜣ ḥꜣ* relationship between Sphinx and royal statue: "Protection, life, stability, power, and health around and behind him like Re" (Zivie 1976, 107). This is to say that it is the Sphinx, who personifies and bestows these qualities, around and behind the king.

The stela of Montuher, Zivie's (Ibid., 232-33, Pl. 20) NE85, carries a representation of the two largest Giza Pyramids in an unusual perspective view behind the Sphinx (as one actually sees the pyramids behind the Sphinx from the S). The figure at the chest of the Sphinx, in a striding posture, is rendered in simple base relief devoid of detail, but the outline indicates it wears the nemes (Hassan 1953, 62, Fig. 53). NE94 (Zivie 1976, 241-3; Hassan 1953, 261, Fig. 197) is unusual in that a small royal figure standing before the Sphinx, and facing away from the Sphinx, is shown as a double figure by doubling the front profile. The doubled figure is also shown as though it was standing alongside the forepaw of the Sphinx. The arms hang straight and the figures wear the *shendyt* kilt and nemes. Finally, Hassan's (Ibid., 246, Fig. 187) stela No. 84 "bears an inscription recording an endowment made by Thutmose IV to the temple of the Sphinx" (Ibid.), but Hassan's photograph is reproduced so poorly that Zivie (1976, 158, NE34) could not transcribe the text. A striding pharaoh, wearing the *shendyt* kilt and Blue Crown, with one arm bent and the other hanging straight, stands in front of the Sphinx and its pedestal facing away from the Sphinx. This unusual direction may indicate that this is a seventh instance in which a statue, rather than the king himself, is intended.

In sum, out of the six stelae that show with some certainty a statue in front of the Sphinx, the statue wears the nemes in four, the head is not preserved in one, and it wears the Blue Crown in one (Stela C), as it does in the possible seventh depiction of a statue. In two of the stelae (A and B = NE8, 9) the royal statue wears the triangular skirt, while in all the rest except C (NE10), where the figure is missing, the statue wears the *shendyt* skirt.

These differences, and other details such as the beard and crown of the Sphinx, or the fact that most of the votive stela that render the Sphinx do not show the statue, make these sources unreliable as records of the actual appearance of the monument. The depictions could be simply indicating the idea that the Sphinx is the protector of the king (Zivie 1976, 309, n. 3). On the other hand, the earliest of these documents, the stelae of the princes of Amenhotep II, make it quite explicit that the figure is a statue and not the king himself, and two of the three stelae carefully label the statue as Amenhotep II. Zivie noted (Ibid.) that there could have been a statue of Amenhotep II against the chest of the Sphinx that was replaced by the great granite stela of Thutmose IV.

In fact there was no need for the Thutmose IV Stela to replace a royal statue at the chest of the Sphinx. The position of the granite stela actually indicates that a statue stood at the Sphinx's chest when Thutmose dragged one of Khafre's granite lintels down from the Pyramid Temple and into the area between the forepaws to serve as his stela. The stela does not rest against the chest of the Sphinx, but against a three-tiered stack of massive limestone blocks, 2.36 m out in front of the chest (Figs. 8.6, 8.8). This is ample room for the base of a royal statue to stand in front of the boss on the chest. A gap in the massive masonry behind the stela (described in chapter 8) might have been filled with smaller packing blocks and mortar to complete the platform, similar to the packing in feature Fa3 (chapter 8).

The stack of masonry standing against the chest in Salt's sketches of Caviglia's excavation (Figs. 8.1, 8.2) is not the remains of a naos to protect the statue as Ricke thought; rather this is the remains of masonry that attached the statue to the chest. A small patch of just this masonry still exists, No. 123 in Figs. 8.6, 8.8. The gap in the Phase I masonry at the center of the chest (Fig. 8.6) is where the support masonry behind the statue was taken away, probably when the statue was removed. Block No. 122 (Fig. 8.6) at the S side of the gap retains a bit of the original finished surface of Phase I casing of the chest. In Fig. 8.8 this surface is shown (No. 112) just where it joined to the perpendicular masonry backing the statue, of which No. 123 is the remnant.

As the evidence of chapter 8 indicates, Phase I is contemporary or close in time to the Thutmose IV stela. So, the missing royal statue must be a part of the same restitution of the Sphinx as a cult object with a *chapelle royale* in the 18th Dynasty. The Sphinx and royal statue expressed a theme that was a hallmark for the time: das den König der Gottheit untergeordnet oder in deren Schutz befindlich zeigt...vor allem wenn wir die heiligen Tiere mitrechnen, unter deren Schutz ein König gestellt ist" (Scharf 1949, 312).

In order not to be lost between the large size of the stela and the immensity of the Sphinx, a statue that stood on the platform behind the Thutmose IV Stela must have been more than 5 m tall. A height of around 7.8 m would be required to bring the top of the statue to the underside of the divine beard as reconstructed in Fig. 9.7.

Several of the Archive Lacau photographs of the Baraize excavation show a large limestone double crown and the front part of a limestone head sitting beside the S forepaw of the Sphinx (Pls. 2.4, 2.6, 6.2). Baraize moved these pieces to the base of the Khafre causeway in the SE corner of the Sphinx floor where they remained through the time of my work at the Sphinx from 1979-83. Although I photographed them on several occasions, I never drew them to scale, and my photographs were always slightly oblique. Both pieces appear to have weathered substantially since the 1926 photographs. Because of this, and the oblique angle, the drawing makes the double crown appear more degenerate that it is (Fig. 9.8, oblique and top views). The double crown is about .96 long and .83 wide. I attempted to restore graphically the original dimensions by matching the double crown from the Ramses II figure on the facade of the small Abu Simble Temple to the double crown fragment from the Sphinx. I made the comparison on the basis of the photogrammetric scale rendering of the temple facade (Desroches-Noblecourt 1968, Pl. XI). It appears that part of the base of the North Crown, as well as the top of the South Crown, are missing from the piece found at the Sphinx. With these restored, the crown was about 1.6 m tall.

The size of a statue that corresponds to a double crown about 1 m long and 1.6 m high can be found by comparison with other statues wearing the same crown. From the top of the crown to the feet, a standing royal statue proportionate to the double crown found at the Sphinx would have been about 7.5 m tall. With a socle .30 to .40 thick resting upon the third course of blocks behind the Thutmose IV Stela (Figs. 8.8, 8.9), the top of the statue would have been just under and in front of the bottom of the divine beard as reconstructed above (Fig. 9.8).

However, arguing against the idea that the double crown derives from the statue against the chest, we can cite the stelae that depict a statue at the Sphinx chest. These all show it wearing either the nemes or the blue crown (*ḫprš*). It is also unlikely that a standing king would wear the double crown in the *zꜣ ḥꜣ.f* position in front of a *Tiergestalt* god or the Sphinx. The double crown and face fragment must derive from another statue that was once in close proximity to the Sphinx, and the only other possibility is the Osiride statue that Mariette said he found on the S side of the Sphinx.

In the drawings of the 18th Dynasty reconstructed Sphinx, I have rendered the royal statue at the chest wearing the nemes scarf (Figs. 9.10, 9.11). In these drawings the royal statue wears the *shendyt* skirt, whereas it may be more likely that it wore the triangular skirt (Russman, personal communication). In one version of the reconstruction (Lehner 1991) the statue has been drawn with the triangular skirt. Amenhotep II wears the triangular skirt on the well-known statue of himself under the protection of the Hathor cow from Deir el-Bahri (Lange and Hirmer 1975, Pl. 146). Thutmose IV and Ramses II both wear the triangular skirt on their stela in the Sphinx chapel (Zivie 1976, Pl. 14; Hassan 1953, Pl. XL). The reason that these stela do not show the royal statue at the chest of the Sphinx might be that the figures of the king himself takes its place; i.e. the king impersonated by the statue moves down and turns to offer incense and libations. Without 1.6 m of the statue taken up by the tall double crown, either the actual height of the king's figure increases to fill the 7.8 m between the bottom of the beard and the top of the three courses of large blocks behind the Thutmose IV Stela, or the statue remains about the same but is put on a higher plinth. I chose the later alternative, and placed the royal statue on a plinth about one meter thick, leaving the statue 6.8 m in height. This brings the feet of the statue almost level with the paws, not unlike some of the New Kingdom depictions on votive stela (Fig. 9.10).

