Sabrina S. Faber.   THE ORIGINS OF THE MINARET: A STUDY OF
THE FUNCTIONAL AND FORMAL ANTECEDENTS OF THE ISLAMIC TOWER.
(Under the direction of Dr. Lawrence E. Babits) Department
of History, July 1996.

The purpose of this thesis is to look at the origins
and evolution of the minaret and to posit possible
functional and formal links between minarets and other tower
structures. Case studies will highlight the historical
investigation of the minaret's origins and an
anthropological approach will organize the data. The
primary case study focuses on the Republic of Yemen's Aden
Minaret, a structure at the site of the Aden's pre-colonial
port.

This thesis draws upon minaret examples throughout
Arabia, North Africa, and Central Asia. Notably, minarets
are different around the world, and there are exceptions to
every general rule of regionality. The Aden Minaret, in
particular, does not resemble Arabian minarets and
strikingly resembles a lighthouse. However, lighthouses
were not the only factors that influenced the minaret's
structure. This thesis concludes that minaret form is
derived from a variety of regionally-based structures, while
still maintaining multiple functions that do not detract
from its importance as a religious symbol in the Islamic
world.

THE ORIGINS OF THE MINARET: A STUDY OF THE FUNCTIONAL

AND FORMAL ANTECEDENTS OF THE ISLAMIC TOWER

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INTRODUCTION

Tape-recorded voices reverberate across the cities of the Islamic world, their clamor adding to the general din of automotive horns and street hawkers. Muslims around the world, whether engulfed by vast urban sprawls, searing, spacious deserts, or mountainous steppes, identify with the call to prayer and are unified by it into one homogeneous faith—Islam.

While *muezzin*s pronounce the *adhan*, or "call to prayer," five times daily from tower structures around the world, these prayer towers, or "minarets," are as architecturally varied as the people they serve. Surprisingly, few historical works focus on minaret origins; most texts written on the development of Islamic architecture relegate discussion of the minaret's beginning to a few paragraphs. In spite of their brevity, architectural historians offered diverse theories concerning the origins of the Islamic minaret. One popular theory holds that the minaret was based on a lighthouse design.[1] Other scholars believe that Byzantine Christian Syrian bell

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[1]Alfred J. Butler, "The Ancient Pharos at Alexandria," *The Athenaeum, Journal of English and Foreign Literature, Science, the Fine Arts, Music and the Drama* n.v. (November 20, 1880): 681; and Hermann Thiersch, *Pharos, Antike, Islam und Occident: Ein Beitrag zur Architekturgeschichte* (Leipzig and Berlin: B. G. Teubner, 1909), 98.

towers inspired minaret architecture.[2] Another school emphasizes a connection between minaret design and early Oriental symbolic towers, such as Mesopotamian ziggaruts and Indian victory towers.[3] This thesis proposes to examine the origins and evolution of the minaret and to posit possible functional and formal links between minarets and other tower structures.

Besides examining historical texts and consulting anthropological theory, this paper will also survey the minaret's origins by means of a case study. The primary case study will focus on the Aden Minaret, a structure at the site of Aden's pre-colonial port. Given the minaret's position and setting, it is reasonable to presume that the minaret may have once also served as a signal tower or lighthouse.

Lewis Binford's approach to the study of material objects and cultural change will be used as a heuristic device to organize the data and to explain the Aden Minaret's functions and those of minarets illustrated in

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[2]K. A. C. Creswell, "The Evolution of the Minaret, With Special Reference to Egypt--I," *Burlington Magazine for Connoisseurs* 48 (March 1926): 134-140, 250-252, and 290-298.

[3]Ernst Diez, *Islamische baukunst in Churasan* (Hagen i. w.: Folkwang-verlag, 1923), passim.

this paper.[4] Binford argued that all physical objects
associated with a society undergo changes, and therefore,
these objects may exhibit several characteristics. Objects
may maintain all characteristics simultaneously, or the
attributes may be viewed separately as objects. For
example, a tower may exhibit multiple characteristics and
functions within a society. Under the assumption that an
object may provide many services to a society, this thesis
will examine several theories of minaret origin centering on
tower function and construction.

This thesis will argue that no single factor influenced
the formation of minarets. Due to regional variations in
minaret design and because of the number of societies
Islamic architecture represents, no one theory can explain
the precise origin of the minaret and its evolution. When
one examines the role of the minaret in Islamic society, it
becomes apparent that these towers often had multiple,
secular functions that did not detract from their religious
purpose. As architectural historian Ernest Richmond
concluded in his work on Islamic architecture, any minaret
may fulfill three Islamic architectural needs: physical,
ritual, and political. The physical aspect of the minaret
highlights its early role as a sanctuary and protected area

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[4]See Lewis R. Binford, "Archaeology as Anthropology,"
American Antiquity 28 (1962): 217-225.

from the elements; the ritual characteristic of the tower is for the call to prayer; and the political aspect is as a manifestation of Islam's splendor.[5] Thus, since the minaret fulfilled a variety of roles in Islam, its structural antecedents and evolution could be interpreted in distinct ways by different societies within the Islamic sphere of influence.

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[5]Ernest Taitham Richmond, *Moslem Architecture, 623 to 1516: Some Causes and Consequences* (London: Royal Asiatic Society, 1926), 29.

CHAPTER I: ANTHROPOLOGICAL APPROACH

In 1965, Lewis Binford suggested a more systematic approach to the study of archaeology.[1] Binford believed that this view revolutionized the way archaeologists trusted their interpretations. Binford proposed using scientific methodology, statistical procedures, and interpretive principles, tools known in cultural anthropology, to develop explanations rather than just "explications," or a systematic description of observations. He called for a process and scientific method: the formulation of questions after observations; the development of hypotheses to answer these questions; and then the testing of the hypotheses against empirical data gleaned from field studies. Binford's methodology shall be applied to the study of the origins of the minaret to organize the structure of the research. This thesis is, however, historically oriented; it is not anthropological and does not, as an anthropological paper would, embrace all of Binford's ideas.

Binford's approach became known as the "new archaeology" or processual archaeology. Processual archaeology, as envisioned by Binford, sought to formulate general laws of cultural change. Binford believed that

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[1]Binford, "Archaeology as Anthropology," 217-225.

archaeologists should be trained in comparative ethnography, and, thus, as trained ethnographers, they could assist anthropologists in answering questions about past lifeways.

Binford's methodology revolved upon the concept that all objects or artifacts have three broad categories of primary functions. Since all artifacts available in a society are used by the society, artifact functions should explain cultural evolution and systematic change. These three artifact categories, "sub-systems," are known as technomic, sociotechnic, and ideotechnic artifact qualities. Additionally, Binford believed that stylistic and formal qualities transect the three artifact sub-systems.

According to Binford, a technomic quality is the feature of an object that "copes directly with the physical environment," and therefore provides information on the nature of the environment. Technomic artifacts have "extractive efficiency" for the user of the object, and, therefore, depend upon the nature, loci, and distribution of resources.[2] A technomic quality may be a technological improvement or advancement for individuals within a society. For example, a candle may be used to provide necessary light following sunset. In this case, the candle is a technomic artifact because it allows its users to continue activities

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[2]Ibid., 219.

("the extraction") in darkness. Binford believed that archaeologists make the greatest contributions to the field of anthropology by studying and understanding technomic features.

A sociotechnic feature, in Binford's view, affects the status of the object in a society. Sociotechnic artifacts illustrate "the total cultural system's social subsystem." Sociotechnic features may allow individuals within a society to communicate more effectively with each other.[3] For example, a king's crown is a sociotechnic artifact because it illustrates the king's position within a society and how he is to be treated in relation to other members of the society. Sociotechnic artifacts reveal how technology has been manipulated for social purposes. For instance, using gold for a king's crown illustrates how individuals within the society were able to work metal and reveals the value ascribed to gold by that society. For anthropologists, sociotechnic artifacts may also illustrate the processes of social change within a society. Sociotechnic artifacts have aesthetic qualities that may reflect what a society appreciates as art. Again, using the example of a candle, an object may be employed in a sociotechnic fashion to provide a romantic ambience at an intimate dinner.

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[3]Ibid.

Ideotechnic qualities "symbolize and signify the ideological rationalizations of a social system." Ideotechnic artifacts represent "the ideological component of a society and the milieu in which individuals have been enculturated." Artifacts with ideotechnic attributes are important to a society because both the understanding and the use of these articles are necessary for an individual to take part in that social system.[4] Ideotechnic artifacts may include: images of deities, clan symbols, and symbols of nature.[5] The candle, previously a tool or set-piece, may also exhibit ideotechnic qualities, serving to reflect knowledge or purity in certain religious ceremonies. Binford argued that diversity of ideotechnic artifacts is directly related to changes in society, and seeking artifacts that undergo change assists the anthropologist in studying the society. For example, features of carved Nubian deities changed to incorporate aspects of Egyptian Pharaonic gods after 1000 B.C.E. when the two societies began to interact in Nubia and Upper Egypt.[6]

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[4]Ibid.

[5]Ibid., 220.

[6]Joyce L. Haynes. *Nubia: Ancient Kingdoms of Africa* (Boston: Museum of Fine Arts, 1992), 19. When Pharaonic Egyptians ruled portions of the Upper Nile region, they imported their own gods and created temples for them. When Nubians controlled parts of Upper Egypt, rulers became enthralled with the Egyptian religion and incorporated

Artifacts do not necessarily have to fit all three categories in every society. In some locations, an artifact may have only one quality. For example, a copper hammer may have served purely technomic purposes, to pound fasteners, in early Native American societies. Likewise, some artifacts may correspond to two categories only. A shepherd's staff may exhibit technomic qualities to prod sheep and ideotechnic attributes as a sign of leadership.

All three artifact categories may also be "cross-cut by stylistic and formal qualities" which cannot be explained by the nature of the raw materials available to a society, by the technology of production, or by the variability of technology.[7] Formal qualities, Binford noted, promote group solidarity and serve as a basis for group awareness; they reinforce religious beliefs, customs, and values in enculturation. Binford recommended examining both the artifact and its formal categories when questions of origin arise, or when there is evidence of migration and interaction between groups.

Binford's characteristics of technomic, sociotechnic, and ideotechnic can be applied to a variety of artifacts, including architectural features. In this thesis, the

representations and manners of the Egyptian gods on their own at home.

[7]Binford, "Archaeology as Anthropology," 220.

minaret will be scrutinized using Binford's categories.
Binford's approach to cultural change provides a background
for the functional aspect of the minaret analysis. Applying
Binford's methods is important because an early, seminal
study examined the minaret's form, not its function.[8] A
proper analysis in any study of evolution requires the
combination of both form and function. Two artifacts that
resemble one another may have different functions; or,
alternatively, two dissimilar artifacts may have remarkably
similar functions. Binford's approach can help scholars
discern the minaret's tower origins because there are
weaknesses in studying objects solely by shape and form.

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[8]Max van Berchem, "Die Inschriften," in Diez,
Islamische baukunst, 109-116.

CHAPTER II: ISLAM

The growth of Islam inspired widespread use of prayer towers known as minarets. A basic understanding of Islam is necessary for the study of the development of these structures, as the religion cannot be viewed separately from the architecture that it spawned. Islam, which means "total surrender or submission to the will of *Allah*, (God)," is not only concerned with metaphysical ends but also with daily conduct. Therefore, some assume that Islamic architecture, by default, followed patterns established by the religion.[1]

Founded in 622 C.E. by the Prophet Muhammad, Islam follows a line of Semitic-based, prophetic religions whose common thread is monotheism. Tribal-based polytheistic animism and ancestor worship were the dominant religious practices among the Arabs before Muhammad. At the cube-shaped Qabah, which is an ancient religious shrine, Arabs worshipped some 360 idols. After Muhammad cleansed the Qabah of these deities in about 630 C.E., he dedicated the shrine with its embedded black stone to Allah. Muslims

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[1]This statement is questionable. Many Islamic practices were developed after the Prophet Muhammad's death, and many of these rules were not always followed, especially when applied to non-Muslim populations. See A. S. Tritton, *The Caliphs and Their Non-Muslim Subjects: A Critical Study of the Covenant of 'Umar*, (London: Clarke, Doble and Brendon; reprint, London: F. Cass, 1970), passim.

believe that the Qabah was built by Abraham and his first
son Ismail and have created an elaborate ritual that both
commemorates the site and unifies Muslims worldwide.

Islam was born in the major Arabian trading center of
Mecca (**Figure 1**). There, a new commercially-based class of
the Quraysh ethnic group began to dominate the social,
political and religious fabric of pre-Islamic Arabia. The
Prophet Muhammad was born into the Hashim clan of this
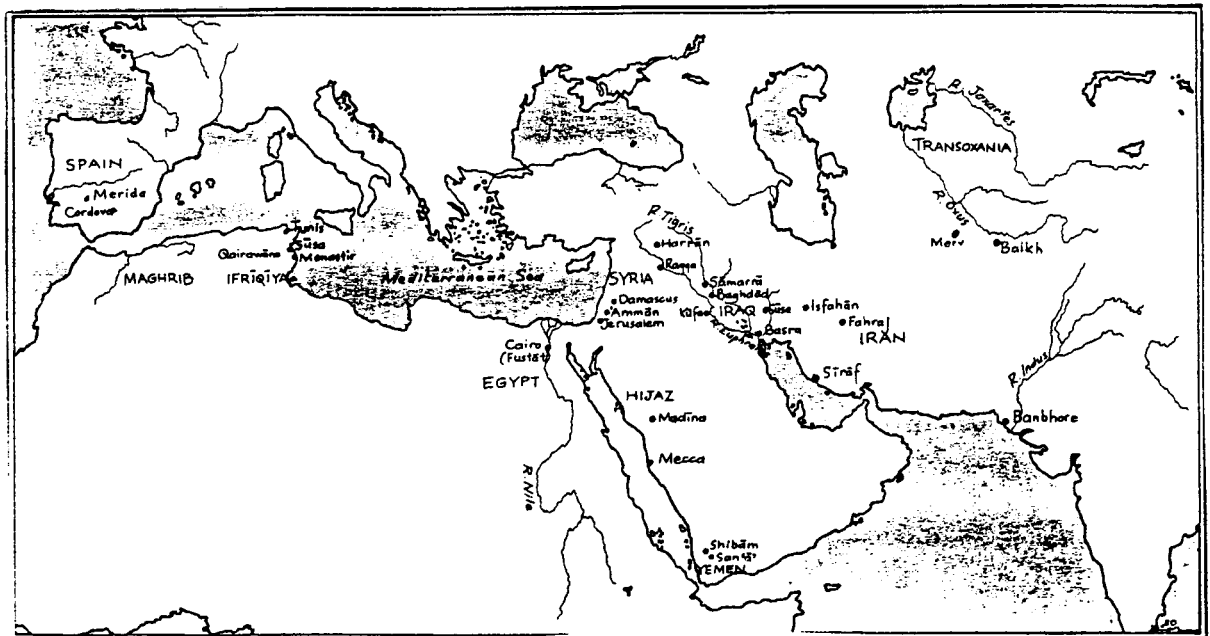
Fig. 1. Map of the early Islamic world. K. A. C.
Creswell, *A Short Account of Early Muslim Architecture*,
(London: Penguin, 1958; reprint, London: Anchor Press,
1989), xviii.

commercial oligarchy in about 570 C.E. Orphaned in
childhood, Muhammad was raised by kinsmen who taught him the
caravan trade. Muhammad visited most of the important

commercial centers in the Fertile Crescent and came into contact with Judaism, Christianity, and Zoroastrianism. He married the widow Khadijah, managed her caravan business, and raised four daughters.

Around 610 C.E., Muhammad claimed to his immediate family and friends that he had received revelations from Allah that directed him to bring pre-Islamic Arabs to worship the one God of Abraham, Allah, and to prepare them for Judgement Day. Muhammad began to believe that he was the Messenger of Allah and soon convinced family members and friends of his mission. This small circle of Muhammad's followers, known as Muslims (meaning "those who submit to the will of Allah"), grew slowly in Mecca.[2]

By 619 C.E., the Prophet's preaching had angered the most powerful Quraysh clans in Mecca, who preferred the status quo. Boycotts, persecution, and the deaths of his wife and uncle did not sway Muhammad's faith in his mission. Increasing persecution and threats to his life convinced him to emigrate to the oasis of Yathrib, about 270 miles north of Mecca. The *hijra*, or "emigration," to Yathrib marked the beginning of the Muslim calendar. Once there, the Muslims began to call the 20 square mile oasis *Medina*, or the "City." Eventually, Muhammad overcame Meccan opposition and

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[2]John L. Esposito, *Islam: The Straight Path* (New York and Oxford: Oxford University Press, 1991), 5.

returned triumphantly to Mecca on a pilgrimage to the Qabah in 630 C.E.

Muhammad's character, his merging of traditional Arab religion with Judaism and Christianity, his efforts to unify Muslims in the name of Allah, and a power vacuum in the Middle East all contributed to the rapid expansion of Islam. More than a religion, Islam directed the political, social, economic, and personal components of the peoples who adopted it; even those who remained Jews and Christians under Muslim rule had their lives changed dramatically. Muslims believe that Muhammad was the last of a long line of biblical prophets including Jesus of Nazareth. Muslims believe that Jesus was an important prophet but not the son of God.

There are five central tenets, or pillars in Islam. These pillars include: *shihada,* the profession of faith, witness of God and belief that Muhammad is the messenger of God; *salat,* prayer five times daily announced by a muezzin from a minaret in the direction of Mecca; *zakat*, almsgiving; *saum,* fasting during the daylight hours of the month of *Ramadan*; and *al-Hajj,* the pilgrimage to Mecca that most Muslims are required to make at least once in a lifetime. Initially, Muslims prayed in the direction of Jerusalem, but Mecca, the most important merchant city in pre-Islamic Arabia, for several reasons soon supplanted Jerusalem as the

truly Arabian center of Islam.[3]

Muslims believe that the *Quran* contains divine revelations from Allah revealed by an angel to Muhammad. The *Quran*, which literally means "recitations," contains one hundred and fourteen chapters (*suras*) of approximately six thousand verses (*ayat*), which are arranged largely according to length. The *Quran* is also divided into thirty equal parts (*juz*). Pious Muslims read a juz a day. The contents of the *Quran* guides the daily lives of all Muslims. After Muhammad's death in 632 C.E., his alleged actions and sayings (*hadiths*) in Medina and Mecca were recorded to serve as a guide in ethics, theology, and exegesis for future Muslim generations. Islam does not have a formalized priesthood, although the *ulama*, or religious scholars, frequently play a role similar to Christian clerics.

Although Muhammad was a brilliant religious and secular leader, he was unable to devise a means of succession that could nurture and maintain the infrastructure of Islam, so

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[3]The Prophet changed the direction of prayer to Mecca in a political maneuver to curry favor with the dominant families of Mecca. Kenneth Cragg, *The Call of the Minaret*, 2d ed. rev. (Oxford: Oxford University Press, 1956; reprint, New York: Orbis Press, 1985), vii. W. Montgomery Watt wrote that because Muhammad initially faced negative sentiment in Mecca, he selected Jerusalem as the holy site to win the favor of Yathrib Jews. After the Prophet received a revelation about the direction of Mecca known as the *qibla*, all efforts to win Jews to Islam ceased. P. M. Holt, Ann K. S. Lambton, and Bernard Lewis, eds. *The Cambridge History of Islam*, (Cambridge: Cambridge University Press, 1970), 1:44.

cleverly and charismatically achieved during his lifetime. The "Four Rightly Guided Caliphs" (based on the Arabic word *khalifa*, or successor) led the followers of Islam after 632 C.E.; these men were related to the Prophet's family and were selected by leaders of the *umma*, or community. The four caliphs included the Prophet's uncle Abu Bakr (rg. 632-634 C.E.); his military lieutenants and Umayyad clan cousins Umar ibn al-Khattab (rg. 634-644 C.E.) and Uthman ibn Affan (rg. 644-656 C.E.); and his son-in-law Ali ibn Abi Talib (rg. 656-661 C.E.).

Ali, the last of the four caliphs, led disgruntled rebel Muslim factions against the eighty-two year old Uthman, who was murdered while reciting the *Quran* by Abu Bakr's son in 656 C.E. Since the tribal law of retaliation (like other pre-Islamic traditions) permeated Islam, Mu'awiya ibn Abu Sufyan, governor of Syria and cousin of Uthman, refused to support Ali as caliph. Mu'awiya, formerly Muhammad's private secretary, and Ali eventually decided to resolve their disagreements by arbitration. During negotiations in 661 C.E., Ali was murdered by a disenchanted supporter who believed the chosen successor should not seek arbitration. With Ali's death, a formal split occurred among Muhammad's followers, dividing them into the two major Islamic sects that still exist today, the *Sunni* and *Shi'ite* Muslims.