9.7 Computer Reconstruction

In order to better visualize this reconstruction, I worked with Tom Jaggers when he was CAD Director of the Jerde Partnership Inc. in Venice, California to digitize the plans and elevations that document the statue as it was in 1979 in order to produce three-dimensional images of the Sphinx. Jaggers used an ALR (Advanced Research Logic) Computer and the Auto Cad (release 10) graphics application. We adapted the computer model of the Sphinx "as is" to illustrate the hypothesis of how it was after the 18th Dynasty renewal.

The process of creating a computer model of the Sphinx is a bit like sculpting the statue again in computer memory. All features of the subject needed to be contoured, so that the computer could digitize and reconstruct the contours from any selected point of view. The contours were then meshed and shaded to create a continuous surface over the model. The contours of the Sphinx "as is" were given on the drawings produced from the fieldwork (Figs. 5.2, 5.3, 5.4, 5.5, 5.6). The model of the reconstruction was contoured as follows.

I traced the original sculpted surfaces and outline of the Sphinx off the photogrammetric elevation drawings, excluding the contours of those surfaces that were weathered or broken. I placed the reconstruction drawings (Figs. 9.10 and 9.11) under the tracings of the original contours and added the contours of the missing features, nose, beard, etc., from reference points on the scale reconstructions, and partly by eye (Fig. 9.12). Jaggers digitized the contoured reconstruction and sent me profile projections and various other points of view. On the basis of these I made corrections that were in turn digitized. Ideally this would be done directly from photogrammetric projections of the various statues - those of Khafre and later sphinxes for example, that were used in the reconstruction, but the process would still involve an electronic re-sculpting of the monument.

A royal statue at the chest proved to be too ambitious to contour by eye. Therefore I "borrowed" one of the contoured photogrammetric images of Ramses from the Small Temple of Abu Simbel (Desroches-Noblecourt 1968, Pl. XI) and placed this behind the Thutmose IV Stela at the chest of the Sphinx so that its contour lines would correspond to our survey grid lines (Fig. 9.12). For reasons stated above, I chose the figure of the king wearing the nemes. The French photogrammetry rendered this at 2 cm contour intervals.

Figs. 9.13, 9.14, 9.15 and Pls. 9.4, 9.5, 9.6 present preliminary images of the computer model of the Sphinx reconstruction. The Ramses statue was rendered with digitized contour intervals of only 20 cm, so much of the detail is missing. It is clear that this statue was designed especially for the massive cliff-side sloping facade, a scale two or three meters larger than its 6.8 m in the reconstruction of the Sphinx (Fig. 9.13). The head is oversized relative to the body, and the figure seems to stride forward while tilting slightly backward (Fig. 9.15, Pl. 9.4). At Abu Simbel, the proportion of the head is compensated by the perspective of the observer at the feet of the statue and so too at the Sphinx, the proportions look better from the ground view in the chapel (Pl. 9.6).

We must remember that this Abu Simbel image of Ramses statue is not sculpture in the round, but high relief. The result is that the backside of the statue is missing in the model at this stage (Fig. 9.15, Pl. 9.5), as is the attachment of the back of the statue to the chest. The gap in the masonry veneer at the center of the chest, the stack of stones against the chest in Salt's sketches (Figs. 8.1, 8.2), and other details (see above) indicate that there was a masonry attachment between Sphinx chest and the statue. This masonry offered a broad support for long divine beard and its much narrower bridging plate.

The computer images indicate that the configuration of the beard is not quite right in this stage of the reconstruction. Aside from inaccuracies in the electronic sculpting of the curl (Fig. 9.15, Pl. 9.5), it is evident that the beard must have thrust more forward, the way it does when the relief-carved sphinx on the Thutmose IV Stela is projected at the same scale over the Sphinx profile (Fig. 9.9). As mentioned above, this produces a surprisingly good match of many salient features of both sphinx images. The beard of the relief-carved Sphinx is the exact length of the actual Sphinx's beard in the reconstruction (when facial features, neck line, and back of the nemes match). But the relief Sphinx's beard projects forward so that it would be just over the back of the royal statue's head.

9.8 The Chapel in the Reconstruction

I rendered the chapel, such as we can see it, in the drawings of the Sphinx reconstruction (Figs. 9.10, 9.11) much as it appears in the sketches of Salt (Figs. 8.1, 8.2). This, of course, gives a picture the chapel as it was at the very last phase of antiquity. In Salt's sketches, the low front walls of the inner chapel and the pavement of brick-sized limestone slabs give the impression of being fairly late, dating, we might guess, to the Roman restorations of the pavement, stairs and viewing platform out in front of the Sphinx (Vyse 1842, 118-19). The runnel in the bedrock floor, which marks an earlier threshold, indicates that the entrance and pavement in Salt's sketches are not original (see chapter 8).

The back wall, taken up entirely by the Thutmose IV Stela, and the sidewalls could be original to the 18th Dynasty. Although they held the stela of Ramses II, the sidewalls may date to the time of Thutmose IV, judging from the material found in the base of the S wall (Fa2, Figs. 8.15, 8.16). The sides of the forepaws underneath the sidewalls did not present finished surfaces (Fig. 8.17). Also, the abundant evidence of ancient blue paint from the fill of the side wall very probably relates to the small bits of Egyptian blue that occur in the interstices of the masonry of large slabs framing the Thutmose IV Stela and reconstructing the S forepaw (see chapter 8).

It is possible that Ramses II simply set his stela into walls that already existed. On the other hand, it is also possible that whatever surface was painted blue in the 18th Dynasty was repainted in the 19th Dynasty, when Ramses might have renewed the side walls of the chapel and placed his stela. Salt's sketch (Fig. 8.2) gives the impression that the Ramses II Stela were integral parts of the side walls.

It is very likely that the crenellations along the top of the wall are original to the New Kingdom. This feature refers to the crenellations that ran along the top of the great temple enclosure walls in the New Kingdom (Kemp 1989, 189-90), as indicated by models (Jacquet 1958, 164, Fig. 1) and relief scenes (The Epigraphic Survey 1979, PL. 53). The temple crenellations refer, in turn, to "fortresses, with towers and embattlements" (Kemp 1989, 188), making the temple the citadel of the god. And so, on a small scale with grandiose intent, the open-air chapel at the heart of the Sphinx was a citadel of Horemakhet.

9.9. Color

It is more likely than not that during its reconstruction in the 18th Dynasty the entire Sphinx was painted in bright colors, as were other statues in wood, limestone, and even hard stone (Brunner-Traut 1977, 121). Traces of red paint still remain on the face, and red powder from ancient paint pours out of the seams of the masonry veneer. According to Salt's notes, when Caviglia first excavated the chapel, "all these remains, together with the tablets, walls, and platform of the temple had been ornamented with red paint" (Vyse 1842, 110).

The fragments of blue with a calcite backing, Egyptian blue powder adhering to sherds, and scattered bits of Egyptian blue throughout the masonry of the chapel, indicate that something nearby was painted blue. There are also scant traces of yellow pigment from the items in the fill of the S chapel wall (Fa2, see chapter 8). According to Johnson (1990, 98), "traces of painted gesso remain on the surface" of the uraeus head, and there is "red on the eyes and flecks of white and black elsewhere" (Pls. 5.41, 5.42, 5.43, 5.44, 5.45, 5.46, 5.47, 5.48). Russman (personal communication) examined the uraeus head in the British Museum and noted that the top is yellow and there are yellow traces along the back break.

It is possible that these Egyptian blue paint residues derive from painting the Sphinx's eyebrows and divine beard in the 18th Dynasty. Traces of red paint on the beard fragments in the Cairo Museum may result from a late repainting of virtually the entire monument in red. Blue was the traditional color for the eyebrows and beards of the gods (Brunner-Traut 1977, 125) and divine creatures. The Story of the Shipwrecked Sailor testifies to this, for the gigantic serpent, Lord of the Island of the Ka, was "thirty cubits, his beard was over two cubits long. His body was overlaid with gold, his eyebrows were of real lapiz lazuli" (Lichtheim 1975, 212). The association of divine facial hair and the color of lapis lazuli applied as well to the beard, for the beard of a god, *ḥbswt*, was said to be of lapis lazuli (Staehelin 1973, 627).

Traces of blue are preserved on the beard of the Hatshepsut granite sphinx in the Metropolitan Museum (MMA 31.3.167). Blue is also preserved in the recessed band of the pleating of the nemes on this sphinx, while traces of yellow remain on the raised bands. The entire tail of the nemes was probably blue as it is on the seated colossus of Hatshepsut (MMA 27.3.163). In similar fashion the renewed Giza Sphinx of the 18th Dynasty was probably given life by painting the face red, the beard and eyebrows blue, and the nemes blue and yellow. It is not impossible that the shoulder mantle and folded wing that are shown on the Sphinx in the stela contemporary with Amenhotep II (Hassan 1953, 84-5, Figs. 67-8) were actually painted on the Sphinx body to indicate, as the stelae say, "Horus Behedite, Lord of the Sky, Great God, variegated of plumage" (Zivie 1976, 94, 96).

9.10. The Masonry Boxes and the “Statue of Osiris”

My reconstruction of the Sphinx has yet to incorporate the mysterious masonry boxes attached to the sides of the lion body, and Mariette's assertion that he found the remains of a colossal statue of Osiris that might have stood upon the S large box.

According to Mariette (1882, 95) the Osiris statue was composed of separate blocks. Laorty-Hadji (1856, 382) adds in his travelogue that the number of blocks was twenty-eight. I have already discussed the fact that a large limestone white crown and a face, badly worn, were lying alongside the S forepaw a short distance from the S large box in several of the Arch. Lacau photographs of Baraize's excavation (Pls. 2.4, 2.6, 6.2). The double crown, when complete, would have been about 1.6 m tall and about 1 m long (front to back). This would be proportionate on a statue about 7.5 m tall (see above). A statue of this size must have been part of the site where it was found. Since it is not likely that this was the statue at the chest of the Sphinx, we must examine the possibility that it was the statue to which Mariette made reference.

The double crown may be more appropriate for an Osiride royal statue than for an actual statue of Osiris. Leblanc (1980) distinguished five types of this kind of royal statue, and in each type there are examples wearing the double crown. The sizes range from 1.95 to 9.50 m (Ibid., 71). Leblanc's study (Ibid., 1982) indicates that these statues are an integral part of the cult of royal renewal. They represent the deified king - actually an hypostasis of the king into a divine entity that is practically distinct from the terrestrial sovereign (Ibid., 304). The Osiride statues are associated with the Sed festival; they are "une statuaire jubilaire par excellence" (Ibid., 311). The cult connected to the Osiride statues is sometimes paired with the cult of another divinity.

Without pieces of the lower part of the statue it is not possible to know the type to which they belonged. Nevertheless, in attempting to reconstruct graphically such a statue upon the S large box I have, somewhat arbitrarily, chosen a design based upon a small limestone royal Osiride statuette that Hassan found near the N side of the Sphinx (Hassan 1953, Pl. 33a-b). This shows the king mummiform, like Osiris, wearing the double crown and holding an ankh sign. The statuette is 33.5 cm high.[10] The statuette corresponds to Leblanc's (1980, 73) type A.9.

I placed this Osiride figure graphically upon the S large box at the scale where it equals 7.5 m in height (Fig. 9.16). Yet another colossal statue at the side of the Sphinx may seem unusual, but the boxes require some kind of explanation.

The question that must be addressed is whether such a royal Osiride figure could have been taken for an image of the god Osiris, and further, whether such a statue could have had anything to do with the well-attested cult of Osiris, Lord of Rosetau at Giza (see chapter 3).

The position of the statue at the right shoulder of the Sphinx fits the topographical directions for the "House of Osiris, Lord of Rosetau" given on the Stela of Cheops Daughter from the Isis Temple: "the mound (i3t) of Haroun-Horemakhet is on the S of the House of Isis, Mistress of the Pyramid, and on the N of Osiris, Lord of Rosetau" (Zivie 1980, 96); the Temple of Isis is "NW of the House of Osiris, Lord of Rosetau"; and the Sphinx is situated "N of Osiris, Lord of Rosetau" (Ibid., 104). If the "House of Osiris, Lord of Rosetau" is equated to the hypothetical Osiride statue at the Sphinx's S flank, the Sphinx is indeed N of Osiris Lord of Rosetau, and the Temple of Isis by the southernmost of Khufu's queens' pyramids is NW of Osiris Lord of Rosetau. Also, if by "mound of Haroun-Horemakhet" the text speaks of the Temple of Haroun-Horemakhet built by Amenhotep II, it is also N of Osiris Lord of Rosetau.

The Archive Lacau photographs indicate that there may have been a platform with a stairway to the E and W in front of the S large box (Pls. 2.3, 2.4, 2.5, 7.30). As Baraize's workmen dismantled these stairs they exposed what might have been a mud core for the platform, and possibly also a mud core or foundation for a stairway ascending to the higher ground above the Khafre causeway (Pl. 7.31).[11] This architecture could have been associated with a cult of the Osiride statue. In fact, if there was an Osiride statue, 7.5 m tall, at the

Sphinx's right flank, it would be surprising if the cult of Osiris Lord of Rosetau was not somehow attached to it.

But would the statue on the box-like base, with the platform and stairway, have been called a *pr*, "house", or "temple," even if the Osiride statue was identified with Osiris?[12] In the New Kingdom *pr* usually indicates a dwelling of some kind for a private individual or a god, in which case it is a temple. But the *pr* could be the temple building, the entire temenos, or the administrative estate of the temple (Spencer 1984).

It is still hard to see the statue on a base as a *pr* unless the statue was in a naos. Supports for naoi may be, in fact, the function that best explains the form of the masonry boxes attached to the Sphinx. An ancient Egyptian naos was, in effect, a miniature temple that usually sat on a high stone socle (Wildung 1982, 342). They functioned particularly as miniature temples when, like the naoi at Mendes, they were monolithic large rooms whose walls were covered with temple reliefs and inscriptions (Ibid.; Mysliwiec 1978). The ground plan of a naos, with its closed back and side walls, and open front wall with jambs for the double-leafed wooden door that could be opened to service the divine image, is exactly the hieroglyph for *pr*. Naoi were made in many sizes and variations to the basic shape of a rectangular box, including tops that are rounded, barrel vaulted, with torus molding, uraei friezes and pyramidians (Roeder 1914). Naoi for Osiris, often shown in naophor statues, can have either flat (Russman and Finn 1989, 189) or rounded tops (Roeder 1914, Tf. 38, CG70028). In the Stela of Cheops Daughter, which likely dates to the 26th Dynasty (Zivie 1980, 95), the figure of Osiris, Lord of Rosetau is actually shown in his shrine with a rounded top, as he is in a fragment of relief from the Isis temple (Ibid., Pls. 5-6). While this representation is a common convention, it could reflect the form of the naos in which the figure of Osiris resided at Giza.

In order to visualize the possibility that the S large box could be the base for a naos around the Osiride statue, I constructed graphically a naos that rises from the short vertical walls at the top of the box (Fig. 9.16). This would leave the area of the hypothetical socle within these walls (Fig. 7.3) to receive the base of the statue itself. In order to contain the 7.5 m-tall statue, the naos would have been about 8.3 m high from the top of the S large box, and 11.6 m above ground level at the base of the box, with a width of 3.75, allowing for walls .50 m thick. This would have been a impressive structure in its own right. The many limestone blocks that Baraize found around the base of the box (Pls. 7.29, 7.30, 7.31) would have told the story of whether the naos in fact existed.

The naos of Amasis at Mendes was of a similar size, even though it was carved from a single block of granite (Porter and Moss 1934, 35). It sat on a pedestal of rough limestone blocks of the sort that I am suggesting for the S large box at the Sphinx when it was filled with packing masonry (Baines and Malek 1988, 166). When the members of the French Expedition visited Mendes, the base apparently still retained its outer finish masonry. In the elevations, plans, and profiles published in the *Description de l'Egypte* the pedestal of the naos has a rounded shoulder, and a short vertical base for the naos itself, very similar to the hypothetical naos on the S large box of the Sphinx (Fig. 9.16, inset; Gillispie and Dewachter 1987, Vol. 5, Pl. 29). The total height of the Amasis pedestal plus naos is 10.99 (compared to our 11.60), the width of the pedestal base is about 4.70 (compared to our 5.26), and the height of the pedestal is 3.48 (compared to 3.29 for the S large box). The width of the Mendes naos is 3.95 m (Ibid.) while our hypothetical naos is 3.80 m wide. The similarity between the pedestal of the Mendes naos and the S large box at the Sphinx is, the naos aside, one of the few indications that the Phase II masonry, which completes the rounded shoulder of the box, is 26th Dynasty. In Fig 9.16 I reproduce the Mendes naos at the same scale as the Sphinx reconstruction.