Both branches vied for control of the growing Muslim empire. The Shi'ites proposed that a member of Ali's family (and by default, Muhammad's Hashim family, because Ali had married Muhammad's daughter Fatima) should lead the *umma*. The Sunni looked towards a Quraysh leader elected by the Muslim community. The Sunni, led by military strongman Mu'awiya, defeated the *Shi'a* and won control of the greatest area of Muslim converts. In 661 C.E., Mu'awiya established the Umayyad dynasty (661-750 C.E.), and he subsequently transferred the social, political, and economic heart of Medina, Islam's traditional capital, and Kufah, Ali's former power base, to Damascus, Syria.

Mu'awiya's meteoric rise to leadership of the Islamic empire sent shockwaves throughout Arabia; he successfully inspired followers and brought all of the Islamic world under his Damascus-based caliphate. However, Mu'awiya was neither elected by the community nor related to the Prophet's inner circle of family members.[4] Thus, this clever administrator felt little compulsion to return to the umma's democratic successor selection process. Instead, Mu'awiya nominated his son, Yazid (rg. 680-683 C.E.), to be his successor. During Yazid's reign, Muhammad's last

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[4]Anthony Nutting points out that "by tradition the Arabian system of succession was more electoral than hereditary." Anthony Nutting, *The Arabs* (New York: Mentor Books, 1964), 42.

grandson, the pious Husayn, died in battle attempting to regain the leadership of Islam for the Hashim clan. In 680 C.E., the remaining partisans of the martyred descendants of the Prophet, the *Shi'as*, firmly established their minority presence in Islam.

In 750 C.E., the Abbasids, descendants of the Prophet's paternal uncle al-Abbas, wrested control of the empire from the Umayyads. The Abbasids announced a true Islamic platform; the rulers proclaimed their hereditary descent from the Prophet and decried the depravity of the Umayyads. The Abbasids moved their base of support from Damascus to Baghdad, which entrenched the growing rivalry between Syria and Iraq. With the establishment of the Abbasid caliphate in Baghdad, many rulers adopted the Persian model of Shi'ite Islam. Today, about fifteen per cent of Muslims are Shi'ite; Sunnis, led by the Saudis, comprise almost the balance.

The Abbasids' reign lasted from 750-1258 C.E. Since the Abbasids maintained only nominal control over some Islamic areas, numerous splinter dynasties began to assert their autonomy throughout the empire. Under Ibn Tulun (866-884 C.E.), for example, Egypt was virtually independent from the Abbasids. Once the standard-bearers of Islam, later corrupt Abbasid rulers did not survive divisive religious

squabbling among different theological schools.[5]

Under the High Caliphate from 685-945 C.E., which were the best years of the Umayyad and Abbasid caliphates (complete caliphates' years are 661-1258 C.E.), Arab political power reached its zenith. River irrigation and long distance trade increased the prosperity of the Muslim world. Arab conquests brought together peoples of great diversity who thoroughly, artistically and intellectually, enriched Islam.

Two ethnic groups that made important contributions to Islam as Abbasid rule declined were the Turks and Persians. A Turkish nomadic tribe of Central Asian origin, the Saljuqs entered modern-day Iraq and Iran and defeated the Abbasid ruler by 1055 C.E. The Saljuqs retained political control of the Eastern portion of the empire and attempted westward expansion into Jerusalem and Damascus. Meanwhile, the Saljuq military leaders allowed an Abbasid monarch to claim nominally the throne of the Islamic empire.

Persian secular culture corrupted the Abbasid rulers, as well as the Saljuqs. The Saljuqs adopted Persian as the language of the educated elite and spread its use widely.

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[5]Ibn Tulun was a Turkish mercenary leader who prevented a palace overthrow. For his loyalty, Ibn Tulun was made governor of Egypt. Once installed in Egypt, he enforced his own laws and disassociated himself from the Abbasids. D. Sourdel, "The Abbasid Caliphate," in *Cambridge History of Islam*, 1:104.

Quarrels over succession led to the dissolution of the Saljuq empire, with its eastern provinces breaking away by 1158 C.E.[6] One branch of the Saljuq tribal family formed the Sultanate of Rum in Anatolia in 1081 C.E. This Anatolian-Saljuq state (1081-1307 C.E.) created the conditions for an Ottoman-Turkish nation. The Saljuqs "Turkified" and Islamicized Anatolia by encouraging Turcoman tribes to attack Byzantine-controlled Christian areas. Eventually, Ottoman Turks settled in Anatolia, and as the Saljuq state fell apart, an Ottoman principality was formed.[7]

The Ottoman principality united the multitude of Anatolian beyliks (political dominions headed by *beys*, petty secular leaders) and the Balkans into an Islamic empire (ca. 1307-1918 C.E.). As Europeans expanded their influence into Africa and Asia, the Ottomans took advantage of a lack of interest in Eastern Europe and created a formidable empire.[8] When Constantinople fell to the Ottoman leader Mehmed II in 1453 C.E., an empire with which all Muslims could seek

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[6]John L. Esposito, ed., *The Oxford Encyclopedia of the Modern Islamic World*, s.v. "Seljuk Dynasty," by David O. Morgan.

[7]Osman Turman, "Anatolia in the Period of the Seljuks and the Beyliks," in *Cambridge History of Islam*, 1:231.

[8]Halil Inalcik, "Emergence of the Ottomans," in *Cambridge History of Islam*, 1:291.

alliance formed almost overnight. The Ottoman empire lasted
until the twentieth century, when it finally disintegrated
amidst a tide of nationalism and the consequences of the
First World War.

CHAPTER III: MINARETS

Scholars sought to understand the origins and purposes
of the minaret-tower structure by studying linguistic,
historical, geographical, and architectural factors that
surround the minaret.[1] Max van Berchem was one of the first
epigraphists to suggest a three-sided approach to
understanding the minaret's origins. He proposed viewing
the minaret in terms of its historical setting, etymology,
and morphology.[2] Following van Berchem's lead, this section
will introduce the linguistic, historical, and architectural
and geographical factors that surround early minarets.
Binford's functional principles will be examined separately
to order the data of early minarets.

Etymology: Manar, Concepts of Light, Other Terms

The etymological connection between lighthouse and
minaret concerns the question of origins because the terms

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[1]Architectural historian Lionel Bier argued that
historical, geographical, and architectural factors aid in
the interpretation of the role of any architectural
structure. Lionel Bier, *Sarvistan: A Study in Iranian
Architecture* (University Park and London: Pennsylvania State
University, 1986), 55.

[2]Van Berchem, "Die Inschriften," 109-116. Terms used
for structures and artifacts may be indicative of their
original functions. In the case of the minaret, where and
when did the tower used for the call to prayer become known
as the minaret?

manar and manara are not necessarily distinct nor
synonymous, and various Arab writers use the words
differently. Additionally, scholars lack a complete,
historical Arabic dictionary to review the evolution of all
words used to describe a minaret.[3]

Architectural historian Jonathan Bloom showed that
philologists were among the first scholars to question why a
tower attached to an Islamic place of worship from which the
adhan is made should be referred to as "manar" or "manara."[4]
Both *manar* and *manara* (the masculine and feminine variations
of the term, respectively), literally mean "the place where
the light or fire is" or "where the light or fire burns."
The words are secular in meaning. In pre-Islamic Arabian
poetry the syllable, *nar*, in particular, referred to "an
elevated place where signals of fire or smoke were made;" in
modern standard Arabic, nar means "fire."[5] Siegmund Fränkel

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[3]Gaston Wiet cited in Max van Berchem, *Matériaux pour un Corpus Inscriptionum Arabicarum*, vol. 1, *Memoires publiés par les membres de la mission archéologique française au Caire*, part 1, *Egypte* (Paris: Ernest Leroux, 1894-1903), 4-5. If all four minaret terms are discrete, architectural historians would need a complete historical dictionary to see how the words became synonymous. Jonathan Bloom, *Minaret, Symbol of Islam* (Oxford: Oxford University Press, 1989), 18.

[4]Bloom, *Minaret*, 9.

[5]*Encyclopedia of Islam: New Edition* (hereafter, *EI*[2]), (Leiden: E. J. Brill, 1960-present), s.v. "Manara, Manar (A) minaret, (1) in the Islamic lands between the Maghrib and Afghanistan," by Robert Hillenbrand. The plural of manar is

and Friedrich Schwally believed that the primary root word "manar" was borrowed from an Aramaic word that meant "candlestick."[6] However, neither scholar explained how a word that once meant candlestick could later refer to a tower, except perhaps as a homology relating to tall, thin, and being a light.

In modern standard Arabic, and particularly in North African dialects, both manar and manara refer to a "lighthouse." The term manara, as used for minarets, occurs primarily in the feminine form.[7] The English language derived the word "minaret" to refer to mosque towers from the Turkish pronunciation, *minar* and *minare*, which are masculine and feminine translations of the Arabic words manar and manara.[8]

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mana'ir, while the plural form of manara is *manwara*. Bloom, *Minaret*, 36. Pre-Islamic poetry was transmitted and preserved orally. In the latter part of the seventh century C.E., Arab scholars began to collect and record pre-Islamic *qasidahs* (verses of poetry) and short compositions that still survived with professional reciters.

[6]Siegmund Fränkel, *Aramäische Fremdwörter im Arabischen*, (Leiden: E. J. Brill, 1886), 270; Friedrich Schwally, "Lexikalische Studien," *Zeitschrift der Deutschen Morgenländischen Gesellschaft*, 53 (1898): 143-146; and Bloom, *Minaret*, 9.

[7]*EI²*, "Manar, manara (A), lighthouse," 358. A few modern Arabic dictionaries refer to lighthouses as *fanar*.

[8]Bloom, *Minaret*, 36. According to the *Oxford English Dictionary*, the word minaret came into the English language in the seventeenth century C.E. The dictionary defines minaret as a "lighthouse, tower, or turret." The immediate

The masculine form manar not only describes "a place where a light or beacon has been established," but also suggests "the means of marking and lighting by fire routes for either a commercial caravan or a military entourage."[9] The Arab philologist al-Asma'i (d. 828 C.E.) defined manar as "a sign or mark, set up to show the way," or "a thing that is put up as a boundary between two lands, made of mud or clay or earth."[10] Further referring to boundaries, collected works by Ahmad ibn Hanbal (d. 855 C.E.) and Muslim ibn al-Hajjaj (d. 875 C.E.) confirmed, "May God curse him who alters the marks of the limit (manar) between two lands."[11]

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source of the English word is the French word, *minaret*. *The Oxford English Dictionary*, 2d ed., s.v. "Minaret."

[9]*EI²*, "Manar, manara (A), lighthouse," 358.

[10]Edward William Lane, *An Arabic-English Lexicon*, ed. Stanley-Lane Poole (New York: Frederick Ungar, 1956), s.v. "Manar," bk. 1, pt. 8:2866b, c; and Bloom, *Minaret*, 36.

[11]A. J. Weinsinck, ed., *Concordance et indices de la tradition musulmane* (Leiden: E. J. Brill, 1936-1988), 7:38; and Lane, *Arabic-English Lexicon*, bk. 1, pt. 8:2866b. Ancient Arabs also used stones to delimit boundaries and sacred enclaves. Abraham supposedly marked the outlines of the Meccan Haram with standing stones (*ansab*); an ancestor of Muhammad re-erected these stones in the cult of the Qabah, and Muslims re-established the markers for their own use after the conquest of Mecca in 630 C.E. Ferdinand Wüstenfeld, *Die Chroniken der Stadt Mekka*, vol. 4, *Geschichte der Stadt Mekka und ihres Tempels von Cutb ed-Din Muhammed Ben Ahmed el-Nahrawali* (Leipzig: F. A. Brockhaus, 1857-1861; reprint, Hildsheim and New York: Georg Olms Verlag, 1981), 113; and Bloom, *Minaret*, 37 and 41.

In classical Arabic literature, there are several descriptions among ancient Arabs of marking by fire.[12] Fire-lit stones illuminated roads and guided caravans and convoys traveling during the night, a common practice to avoid the heat of the day. Pre-Islamic South Arabian legend conferred the title of "manar" upon Abraha, a Christian viceroy and military leader of South Arabia (Yemen). According to al-Suyuti, the most prolific Arab writer who lived in fifteenth-century Mameluke Egypt, Abraha led a Yemeni expedition against Mecca in the mid-sixth century C.E.[13] The *Quran* (Surat al-Fil 105) mentions Abraha's expedition against Mecca because a failed parley occurred in 570 C.E., the year of the Prophet Muhammad's birth. Islamic historian Richard Hartmann believed that Abraha received his title because he marked his military routes in time of war; thus Abraha is one of the first leaders recognized in

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[12]Toufic Fahd, "Le feu chez les anciens Arabes," in *Le feu dans le Proche-Orient antique: aspects linguistiques, archéologiques, technologiques, littéraires du colloque du Strasbourg, 9 et 19 juin 1972* (Leiden: E. J. Brill, 1973), 59; A. J. Weinsinck, "Feuer als Signal zum Gottesdienst bei den Juden," *Der Islam* 1 (1910): 100-101; Richard Hartmann, "Manara = Minaret," *Memnon* 3 (February 1910): 220-223; and al-Idrisi, *Al-Maghrib wa Sudan wa Misr wa Andalus* in *Kitab Nuzhat al-Mushraq fi ikhtiraq al-Afaq*, ed. Dozy de Goeje (Leiden: E. J. Brill, 1866) 198 cited in Maurice Gaudefroy-Demombynes, *La Syrie à l'époque des mameloukes d'après les auteurs arabes* (Paris: Paul Geuthner, 1923), 258, n. 1.

[13]Al-Suyuti, *Madjmu'at al-Masa'il-al-tis*, ed. al-Adawi and Umar, 146 cited in *EI²*, "Manar, manara (A), lighthouse," 358.

literature to set fires as boundary markers.[14]

Symbolically—and ironically—the title manar in later Arabic

literature may have referred to a triumphant event.[15]

In pre-Islamic Arabic poetry, the term manar also

described a candelabrum or lamp stand.[16] Later, the

Egyptian historian al-Maqrizi (1364-1442 C.E.) used manar to

refer to obelisks because the sun's rays reflected off the

gold at the apices of these structure.[17] Gottheil believed

that manar referred to "an object that gives light."[18] For

example, the poet Jarir (d. 728-729 C.E.) praised the

Umayyad governor of Iraq, Khalid ibn Abd Allah al-Qasri, for

building a manar:

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[14]Dogan Kuban, *Muslim Religious Architecture. Part 1. The Mosque and Its Development* (Leiden: E. J. Brill, 1974), 6; and Richard Hartmann, "Zur Thema: Minaret und Leuchtturm," *Der Islam* 1 (1910): 388.

[15]Doris Behrens-Abouseif, *Minarets of Cairo* (Cairo, Egypt: The American University in Cairo, 1985), 12.

[16]Guidi, *Della sede primitiva dei popoli Semitici*, 38 cited in Richard J. H. Gottheil, "The Origins and History of the Minaret," *Journal of the American Oriental Society* 30 (1909-1910): 132; and Robert Hillenbrand, *Islamic Architecture: form, function, and meaning* (New York: Columbia University Press, 1994), 132.

[17]Al Maqrizi cited in Behrens-Abouseif, *Minarets of Cairo*, 12.

[18]Gottheil, "Origins of the Minaret," 132. See also Thomas Patrick Hughes, *A Dictionary of Islam: Being a Cyclopedia of the Doctrines, Rites, Ceremonies, and Customs, Together with the Technical and Theological Terms, of the Muhammadan Religion* (Lahore, Pakistan: Premier Books, 1965), s.v. "Manarah."

You built the illuminated manar to guide
So you became a light whose sheen is not
subsiding;
You built a building the likes of which none had
ever seen
Its walls almost attain the level of the four
stars of Ursa Minor.[19]

It is not clear when the term manar began to refer to large structures in Islamic writing. In Bloom's assessment of Islamic texts during the Umayyad period (661-750 C.E.), the word manar referred to lighthouses or boundary markers, but not to structures identified with Islamic ritual.[20] Manars were lighthouses in some areas and boundary markers in areas that had no use for lighthouses.[21]

The feminine form, manara, could refer symbolically to any structure that supported a lamp, the porcelain of the lamp, and even coats-of-arms, such as those found on arm-rests of seats and thrones.[22] Manara, like its Hebrew

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[19]Jarir, *Naqa'id Jarir wa'l-Farazdaq*, ed. A. A. Bevan, (Leiden: E. J. Brill, 1905-1912), 2:989, n. 103:33-34 cited in Bloom, *Minaret*, 37. Bloom believed that this manar was a lighthouse because of its function.

[20]Bloom, *Minaret*, 39.

[21]Ibid., 41.

[22]Hillenbrand, *Islamic Architecture*, 132. For examples of coats-of-arms and other finery called "manara" and collected in Muslim excerpts, see al-Djahiz, *Bukahala*, ed. al-Hadjiri, 19 and al-Biruni, *K. al-Djawahir*, 227 cited in *EI²*, "Manar, manara, A, (1)" 362. See also Eliyahu Ashtor, *Histoire des prix et des salaires dans l'Orient médiéval* (Paris: Ecole Pratique des Hautes Etudes, 1969), 178; and J. Sadan, *Le Mobilier au Proche Orient Medieval* (Leiden: E. J. Brill, 1976), 39, n. 133, 126, n. 477.

cognate *menorah*, originally meant "lamp stand."[23] The

feminine form designated a variety of structures or

buildings that facilitated lighting besides the

candelabrum.[24] Ibn Sarabiyun (ca. 915 C.E.) related how al-

Hajjaj, the governor of Iraq, employed Hassan the Nabataean

to drain marshes in lower Mesopotamia and then build the

Manara Hassan on the Hawr al-Muhammadiyya by 714 C.E.[25]

Although the Manara Hassan's profile is unknown, it

functioned as a lighthouse to guide ships through navigable

channels.[26] Along the North African coast, particularly in

Tunisia, Islamic fortresses with watch towers that served as

lighthouses were called manaras in the Abbasid period (750-

1258 C.E.).[27] In the tenth century C.E., al-Muqaddasi

described a warning system composed of a series of towers

along the coast of Palestine:

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[23]Lane, *Arabic-English Lexicon*, 2886b; and Bloom, *Minaret*, 36.

[24]*EI²*, "Manar, manara, A, (1)," 362. According to one Turkish architectural historian, Dogan Kuban, the term manara referred to any tower-like structure. Kuban, *Muslim Religious Architecture*, 6.

[25]K. A. C. *Early Muslim Architecture*, 2d ed. 2 vols. (Oxford: Clarendon Press, 1969), 1:655; and Bloom, *Minaret*, 37. Suhrab Ibn Sarabiyun is a little known tenth-century writer. His work, *Kitab Adja'ib al-akalim al-sab'a ila nihayat al imara*, about the "marvels of the world" is a compilation of earlier Islamic writers' impressions.

[26]Bloom, *Minaret*, 37.

[27]Hillenbrand, *Islamic Architecture*, 134.

> Along the sea-coast of the capital are watch-stations [*ribat*], from which the summons to arms is given. . . At the stations, whenever a Greek vessel appears, they give the alarm by lighting a beacon on the tower [manara] of the station if it be night, or if it be day, by making a great smoke. From every watch-station on the coast up to the capital [Ramla] are built, at intervals, towers [mana'ir], in each of which is stationed a company of men. As soon as they perceive the beacon on the tower of the coast station, the men of the next tower above it kindle their own, and then on, one after another; so that hardly is an hour elapsed before the trumpets are sounding in the capital, . . . calling the people down to that watch-station by the sea.[28]

Clearly, by the tenth century C.E., the term manara referred to lighthouses.[29]

Contrary to Bloom's assertion that both manar and manara derive from the Arabic word meaning light, Robert Hillenbrand believed that the term manara should not be connected with *nur*, the Arabic root for "light," as opposed to *nar* for "fire." He maintained that historically the word manara referred to items such as boundary markers, signal

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[28]Al-Muqaddasi, *Ahsan al-Taqasim fi Ma'rifat al-Aqabim* cited in Guy Le Strange, *Palestine under the Muslims: A Description of Syria and the Holy Land from A.D. 60 to 1500*, trans. *The Medieval Arab Geographers* by Guy Le Strange (Boston: Houghton Mufflin, 1890; reprint, New York: AMS Press, 1975), 23-24; also cited in Amikam El'ad, "The Coastal Cities of Palestine During the Early Middle Ages," in *The Jerusalem Cathedra: Studies in the History, Archaeology, Geography and Ethnography of the Land of Israel*, ed. Lee I. Levine, vol. 2 (Detroit: Wayne State University Press, 1982), 156; in Gottheil, "Origins of the Minaret," 132; and in Bloom, *Minaret*, 37.