A colossal naos could have been considered the *pr* of the Osiride statue. A platform and steps in front of the naos might have lead S over the Khafre causeway embankment. These might be related to the royal mudbrick structure, the “Resthouse of Tutankhamen,” which Baraize cleared and dismantled slightly farther S and E behind the Khafre Valley Temple (Pls. 2.37, 2.38 where the smaller stairs just in front of the mudbrick building are obviously modern). Beyond the mudbrick structure, lies the Main Wadi and modern Coptic Cemetery where the 26th Dynasty statue of Senbef might have been found (Zivie 1980, 105). It appeals to the "prophets and purification priests who ascend toward the House of Osiris, Lord of Rosetau" (Ibid.).

Zivie (1976, 276-80, 328-30) discussed a number of inscriptions and architectural fragments that carry the name of Ramses II and his son Khaemwase and that have been associated with Kafr el-Batran, once a village, now a suburb, a short distance SE of the Sphinx. She reviews the long-held opinion that Khamwase's tomb was in the vicinity of this village (Ibid., 278 for refs.), and advances the hypothesis that the fragments in question might have derived from the missing Temple of Osiris, Lord of Rosetau. Of the most important documents (NE56-60) a granite doorjamb of Khaemwase was seen in Nazlet el-Batran by Lepsius, and its location is now unknown. All the others mention Sokar-Osiris, or Osiris, Lord of Rosetau;

their provenance, and in one case, present location, are unknown.[13] These fragments could equally be from architecture in the Sphinx precinct that was destroyed entirely before modern excavations, or went unrecognized during those excavations.

Two architectural fragments in particular are worth mentioning: a cornice fragment that Baraize found at the Sphinx bearing Ramses II's cartouches (Hassan 1953, 23, Fig. 14), and the fragment of relief showing Ramses II before a falcon-headed Sphinx who is labeled, "Horus, Son of Osiris, [Lord?] of Rosetau" (NE56, Zivie 1976, 199-201, Pl. 15). The latter piece could be from a round-topped stela, but it could equally be the upper corner of a wall of a large naos with a rounded ceiling, like that of the naos of Ramses II from Tell el-Maskhuta (Mysliwiec 1978, 172).

In any case, texts mentioning Osiris, Lord of Rosetau, begin and pick up frequency in the reign of Ramses II (Zivie 1976, 328-9). It may be that the son of Ramses, Khaemwase, built a cult installation for his father in honor of this manifestation of Osiris, as Zivie hypothesizes (Ibid., 279-880), although it might have been within the Sphinx sanctuary rather than some distance to the SE in Nazlet el-Batran. Perhaps this building is part of the same operation referred to in the letter from this reign mentioning workers assigned to the "House of Houron in Memphis," which must indicate the Temple of Horoun-Horemakhet at the Sphinx (Gardiner 1937,123-4; Caminos 1954, 454-64; Zivie 1976, 277). A limestone block bearing the name of Ramses II was found with the beard fragments at the base of the chest, which might indicate that he restored or added to the masonry that supported the beard and that attached a royal statue to the chest (Vyse 1842, 109).

The evidence discussed in chapter 7 indicates that the masonry boxes, including at least the core of the S large box, are contemporary with Phase I, which likely dates to the 18th Dynasty reconstruction of the Sphinx. If so, the boxes were present before Ramses II. The smaller boxes are well suited for smaller square naoi, such as the Abu Simbel naos of Ramses II for the sun and moon gods (Roeder 1914, 22-4, TYf. 6, CG70005). A fine limestone naos of Thutmose IV dedicated to Horemakhet was found lying opposite the N hind paw of the Sphinx, which is fairly close to the N small box (Hassan 1953, 65, Fig. 58; Zivie 1976, 156-7, NE32). Its dimensions are 63.8 X 41 X 35 cm, and it features a small niche 19.5 X 14 cm.[14] It would be nice to see this naos as the piece that actually sat on the N small box, but it is a bit small for the 1.25 X 1.50 m platform provided by the box (see chapter 7).

The suggestion that the boxes are naos pedestals implies that the floor around Sphinx was accessible in the New Kingdom, as suggested by the find spots of objects like the small

Thutmose IV naos. The tall body of the Sphinx, and the massive protective walls of Thutmose IV (Pls. 2.9, 2.10, 2.13, 2.14, 2.15) created a kind of alley for circumambulating the colossus. Although he does not make the point very explicit, Hassan (1953, 64, Pl. 36) indicates that the N protective mudbrick wall (Pl. 2.12) of the Sphinx sanctuary was a common repository for stelae. As one walked around the Sphinx, it must have been a colorful scene with the brightly painted stelae on one side, and the naoi on their pedestals against the flank of the Sphinx on the other side.

Pl. 2.13 shows part of this circuit. Just opposite the N hind paw, Thutmose IV's wall jogs to the N to run along the top of the N bedrock ledge. The remnant of wall standing on the ledge in this view is still standing, as I described in chapter 4. The men in the view are digging within meters of the find spot of the Thutmose IV naos. Yet they stopped excavating here soon after this photograph was taken, for the wall and the deposit behind it were cleared under Hassan in 1936. Even Hassan did not finish clearing this spot. For it was just here that the sand still covered the unfinished ("Keystone") tomb shaft and the shallow trench that runs in front of it (Fig. 4.2, see chapter 4) when this area was cleared under Hawass in 1978. Among other odd pieces of shaped limestone, we recovered the top of a limestone offering stand shaped in the lotus motif. This could have come down from higher levels in the debris during the previous excavations, but it is one among a number of indications that ritual activities were carried out at a number of spots, perhaps in front of the naoi on their pedestals, around the flanks of the Sphinx.

As for the cult of Osiris, Lord of Rosetau, there remain the questions of whether an Osiride statue, like more explicit Osiris figures, would be put in a naos, or whether such a statue would be taken for the god Osiris. Most figures of Osiris in a naos (eg. Russman and Finn 1989, 189), like the depictions of Osiris from the Isis Temple at Giza (Zivie 1980 Pl. VI) show the god wearing the Atef crown and holding the crook and flail.

It is possible that the double crown that Baraize found in the vicinity of the S large box does not belong to the statue of Osiris. It is also possible that a statue that represented Osiris replaced an 18th Dynasty naos of Sokar, since the two deities were intimately related in the New Kingdom and in several texts of the 19th Dynasty from Giza (see chapter 3). Two texts in particular evoke the impression that the focus of both Sokar and Osiris was in close proximity to the Sphinx. The first is from the Thutmose IV Stela, where it says that "when his hour of giving rest for his retinue occured" [it was] *r stpt Ḥr-m-ꜣḫt r gs Skr m R-sṯꜣw*, "at the temenos (Zivie 1976, 286) of Horemakhet, at the side of Sokar in Rosetau" (Urk IV 1541). With *r stpt* parallel to *r gs*, the place of Sokar at Giza was at the temenos of the Sphinx. The second text is the Greek inscription from the Sphinx's forepaw to the effect that the Sphinx was "protecting the regretted good Osiris" (Vyse 1842, 118).

Chapter 9 Notes

[1] I have used 52.5 cm as a value for the royal cubit. For the latest on the cubit, see Arnold (1991, 10).

[2] See Evers (1929, I, 46-7) for further thoughts on the artistic challenge of combining the king's head with the lion body, how this was treated in various periods, and what the combination signifies.

[3] Nowak and Pardiso (1983, 1092), give 1.7 to 2.5 m for the head-body length of the adult male lion, while KGVO (1984, 28) gives 2.6 to 3.3 m for head body length of the adult male lion. I averaged these to 2.5 m. The Sphinx body length is 55 m from the base of the chest to the end of the tail as measured off the Sphinx plan. This gives a scale of 1:22. The head-body length of the lion is probably measured while it is standing, and therefore somewhat longer than when couchant. However, given the wide range between the two sources, the scale is somewhere close to 1:20 to 1:22.

[4] As indicated in chapter 5, a prominent fissure cuts the natural rock just where the tail of the nemes began. This may be the reason for the break at the back of the head.

[5] Divine beards are found on deities in the reliefs from the 5th Dynasty pyramid temples. See, for a selection, Borchardt (1907, 93, Abb. 71; 1910-13, II, Pls. 1 (*ꜣš nb Tḫnw*), 5 (Sopdu), 19, 24 (Nile gods), 25, 29 (Nile and nome gods), 30 (Nile and nome gods), 31 (nome gods)). I thank James Allen for supplying me with these references.

[6] I would like to thank Lanny Bell for pointing out to me that the object is likely the broad collar, and for the reference to Calverly and Gardiner 1933.

[7] I would like to thank James Allen for this reading.

[8] See Scharff (1949) for examples of the motif. He contrasts the large, divine animal protecting the smaller figure of the king with Rammeside statues, particularly Ramses II statues that show the king equal in size to his companion gods. At Abu Simbel Ramses II portrayed himself on truly a truly colossal scale, bigger than the divine images. This was the only time, as far as I know, in the history of Pharaonic art that the image of the king was hewn this large out of the natural rock, with the single exception of the Giza Sphinx.

[9] When the Sphinx is shown double, facing both right and left, as on the Thutmose IV Stela (Hassan 1953, Pl. XL), the tail is shown on the either the right or left haunch respectively.

[10] The dimensions and some detail about the find spots of the objects from Hassan's excavation are given in unpublished notebooks from Hassan's work now in the Giza storage magazines. The notebooks give a photograph and English entry for each object. I would like to thank Zahi Hawass for making this information available to me, and Christiane Zivie-Coche for collating these and the Archive Lacau notes during her work with the ARCE Sphinx project in 1980.

[11] *Ed. Note: On the other hand, Archive Lacau photograph C I 080 shows what are certainly modern stairs of broken stone and mortar that Baraize workers built from the causeway down to a lower level of sand farther west, at the southern side of the Sphinx rump. This causes me to think that these workers also built the higher stairs opposite the S Large Box to serve their excavation work.*

[12] I would like to thank Lanny Bell for calling my attention to this question.

[13] *Ed Note. After this writing, in the 1980s, the Giza Inspectorate under Ahmed Moussa's direction excavated a number of limestone panels and other limestone accouterments of some kind of chapel dedicated by the 19th Dynasty court members Tiya and Tiya to Ptah-Sokar-Osiris. These were placed into the government storehouse at the northern base and entrance of the Giza Plateau.*

[14] The dimensions of the naos are in the notebooks from Hassan's excavation; see note 10 above.

CHAPTER 10

Summary and Conclusions

10.1 Origin of the Sphinx

When the 4th Dynasty pharaoh Khafre had the Sphinx created at Giza, ca. 2500 B.C., it was part of a trend toward monolithic stone architecture that had been underway for nearly a century. Gigantism was expressed by the pyramid superstructures of the royal tombs, which were the focus of a temple complex designed to merge the king with the power of the sun god (Kemp 1989, 62). Khafre took the trend toward gigantism much farther. He began using limestone core blocks in his temples that weighed hundreds of tons. He had his craftsmen fashion more than 58 statues of hard stone and perhaps as many as one to two hundred; 22 of these were at least three times life size. It would be many centuries later before royal statues were again produced in such numbers at such a large scale. The largest statue of all would remain unique for its size and for the fact that it was hewn directly from the living rock. It would be another 1,200 years before a king again attempted to carve his image on such a scale.

The Sphinx is an image of Khafre as king. Because it is carved directly from the earth, it also seems well suited as an image of the chthonic aspects of Atum, the sun god and first god king. Whether this or other ideological notions were in the minds of the individuals who designed the Sphinx, one can only guess.

Given its immensity, it is surprising that the Sphinx appears suddenly without precedent; its form, in better proportions, remained a classic image of kingship down to the close of antiquity. But preceding it, we see no continuum of lion figures that became gradually more human in the head; first the eyes and nose, then the ears, and finally a mane that gives way to the nemes scarf. Such half-sphinxes exist, but as far as we know, they do not represent a developmental step toward the nemes-coiffed Sphinx. Rather, the complete form appears all at once as the Giza Sphinx, even though the detached Dejedfere head in the Louvre (Chassinat 1921-22) suggests that the form had been executed in stone a few years earlier.[1] The Giza Sphinx therefore, may be a prototype. It is an excellent example of what Kemp (1989) termed codification, the ability of ancient Egyptian designers to come up with new combinations of "formal Egyptian visual culture", particularly in the service of royal propaganda (Simpson 1982).

Whatever subtleties of meaning were in the minds of the Sphinx designers, surely its sheer size must have conveyed tremendous importance and, like the gigantic serpent in the Shipwrecked Sailor (Lichtheim 1975, 211-15), otherworldliness (cf. Fischer 1987,24). It is also significant that this first representation of the king on a colossal scale (1:30 for the head, and 1:22 for the lion body) took form as a *Mischgestalt*. In mixed forms it is the head that conveys the essential identity; covered with the nemes, this must be the king. But in its attachment to the lion body "there is a suggestion of shape-shifting, of metamorphosis, that is appropriate to the king who is, uniquely, the link between mankind and the gods, and stands constantly on the threshold of these two worlds" (Fischer 1987, 14; cf. Kákosy 1982).

The design of the temple below the Sphinx's paws, with its eastern and western sanctuaries, open court, and 24-pillar colonnade, makes it likely that it was a sun temple (Ricke 1970). Although there seems to have been no direct architectural access to the Sphinx itself on its higher terrace, the fact that the temple and Sphinx face one another directly indicates a close connection. It may be that for the 4th Dynasty Egyptians the Sphinx was Horus, i.e. the king as the presenter of offerings to the sun (Anthes 1971). But it would be hard for anyone familiar with Egyptian thought not to admit that the Sphinx could have been both the king as Horus, presenting offerings to the sun god, and at the same time, identified with the sun god (Gardiner 1916, 91).

Khafre's quarrymen created the Sphinx site as a series of terraces. They probably took the stone that they removed while creating these terraces up the slope of the causeway to build the pyramid and the Pyramid Temple. They reserved a long rectangular block of bedrock core for sculpting the Sphinx. This long core block, oriented east west, rose slightly above the slope of the causeway, and to make the core tall enough to form the lion body of the Sphinx, they quarried out a U-shaped ditch several meters deeper than the causeway. They moved multi-ton blocks from the upper layers of the Sphinx quarry to the immediate E-SE for the core of the Khafre Valley Temple walls. As they quarried out the deeper layers, they moved the blocks to the immediate E for building the Sphinx Temple on Terrace I (Lehner 1985a, 137-40; Lehner and Aigner, forthcoming).[2]

Khafre's quarrymen already must have inherited a deep rapport with the natural limestone layers at Giza; two generations of craftsmen had built the pyramid of the king and that of his predecessor, Khufu. Their skill is evident in the way they fit their sculpture to the bedrock layers. They reserved the uppermost layers of the SE part of the plateau, Member III, for the Sphinx's head, since this was hard stone that could be cut and worked into fine detail. They seem to have actually designed the face so that their cubit scheme fit the finer division of this stone into thinner layers (Fig. 9.2). It is possible that, to some extent, the layering of the rock determined for them the size and scale of the head.

The amount of stone that the workmen reserved for the lion body was longer than the normal proportions for a lion, or for sphinxes of later dynasties. One might conclude that they had sculpted the head and finished the fine detail before quarrying the U-shaped ditch to fashion the lion body, and that this resulted in the loss of balance between the length of the body and head. However examples of unfinished sculpture from all periods in Egypt indicate that the whole figure is worked together (Schäfer 1986, 330-1); it is doubtful that the 4th Dynasty sculptors would have proceeded differently with the Sphinx, in spite of the unusually large scale. They may have lengthened the body to accommodate an extremely wide fissure that otherwise would have cut the slope of the back, the rump, and the rear haunches.

In order to shape a lion body 24 to 22 cubits in height, the quarrymen had to dig their U-shaped trench down through the (more amenable) hard-soft-hard-soft layers of Member II and into the hard and brittle rock of Member I. Some of the original outer surface of the lion body that they sculpted in the hard Member I rock still exists around the base of the statue under limestone cladding added in later ages. The surface does not look like finished sculpture, which leaves one to speculate that, as with the contemporary pyramids and mastabas tombs, the plan was to finish the statue with a fine Turah-quality limestone casing. However, the first casing was applied at a time when higher parts of the lion body, carved from Member II, were severely eroded. It is also the case that the original workmen took care to carve the claws onto the N hind paw, and possibly onto the front toes as well, which tends to suggest that they did not intend to cover the paws with masonry. Furthermore, the long, curled divine beard of the Sphinx appears to be the same stone as the layers of the Sphinx neck and chest where it was once positioned. If so, the relief-carved braiding of the beard that still exists on its fragments could well be original to the 4th Dynasty. And if this is so, Khafre's workmen took care to carve and detail the beard directly from the natural rock and not as part of a masonry cladding that finished off the lion body.

It is possible that the sculptors did not complete the final stages of dressing the surface of the statue before they abandoned work on the project. We know that when worked stopped, crews were still leveling the floor near the rear of the statue and dressing smooth the natural rock that forms the south side of the sanctuary. In the NE corner, workmen were taking the last core blocks from the N ledge and dragging them to the NW corner of the Sphinx temple, which had yet to be finished. They still had to straighten the N side and back W end of the Sphinx sanctuary and straighten the natural rock walls.