[29]El'ad, "Coastal Cities," 155.

posts, and watch towers and that these items had no connection with lighting a fire. While Hillenbrand recognized that an operating signal tower required some means of lighting,[30] he failed to consider that fires were frequently built instead of oil lamps. Hillenbrand concluded that the use of fire had little to do with the naming of the minaret.[31] Ernst Diez showed that the term manara most likely lost its original connection with the lighting of fire; eventually the word designated signposts, boundary stones or markers, and watch towers even when no particular association with fire was intended.[32] Hillenbrand did cogently point out that the terms manar and manara came to involve two distinct concepts: fire (or light) and marker.[33]

Hillenbrand further claimed that the distinctions between manar and manara play no specific role in Islamic ritual and that the lighting of a fire in a mosque's minaret

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[30]Bloom, *Minaret*, 36; and *EI²*, "Manar, manara (A), (1)," 362.

[31]Ibid.

[32]*E. J. Brill's First Encyclopedia of Islam, 1913-1936*, ed. M. Houtsma, et al. (Leiden and London: E. J. Brill, 1913-1936; reprint, Leiden: E. J. Brill, 1987), s.v. "Manara," by Ernst Diez.

[33]Hillenbrand, *Islamic Architecture*, 133.

was a rare event in early Islam.[34] In the Islamic

community, the minaret became an important marker of the

mosque, the principal religious building, and, thus, an

association between the minaret and fire is virtually

irrelevant.[35] Arab travel writers recorded lighting a

mosque's tower, even though Hillenbrand believed it was a

rare event. For example, tenth-century Arab geographer al-

Muqaddasi (d. 1000 C.E.) reported that "lamps kept in

mosques were always lighted."[36] Also, the north minaret of

the old Umayyad mosque of Damascus displayed a light

signal.[37] In his *Travel Diary*, the eleventh-century Persian

metaphysician Nasir Khusrau described the custom of

arranging lights in a mosque.[38]

Nineteenth-century historians Friedrich Schwally and

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[34]Ibid. *EI*^{2}, "Manar, manara (A), (1)," 362. This event
is recorded with the Manarat al-Arus in the Damascus mosque.

[35]*EI*^{2}, "Manar, manara (A), (1)," 362; and Bloom,
Minaret, 191.

[36]Basel Anthony Collins, *Al Muqaddasi: The Man and His
Work*, Michigan Geographical Publication, No. 10 (Ann Arbor,
MI: University of Michigan, 1974), 197.

[37]Don Fadlallah al-Omari, *Tarif bil-mustalah as-sarif*,
(1854), 200 cited in Hartmann, "Minaret und Leuchtturm,"
388.

[38]A. S. Melikian-Chirvani, "The Lights of Sufi
Shrines," *Islamic Art: An Annual Dedicated to the Art and
Culture of the Muslim World* 2 (1987): 119; and Ehsan
Yarshater, *Naser-e-khosrau's Book of Travels*, trans. W. M.
Thackston, Jr., Persian Heritage Series, no. 36 (New York:
Columbia University Press, 1986), passim.

Edmond Doutté proposed that Syrian Arabs used the term
manara to refer to a tower attached to a mosque because
muezzins would hold a light while ascending the tower to
issue the evening call to prayer. The appearance of the
light in the tower gave an onlooker the impression of a
light-tower.[39] Gottheil disagreed with this "involved and
far-fetched" explanation for the appellation of the tower;
he asserted that the use of the same word for both the
minaret and lighthouse "is occasioned by the resemblance
between the two tower constructions," a structural
homology.[40]

The ritual use of minaret lighting cannot be ignored.
Islam inherited and adapted ritual lighting. In pre-Islamic
Iran, lighting fixtures were dedicated in places of worship
and religious shrines; this practice continues in Sufism, a
mystical Islamic sect founded in Iran.[41] An entire chapter
of the *Quran*, the "Surat al-Nur," emphasizes the subject of
light: "His light is found in temples which God has

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[39]Schwally, "Lexikalische Studien," 145; and Edmond
Doutté, "Les minarets et l'appel à la prière," *Revue
Africaine: Bulletin des Travaux de la Société Historique
Algérienne*, 43 (1899): 339.

[40]Gottheil, "Origins of the Minaret," 132-133.

[41]Sufism emerged as a primary movement in Iran during
the thirteenth and fourteenth centuries C.E. Sufis
incorporated Sasanian and ancient Iranian architecture and
rituals into their interpretation of Islam. Melikian-
Chirvani, "Sufi Shrines," 117-118.

sanctioned to be built for the remembrance of his name"
(Surat al-Nur 24:37).[42] Sufis maintained that individuals
who illuminate lights in mosques or mausoleums are
rewarded.[43] Dedication of lights was not unknown to Sufis
and their predecessors. The Parsees (Zoroastrians) in India
conducted a "festival of lights;" in continuing earlier
rituals, the Parsees consecrated their temples with sacred
fire.[44]

It is not clear when minarets became associated with
the practice of lighting or use of fire, but the symbol of
fire is notably prevalent in Semitic tradition. By
analogical reasoning, the minaret may be associated with the

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[42]Surat al Nur means the book of light. Sufis support
their beliefs based on this book. Albert Habib Hourani, *A
History of the Arab Peoples* (Cambridge: Harvard University
Press, 1991), 173.

[43]Sufis adhere to the belief that earthly light acts as
a guide to God's Light. Sufi philosopher, Shihab al-Din
Yahya b. Habash al-Suhrawardi (d. 1191 C.E.), elaborated on
the theme of light in his '*Imadian Tablets*, in Sayyid H.
Nasr, ed., *Majmu'a-i Musannafat Shaykh-i Ishraq*, 3:127
quoted in Melikian-Chirvani, "Sufi Shrines," 118: "God is
the light of the Heavens and the Earth. His light is
exemplified by a lantern in which is a lamp. The lamp is in
a crystal case. The case is exemplified by a star shining
with the brilliance of a pearl hanging from a blessed olive-
tree that is neither to the east nor to the west. . . . The
lamp is in the shrines (*bayt*, pl. *buyut*) in which God has
permitted that His name be extolled and repeated (*yuzkar*)
where He is celebrated from dawn to dusk."

[44]Jivanji Jamshedji Modi, *The Religious Ceremonies and
Customs of the Parsees* (Bombay: British India Press, 1922;
reprint, New York and London: Garland-Publishing, 1979),
210-211. The fire brings the Parsee closer to God.

burning of fire. The menorah, a candelabrum displaying

eight candles, is highly symbolic of the minor Jewish feast

of Chanukkah, or the "Feast of Dedication."[45]

The Chanukkah festival commemorates the victory of the

Maccabees, a family of Jewish patriots, over forces of the

Syrian king Antiochus IV, and the subsequent cleansing and

redemption of the temple in Jerusalem ca. 165 B.C.E. (1

Maccabees 4:36-60). A feature of the festival is the

lighting of candles or oil lamps to commemorate rekindling

the candelabrum in the sanctuary. Since only lights are

mentioned in the Apocryphal section of the *Old Testament*,

Jewish scholar Theodor Gaster proposed that their use is

merely an adaptation of a familiar pagan custom of lighting

candles or kindling fires during the winter solstice as a

means of returning the sun.[46] Gaster suggested that the

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[45]Jewish festivals are geared towards the lunar
calendar. Minor festivals punctuate this calendar but are
popular celebrations rather than sacred institutions.
Chanukkah is the only Jewish festival not described in
Protestant versions of the *Bible*. Theodor Herzl Gaster,
*Festivals of the Jewish Year: A Modern Interpretation and
Guide*, (New York: William Sloane, 1953). Both the term
menorah and its Arabic cognate manara lack religion-specific
etymological origins. Hillenbrand, *Islamic Architecture*,
133.

[46]Gaster, *Festivals of the Jewish Year*, 248. Chanukkah
began well after the Babylonian Captivity (597-538 B.C.E.)
when Jews were exposed to Zoroastrian, or Chaldean, light
festivals. Raymond E. Brown, Joseph A. Fitzmeyer, and
Roland E. Murphy, *The Jerome Biblical Commentary* (Englewood
Cliffs, NJ: Prentice-Hall, 1968), 76: 159-161.

custom of lighting candles was "Judaized" to divert
attention from what may have been embarrassment over the
militant antecedents to the festival.[47] Gaster further
speculated that the lights-festival addition was a
"satyrization" of a contemporary Greek festival of Dionysus,
where lights were paraded through mountains in the night and
then strangely (to observant Jews) lowered into wine or
water.[48]

Interestingly, in the medieval era, Islamic writers did
not always refer to the minaret as manara. Medieval writers
employed two other terms, *mi'dhana* and *sawma'a*. The term
mi'dhana is the place-noun form of the word adhan.[49] While
the word manara provided scholars with few clues to the
minaret's ritual function, the term mi'dhana (pl. *mi'adhin*)
meant "a place from which the time of prayer is announced,"
a direct reference to the ritual role of the structure, thus
linking the ritual act with the functional place.[50] Of the
three terms employed to designate a minaret, mi'dhana was

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[47]Gaster, *Festivals of the Jewish Year*, 249.

[48]Ibid., 253.

[49]*EI*², "Manar, manara (A), lighthouse," 358; S. D.
Goitein, *Studies in Islamic History and Institutions*
(Leiden: E. J. Brill, 1966), 79; and Gottheil, "Origins of
the Minaret," 133.

[50]Gottheil, "Origins of the Minaret," 133; and
Hillenbrand, *Islamic Architecture*, 132.

the least frequently used, except in the case of

commemorative inscriptions.[51] Hillenbrand showed that

because the term mi'dhana was not used with frequency,

modern scholars justifiably may question whether early

minarets were used for the adhan.[52]

A third word referring to the minaret was sawma'a; in

the medieval era, the term meant "cell" or "cloister."

According to Creswell, philologists suggested that Arabs

developed the term sawma'a in reference to the hermit towers

of Christian Syrian churches.[53] Hermit cells were a regular

feature of pre-Islamic Byzantine architecture, eventually

incorporated into tall rectangular towers attached to

churches, monasteries, and houses.[54] Pre-Islamic poets

favored the term sawma'a to describe hermit or monk cells

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[51]Two inscriptions (dated 720-721 and 745 C.E.)
discussed in Creswell, *Early Muslim Architecture*, 1:490; and
Jean Sauvaget, "Les inscriptions Arabes de la Mosquée de
Bosra," *Syria*, 22 (1941), 53-65 cited in Bloom, *Minaret*, 31-
32. The first word of the second line of the later
fragmentary inscription at Basra reads "mi'dhana." Bloom is
not surprised by the use of the word mi'dhana over sawma'a
because he noted that the language of inscriptions was more
literary than the language of literature because
inscriptions were official records. Bloom, *Minaret*, 32.

[52]Bloom, *Minaret*, 10; and Hillenbrand, *Islamic
Architecture*, 134.

[53]Creswell, *Short Account*, 16; Doutté, "Les minarets,"
339; and Henri Lammens, "Phares, Minarets, Clochers et
Mosquées: Leur Origine, Leur Architecture," *Revue des
Questions Historiques* n.s., 56 (1 July 1911): 14.

[54]*EI*², "Manar, manara (A), (1)," 362.

lit with lamps well into the night.[55] Literate Arabs

probably borrowed the term from the early Christian

vernacular, Syriac.[56]

The term sawma'a had greater ideological connotations,

even though the word is Christian in origin, than the word

manara.[57] Gottheil did not believe that the term manara had

any great religious significance. The word was used rarely

in early Arabic epigraphy, suggesting that, initially, it

did not have a religious meaning.[58]

Hillenbrand believed that the term sawma'a was

misleading because it originally referred strictly to the

hermitage itself; eventually, the word sawma'a alluded to

the entire structure, the tower, of which the cell was a

small part. The term sawma'a is still used, primarily in

North Africa and Spain, to describe squat, square minarets

that resemble the early hermitages. In North Africa, in

particular, manara distinctly referred to signal towers or

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[55]Doutté cites poetic examples from the *Mo'allaya*.
Doutté, "Les minarets," 340. Monk cells were popular in
Byzantine Syria.

[56]Bloom, *Minaret*, 9; and William Marçais and Georges
Marçais, *Les monuments arabes de Tlemcen* (Paris: Ancienne
Librarie Thorin et Fils, 1903), 45. Syriac is an ancient
Aramaic (Biblical) language used in Syria from the third to
the thirteenth century C.E.

[57]*EI²*, "Manar, manara (A), (1)," 362; and Hillenbrand,
Islamic Architecture, 133.

[58]Gottheil, "Origins of the Minaret," 132.

lighthouses, while sawma'a refers to a "high place or building," or minaret.[59] In Syria, the term sawma'a described the tall, rectangular minaret-style known as the "sentry box," rather than referring to all minarets.[60]

Structures called manar and manara exhibit secular, technomic functions both as markers and lighthouses,[61] but why are minarets called manaras when historically the word had no religious connotation? Although this question is key to understanding the development of the minaret, minaret origins are complex because the minaret's functions are not uniform throughout the Islamic world.[62] The next section will explore the development of the minaret as an architectural symbol of Islam.

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[59]*EI²*, "Manar, manara (A), (1)," 362; and Hillenbrand, *Islamic Architecture*, 133.

[60]Joseph Schacht, "Ein Archaischer Minaret-Typ in Agypten und Anatolien," *Ars Islamica* 5 (1938): 46. Creswell says square minarets are almost always referred to as sawma'a. The Spanish adapted the term sawma'a and refer to all minarets as *zoma*. Creswell, *Short Account*, 16; and *EI²*, "Manar, manara (A), (1)," 362. In modern Arabic, the term sawma'a can also designate a silo. Behrens-Abouseif, *Minarets of Cairo*, 11.

[61]Gottheil, "Origins of the Minaret," 132.

[62]George Michell, ed., *Architecture of the Islamic World: Its History and Social Meaning,* 2d ed. (New York: Thames and Hudson, 1984), 99.

The Adhan and Historical Setting of the Minaret

Although architectural historian Jonathan Bloom believed that Western religious historians have studied the adhan infrequently, many scholars, including Bloom, Ibrahim, and Hillenbrand, agreed that the adhan seemed to be an adaptation of earlier Semitic methods of summoning worshipers.[63] These scholars believed that using the human voice to call people together for prayer was a dominant characteristic of Semitic-based religions.

In Islam, the development of the adhan seemed based on circumstance. In the early days, Islam was in direct competition with both Christianity and Judaism in the Middle East. To announce meetings of their followers, Near Eastern Christians employed wooden clappers (Arabic, *naqus*, or Greek, *semantron*), while Jews used rams' horns (*shofar*) or trumpets (*hazozerah*) (Numbers 10:1-10).[64] According to Muslim tradition, the adhan was initiated in the second year of Muhammad's *hijra*, (flight from Mecca to Medina beginning

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[63]Layla Ali Ibrahim, "The Adhan: the Call to Prayer," in Behrens-Abouseif, *Minarets of Cairo*, 187; Bloom, *Minaret*, 16; and Hillenbrand, *Islamic Architecture*,

[64]Bloom, *Minaret*, 7, 23; Creswell, *Early Muslim Architecture*, 1:15; Gottheil, "Origins of the Minaret," 134; and Tritton, *Non-Muslim Subjects*, 5 briefly discusses the Byzantine clapper. By the early seventh century C.E., the semantron is used in urban Levantine churches as a new instrument of convocation. Hillenbrand, *Islamic Architecture*, 130.

in 623 C.E.).[65] Muslims believed that one of the Prophet's

followers, Abd Allah bin Zayd, dreamed about the need for

the call to prayer and advised the Prophet to adopt the

adhan.[66]

Early Muslims needed a unique method of calling prayer,

and Muslim tradition relates that, after careful thought,

Muhammad decided to have a herald (muezzin) call the

faithful to prayer. The "herald" was called the *mu'adhdhin*,

a term that also referred to pre-Islamic heralds.[67] While

adhan and mu'adhdhin are related words, the latter term

appears only twice in the *Quran* (Surat al-Araf 7:44 and

Surat Yusuf 12:70). The preferred, Quranic term for the

announcer of prayer was *munadin*, which also means

"herald."[68] The poet al-Farazdaq (d. 728-729 C.E.)

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[65]Bloom, *Minaret*, 7; and Ibrahim, "The Adhan," 187.

[66]Ibn Ishaq cited in I. K. A. Howard, "The Development of the Adhan and Igame of the Salat in Early Islam," *Journal of Semitic Studies* 26 (Autumn 1981): 222.

[67]Al-Bokhari, 74-75 cited in Doutté, "Les minarets," 342. According to Doutté, Syrian Christians knew and used the words "adhan" and "mu'adhdhin" before the advent of Islam. Abi ben Zeid, *Op.*, trans. René Basset, and El Bekri, *Mo'djem*, 233 in Doutté, "Les minarets," 343. See also Bloom, *Minaret*, 23.

[68]See Diwan cited in Josef Horovitz, "Bemerkungen zur Geschichte und Terminologie des Islamischer Kultur," *Der Islam* 16 (1927): 253. Munadi was probably preferred in early Islam because it did not have pre-Islamic connections. Bloom noted that the herald was, however, a pre-Islamic occupation, but Islam made it a religious position by specifying the content of the message. Other pre-Islamic

proclaimed

> And so that on the wall of every city
> A herald [munadin] called the adhan from on top of
> it.[69]

An Abyssinian freedman and former slave of Muhammad, Bilal al-Habashi, was regarded as Islam's first mu'adhdhin. According to tradition, Bilal climbed the highest rooftop of a Muslim supporter's home and began the call to prayer; from his lofty perch, he could be heard above the din of medieval, Arab city life. In another tradition, he pronounced the adhan from an elevated circular structure that was supposedly movable; this edifice was regarded as the forerunner of the minaret.[70]

It is unlikely that Muhammad and his followers employed a movable structure. The *Quran* rarely mentions the adhan and does not refer to any innovative prayer structure or tower. Rather, Bilal probably found a home that rose above its neighbors and his actions were merely replicated and formalized into a minaret structure later.[71]

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traditions continued well into Islam. For example, trumpets, instruments also used by Jewish religious leaders, announced the beginning of Ramadan until the twentieth century. Edward Westermarck, *Ritual and Belief in Morocco*, (London: n.p., 1926), 2:91 cited in Bloom, *Minaret*, 4.

[69]Al-Farazdaq cited in Bloom, *Minaret*, 23.

[70]Behrens-Abouseif, *Minarets of Cairo*, 10.

[71]Ibid.

Two pillars of Islam still are linked to the minaret.
The first and most important tenet of Islam, the *shihada*
("There is no God but God, and Muhammad is His Prophet"), is
mentioned in the adhan. The second, the pillar of fasting
(*saum*) that occurs during the holy month of *Ramadan*, also
involves the minaret. During the month of Ramadan, lanterns
atop the minaret are extinguished until sunset, at which
time the fast ends. Throughout the evening and night, a
typical minaret is lit with decorative lights to celebrate
the breaking of the obligatory fast. Both faith pillars,
the shihada and saum, are linked with the minaret since
Muhammad's death.

Today, architects throughout the Islamic world view the
minaret as one of the most prominent, external features of
the religion and its religious structures.[72] Nevertheless,
the earliest Arabic literature infrequently mentioned the
minaret in contrast with other internal mosque features,
such as the *mihrab* and *minbar*. The external minaret was not
one of the earliest architectural features of the
religion.[73]

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[72]Ibid. Lammens, "Phares, Minarets," 5.

[73]Gottheil, "Origins of the Minaret," 132-154; and
Bloom, *Minaret*, 10. The mihrab is an arch found in the
architectural design of a mosque that indicates the
direction of Mecca; the minbar is a pulpit, particularly
found in mosques to be used for Friday prayer.

Several prominent Islamic architectural scholars, such
as Hermann Thiersch, K. A. C. Creswell, and Jonathan Bloom,
noted that early Islamic accounts did not mention towers
attached to or on mosques.[74] Hermann Thiersch, a late
nineteenth-century German historian, described the minaret
as the most recent addition to the mosque and pointed out
that the most prominent mosques of the seventh century C.E.
(the first century of Islam) did not incorporate minarets.[75]
Neither the early mosques of Mecca, Medina, Umar's Jerusalem
Mosque, Amr's building in Fustat, Egypt, nor the "converted
church-mosque" in Damascus, Syria, featured minarets.
Furthermore, there were no early depictions of minarets.[76]
The first representation of the minaret functioning as an
integral part of a newly-built mosque dates to the
thirteenth century C.E., nearly six centuries after the
founding of Islam.[77]

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[74]Thiersch, *Pharos*, 98; Creswell, *Short Account*, 5;
Bloom, *Minaret*, 7; and Gottheil, "Origins of the Minaret,"
133.

[75]Thiersch, *Pharos*, 98.

[76]Ibid.

[77]Bloom, *Minaret*, 177. Earlier depictions of specific
minarets did exist, but Bloom believes that the first
surviving generic descriptions of mosques and minarets
appear in the Paris version of al-Hariri's manuscript,
Maqamat (dated 1237 C.E.). So the earliest extant towers
attached to mosques and the written evidence about them date
from the first half of the ninth century. These mosques are
found in Wasit and Raqqa. Bloom, *Minaret*, 55.