At the same time, other crews were just beginning to trim down the limestone core blocks on the front of the Sphinx Temple to lay in the granite sheathing that would form the facade. The interior of the temple had been finished with granite casing on the walls, and colossal statues of the king seated around the open court, but possibly not yet with alabaster pavement on the floor. This was the second phase of finishing the interior, after the workmen dismantled the N and S walls of the temple to move them back and create N and S colonnades like those on the E and W, for a total of 24 colonnade pillars (Ricke 1970).

As for the Sphinx itself, if the builders did not intend to finish the statue with a masonry casing, perhaps they evened its surfaces with plaster, which that they then may have painted. There is no sign of painted gypsum, however, on the original natural rock surface (Member I) where the layers of outer casing have been stripped away near the bottom of the statue, for example in the rump passage profile (Fig. 6.7).

10.2 Abandonment and Robbing

In spite of its enormous size and uniqueness, very little evidence suggests a Sphinx cult was practiced at the time it was made. No Old Kingdom texts mention the Sphinx in terms we recognize, except, for a vague "House of Khafre" in with thr suggestion of services for Hathor and Neith. Ricke (1970, 38) believed these cults may have been conducted in the entrance niches of the Sphinx Temple, but that the main temples services were never organized because the temple was not completed (Ibid., 32).

We cannot expect much archaeological evidence for such services in the temple because the temple was systematically stripped of its granite sheathing and alabaster paving. Some evidence of a service - between the first and second building phases of the temple when the N and S colonnades were built - may have been retrieved from the corridor between the Sphinx Temple N wall and the N ledge during the excavations under Hawass in 1978. A full range of Old Kingdom ceramic vessel types were recovered just under the overlapping corner of the Amenhotep II temple in a deposit that Selim Hassan did not excavate (Hawass and Lehner, forthcoming). This does not look like a pottery assemblage of workmen, but rather, pieces cast out from service in the temple.

Hölscher (1912, 80-1) cited weathering on the upper exterior elements of the Khafre Pyramid Temple as evidence that the temple had stood intact through the end of the 6th Dynasty. The Priesthoods of Khufu and Khafre continued unabated through to the end of the Old Kingdom (Wildung 1969, 152ff.), although attestations of estates feeding these complexes diminish at the end of Dynasty 5 (Ibid.). It may have been at this time that the statues of Menkaure in his Valley Temple, as well as those of

Khafre from his Pyramid Temple (Junker 1951, 40-1), were hacked up for funerary vessels (Reisner 1931,119) as the cemeteries expanded and administrative control slackened.

The expansion of the Giza cemeteries reached the Sphinx precinct about the end of the 5th Dynasty. The owner of one of the tombs in the N cliff of the Sphinx amphitheater, In-ka-f, was a Prophet of Sahure (Porter, Moss and Malek 1974, 214-15) though this does not prove that he was contemporary with that king. Hassan (1960, 11-12) noted that all the tombs in the N cliff were unfinished. This suggests that local tomb cutters began a series, the tombs of which had only begun to be allocated. The unfinished tomb in the N ledge just beyond the NE corner of the Sphinx Temple (Fig. 4.2, 4.8a), and the "Keystone Shaft" in the floor of the N side of the Sphinx sanctuary (Fig. 4.2), must be a part of this series. At some point before the end of the Old Kingdom, the sanctuary of the Sphinx itself was accessible for private tombs. One can only speculate whether the series was never finished because of administrative intervention to prevent encroachment on the Sphinx.

The Sphinx, like the rest of the Giza Necropolis, was abandoned at some point in the First Intermediate Period and throughout the Middle Kingdom. The unfinished tombs mentioned above are evidence that the floor of the Sphinx sanctuary remained exposed until some point into Dynasty 5 or 6. The weathering of the Sphinx body and the walls of the amphitheater began as soon as these surfaces were created under Khafre. But the weathering might have accelerated with the onset of greater aridity during the First Intermediate Period, at the end of a sub-pluvial phase that included the 4th Dynasty, when conditions may have been slightly wetter than today (Butzer 1959, 74-5; 1976, 26-7; F. Hassan 1986, 64).

The walls of the amphitheater and the core body of the Sphinx must have been equally exposed, because they weathered together at about the same rate. The Member II layers on the Sphinx, under the most ancient layers of repair masonry, are just as eroded as the sides of the amphitheater, which have never been covered with masonry. The weathering must have progressed along with the gradual sanding up of the Sphinx sanctuary, reducing the profile of the Sphinx where it was cut from Member II into a series of protruding, rounded rolls and deep recesses that correspond to the harder and softer layers respectively. At the bottom of the Sphinx, the harder Member I stone did not erode. It was left projecting like a shelf on all sides of the lion body.

It could have been during the First Intermediate Period or early 12th Dynasty that the interior of the Sphinx Temple was stripped of its alabaster pavement, granite casing, granite pillars, and colossal statues of Khafre. Such a thorough removal is not the kind of small-scale plunder and vandalism that affected the Khafre and Menkaure statues in the mid-to-late Old Kingdom. Rather it indicates that royal power, as Hölscher (1912, 53-4) recognized, was responsible for the stripping of the Khafre Pyramid and temples. There had to have been enough damage to the Khufu and Khafre temples by the early 12th Dynasty for Amenemhet I to have gathered up odd pieces and dump them into his pyramid at Lisht (Goedicke 1971).

Ricke (1970, 24-5) identified two periods when the temples in front of the Sphinx were robbed: first when the Sphinx Temple was stripped, and second when the Valley Temple was stripped and its limestone top plates and granite cornice pieces were toppled onto the debris filling the S end of the Sphinx Temple. He assigns the first robbing to Amenemhet I, whereas Goedicke (1971, 7) thought that the destruction of the Old Kingdom temples occurred prior to Amenemhet I's reuse of pieces of these temples.

The argument can be made that the major stripping of Khafre's temples occurred during the 18th Dynasty and continued through the reign of Ramses II. The excavations of Hölscher and Baraize indicate that substantial buildings of mudbrick had been built on accumulated sand and debris at the front and back of the Khafre Valley Temple. These buildings linked up with the broad mud viewing platform, stairways, podium, and enclosure that were built on the debris filling the Sphinx Temple. A bastioned enclosure wall, probably dating to Thutmose IV, surrounded the entire Khafre Valley complex. All of this architecture was focused on the Sphinx, which, according to the evidence from the statue itself, was reconstructed in the 18th Dynasty as the god, Horemakhet. Yet, in spite of the attention paid to the Sphinx in the New Kingdom, there is little textual evidence to indicate, as Zivie (1976, 323) pointed out, that the 18th and 19th Dynasty royal patrons of Horemakhet did anything to restore or perpetuate the temple services of Khafre. The archaeological evidence indicates quite the contrary.

Hölscher's (1912) trench in front the Valley Temple establishes conclusively that the exterior of the temple was stripped of its granite sheathing by the time the (late?) 18th house was built against its facade. The mudbrick walls of the casemate foundation of the 18th Dynasty house extended down to the level of the mudbrick walls that sealed off the Valley temple entrances, and to the level of the lowest course of granite casing that remained on the Valley Temple facade (Ibid., Bl XV). As noted in chapter 3, the back wall of the house actually rested directly upon the granite entrance block inscribed "beloved of Hathor" (Ibid., Abb. 71). This indicates that when the 18th Dynasty builders began to make the foundations of the house, either the area in front of the Valley

Temple was free of sand down to the level at which the granite casing had been stripped, or, the house builders excavated through the sand and debris down to that level. This can only raise our suspicions that the stripping occurred, in fact, shortly before the building of the house.

As indicated in chapter 6, during Phase I, the earliest and most extensive casing of the Sphinx lion body, the entire lion body was reconstructed with masonry of fine large Turah-quality limestone slabs. These resemble Old Kingdom mastaba casings and, closer at hand, the fine limestone slabs that compose what remains of the Khafre causeway walls close to the Valley Temple rear exit (Fig. 4.8b). Although the Phase I slabs on the Sphinx range in thickness from .27 to .77 m, the average thickness is .38, while .36 m is common. The slabs forming the Khafre causeway walls show the same general range of thickness; furthermore they are of the same quality of limestone, develop the same patina, and show similar hair-line cracks. This suggests that the 18th Dynasty restorers dismantled the walls of the Khafre causeway to carry out the Phase I reconstruction on the Sphinx.