Nevertheless, French historian Lammens believed that minarets were a known and accepted institution by the second century of Islam. He asserted that minarets were built primarily in the seats of Islamic power such as Mecca, Jerusalem, and Damascus. Lammens did note that in the provinces or outlying areas of the empire, minarets were built infrequently and that the muezzin most likely called believers to prayer from the middle of the mosque building.[78]

According to Bloom, doctrinal, literary, and Quranic evidence indicates that the content and order for the adhan were not fixed in the early years of Islam and that the call to prayer was made from various places.[79] While the minaret facilitated the call to prayer, documentary evidence suggested that early adhans were made in front of a mosque after the Prophet's death.[80] Therefore, calling to prayer did not directly contribute to the minaret's development or

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[78]Al-Farazdaq, *Aghani* 13 cited in Lammens, "Phares, Minarets," 13. Lammens notes that Walid's successor razed a minaret in his palace in Medina.

[79]Bloom, *Minaret*, 28.

[80]Kuban, *Muslim Architecture,* 6; and Schacht, "Ein Archaischer," 46. During the Prophet's life, Bilal announced the adhan from rooftops and in Medina occasionally from a square pillar erected behind the qibla's wall, which he reached by climbing a set of external stairs. Ghazi Bisheh, "Excavations at Qasr al-Hallabat, 1979," *Annual of the Jordanian Department of Antiquities* 24 (1980): 77, n. 37 cited in Bloom, *Minaret*, 28.

to its tower construction.

Early mosques were frequently fabricated as
sanctuaries, or palm-shaded, outdoor meeting halls that
provided the first Muslims with protection from the
elements. Rivoira proposed that the early mosque's
architectural and historical antecedents lay in the tribal
majlis, or "council-tent," but with greater ritual
functions.[81] The Masjid al-Nabi, the Prophet's Mosque at
Medina, for example, initially served as a temporary *dar*, or
private dwelling, for the Prophet and his family. Muhammad
did not intend for his home to serve as a permanent place of
assembly for the faithful.[82] The Prophet's dar had a
rectangular court, shaded from the sun by palm fronds and
mud supported on palm branches:

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[81]Ziad ibn Abihi, *Rivisti degli studi orientali*, 4:240-
250 cited in Giovanni Teresio Rivoira, *Moslem Architecture:
Its Origins and Development*, trans. G. McN. Rushforth
(Oxford: Oxford University Press, 1918; reprint, New York:
Hacker Art, 1975), 1.

[82]When the Prophet died, his dar assumed sacred
characteristics. Leone Caetani, comp., *Annali dell'Islam*,
12 vols. (Milan, Italy: Ulrico Hoepli, 1905), 1:438;
Rivoira, *Moslem Architecture*, 1; Gottheil, "Origins of the
Minaret," 133; Creswell, *Early Muslim Architecture*, 1:7; and
Elie Lambert, "Les origines de la mosquée et l'architecture
religieuse des Omeiyades," *Studia Islamica* 6 (1956): 5. The
mosque at Medina included a courtyard surrounded by a
portico through which one entered into the family's living
quarters. The whole building was surrounded by a wall like
any other dar for privacy. Lucien Golvin, *Essai sur
l'architecture religieuse musulmane* (Paris: Editions
Kleinseck, 1970), 1:40.

> Bricks were prepared and used for building the mosque. Its foundations were laid with stones; its roof covered with palm branches, and its columns were made of trunks of trees.[83]

The Prophet's dar-mosque exhibits three qualities of Binford's view of artifactual symbolism: as a home, it served technomic (shelter) and sociotechnic (family center) purposes, and as a site of religious worship, it served an ideotechnic function.

A description of a minaret erected in Basra ca. 665 C.E. by the governor of Iraq, Ziyad bin Abihi, recorded the earliest available documentary evidence for the use of a minaret. The Basra tower, or manara, was constructed of stone and placed alongside a small, palm-roofed mosque.[84] The Basra mosque and other early mosques were inward-looking. K. A. C. Creswell and John Hoag described the

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[83]Al-Baladhuri cited in Philip Khuri Hitti, *Origins of the Islamic State, Being a Translation from the Arabic, Accompanied with Annotations Geographic and Historic Notes of the Kitab Futun al-Budan of al-Imam abu-l Abbas Ahmad ibn-Jabir al-Bellwether, vol. 1*, Studies in History, Economics and Public Law, vol. 58 (New York: Columbia University Press, 1916; reprint, New York: AMS Press, 1968), 20. The courtyard was built with palm branches and the structure with *libin*, unfired mud-brick. G. R. D. King, *The Historical Mosques of Saudi Arabia* (London and New York: Longman, 1986), 27-28.

[84]Basra is a major seaport connecting the Shatt al-Arab with the Indus Valley region. *EI²*, "Manar, Manara, (A), (1)," 362. Richmond disputed this point with *EI¹* authors. He believed that Ibn al-Zayyat, an Arab chronicler, described the first minaret which was built at Fustat, Egypt. Richmond, *Moslem Architecture*, 11.

Basra mosque as a simple building that did not yet reflect "the art of architecture."[85] Creswell further proposed that the first mosques were mere *hiras*, or encampments for the partially nomadic Muslims who conquered Arabia.[86] While most architectural historians agree that the Umayyads first used towers as minarets, the precise use of the Umayyad minarets is not always clear. When the adhan became attached to minarets, and when minarets became linked to mosques, also remains unclear.[87]

Ziyad bin Abihi erected a minaret after he transferred his allegiance from Ali, the Prophet's son-in-law, to Mu'awiya, the first Umayyad caliph. After their successes in converting much of upper Arabia to Islam, the Umayyad caliphs began to acquire the trappings of both religious and secular power. To promote their religious power and political prestige, the Umayyad caliphs encouraged a distinct Islamic historiography and architecture that lauded

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[85]John D. Hoag, *Islamic Architecture* (New York: H. N. Abrams, 1977), 15; and Gottheil, "Origins of the Minaret," 133.

[86]Creswell, *Short Account*, 16.

[87]Richmond, *Moslem Architecture*, 15; *EI*², "Manar, Manara (A), (1), 362; and Oleg Grabar, "Islamic Art and Byzantium," in *Islamic Art and Architecture*, The Garland Library of the History of Art, vol. 13 (New York and London: Garland Publishing, 1976): 7. Creswell believed that the idea of the minaret rose in Syria under the Umayyad dynasty. Creswell, *Short Account*, 111; and Bloom, *Minaret*, 74.

their empire; their architecture was politically

iconographic.[88] Under the Umayyads, the recently converted

Muslim population needed a symbol to overwhelm the Syrian

Christians and their still-prevalent religious practices.

Byzantine-influenced art dominated the Syrian

landscape. The Umayyad caliphs, however, in their

interpretation of the *Quran*, viewed art as suspect.[89]

According to architectural historians such as Richmond, the

ubiquitous Byzantine art and its relics had to be

incorporated into daily Muslim life. The Muslim invaders

followed examples of Byzantine religious architecture, where

churches were part of larger constructions and complemented

habitation units.[90] Richmond believed that during the reign

of Umayyad Caliph Abd al-Malik (706-712 C.E.), several needs

of the Muslim congregation were addressed in architectural

expression. Richmond proposed that one need in particular

was met: a tower for the call to prayer. Caliph Abd al-

Malik ordered his cousin, the future Umayyad Caliph Umar b.

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[88]Islamic historiography was not well-developed during
the time of the four caliphs but became prominent under the
Umayyads. Hitti, *Origins of the Islamic State*, 4.

[89]Hourani, *Arab Peoples*, 48.

[90]Joseph Nasrallah, *Architectes d'art religieux de la
Syrie centrale et septentrionale des villes mortes de Syrie
du Ie au Vie siècles* (Paris: Société des Antiquités
Nationales, 1966), 15.

Abd al-Aziz II, to build minarets.[91] Oleg Grabar also
believed that minarets first appeared in the conquered
cities of Syria because Roman temenos (temple towers) and
church towers already existed.[92] Grabar stated that the
minarets were not used only for the call to prayer but also
for a more important purpose: to symbolize the presence of
the new faith in the midst of a predominantly non-Muslim
population.[93]

Bloom argued that the Abbasids unwittingly introduced
the tower as an architectural feature solely to give a
muezzin a place for the adhan. He acknowledged that manaras
were used for the call to prayer in the early tenth century,
but noted that the Abbasids, who overthrew the Umayyads,
were religious conservatives. Additionally, the Abbasids
celebrated the empire's increased bureaucratization and
lavish monarchial style through architectural expression.[94]
When the Abbasids saw the Umayyad-erected towers around the

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[91]Richmond, *Moslem Architecture*, 24. King believed
that Abd al-Malik continued a large-scale mosque-building
program. King, *Historical Mosques of Saudi Arabia*, 27.

[92]Grabar, "Islamic Art and Byzantium," 7. Some
Christian bell towers that dotted previously-Christian
Syrian towns were struck down by Muslim invaders, who were
frequently intolerant of the Christian population. Doutté,
"Les minarets," 344.

[93]Grabar, "Islamic Art and Byzantium," 7.

[94]Bloom, *Minaret*, 74.

Mosque of the Prophet, they assumed that the towers denoted the status of a holy site. According to Bloom, the Abbasids then added more towers to the Medina mosque.[95]

Abbasid rulers refined the minaret's features and use as they sought to build architectural forms reflecting the increasing prestige of Islam. The Abbasids also encouraged a synthesis of Eastern and Western trends. In architecture, given their crossroads location in Iraq, they continued the pre-Islamic practice of constructing beacon towers along the pilgrimage route from Iraq to the Hijaz.[96]

Arguments on the historical setting of the adhan, its beginning and formalization, are susceptible to multiple interpretations and do not give scholars a clear picture of the minaret's origins. Calling the adhan from a minaret-tower structure may have demonstrated to non-Muslims that Islam was as capable of erecting monumental architecture for its own glory as were other religions. Alternatively, even if the adhan and minaret had pre-Islamic antecedents, they were soon recognized as symbols of Islam. The next sections

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[95]The Umayyad caliph and military strongman Mu'awiya encouraged the building of four towers around the Prophet's dar-mosque. Many examples of buildings with high towers to view wide areas and to show political and military strength exist in architectural history. Bloom, *Minaret*, 54, 62. Bloom's theory is gaining currency in the field of Islamic architecture. See Hillenbrand, *Islamic Architecture*, 129.

[96]Hoag, *Islamic Architecture,* 32; Bloom, *Minaret*, 54; and Eleanor Sims in Michell, ed., *Islamic Architecture,* 99.

will conclude this chapter with a review of minaret forms
and will comment upon the minaret's geographical
distributions to follow van Berchem's scheme for
understanding the minaret's origins.

Minaret Architecture

A minaret is generally a slender tower attached to or
on top of a mosque with a balcony from which the muezzin
calls faithful Muslims to prayer.[97] While the minaret
served as the visible sign of a mosque, the minaret had no
definite location with regard to the mosque. Since the
minaret was not mentioned in the *Quran*, there was no
prescribed place for its location. However, according to a
medieval Islamic legal text, a minaret should not occupy
space which could otherwise be used for prayer.[98] In some
cases, the minaret was located on one of several corners of
the mosque; in other instances, it was found on top of the
mosque (**Figures 2 & 3**).[99]

Architectural scholars generally divided minarets into
two categories: (1) minarets with ample interior space; or

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[97]*EI*[2], "Manar, manara (A), lighthouse" 358.

[98]Behrens-Abouseif, *Minarets of Cairo*, 23.

[99]*EI*[1], "Architecture," by Max van Berchem. A minaret is
usually aligned with the *qibla*, or direction of prayer.
Cragg, *Call of the Minaret*, vii.

(2) minarets with reduced interior space as a result of an internal staircase. Staircase minarets, early minarets with a few steps to a small platform above the roof, are the exception to this general division (**Figure 4**).[100] Most minarets achieved structural stability by using layered stories of decreasing size atop each other and an internal staircase that tied the outer wall to the center.[101] The stories or layers took different forms and shapes: square, round, octagonal, or polygonal (**Figure 5**). In some instances, these shapes alternated throughout the height of the minaret; some minarets in Cairo, Egypt had a square base, octagonal center, and a round top (**Figure 6**). Alternatively, one shape may be used throughout; for example, many Ottoman minarets were entirely circular (**Figures 7 and 8**).

Square minarets dominated the Umayyad Syrian landscape and were built continuously throughout the medieval era (**Figure 9**). Syrian square minarets appear to be modeled after watch or dwelling towers of the pre-Islamic era. Square minarets were also found throughout the Arabian Peninsula, Egypt, and the Maghrib. These minarets were

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[100]Hillenbrand, *Islamic Architecture*, 134. This division of style is useful for modern minarets, but it does not describe minaret evolution, the first century of Islam, or pre-Islamic antecedents.

[101]Lewcock in Michell, ed., *Islamic Architecture*, 143.

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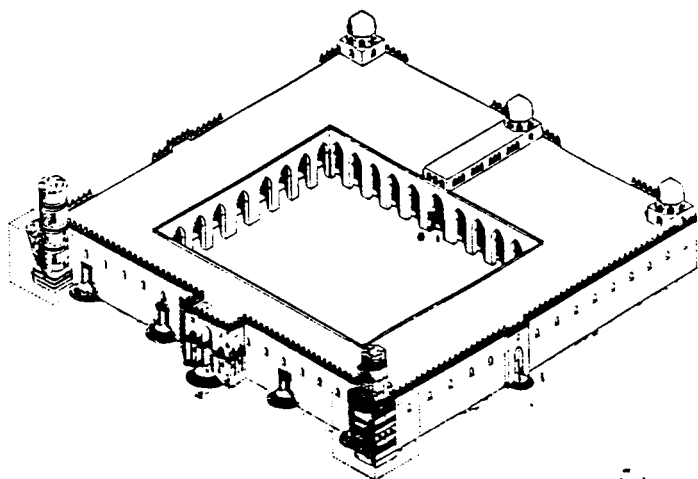
Fig. 2. Al-Hakim Mosque. A bird's-eye perspective of the
al-Hakim Mosque in Cairo, Egypt. Minarets adorn the
northern and western corners of the mosque. Bloom, *Minaret*,
133.
Fig. 3. Western minaret of al-Hakim Mosque. Ibid.
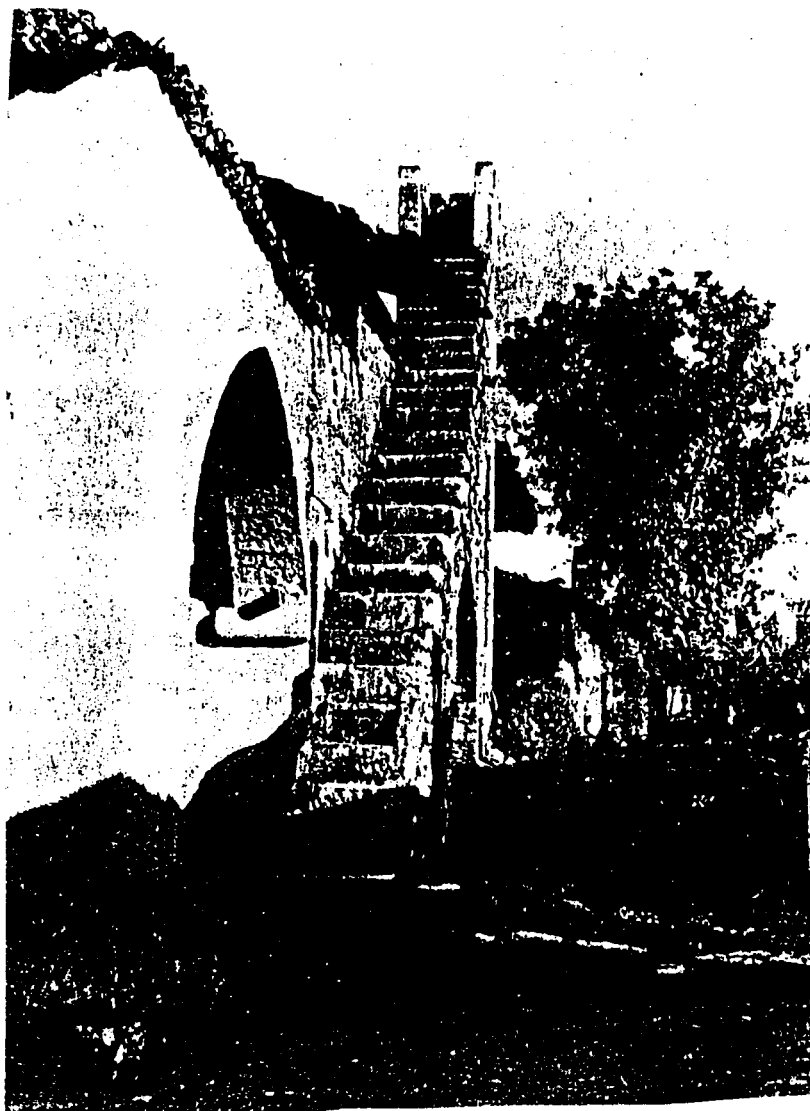
Fig. 4. Haci Ilyas staircase minaret, Turkey. Schacht, "Ein Archaischer Minaret-Typ," 52.

SÀMARRÀ   KAIROUAN   SFAX   MARRAKECH

ALEP   QAL'A DES B.HAMMÀD   BUXHÀRA   GHARBAÏA   LE CAIRE

ECHELLE GENERALE

Fig. 5. Representative minaret samples. Minarets come in a wide array of styles as shown above. Golvin, *Essai sur l'architecture*, 1:48.
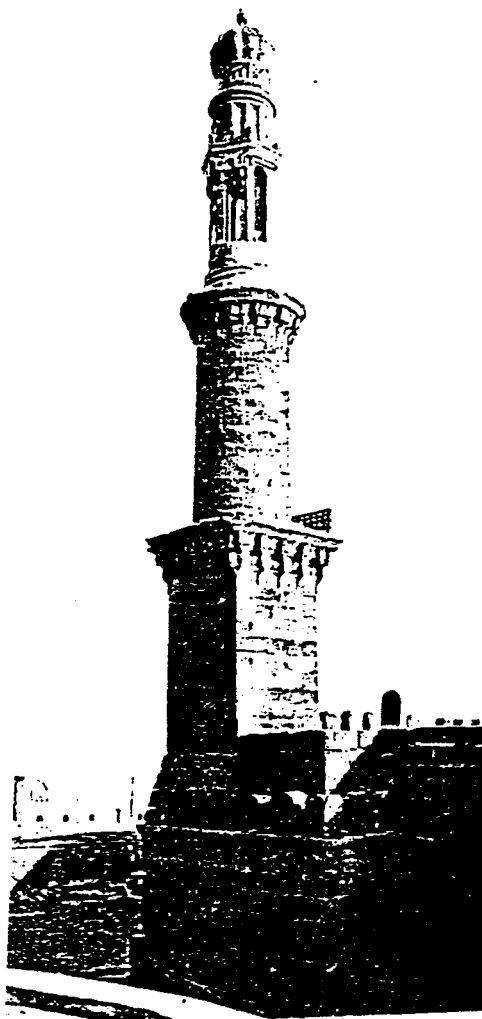
Fig. 6. Alternating shapes of Cairo minaret, Egypt.
Minaret of the Mosque of al-Nasir Muhammed. Bloom, *Minaret*,
185.

usually divided into multiple stories, had windows for outside communication, and rested on broad heavy bases. Some square minarets of the Arabian Peninsula, Egypt, and particularly the Maghrib, possibly imitated early watch towers.[102] Square minarets were placed in prominent positions in a town or village.[103]

Square minarets are presently unique to North Africa, but were built continuously through medieval times from Syria to North Africa and Spain. The square minaret design spread to North Africa as the Umayyad dynasty, which adopted the square minaret in Syria, expanded its influence into North Africa. The collapse of the Umayyad dynasty in 750 C.E. and the subsequent escape of Abd al-Rahman (736-788 C.E.), the last Umayyad heir, to North Africa ensured the survival of a splinter Umayyad dynasty (756-1031 C.E.) in Spain and, consequently, the continued construction of square minarets in North Africa and Spain.[104] After the collapse of the Umayyad splinter dynasty, North African
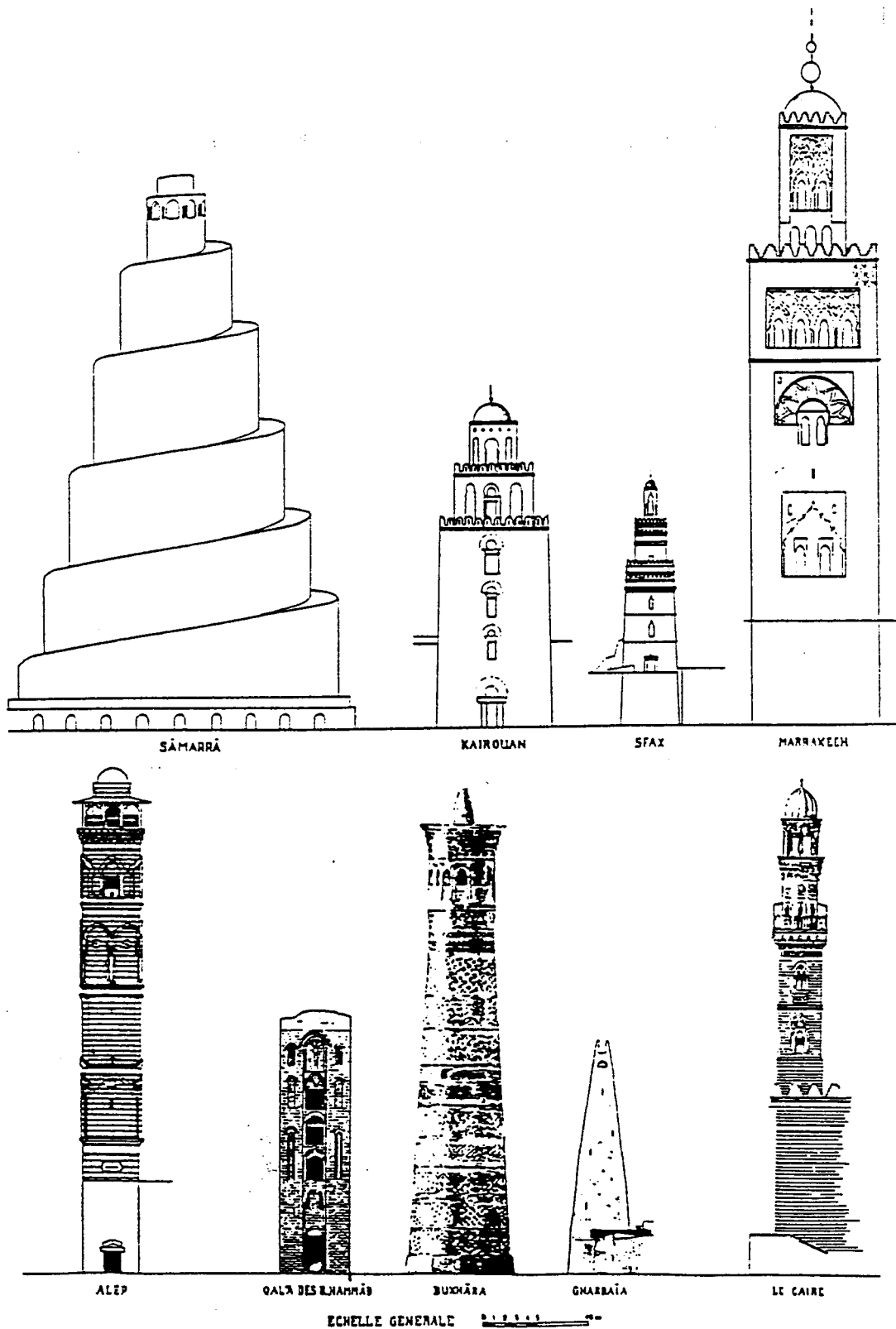
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[102]_EI_[1], "Manara," 229.

[103]Behrens-Abouseif, _Minarets of Cairo_, 11.

[104]Nutting, _The Arabs_, 106-108. Abd al-Rahman's escape to North Africa is a tale of adventure. The Abbasids executed Abd al-Rahman's entire family. Abd al-Rahman took refuge in a Bedouin camp near the Euphrates and was discovered by Abbasid troops. He escaped by swimming the Euphrates. He travelled through Palestine and North Africa for five years before he formed his own dynasty in Cordova.
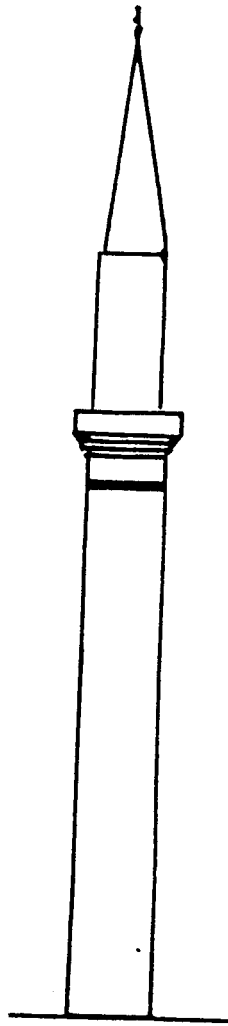
Fig. 7. Ottoman tower. Pencil-thin minarets are typical
Ottoman towers; however, they are derived from the Saljuqs.
Bloom, *Minaret*, 18.

Fig. 8. Ottoman minarets. Shown are slender minarets that
mark the Suleymaniye mosque in Istanbul, Turkey. Bloom,
Minaret, 188.
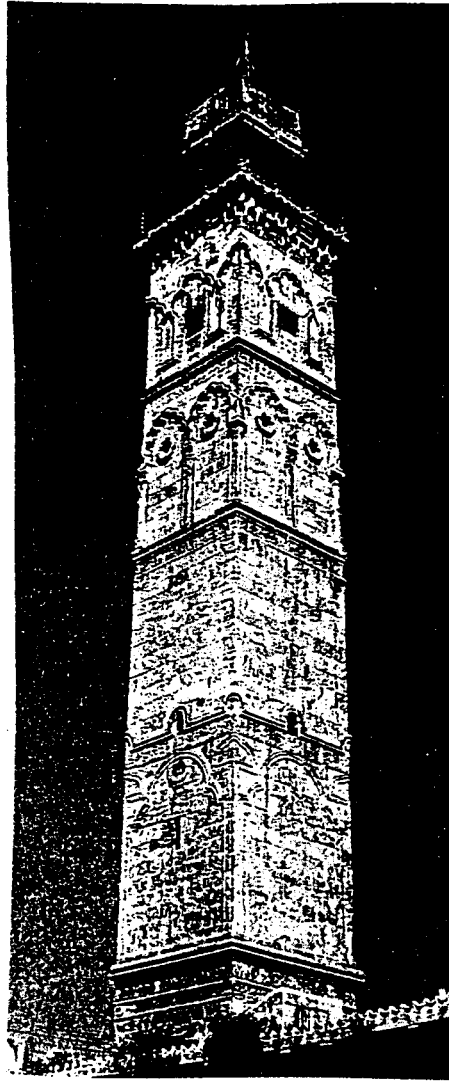
Fig. 9. Syrian square minaret. Congregational mosque tower in Aleppo, Syria. Bloom, *Minaret*, 164.

architects introduced arches into the design of the square minarets. These arches strengthened and increased the minaret's height by distributing its weight along the length of the arches.

Round minarets were unknown in the Umayyad area of Syria—the land of pre-Islamic Byzantine square bell towers and hermit cells. Round minarets are common, however, in India, Afghanistan, Persia, and Turkestan, where Byzantine monks were unknown.[105] The Persian-based Saljuqs (1038-1157 C.E.) were proponents of the round minaret's spread throughout the Islamic world and for its multiple uses, as caravan light towers and minarets. The construction of round minarets flourished during the Saljuq and Ottoman eras.[106]

In Persia, the minaret shape known as the *mil* dominated other styles. The mil tower was cylindrical throughout its length, and, unlike Western minarets, lacked windows and a dwelling-like atmosphere. Mil is the Persian word for "sky," but in literary and epigraphic texts, the word mil

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[105]Josef Strzygowski, "Antike, Islam und Occident," *Neue Jahrbücher für das klassische Altertum* 23 (1909): 354-372; and Bloom, *Minaret*, 12. Strzygowski added that round minarets ultimately derive from Asian folk arts that engendered round towers at Ravenna and in Ireland.

[106]*EI²*, "Manara, Manar (A) minaret; (1) in the Islamic lands between the Maghrib and Afghanistan," 365.

was synonymous with manara.[107] Saljuq Persian and later

Anatolian architects believed that minarets were symbolic of

their faith and should be built as tall as possible. The

Saljuqs viewed minarets as monumental structures,

illustrating the distance between Allah and humans below.[108]

Minarets in areas west of Persia, in particular, had

many shapes and styles, revealing the multiple cultural

influences on their design. Lammens believed that minarets

in Palestine, for example, reflected influences from both

Syria and Egypt because the Egyptians held political sway

over the area but the Syrians were closer in proximity.[109]

Palestinian minarets frequently have octagonal shapes but

square bases which have led some scholars, such as Doutté,

to argue that the octagonal shape might be credited to

Egyptian influence and control over areas of Palestine

during the medieval era. Towns in upper Palestine and the

Levant, such as Jaffa, Haifa, Sidon, Tyre, and Beirut,

tended toward square bases because of Syrian influence.

Climatic differences and the availability of regional

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[107]Hillenbrand, *Islamic Architecture*, 134.

[108]*EI*[1], "Manara," 228. Diez suggests that naming the
tower *mil* indicates its antecedents as a primitive pole and
pillar to indicate something of importance.

[109]Lammens, "Phares, Minarets," 16.

building materials affected architectural design.[110] In

Spain and Cairo, minarets were built primarily with stone,

while in the Maghrib, Iraq, Persia, and Afghanistan, they

were constructed of brick. In Arabia, Syria, Anatolia,

Armenia, Mesopotamia and India, minarets were built with

either brick or stone. In all areas and instances, there

were exceptions to these generalities.[111]

Early Islamic leaders, abhorring physical remnants from

the *Jahaliyya*, "the age of idolatry" that preceded the

Prophet Muhammad, contributed to the evolution of regional

minaret designs.[112] It is difficult to imagine that Islamic

architects would imitate something which held such negative

connotations. However, for practical reasons, early Islamic

leaders may have adopted designs of various tower

structures, especially those used by "people of the book."[113]

Mosques also existed without minarets. The first

mosques lacked minarets, and the tradition of minaret-free

mosques was imitated at a later date.[114] Until the

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[110]Richmond, *Moslem Architecture*, 8.

[111]*EI*[1], "Manara," 227.

[112]Bloom, *Minaret*, 13.

[113]Ibid., 17. Jews, Christians, and Zoroastrians were known as "people of the book" because they had revealed scripture but refused to convert to Islam. Hourani, *Arab Peoples*, 47.

[114]Bloom, *Minaret*, 10.

fourteenth or fifteenth century C.E., the geographical areas
encompassing India, Iran, and parts of Anatolia featured
mosques without minarets.[115]

Minarets used for the adhan were not always attached to
mosques. Minarets in North Africa were frequently attached
to or associated with *ribats*, or fortresses, while some
mosques in North Africa lacked minarets altogether (**Figure
10**).[116] In Cairo, Egypt, minarets were paired with Sufi
monasteries (*khanqas*), built in religious school compounds
(*madrasas*), placed alongside Sufi chapels (*zawiyas*), or
built with small oratories (**Figure 11**). According to
Behrens-Abouseif, minarets were attached to any religious
structure, even if they were not necessary for a mosque,
such in as an urban area like Cairo already crowded with
other minarets.[117] Behrens-Abouseif also proposed that some
Cairene architects constructed minarets to emphasize a

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[115]*EI*[1], "Manara," 230-231. In North Africa, some
mosques continue to be built without minarets. Bloom,
Minaret, 10. Additionally, certain orthodox Islamic
communities, such as the Wahhabis in Saudi Arabia, avoid
building minarets because conservative religious leaders
believe that the minaret is ostentatious and unnecessary.
Orthodox Muslims argue that the adhan was made in front of a
mosque in the days of the Prophet; therefore, this practice
should continue. Hillenbrand, *Islamic Architecture*, 129.

[116]Bloom, *Minaret*, 10.

[117]The only qualification for the minaret is that it
would have to be located over a street. Behrens-Abouseif,
Minarets of Cairo, 10.
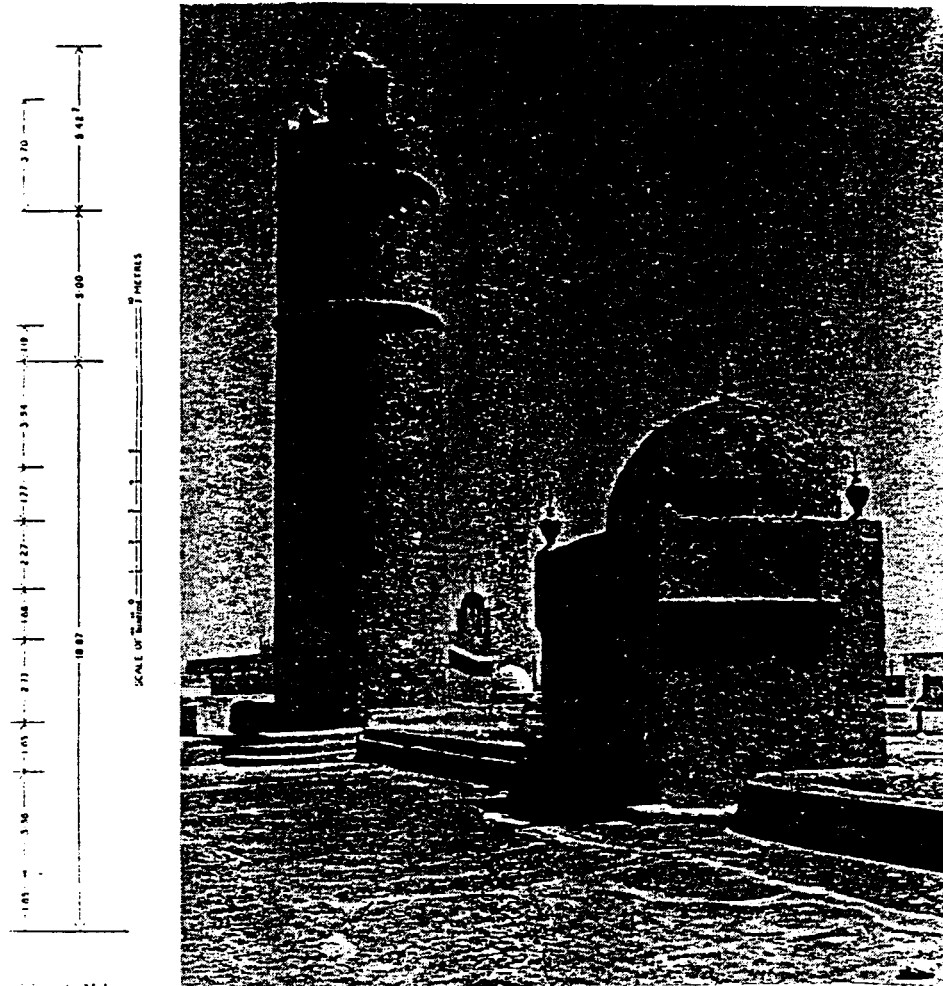
Fig. 10.   Ribat tower at Sousse, Tunisia.   Located at the
nearby ribat (watch tower) at Sousse, this cylindrical tower
dates ca. 821 C.E.   Although the tower's foundation
inscription does not refer to its function directly, it was
clearly built to guide ships into the nearby port.   The
inscription quoted the *Quran* 23:29, "And say, O my Lord, do
Thou harbour me in a blessed harbour, for Thou art the best
of harbourers."   Scale by M. Lyon.   Bloom, *Minaret*, 90.
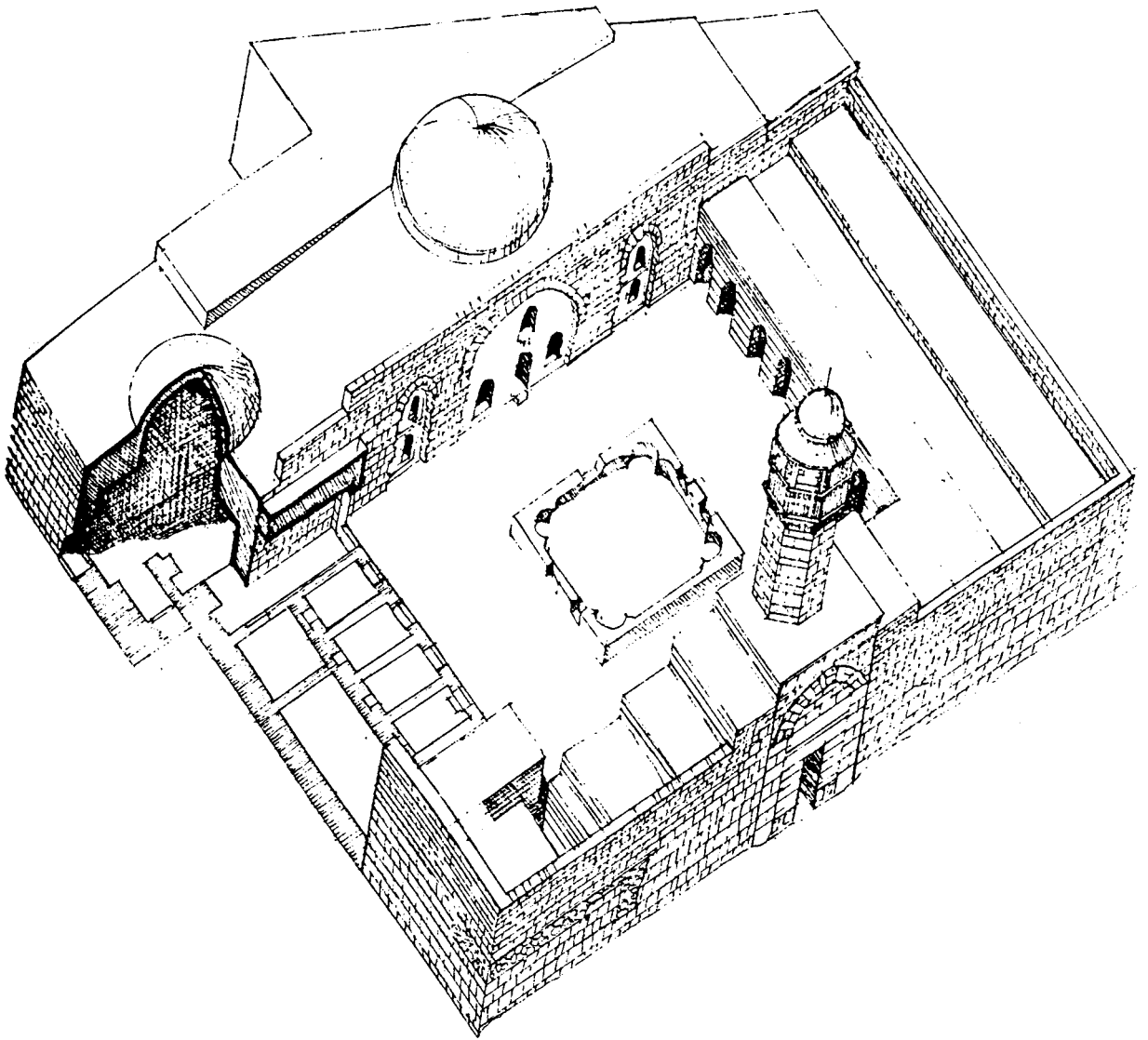
Fig. 11. Madrasa al-Sultaniya at Aleppo, Syria. Minarets
may also be attached to madrasas, for example here to an
Aleppo school. Hillenbrand, *Islamic Architecture*, 189.

building facade in the crowded city horizon; on the minaret,
the architect would etch his name for posterity.[118]

Similarly, Persians had a long tradition of lone
minarets not attached to mosques, and some minarets were
joined to tomb towers. Persian architects also placed tower
shrines directly behind the *qibla* wall of the congregational
mosque. Individuals within the society would donate
candlesticks to furnish a tower shrine as lighting was
important to Iranian Islamic rites.[119]

Archaeologists and historians uncovered lone minarets
in Iran that date to at least the eleventh or twelfth
centuries C.E. Based on this physical evidence, Eleanor
Sims and Antony Hutt concluded that Islamic minarets may
have served as beacons or watch towers for travelers on the
trade and pilgrimage routes of the Khurasan Road.[120] Towers
also existed along routes west of the central Iranian desert
(between Kerman and Isfahan) and in Afghanistan. These
minarets usually featured internal staircases that gave

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[118]Ibid.

[119]Sheila S. Blair and Jonathan M. Bloom, *The Art and
Architecture of Islam, 1250-1800* (New Haven and London: Yale
University Press, 1994), 10; and Melikian-Chirvani, "Sufi
Shrines," 120.

[120]Sims in Michell, ed., *Islamic Architecture,* 99.
Antony Hutt, M. Phil, thesis, University of London, 1974,
113-120 cited in Bernard O'Kane, "Saljūk Minarets: Some New
Data," *Annales Ismalogiques* 20 (1984): 85, n. 6.

access not only to a balcony where the muezzin could call

the adhan but also to the very top of the tower where a

beacon was lit.[121] Since caravan travel would frequently

occur at night, a minaret with a lamp on top would act as a

landlocked lighthouse.[122]

One example of a lone tower is the Jham Minaret

(**Figures 12 and 13**). André Maricq, a member of a French

archaeological expedition, located the minaret in the Jham

Valley of central Afghanistan, a remote area closed to

foreigners. Maricq reported that the minaret tower stood

over 60 meters high and that

> the monument rises from an octagonal base
> supporting three superimposed shafts in the form
> of truncated cones. At the top of the first two
> stages, projected balconies which are now
> destroyed, while the third is crowned with a
> lantern now lacking its cover.[123]

The Jham Minaret supported a muezzin for the adhan and

supported lighting features. Hillenbrand noted that the

height of the Jham Minaret was unprecedented for Iranian

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[121]Sims in Michell, ed., *Islamic Architecture,* 99.