In chapter 8 I noted that the broad granite slab that Thutmose IV employed for his famous stela is actually an unusually large lintel from one of the doorways in Khafre's temples. The width of the door is indicated by the pivot holes on the back of the stela (Fig. 8.12). When this width is compared to the widths of doorways, as given by pivot sockets at the thresholds, it is clear that the lintel Thutmose appropriated could only come from the doorway that gave entrance to the Pyramid Temple from the upper end of the causeway, or several doorways at the back of the Pyramid Temple including those of the five storage chambers. A picture emerges of 18th Dynasty crews working their way gradually up the slope of the causeway, as they dismantled its walls to rebuild the Sphinx. At the end of the operation, they took the lintel of the entrance to the Pyramid Temple on which they inscribed the story of how the Sphinx (certainly not as Khafre) chose prince Thutmose to be king.

Therefore it is all the more intriguing that the name of the Sphinx, Horemakhet, was found inscribed on one of the massive limestone core blocks of Khafre's Pyramid Temple (Hölscher 1912, 84). The Horus Userib's name was sacrificed so that "Horus-in-the Horizon" might live! South of the Pyramid Temple, Hölscher found a mudbrick ramp of the New Kingdom that must have remained from the operation to strip the granite and statuary from the temple (Ibid., 71-3).

It appears that the use of Khafre's complex as a quarry for Turah limestone and granite began at his valley complex, continued up the causeway, and through the Pyramid Temple. This did not necessarily happen in one quick operation. Like restoration and construction work today, it may have been intermittent over the course of several years or longer. It seems to have picked up again in the reign of Ramses II, attested by the graffiti of his Chief of Works May on the bedrock walls of the NW corner of the Khafre Pyramid terrace (Sauneron 1953). The fact that the inscriptions are found in this far corner may indicate that the Khafre Pyramid Temple had been exhausted of its granite, and May's men were now stripping the bottom course of the pyramid casing, which is granite, working their way to its far west side.

Where was this enormous quantity of granite going? One trail leads to Memphis, and to the rebuilding of the Ptah Temple in the New Kingdom. Ricke (1970, 28) noted that one of the Valley Temple cornice pieces was seen in the Ptah Temple where there are many obvious granite casing blocks put to another use (Sauneron 1953, 61; and most recently Giddy, Jefferys and Malek 1989, 4-7). Another trail, perhaps by way of Memphis, leads from Giza to Tanis, where an inscribed block that Ricke (1970. 13 nt. 51) thought could derive from the Sphinx temple was put to reuse.

The Sphinx Temple could also have been stripped during the 18th Dynasty, just before quarrymen turned their attention to the adjacent Valley Temple. The lowest of the mud viewing platforms in front of the Sphinx (chapter 2) was probably laid down in the early to mid 18th Dynasty, and this rested on four to five meters of sand filling the stripped Sphinx Temple. This indicates, at first glance, that over many centuries the temple filled with drift sand. But Hölscher (1912, 81-2) may have been correct when he suggested that the sand in front of the Valley Temple, upon which the 18th Dynasty "villa" was erected, could have been dumped artificially, with the enormous quantities of sand coming from the excavation of the Sphinx sanctuary. In the same operation, the recently stripped Sphinx Temple may have been filled up to the top of its core walls in order to provide a dramatic platform for the approach and ritual to the newly manifest god, Horemakhet.

10.3 Restoration

The Sphinx was given rebirth, in effect, in the 18th Dynasty. This was about 125 years after the Egyptian had expulsed the Hyksos rulers from their land and pushed the boundaries of their conquests to the widest extent. The Sphinx probably owes its rebirth, in part, to the reemergence of nearby Memphis as a second capital of Egypt in the New Kingdom. A new identity for the Sphinx, Horemakhet, was either another royal invention, or it grew by popular tradition. If the Sphinx had been buried to its neck in sand, as the Thutmose IV stela may indicate, it is tempting to speculate that the Egyptians saw it as a colossal head of a king, Horus, buried in the desert, and called it "Horus-in-the-Horizon." Approaching from the E-SE, the direction of Memphis, they would have seen the head framed by the two largest Giza Pyramids, composing the hieroglyph for *ꜣḫt*, "horizon," on the scale of acres -- the Sphinx head taking the place of the sun disk between two mountains. Once the desert was excavated away from the Sphinx, it became known popularly as Haroun, a Semitic name that may have been introduced by new military personnel of Asiatic origin in the region.

While it is indeed tempting to take the Thutmose IV Stela at face value, and to credit Thutmose IV with first excavating the Sphinx from the sands, the idea must be considered with some caution, because there are definite clues that the cult of Horemakhet was thriving well before Thutmose IV became king. The earliest votive object dedicated to Horemakhet dates to Amenhotep I (Zivie 1976, 51-2, NE1). This was one of many votive objects that Baraize retrieved from the foundations of the "Rest House of Tutankhamen" behind the Khafre Valley temple (Ibid., 51, 273 nt. 1). The text of his great limestone stela (Urk. IV 1276-86) makes it clear that Amenhotep II built his temple to Haroun-Horemakhet early in his reign. Thutmose IV was only one of several known princes at the time (Bryan 1980, 46-118). Terrace III, which is not much higher than the tops of the Sphinx forepaws, had to be clear when the temple was founded. So the site must have been excavated to that level, and the Sphinx could not have been buried. There are indications of earlier structures in the same general spot as the Amenhotep II temple, but slightly farther NE (Fig. 4.2). Hassan (1953, 67) suggested that the largest of these dates to Thutmose I without giving any reason. On his general site map, this building is similar in size and orientation to the Amenhotep II temple, but this plan differs entirely from another that Hassan (Ibid., Fig. 60) gives for the same building. Finally, the clearest depictions of a statue at the chest of the Sphinx, on the stelae of the prince(s) of Amenhotep II, label the statue as an image of Amenhotep II. Another depiction of the Sphinx chest statue (Pl. 9.3) may label it Thutmose III, (*Mn ḫpr -Rᶜ*) although it could read as the name of Thutmose IV (*Mn ḫpr -Rᶜ*).

The evidence suggests that it was Thutmose IV's predecessors, at least his father, who began the effort to rescue and rehabilitate the Sphinx. As I noted in chapter 3, this was part of a burst of temple building nationwide, as well as a reaching back to past glories in the wake of overwhelming military victories and renewed national pride and exuberance. The digging out and restitution of the Sphinx compares to the Thutmose III temple at Elephantine, where a shaft was sunk from the sanctuary of the elaborate 18th Dynasty stone temple down to the simple boulder shrine of the Old

Kingdom (Dryer 1986, Abb. 1,4,7; Kemp 1989, 70-72). The difference is that at Giza the Old Kingdom sanctuary was the abode of the most colossal royal/divine image that had ever been created.

The rehabilitation of the buried and weathered colossus must have proceeded in the following way: The Khafre Temples were already partially in ruins and filled with sand. The sand and debris was cleared away from the Valley Temple, and possibly the Sphinx Temple as well, although there is a good chance it had already been stripped systematically. The granite was taken off the exterior of the Valley Temple and hauled away. Some of the granite was used to rebuild the Ptah Temple in Memphis. Most of the granite used there, particularly Old Kingdom elements such as pyramid casing, appears to be associated with Ramses II (Giddy, Jeffreys, and Malek 1990, 7; Kees 1961, 176-77), but it would fit with the removal of granite at Giza if the building had begun already in the 18th Dynasty. The granite was taken from the Valley Temple and Sphinx Temple first because of their proximity to the valley floor and easy removal, compared to the Pyramid Temple and the pyramid, a quarter of a mile up the plateau. Most of the granite and alabaster was left inside the Valley Temple, as opposed to the interior of the Sphinx Temple. The high walls and narrow rooms and corridors of the Valley Temple made it harder to strip the granite and carry it outside. Furthermore, when the huge architraves fell, they blocked the way and made difficult any operation inside the temple (Hölscher 1912, 83).

When the Sphinx Temple and Valley Temple had been stripped of most of their statuary and granite, the excavation of the Sphinx sanctuary must have commenced. The sand that had filled up the rock cut sanctuary was dumped immediately to the front of the Sphinx, filling up the ruins of the Old Kingdom temples on Terrace I and building up a new platform and viewing terrace that was slightly higher than Terrace II of the Sphinx. This was the first of a series of viewing platforms and approaches to the Sphinx at about the level of its chest, with stairways descending to Terrace II and to the cult at the base of the Sphinx's chest.

The 18th Dynasty excavators found the Sphinx in a seriously deteriorated condition. During the centuries that it remained exposed to the elements, as it was gradually buried in sand, the softer Member II layers of most of the body had weathered back drastically from the hard Member I stone around the base. The 18th Dynasty masons set about reconstructing the disfigured lion form. They filled in the deeper recesses of the Member II layers with packing of limestone blocks, gypsum mortar, sand, and rubble. They gave the Sphinx a new outer skin of large limestone slabs that they took from the nearby walls of the Khafre causeway, working their way up the slope of the plateau toward the Pyramid Temple. They found large pieces of the Old Kingdom divine beard and re-trimmed the backsides of some of the pieces to make it easier to restore them with mortar. Even more than in the Old Kingdom, the restored beard needed a support. The workmen provided support with a column of masonry built over the boss that Khafre's sculptors had left for the same reason on the lower part of the chest. At the front of the masonry support they erected a statue of the king so that his image would be striding forth from under the divine beard, within the protective embrace of Horemakhet.

Amenhotep II could have done much of this when he was a prince living, as his Giza texts specifies, in nearby Memphis. It is not impossible, therefore, that the statue at the chest could have been identified, originally, as Thutmose III. But the whole program might have been completed after Amenhotep II ruled alone, hence his identification with the Sphinx chest statue on the stelae of the princes during his reign.

Other works on the Sphinx included the erection of masonry boxes on both sides, to serve perhaps as pedestals for naoi of the various deities associated with the cult of Horemakhet. The S large box might have been for Sokar, and later for either an Osiride statue of one of the kings, or for a more explicit image of Osiris.

Thutmose IV's contributed to the Sphinx rehabilitation by building an elaborate bastioned enclosure walls around the greater site, and thick retaining walls around the immediate sanctuary. The retaining walls around the Sphinx sanctuary, with curved corners like a gigantic cartouche, became the posting place for colorful stelae and votive objects which, along with the naoi attached to the gigantic image, created a panoply of sacred imagery and iconography.

Thutmose may have been responsible for a great deal of the Phase I restoration and clearing when he was a prince, as well as after he assumed the throne. As a final contribution to the reconstructions of the Sphinx, Thutmose took one of the larger lintels from the Khafre Pyramid Temple, probably the one from its entrance doorway, had it dragged to the base of the royal statue between the forepaws, and erected it with testimony to how he had rescued his divine father, the Sphinx, Horemakhet, Khepri-Re-Atum. He built side walls perpendicular to his stela, to form an intimate royal chapel at the heart of the divine image. This became the focus of all the support architecture built upon and around the stripped ruins of Khafre's temples.

During 800 years after the 18th Dynasty reconstruction, the Phase I layer of the Sphinx must have deteriorated. The surface of the Phase I restoration was recut over broad areas and patched with smaller blocks, Phase II. There is little left to help date Phase II. The closest parallel at Giza to the distinct vertical tooling pattern on the Phase II patches is found on masonry in the 26th Dynasty tomb of Thery in the South Field (Porter, Moss, and Malek 1974, 296-7).

By some point in the 26th Dynasty the walls of the Khafre causeway were gone and a series of large and deep tomb shafts were cut into the bedrock foundation of the causeway. These tombs, of unknown ownership, are probably contemporary with the 26th Dynasty tombs, LG81, LG83, and LG 84 (Campbell's Tomb) in the quarry immediately north of the causeway (Ibid., 289-90, Pl. III). LG 83 is associated with Nekhtubasteru, wife of Amasis. Four 26th Dynasty tombs in the western ledge of the Sphinx amphitheater indicate a renewed interest in the site (Ibid., 291-93). As noted in chapter 9, the outer addition to the S large box makes the box almost identical to the pedestal of the large naos of Amasis at Mendes (Fig. 9.16).

Even more than these traces of the Saite Period, the remains found in the Isis Temple at Giza tell us that the 26th Dynasty marked another period of intense interest in the Sphinx as Horemakhet (Ibid., 17-19). At this time there was an official clergy that served the cult of Horemakhet in addition to that of the 4th Dynasty kings (Zivie 1980, 95). Under Psamtik I, a priest named Harbes was especially active in the Isis Temple and in the Sphinx precinct (Ibid., 94). It is probable that at this time of renewed interest in Old Kingdom monument, Phase II repairs were carried out to the Sphinx.

There is little doubt that Phase III belongs to the Roman Period when, as the Greek texts from the Sphinx inform us, the sanctuary was once again cleared of sand, the statue was repaired, and the viewing platform and approach to the Sphinx were rebuilt (Ibid., 97; Schwartz 1950; Dittenberger 1960).

Already in the 18th Dynasty the Sphinx did not stand alone as a divine object. The Sphinx was the subject of rich iconography and ceremony that was associated with the growing royal cult. Within a generation of Thutmose IV, kings would make colossal images of themselves on a scale that rivaled that of the Sphinx. Like the Sphinx, these colossi were places of prayer and pilgrimage, associated with the sun (Assman 1977, 992; Stadelmann 1987, 440). We can only speculate to what extent the Sphinx actually inspired these later colossi.

Looking at its role within the entire span of ancient Egyptian history, the Sphinx is as much an 18th Dynasty as a 4th Dynasty monument; it is a kind of composite that, ironically, may not have served as the subject of a functioning cult until 1,200 years after it was created. The 18th Dynasty kings wanted to unite their image with this image so that, like the colossi of their successors, the Sphinx would "convey to the viewer the impression that the union of king and godhead had created a super deity on earth" (Bell 1985, 271, nt. 97).

The sphinx form in general was one of the most striking images of the concept of the royal *ka* (Barguet 1951). With the royal statue at its chest, the Sphinx was a powerful image for bestowing divine confirmation to princes and newly ascended kings in its *stpt*, "Place of Elect," or "Place of Choosing" (Zivie 1976, 322-4; Stadelmann, 1987, 440). In the New Kingdom the Giza Sphinx was an expression of the highest intensity of the royal *ka*, like the imagery in the Luxor Temple (Bell 1985) where "it is not the legitimization of a particular king's reign which is intended...the temple can function in this respect for any and all kings...the monarch grows into the unique *ka* which is shared by all the kings of Egypt and has been handed down from ruler to ruler since the creation of the universe" (Ibid., 280).

The Sphinx embodied both celestial and chthonic aspects of primeval kingship as an image of the sun god in all its aspects (Horemakhet, Khepri-Re-Atum) and a god of desert caverns (Haroun). The underworld associations are also present in the nearby cult of Sokar and Osiris. However, somewhat distinct from the theme of cyclical renewal by merging with the godhead, the Sphinx was an image of royal confirmation at the beginning of a king's reign. It was a focus of royal and divine "vital force" that was transmitted to princes and kings during their sportive promenades. This, no doubt had something to do with the fact that princes lived at Memphis during this time, with the tradition that Memphis was "the Balance of the Two Lands," and with the Temple of Ptah serving as the place of coronation (Kees 1961, 148-50). This may be one reason why the 18th Dynasty princes could, in good conscience, strip Khafre's pyramid complex to build temples in Memphis while restoring his image in the Sphinx as a symbol of universal kingship.

Chapter 10 Notes

[1] In addition to the Lourve head of Djedefre, a small (h: 34.5, l: 74 cm) limestone sphinx was found at Abu Roash (Cairo JE 35137; Chassinat 1921-22, 64-5; Demisch 1977, 17, Abb. 22-23; Horneman 1966 IV, 1523). This small sphinx does possess lion ears and a lion-like mane. This piece could be seen as transitional to the nemes-coiffed sphinx except that the nemes sphinx is already present as represented by the Lourve head. The small limestone sphinx exhibits curious features. It has no beard or uraeus, and its face was painted yellow, indicating, perhaps, it is female. I would like to thank Bernard Bothmer for calling my attention to this piece, and for providing me with photographs.

[2] This argues against Ricke's (1970, 3-6, Abb. 2) idea that Terrace I in front of the Sphinx remained open for some time after both the Valley Temple and Sphinx were complete, and before the Sphinx Temple was built. He had good evidence for this view as well: a drain that was covered by the core work of the SE corner of the Sphinx temple, and traces of an enclosure wall of the Valley Temple that was dismantled when the Sphinx Temple was built. The geological analysis, however, provides strong evidence that the construction of the Valley Temple and Sphinx Temple were one process with the creation of the Sphinx. Aigner and Lehner (forthcoming) develop this evidence and examine in detail evidence that supports Ricke's interpretation.

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