[122]*EI²*, "Manara, Manar (A) minaret, (1) in the Islamic lands between the Maghrib and Afghanistan," 365.

[123]"The Lost Minaret of Jham," *Horizon: A Magazine of the Arts* 2 (November 1959): 42-43. See also André Maricq and Gaston Wiet, *Le Minaret de Djam (Mémoires de la Délégation Archéologique Française en Afghanistan 16)* (Paris: n.p., 1959) cited in Hillenbrand, *Islamic Architecture*, 154-155. Bloom believes that the discovery of the Jham minaret led to specialized study of minarets. Bloom, *Minaret*, 16.

minarets and that the base of the shaft was decorated by an entire Quranic chapter.[124] The Jham Minaret was not located near water, but it represented an instance of a minaret exhibiting multiple functions.[125]

The variety of minaret structures demands a regional focus in studying mosque evolution. As seen in this chapter's discussions, viewing tower architecture within a regional context creates difficulties. While there are regional terms for minarets, contemporary historians lack a complete historical Arabic dictionary. Even within specific regional areas and time periods, individual towers differ. As a result, architectural historians often specialize in the study of individual monuments.[126]

Under each category through which the minaret may be viewed, etymology, history, and architecture, a common theme of function is found because no single category produces a clear origin of the minaret. For example, morphology and location provide scholars with contexts to understand

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[124]*EI²*, "Manara, Manar (A) minaret, (1) in the Islamic lands between the Maghrib and Afghanistan," 365.

[125]Sims in Michell, ed., *Islamic Architecture*, 99. Viewing the regional variations of minarets, Sims concluded that the minaret may serve as lighthouses, watch or signal towers, towers for fire signals, or commemorative columns.

[126]Bloom, *Minaret*, 16; and Sims in Michell, ed., *Islamic Architecture*, 99.
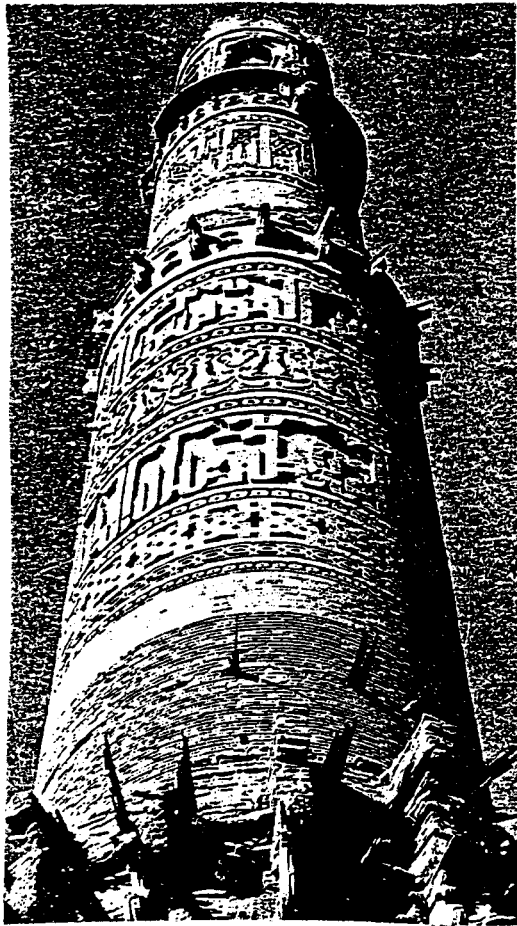
Fig. 12. The upper portion of the Jham Tower, central
Afghanistan. Hillenbrand, *Islamic Architecture*, 160.
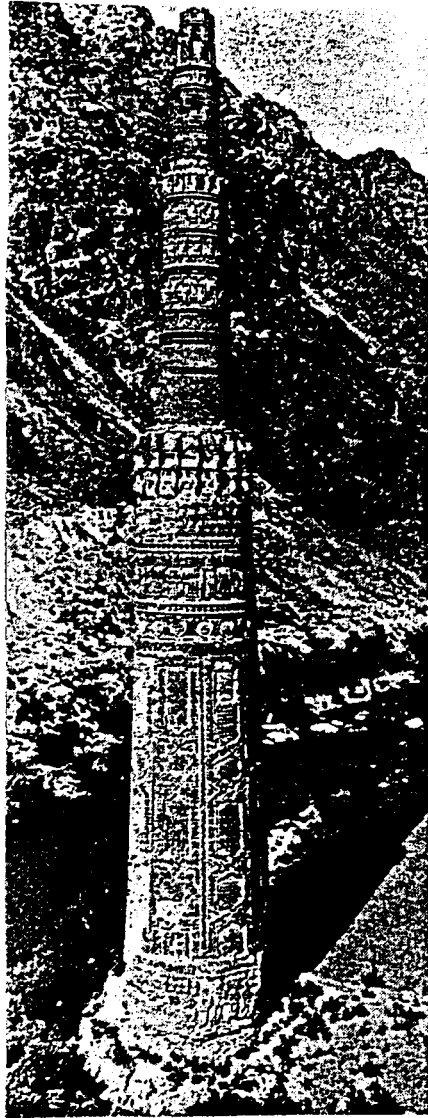
Fig. 13. The Jham Tower, central Afghanistan. Found in
Afghanistan by Andre Maricq, the Jham Minaret also served as
a signal tower. Bloom, *Minaret*, 162.

individual monuments, which touch upon the function of the minaret in a particular community. Since the role of the minaret within a community is variable, Binford's approach to cultural change can be applied to a structure. In presenting a unique case study to understand the functions of a minaret, the next section will provide a fourth method for examining the origins of the minaret.

CHAPTER IV: CASE STUDY OF THE ADEN MINARET

The minaret's origins remain controversial even after reviewing its historical setting, etymological roots, geographical locale, and form. This next chapter will examine the Aden Minaret using Binford's three artifact categories to evaluate the structure, in terms of a tower that may have served as lighthouse, signal tower, marker, and Islamic minaret.

Site History

The geographic area known as Aden in the Republic of Yemen occupies two peninsulas—Little Aden and Aden proper; these peninsulas extend southwest into the Gulf of Aden. Aden's geologic landscape is primarily volcanic. The main peak, Jabal Shamsan, towers over the broken "Crater" center. Sira Island, currently connected to the mainland by a causeway, is a fragment of the former crater wall. Aden has several sub-centers that appear to be separate habitation units but are all part of the city known as Aden. These sub-centers include Crater, Khormaksar, Ma'alla, and Tawahi (or Steamer Point).

Aden was once one of the most important ports in

history.[1] Medieval travelers, such as Marco Polo, Ibn

Battuta, Ludivico di Varthema, Tome Pires and Francisco

Rodrigues, wrote descriptions of it.[2] Alfonso

D'Albuquerque, the Portuguese Governor of India, tried but

failed to take Aden in 1513 (**Figure 14**). Although the

Portuguese seized control of the port briefly in 1547, they

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[1]G. R. Tibbetts, *Arab Navigation in the Indian Ocean Before the Coming of the Portuguese, Being a Translation of Kitab al-Fawa'id fi usul al-bahr wa'l-qawa'id of Ahmad b. Majid al-Najdi*, Oriental Translation Fund, n.s. vol. 42 (London: Royal Society of Great Britain and Ireland, 1971), 438. The Portuguese believed that the harbor of Aden was "anciently a very small settlement, but after the discovery of India by the Portuguese and their navigation to that place, it began to increase." Affonso D'Albuquerque, *The Commentaries of the Great Afonso Dalboquerque, Second Viceroy of India*, trans. Walter de Gray Birch (London: Hakluyt Society, 1875-1884; reprint, London: Burt Franklin, 1970), 4:10. Ibn Khordadhbeh, *Kitab al-Masalik wa'l Mamalik*, ed. M. J. de Goeje (Leiden: E. J. Brill), 40-42 cited in Pier Giovanni Donini, *Arab Travelers and Geographers* (London: Immel, 1991), 31.

[2]Marco Polo, *The Book of Ser Marco Polo, the Venetian, concerning the kingdoms and the marvels of the East*, 3d ed., (London: J. Murray, 1926; reprint, New York: AMS Press, 1986), 2:438-439. See also Ibn Battuta, *The Travels of Ibn Battuta, A.D. 1325-1354*, trans. H. A. R. Gibb, (Cambridge: Hakluyt Society, Cambridge University Press, 1958); *The Suma Oriental of Tomé Pires: an account of the east, from the Red Sea to Japan, written in Malacca and India in 1512-1515; and the Book of Francisco Rodrigues: Rutter of a Voyage in the Red Sea, nautical rules, almanack and maps, written and drawn in the east before 1515*, trans. Armando Cortesao, (London: Hakluyt Society, 1944); and Ludivico di Varthema, *The itinerary of Ludivico di Varthema of Bologna from 1502 to 1508*, trans, John Winter Jones, ed. Sir Richard Carnac Temple, (London: Hakluyt Society, 1863; reprint, London: Argonaut, 1928; reprint, New York: Plenum, 1970).
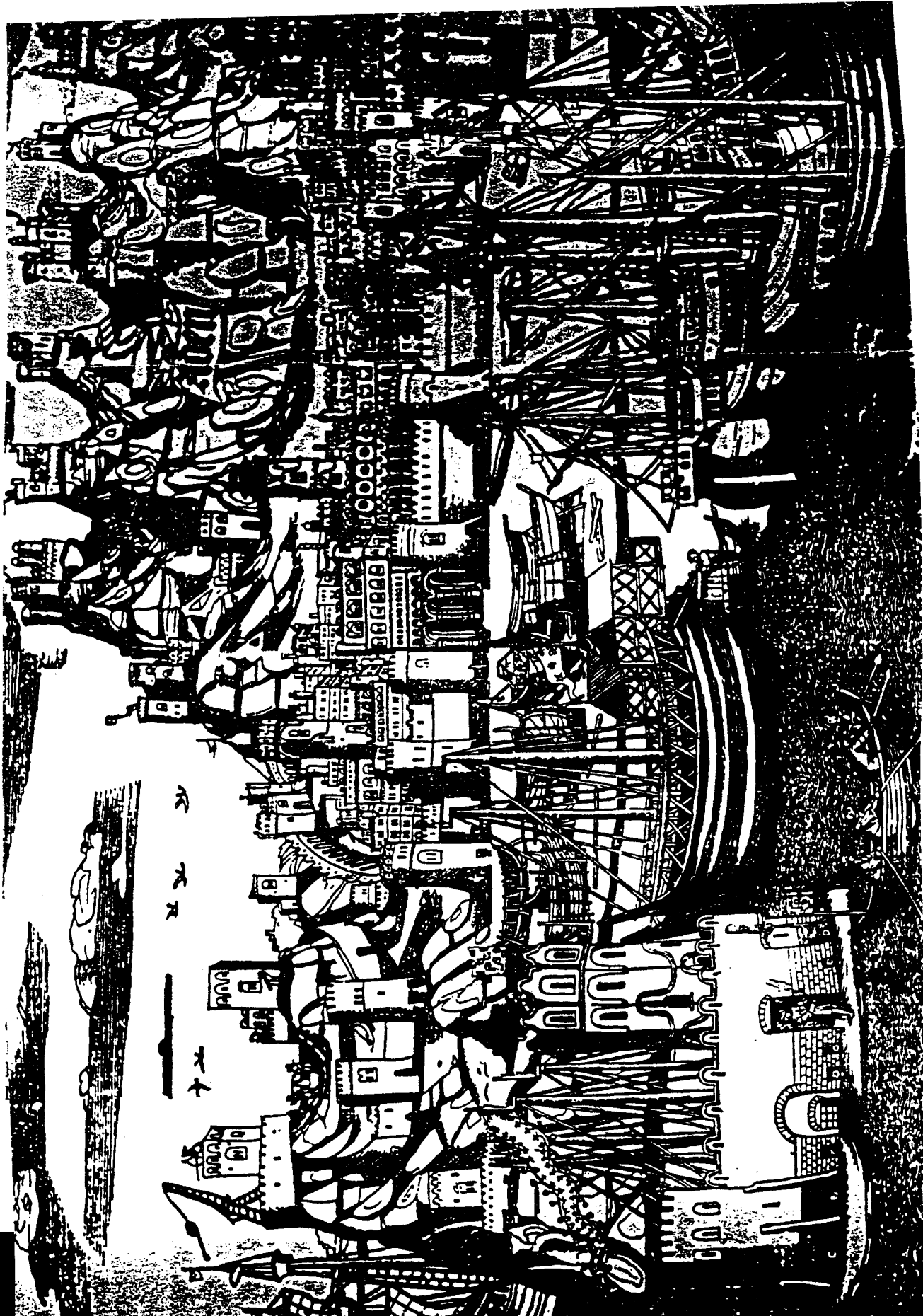
were expelled shortly thereafter.[3] The Ottomans briefly
captured Aden in the 1560s. Later, the Ottomans exercised
nominal control under the Capidan of Egypt.[4] By the first
half of the seventeenth century C.E., the Ottomans and their
vassals were gone. The British seized Aden in 1839 and
developed the city into a major port-of-call on the sea
route to India.

Aden Minaret

Most Adenis refer to a distinctive tower in downtown
Aden as a minaret (**Figure 15**). In the nineteenth century,
Captain F. M. Hunter, an early British government
representative in the colony, wrote a description of the
city. Hunter described a minaret "that stands near the new
Court and Treasury building."[5] He believed that the minaret
was the "sole surviving relic of a large [mosque] that

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[3]*Suma Oriental of Tomé Pires*, 1:15.

[4]A. H. Lybyer, "The Ottoman Turks and the Routes of
Oriental Trade," *The English Historical Review* 30 (October
1915): 586. Yemeni Hadrami chroniclers say little about the
Ottomans who fought the Portuguese for supremacy in the
Indian Ocean. R. B. Serjeant, *The Portuguese Off the South
Arabian Coast: Hadrami Chronicles with Yemeni and European
Accounts of Dutch Pirates off Mocha in the seventeenth
century* (Oxford: Clarendon Press, 1963), 20. Capidan is a
naval leadership term. The Ottoman naval leaders installed
loyal Egyptian naval vassals to administer the port city.

[5]Captain F. M. Hunter, *An Account of the British
Settlement of Aden in Arabia* (London: Frank Cass, 1877;
reprint, London: Thomas Nelson, 1968), 176.

passed into ruin within the memory of some older
inhabitants." Hunter added that these older inhabitants
declared that the minaret and mosque were of "considerable
size" and that they were "built at great expense" by a woman
of the politically-prominent Bani-Ghassan tribe that held
political sway in Aden from 1397 to 1597 C.E.[6]

Hunter did not specify his sources, but a local
historian known as Adel-Feda was mentioned by Hunter in
succeeding paragraphs of the account. He may have provided
Hunter with the minaret's history, and, according to Hunter,
Adel-Feda also described another missing mosque in Aden.
Hunter pointed out that *ziarahs*, religious visitations, were
"one of the principal amusement[s] of all classes in Aden"
during the early British colonial years. According to Adel-
Feda and Hunter, the Aden Minaret was one of the most
popular ziarah sites.[7]

This minaret, known simply by Adenis as the "Manara
'Aden," still stands today near the former Colonial Court
and Treasury buildings overlooking an open-air soccer
stadium in Crater. A 1993-1994 archaeological survey team
proposed that the minaret was a feature associated with the
medieval port, as it appeared to be represented in the

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[6]Ibid.

[7]Ibid., 173.
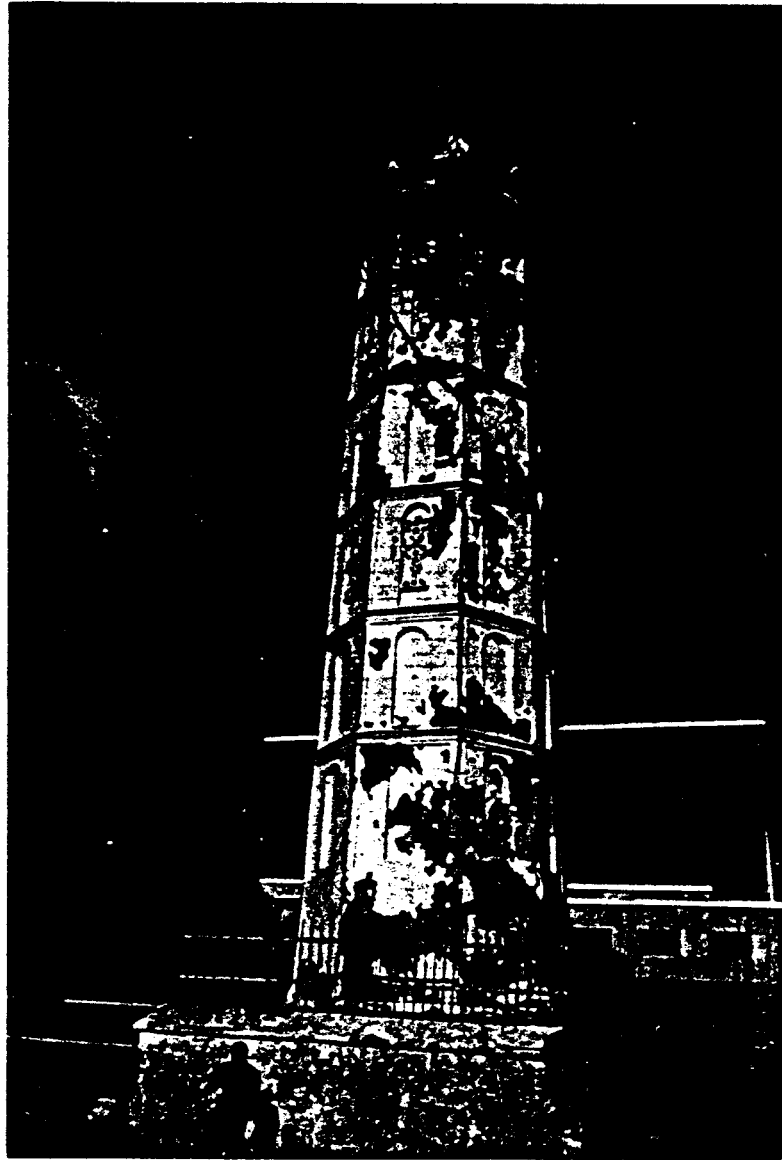
Fig. 15.   Manara Aden, Yemen.   The Aden Minaret-Lighthouse as seen in December 1993.   Photograph by Author.

Portuguese woodcut of D'Albuquerque's attack on Aden in 1513. Rather than operating only as a minaret, the tower also functioned as a lighthouse.[8]

Unfortunately, the date of the Aden Minaret's construction is not known. The author interviewed several inhabitants of Crater and officials from the Aden Branch of the Ministry of Antiquities and received a variety of responses: The tower may date from as early as the seventh century C.E. to shortly before the British occupation in the nineteenth century. The author observed a photograph (daguerreotype) from the British era, located in Aden's National Museum that confirms that the minaret existed as early as the mid-nineteenth century C.E. In the twentieth century, British Lt. Col. Tom Hickinbotham exaggerated the Aden Minaret's origins in his account, but he did verify its location:

> By 1931, Aden was by no means in an 'exigent condition of poverty and neglect.' Far from it, it was a flourishing town, though all that remained of its ancient splendor was the tall white minaret in Crater overlooking what is now the Football Stadium. A lonely ghost from the past whose mosque long since disappeared.[9]

Measurements made by members of the survey team reveal

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[8]Edward Prados, "An Archaeological Investigation of Sira Bay, Aden, Republic of Yemen," *International Journal of Nautical Archaeology and Underwater Exploration* 23 (1994): 297-307

[9]Tom Hickinbotham, *Aden* (London: Constable, 1958), 10.

that the Aden Minaret stands approximately 20 meters high from the base of the structure to the top of the tower. The minaret has an octagonal shape throughout its entire length. It measures 16 meters in circumference at the base. The circumference of the minaret's platform near the top of the structure is approximately 12 meters. The difference in circumference illustrates the gradual taper; each succeeding, octagonal layer is slightly smaller in circumference than the one below it.

The minaret also has a slight incline (approximately three degrees) which would indicate that it was not built upon firm bedrock, but rather upon a shifting base of fill and sand. The base of the minaret is square, and a recently-constructed iron fence protects its perimeter. Weather has heavily eroded the seaward-facing, south wall of the minaret; the other walls, by comparison, appear in better condition. Erosion on the seaward face suggests that the minaret may have once stood closer to the shore and sea. Additionally, in the corner of the seaward and westward facing walls, salt deposits were found. Sea shells were seen in all walls of the mortar.

Like many minarets, the Aden Minaret is a distinctive feature of the Arabian landscape. It is whitewashed and strikingly visible at a great distance from both sea and land. The minaret is discernible from the Jabal Shamsan

range that forms the backdrop of Crater, and the minaret can also be seen from the remains of a fortress on top of Sira Island, located immediately offshore. Survey team members first identified the minaret as a lighthouse because of its visibility on the Adeni skyline.

The author was given permission to enter the minaret by on-site workers and at the time observed that the structure's upper platform lies flush with the bottoms of four, deep and open windows. This arrangement would make it possible for a muezzin to call prayer only if he sat on the platform. The level of the windows would allow a burning light to shine through the open windows. No evidence of fires maintained on the platform was found, but a light source may have been placed on a brazier above the platform floor. Interestingly, the Aden Minaret lacks a balcony. While minarets of the Arabian Peninsula vary in shape and design, a balcony or exterior standing platform is an important and virtually standard feature of a mosque's minaret.[10]

The stairwell within the Aden Minaret is circular with eighty-nine plaster steps; the topmost steps are recent wooden replacements. Nine additional exterior steps lead to the base. At the platform level, there are four windows,

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[10]*EI*[1], "Manara," 229.

which face at 53°NE, 147°SE, 227°SW, and 319°NW (**Figure 16**).
The windows' locations around the minaret are not
symmetrical, indicating deliberate sight lines.

From the Aden Minaret, one may observe the remains of a
British fort on top of Jabal Shamsan. This fort was built
upon an earlier fortification that might be one castle
described by Ludivico di Varthema in 1503:

> Aden is the strongest city that was ever seen on
> level ground. It has walls on two sides and on
> the other sides there are very large mountains.
> On these mountains there are five castles. . . .
> At a stone's cast from this city there is a
> mountain upon which stands a castle, and at the
> foot of this mountain the ships cast anchor.[11]

Another feature in direct sight of the Aden Minaret is the
Zoroastrian Temple of the Dead, ruins of which remain below
the Jabal Shamsan peak. "High up on the rocks above the
tanks stands the grim Tower of Silence, the last resting
place of the Parsees."[12] The temple is believed to have
been built by the Parsees ca. 1868 when the British brought
them to Aden to escape political oppression in Bombay,
India. Parsees were in Aden prior to the British invasion
in 1839, but they immigrated in large numbers during the

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[11]Varthema, *Itinerary of Ludivico*, 26-27.

[12][Alfred Louis Moreau Gottschalk,] *Three Hours in
Aden: Being a Description of the Settlement with a Short
Account of the Surrounding Countries and Three Maps* (Bombay:
Times of India, 1902), 47.
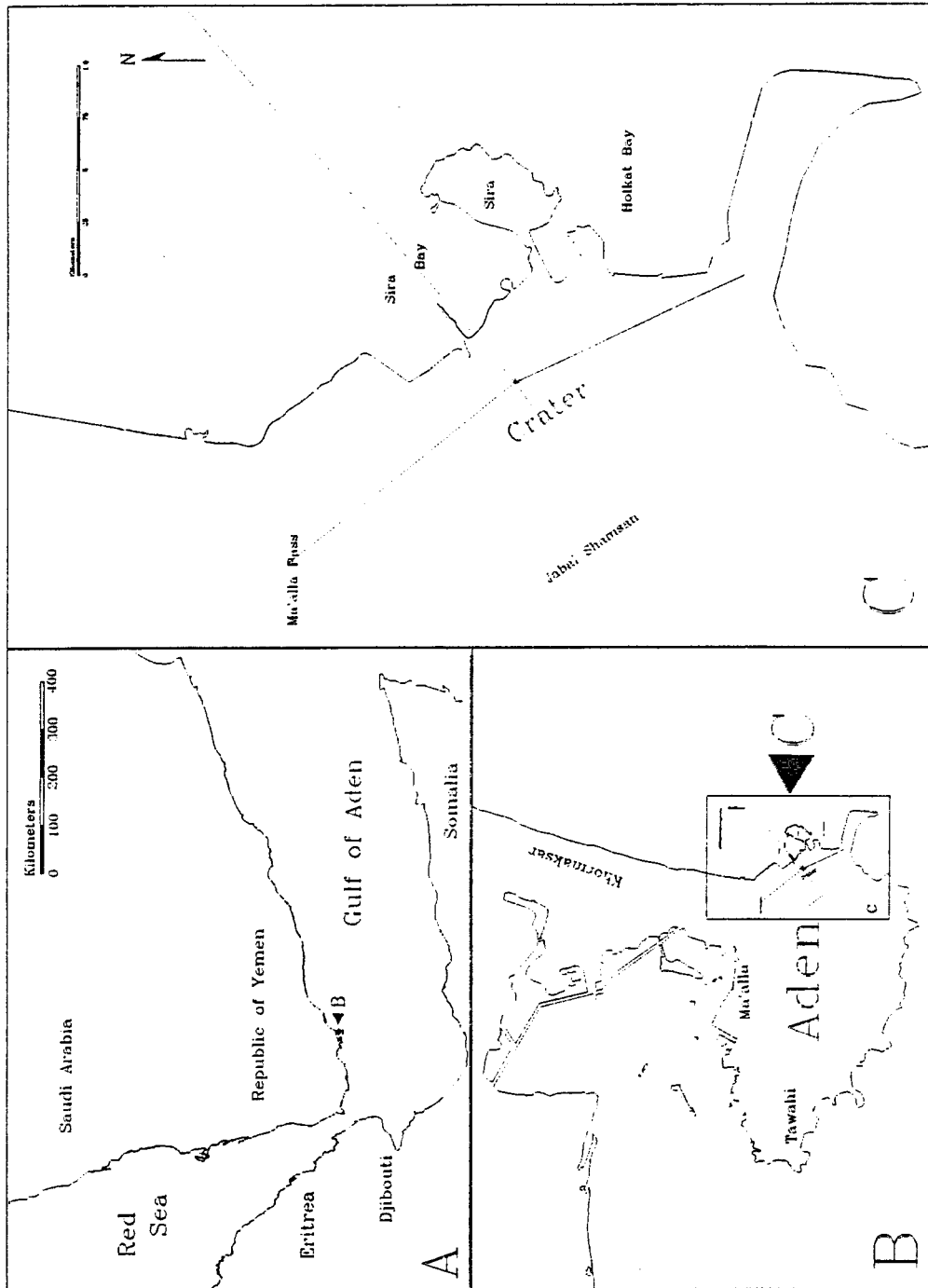
Fig. 16.   Aden site maps, Yemen.   Maps include: (a) location
of Yemen; (b) port city of Aden; and (c) site of the Aden
Minaret and the direction of its windows.   Illustration by
Prados, "An Archaeological Investigation, 298.

British occupation.[13] The Tower of the Dead was a recent feature, and it was unlikely that the structure was built on an earlier Zoroastrian site.

The Aden Minaret served as a signal tower for shipping in medieval times. Above the four main windows are four smaller apertures that resemble signal portals. The sight lines of these windows were not taken, as they were too high above the minaret's platform for individuals to view the Adeni landscape. Nevertheless, since it is visible from the Jabal Shamsan range, the Aden Minaret was possibly employed as one of a series of towers that alerted the populace to ship arrivals and possible enemy attacks. Although Alfonso D'Albuquerque and Ludivico di Varthema each noted that towers protected the city, neither adventurer described an individual lighthouse or the Aden Minaret.[14]

There are five stories or octagonal levels. The exterior of the Aden Minaret, like many minarets, features geometrical designs. The Aden Minaret has a simple design of interlocking ovals on each side of the third level, but it does not feature any Islamic calligraphy or inscriptions.

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[13]Ibid. It appears that most Indians in Aden were Hindu given the fatwas illustrating the positions that they were assigned relative to Muslims. Ibn Dja'man cited by Serjeant, *Portuguese*, 32.

[14]D'Albuquerque, *Commentaries,* 4:10-11; and Varthema, *Itinerary of Ludivico*, 26-27.

The simplicity of the tower's decoration suggests that it was used for religious purposes.[15]

As a religious structure, the Aden Minaret lacked one important element: an associated mosque. While Captain Hunter believed that a mosque was linked to the Aden Minaret before 1800, in discussions with local inhabitants, the author learned that, currently, people believe no mosque was even attached to or near the minaret. As noted earlier in the section on "Minaret Architecture," a mosque may have a minaret that is separate from the main religious building. However, with the exception of towers found in Iran, Afghanistan, and occasionally Egypt, religious minarets usually do not stand alone.[16] An examination of the area surrounding the minaret revealed no evidence of a mosque. A pit dug by construction workers adjacent to the minaret revealed no remains of a building. A wall-sized, twentieth-century aerial photograph in the Rock Hotel Restaurant in Tawahi, Aden, shows the minaret standing alone several hundred meters from the shoreline. The author could not distinguish the remains of a mosque in the picture and the

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[15]The use of inscriptions or depictions of human and animal forms on or in places or objects used for religious purposes is not accepted Islamic practice. *EI*[1], s.v. "Architecture," by Max van Berchem, 422.

[16]*EI*[1], "Manara," 227. The Jham Minaret mentioned in an earlier discussion is an example of a lone minaret.

date of the photograph is unknown.

Landfill lies below the minaret to the sea.[17] Along the road to the sea, recent construction excavations indicated at least 5 meters of landfill covering the original shore line. Land reclamation activities by the British formed a major part of the colony's budget; currently, a waterside roadway lies in front of the British fill areas. No indigenous, volcanic-rock formations were observable in any pits. While the Aden Minaret may have functioned as a lighthouse, it now serves as a marker for the medieval shoreline of Aden.[18]

The Aden Minaret was made of unusual material when compared with other Arabian minarets. The builders of the Aden Minaret used red clay bricks that are not indigenous to Aden's volcanic peninsula. Since the Ottomans frequently used bricks in their architecture, they may have built the Aden Minaret, perhaps from bricks used as ship's ballast. The building resembles, in construction details, a structure in Mocha, Yemen also ascribed to the Ottomans and situated on Yemen's Red Sea coast shoreline (**Figure 17**). The Mocha Minaret, however, has a mosque linked to it.[19]

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[17]Prados, "Archaeological Investigation," 299-301.

[18]Ibid., 301-302.

[19]Francine Stone, ed., *Studies in the Tihamah: the Report of the Tihamah Expedition in 1982 and related papers*
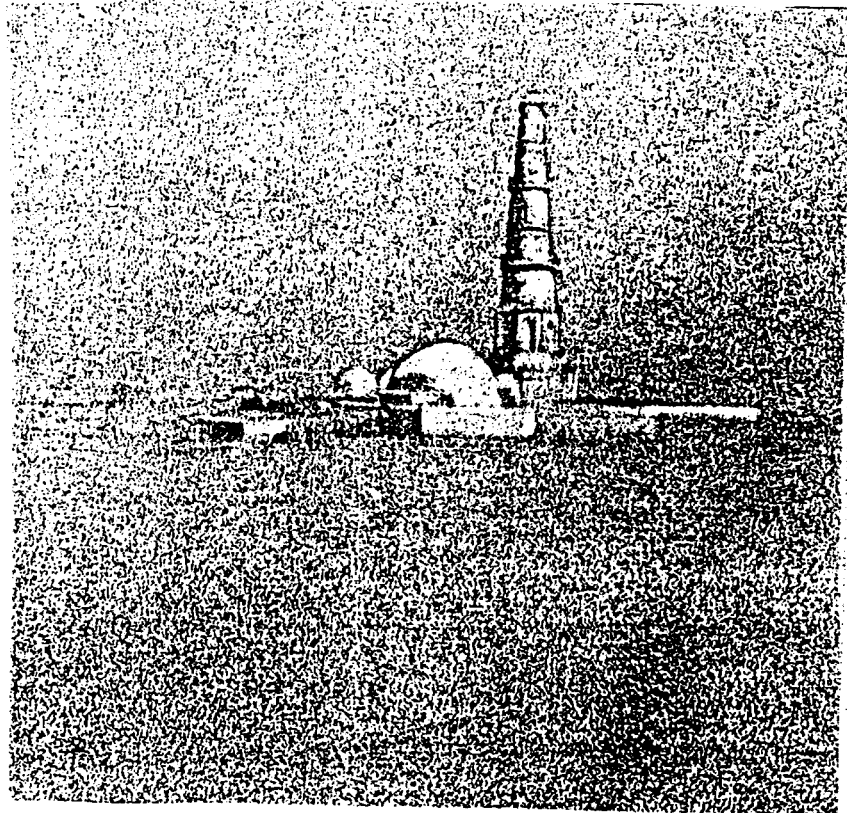
Fig. 17. Mocha minaret. Artist's rendering of the Red Sea coastal city Mocha mosque and minaret, Yemen. Stone, ed., *Studies on the Tihamah*, 45.

(Essex, England: Longman, 1985), 45.

While the Ottomans may have built the Aden Minaret, the structure exhibits distinct characteristics of an earlier era and dynasty. These characteristics include the minaret's brick construction, octagonal base, and internal staircase, which are more typical of Saljuq construction. It is possible that the Aden Minaret dates to the Saljuq era, but the Saljuqs are not known to have controlled the area around Aden. Their successors, the Ottomans, maintained nominal control of Aden until the seventeenth century, but while Ottoman minarets are made of brick, they are generally tall, thin, and monumental. Saljuq minarets were, on the other hand, noted for internal staircases to make them accessible for muezzins to call the adhan.[20] Additionally, Anatolian Saljuq architects traditionally built watch towers for defensive purposes.[21] As one architectural historian noted,

> The fact that many Seljuk [sic] minarets are free-standing and that some, with exceptional decoration, have been found in places where there was not, nor ever could have been, a mosque, suggest that their functions were not limited to the purely liturgical.[22]

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[20]Godfrey Goodwin, *A History of Ottoman Architecture*, (London: Thames and Hudson, 1971), 23.

[21]Ibid., 300.

[22]Sims in Michell, ed., *Islamic Architecture*, 99. The author is referring in part to the Jham Minaret in Afghanistan.

The Aden Minaret could have been built by the Saljuqs,

because Aden was a seaport exposed to Saljuq influences.

The author believes that the Aden Minaret's

construction was Saljuq-influenced. While the Saljuqs did

not control Aden, they were a powerful influence within the

Islamic world,[23] and their architecture easily could have

spread to adherents abroad, especially to sea-ports such as

Aden that were exposed to many different cultural

influences. By the Saljuq era (1081-1307 C.E.), the minaret

was a prominent symbol of Islam. The minaret was such a

distinctive sign within the religion that the Saljuqs did

not require a mosque or any religious facility to be built

in the minaret's proximity.[24]

The Aden Minaret also closely resembles the Saljuq-

built Ana Minaret in design, construction, and height

(**Figure 18**). The Ana Minaret, a brick structure built by

the Persian Saljuqs, was located on an Iraqi island in the

Euphrates River.[25] Archaeologists believe that the Ana

Minaret was built around 1058 C.E. because the minaret has

similar architectural features to another dated tower in the

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[23]Turman, "Anatolia in the Period of the Seljuks and the Beyliks," in *Cambridge History of Islam*, 1:231.

[24]Bloom, *Minaret*, 157.

[25]Maurice Gaudefroy-Demombynes noted that Ana was on the Euphrates to the west of Samarra. Gaudefroy-Demombynes, *Syrie à l'époque des Mameloukes*, 259.

region.[26]

The Ana Minaret also stood alone and seemed to fulfill Binford's requirements of architectural functions. The Ana Minaret acted as a structure for the adhan, thereby fulfilling a technomic role. Additionally, the Ana Minaret could have been employed as a marker or signal tower. In his collection of Arab documentary fragments, Gaudefroy-Demombynes quoted an anonymous Arab writer who related that

> in the town of Ana there are people who only tend fires [for the tower]. The [local] population protects them. Fires are lit from Khirbat er Roum to el-Jowf. Signals travel a great distance. . . A signal could travel down the Euphrates in one day or in one night.[27]

As a prominent and important tower, the Ana minaret also symbolized the town of Ana, thereby fulfilling a sociotechnic role. It is unclear from these sources whether the Ana Minaret exhibited ideotechnic qualities, such as being used for the adhan.

The Aden Minaret also exemplified Binford's attributes of artifact use. The Aden Minaret exhibited sociotechnic characteristics. The minaret marked the entrance of a major seaport, and in this role, it symbolized the significance

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[26]See Bloom, *Minaret*, 159, 170; and Friedrich Paul Theodor Sarre and Ernst Emil Herzfeld, *Archäologische Reise in Euphrat und Tigris-Gebiet* (Berlin: D. Reimer, 1911-1920), 2:319-321.

[27]Gaudefroy-Demombynes, *Syrie à l'époque des Mameloukes*, 259.
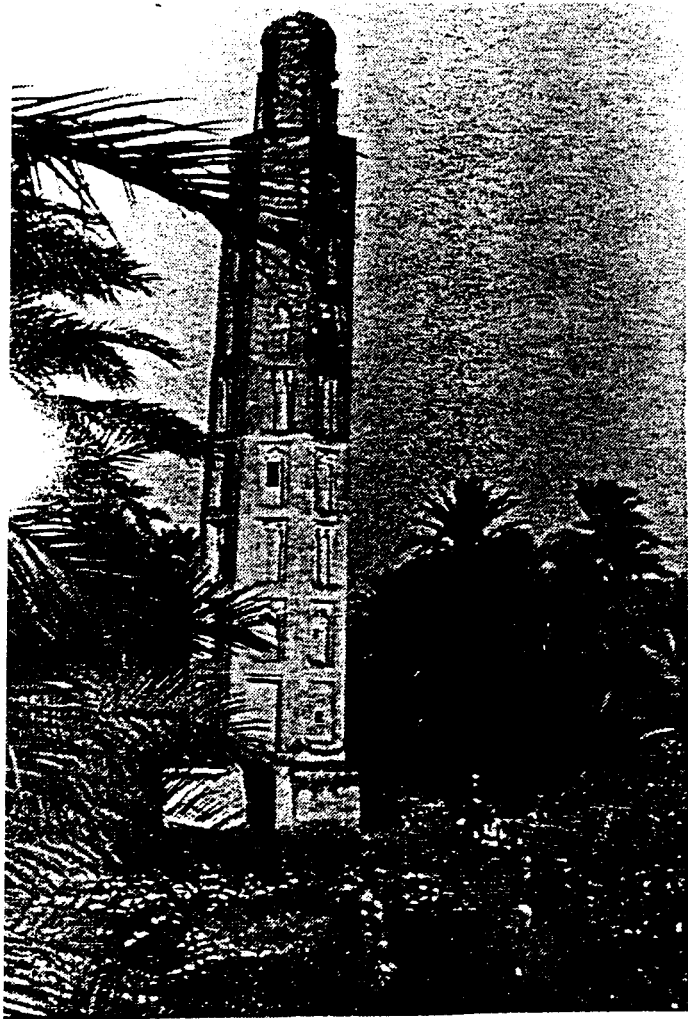
Fig. 18. The Ana Tower, Ana, Iraq. This minaret/seamark most resembles the Aden Minaret. Photo by Yasser Tabbaa reproduced in Bloom, *Minaret*, 59.

and prestige of the city. The minaret illustrated technomic qualities. Upon the distinctive Adeni landscape, the minaret served as both a lighthouse and signal tower. Both were absolutely necessary to a thriving entrepôt. The minaret's construction revealed the resourcefulness of the builders in using ballast or building materials foreign to the area. Concurrently, a muezzin could have called the adhan from the Aden Minaret. The structure served the local population as a ziarah pilgrimage site and meeting place. Since visitations to the Aden Minaret were expected of local, pious Muslims, the minaret played both an important religious and social role in Adeni society; thus it fulfilled both technomic and ideotechnic functions.[28]

Islam, as a religion, incorporated objects with more than one identity or characteristic, because Islam was founded on adaptive qualities. According to P. M. Holt, Islam adopted the conceptual and logical tools of Greek philosophy that existed in areas Muslims conquered. Islam was concerned with the *umma*, and required the mutual support of the umma to maintain the faith even after Ali's death.[29] The successors of the Prophet led the community based on traditional, Arab tribal leadership, as well as upon the

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[28]Hunter, *British Settlement*, 173.

[29]Holt, "Introduction" in *Cambridge History of Islam*, xi-xii.

Meccan trade oligarchy. The *Quran* abounded with historical references that described continuity between the previous society and the Muslims. Historical allusions also illustrated the concept of time, a succession of events that opens with a creation and culminates with a supreme revelation and last day of judgment. This concept of time is Judaic and Hellenic and was transferred from Judaism, to Christianity and then to Islam.[30] Likewise, Islam borrowed architectural designs from previous eras.

Similar Tower Structures

Other tower structures around the world further illustrated the likelihood of the Aden Minaret's technomic functions as a lighthouse. Peter Garlake described a minaret, built by Muslim sailors, in East Africa's Zanzibar, a former colony of the Sultanate of Oman. On the north-east tip of the East African Kilwa Island, Muslim merchants built a small mosque, known as "Mnara," offshore, in shallow water.[31] James Kirkman recorded the location of another small mosque near the sea at Husani Kilbwa. Both the mosques were built as seamarks on a cliff or headland and

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[30]Ibid.

[31]Peter S. Garlake, *The Early Islamic Architecture of the East African Coast* (Nairobi and London: Oxford University Press, 1966), 4, 98.

served an integral role in the Arab seaborne trade, equating

with Binford's sociotechnic, ideotechnic, and technomic

artifact qualities.[32] Similarly, Roman and later medieval

European sailors used religious structures along the English

coast as seamarks.[33]

In 1980 adventure traveler Timothy Severin convinced

the ruler of Oman, Sultan Qaboos bin Said, to fund the

building of an Omani *bum*, a traditional sailing vessel and

its subsequent voyage. Severin sailed the bum <u>Sohar</u> to

China, retracing the medieval Arab sea route, which, at the

time, was the longest in the world. Severin and his Omani

crew visited a mosque in Canton whose minaret, he believed,

may have served as a lighthouse. Known by the Chinese as

the "Smooth Pagoda," the building was actually a mosque

constructed by foreign merchants (many of them of Arab

origin).[34] The pagoda had an attached tower that provided a

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[32]Ibid. See also James S. Kirkman, "Mnarani of Kilifi: The Mosques and Tombs," *Ars Orientalis: The Arts of Islam and the East* 3 (1959): 95-112.

[33]John Naish, *Seamarks: Their History and Development* (London: Stanford Maritime, 1985), 15.

[34]Based on Chinese tax registers, Arabs worked and lived in the port city of Canton, known as Khanfu or Hanfu by the Arabs and as Han chau-fu by the Chinese. Captain Burzug ibn Shahriyar of Ramhormuz, *The Book of the Wonders of India, Mainland, Sea and Islands,* ed. and trans. G. S. P. Freeman-Greenville (London and The Hague: East-West Publications, 1981), vii; Abu'l Ḥasan Ali ibn al-Husayn ibn Ali Al-Masudi, *Les prairies d'or*, ed. Ç. Pellat, trans. C. Barbier de Meynard et J. Pavet de Courteille, *Muruj al-*

beacon of light for ships traveling up Canton's river.
According to Chinese scholar Jung-Pang Lo, the pagoda-
minaret displayed flags during the day and fires were lit in
it at night.[35] Severin learned from his Omani sailors that
after a long voyage, Muslim sailors offered thanks to Allah
at the Cantonese mosque for their safe passage to the East.

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dhahab wa ma'adhin al-jawhar (Paris: Centre national de la
recherche scientifique, 1962), 1:330; and G. R. Tibbetts, *A
Study of the Arabic Texts Containing Material on South-East
Asia* (Leiden: E. J. Brill, 1979), 37.
     Chinese emperors permitted the construction of the
Canton mosque and appointed local leaders to administer the
Muslim factors, ensure justice, preach, and offer prayers
for the emperor at the mosque. Hirth and Rockhill note that
this selection and permission shows how important the
Cantonese Muslim settlement was in the ninth century C.E.
Friedrich Hirth and W. W. Rockhill in *Chau Ju-Kua: His Work
on the Chinese and Arab Trade in the twelfth and thirteenth
centuries, entitled Chu-fan-chi*, [Description of the
Barbarian People], trans. by Friedrich Hirth and W. W.
Rockhill (St. Petersburg: Printing Office of the Imperial
Academy of Sciences, 1911), 16-17. See also *Voyage du
marchand arabe sulayman en Inde et en Chine rédigé en 851
suivi des remarques par Abu Zayd Hassan (vers 916)*, ed. and
trans. Gabriel Ferrand, Les classiques de l'orient, vol. 7,
(Paris: Editions Bonard, 1922), 38; Adam Mez, *The
Renaissance of Islam*, trans. Salahuddin Khuda Bukhsh and D.
S. Margoliouth, 1st ed., (London: Luzac, 1937), 514; and Abu
Zayd Hassan Ibn Yazid al-Sairafar, *Silsilat al-tawarikh.
Relation des voyages faits par les arabes et les persanes
dans l'Inde et à la Chine dans le Ixe siècle de l'ere
chrétienne*, ed. Joseph Toussaint Reinaud, (Paris:
L'Imprimerie royale, 1845), 14.

    [35]Jung-Pang Lo noted early Chinese writings that
describe this pagoda-lighthouse. *Kan Chiao P'u-shih chia-
p'u* cited in Lottsiang-lin, "T'ang Sung shih-tai Kuang-chou
chi Hui-chiao," *Ch'ing-hua hsüeh-pao*, n.s. 5 (July 1965): 8
cited in Jung-Pang Lo, "Maritime Commerce and Its Relation
to the Sung Navy," *Journal of the Economic and Social
History of the Orient* 12 (1969): 72, n. 5.

As with the Aden Minaret, centuries of landfill activities "moved" the "Smooth Pagoda" several meters inland.[36]

Like the Aden Minaret, the Smooth Pagoda fulfilled Binford's vision of multiple functions. The Smooth Pagoda in Canton was a lighthouse for mariners and traders and therefore exhibited technomic qualities. The Smooth Pagoda had sociotechnic characteristics as a marker of both Arab and later Chinese trading communities. Finally, the Pagoda's ideotechnic qualities demarcated a place of worship for the Cantonese Muslim population and later a place of worship for Canton's Chinese inhabitants.

The Aden Minaret fulfills all the functional types of an artifact as defined by Binford. By studying this individual structure under five categories, its architectural and symbolic origins became clearer. However, the diffusion of a particular type of minaret revealed only one of several popular theories about the origins of the minaret. This thesis will now examine three major theories of minaret origins in light of Binford's hypothesis.

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[36]Tim Severin, *The Sinbad Voyage* (Norwalk, CT: Easton Press, 1988), 229.

CHAPTER V: THEORIES OF MINARET DEVELOPMENT

Most scholars agree that the distinctive tower used for the adhan is not of Islamic origin.[1] Some suggest that the origins and varieties of minarets date to the pre-Islamic tower traditions of Mesopotamia. Others assert that the towers were directly related to Mediterranean, Christian Syrian, Iranian, or Indian tower traditions.[2]

This chapter will discuss both form and homology. Towers are tall and thin, regardless of their name(s) or function(s). Thus, some towers represent a homology, or the quality of corresponding to each other in structure, position or character.[3] For example, the wing of a bat and the foreleg of a mouse are homologous. This thesis will review and comment upon the possibilities of structural and

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[1]*EI*[1], "Manara," 227; Behrens-Abouseif, *Minarets of Cairo*, 12; Hillenbrand, *Islamic Architecture*, 138; and John D. Hoag, *Western Islamic Architecture* (New York: George Braziller, 1963), 10.

[2]André Parrot, *Ziggurats et Tour de Babel* (Paris: Editions Albin Michel, 1949), 51. Parrot believes that the minaret at Samarra is an evolutionary stage of Mesopotamian architecture. The Saljuqs must have been influenced by the Sasanian architecture when they arrived in Persia before continuing west to Anatolia. Derek Hill, *Islamic Architecture and Its Decoration A. D. 800-1500* (London: Faber and Faber, 1964), 16. The Sasanids ruled Iran from 224-651 C.E. and were successors of the Parthians.

[3]In biology, homologous relationships indicate the possibility of deriving from a common primitive origin.

functional origins of the minaret through the following forms: ziggarut, stambha and lat, mil, bell tower and sawami, and lighthouse.

Ziggaruts and Other Early Tower Forms

Ernst Diez, a nineteenth-century German archaeologist, claimed that the minaret's structural precursor may date several millennia before the present era. He maintained that the minaret's origins could be traced to Eastern cultural roots. However, Diez recognized that Eastern and Western minarets were markedly different in appearance. Therefore, Diez proposed that Western minarets were influenced by pre-Islamic Eastern watch or signal towers along pre-Islamic caravan routes that continued during the Islamic empire. Eastern minarets, on the other hand, evolved into the archetypal Persian *mil* from several earlier tower types. Diez believed that the idea of a minaret tower came from early structures such as the ziggarut, and felt the ultimate manifestation of the ziggarut's influence was replicated with the Iraqi Samarra minarets.[4]

Ziggaruts were usually staged, or stepped, towers with a shrine placed on top of a superimposed masonry block, and another temple or shrine placed at the bottom. A series of

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[4]Michell, ed., *Islamic Architecture*, 99.

ramps or stairways rising in several stages gave access to
the top of the structure. Herodotus reported the existence
of ziggaruts in his history of the Persian Wars:

> A solid tower . . . built . . . one-eighth mile in
> length and breadth; on top is another tower and
> another tower and yet another until there are
> eight towers in all. You ascend by an external
> spiralling stairway built into the towers. There
> is a large shrine on top of the last tower.[5]

Based on their locations within a tel, ziggaruts
dominated the skylines of Sumer, Babylonia, and Assyria
during the Ubaid culture complex of the last half of the
sixth and most of the fifth millennia B.C.E.[6] Although
ziggaruts were built primarily on elevated ground, they were
likely associated with nearby mountains because the term
ziggarut could refer to either a mountain summit or a temple
tower.[7] According to Henri Frankfort, a high place, such as
a mountain, has an almost ubiquitous symbol in early
religions.[8]

Ziggaruts were associated with ritual worship. The

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[5]Herodotus 1.179.

[6]Paul Bahn, ed., *Collins Dictionary of Archaeology*,
(Santa Barbara, CA: ABC-CLIO, 1993), s.v. "Ziggarut."

[7]Parrot, *Ziggurats*, 10.

[8]Henri Frankfort, *The Art and Architecture of the
Ancient Orient* (Baltimore: Penguin, 1963), 6-7.
Interestingly, in the *Quran* ("Surat al-Baqarah" or "The Cow"
2:197), the pilgrimage to Mecca is associated with the
mountain near Mecca known as Arafat.

most famous ziggarut is the Biblical Tower of Babel (Gen.
11.1-9), which may have risen eight stories.[9] The towers at
Babel and nearby Birs-Nimrod were both temples and
observatories simultaneously, as the Babylonians used
observatories for religious rites.[10]

Despite the passage of time, Babylonian architectural
ruins likely influenced the Abbasids, as they lived in the
same area.[11] Cylindrical Abbasid-built minarets with
exterior ramps, such as the Malwiyya ("spiral") minaret at
Samarra, Iraq, resembled the ziggarut on a reduced scale
(Figure 19). The brick Malwiyya minaret in Samarra rose 50
meters high in a helicoidal fashion. The caliph al-
Mutawakkil ordered the mosque and its minaret to be built
between 848-852 C.E. The 2.3 meters wide ramp rose in five
complete counterclockwise turns to a cylindrical platform.[12]

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[9]David Porter Heap, *Ancient and Modern Light-Houses*
(Boston: Ticknor, 1889), 5.

[10]Auguste Choisy, *Histoire de l'architecture* (Paris:
Villars-Gauthier, 1899; reprint, Ivry: Serg, 1976), 1:86.
The religion was a cult of the stars.

[11]Kuban, *Muslim Religious Architecture,* 6.

[12]Bloom, *Minaret,* 60. The town of Samarra lies on the
east bank of the Tigris River in Iraq, and Samarra served as
the Abbasid capital from 836-892 C.E. In antiquity, the
site was lightly occupied. Scholars debate whether the
Assyrians may have occupied the area, but based on 1986
archaeological excavations of the tell al-Suwwan,
Sennacherib re-founded a city of Sur-marrati there. *EI²,*
s.v. "Samarra."
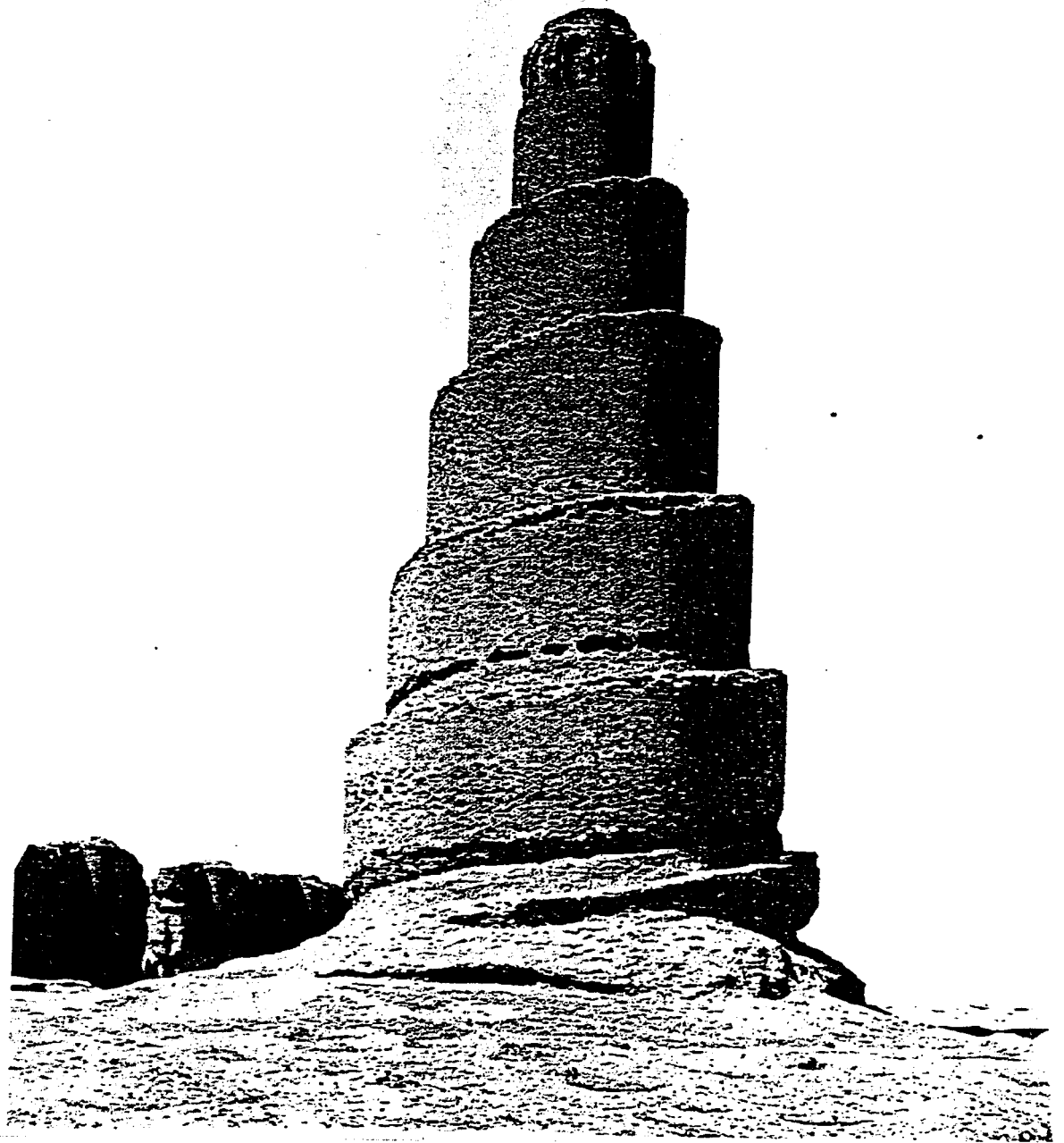
Fig. 19. The Malwiyya Minaret, Iraq. Located outside of
Samarra, the Malwiyya Minaret resembles a Mesopotamian
ziggarut. Bloom, *Minaret*, Frontispiece.

A similar minaret attached to the Abbasid Mosque of Abu
Dulaf built in 861 C.E. resembled the Malwiyya but only
ascended to 30 meters (**Figure 20**).

Diez regarded the Samarra minarets as replications of
one tower type, the ziggarut. In turn, the ziggarut
represented the ultimate ideotechnic quality. Adapting the
ziggarut's form crystallized ideotechnic characteristics of
Eastern minarets, which were "etherealized" and became
spiritual rather than secular manaras.[13]

Although Diez was not familiar with Binford's
methodological approach to artifact analysis, he recognized
that minarets had sociotechnic characteristics derived from
other types of earlier towers and markers and imitated in
later minaret construction. Despite the long time between
their constructions, Diez asserted that minarets also
derived from the *stambha* or *lat*, victory towers, such as
those erected by the King of Asoka in India between 250-232
B.C.E.[14] He felt that even multi-storied Chinese pagodas
built from the fifth century C.E. influenced the minaret
because the structure's height, and concurrent visibility,

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[13]*EI*[1], "Manara," 228.

[14]Ibid., 227. Singular pillars are ascribed to the
King of Asoka for imperial not religious purposes. Jeannine
Auboyer and others, *Oriental Art: A Handbook of Styles and
Forms*, trans. Elizabeth and Richard Bartlett (New York:
Rizzoli, 1980), 14.

Fig. 20.   Samarra Minaret, Iraq.   The Mosque of Abu Dulaf's
minaret.   Hillenbrand, *Islamic Architecture*, 146.

were important to a community (**Figure 21**).[15]

The stambha was a tower of varying height that commemorated either a military victory, deity, or ruler. The stambha did not have an internal stairwell, and its design probably derived from early Aryan wooden columns built as symbols of deity.[16] Archaeologists have shown that the stambha shared both ritual (ideotechnic) and monumental (sociotechnic) roles in Indo-Aryan life.[17]

Diez accurately noted that the stambha and minaret were significantly different in height; the stambha was much smaller than the typical minaret. However, Diez, like many scholars studying minaret origins, posited that since the shapes of the stambha and minaret are similar, they must be related, homologous architectural designs. In Diez's opinion, the stambha and minaret shared the same alternating

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[15]Hillenbrand, *Islamic Architecture*, 147. Interestingly, Fergusson believes that the Chinese probably borrowed the spiral pagoda from Mesopotamian ziggaruts as early as 2300 B.C.E. James Fergusson, *History of Indian and Eastern Architecture* (New York: Dodd, Mead, and Co., 1891), 2:468-469. Fergusson also believed that Muslims adopted the Buddhist and Jaina plan of erecting towers of victory to commemorate their exploits, and that the most direct imitation is the Chinese nine-story pagoda which are literal copies of the Indian towers. Fergusson, *Indian and Eastern*, 2:37 passim. See also Bloom, *Minaret*, 12.

[16]Auboyer, *Oriental Art*, 14.

[17]*EI*[1], "Manara," 227.
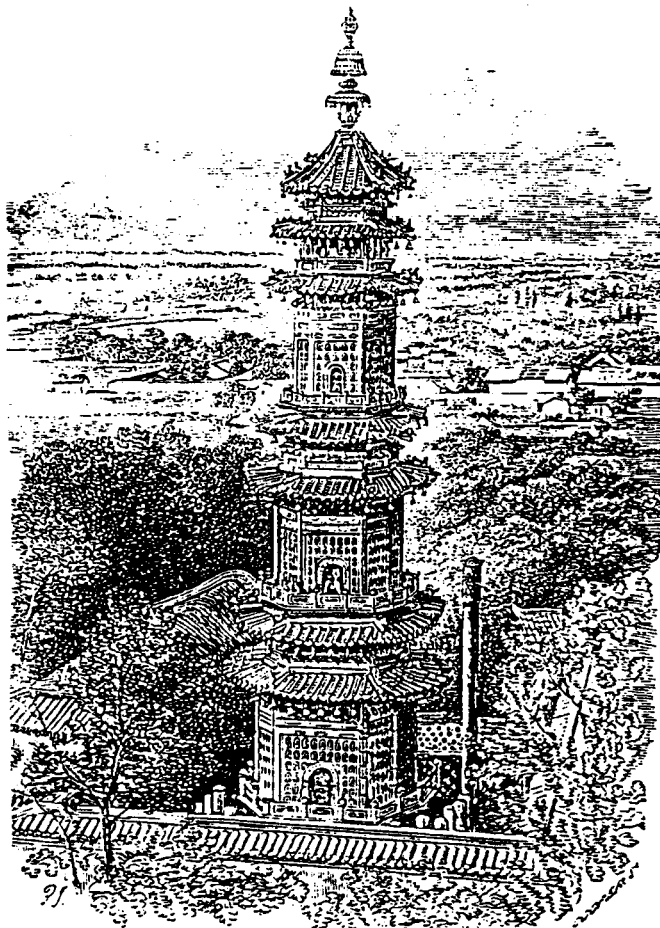
Fig. 21. Multi-storied Pagoda. Pagoda tower linked to the
Summer Palace in Peking, China. Fergusson, *History of
Indian and Eastern Architecture*, 311.

cylindrical and polygonal sections.[18]

Diez proposed that an Indo-Buddhist brick stambha of uncertain date in Kabul represented a link between the early stambha and the first Muslim memorial towers such as those built in Ghazni, Afghanistan between 1019-1020 C.E. and 1101-1102 C.E. by Sultans Mahmud II and Ma'sud III respectively (**Figure 22**). Diez believed that towers similar to the Ghazni memorials were part of a series that had other uses.[19] Diez claimed that a third factor influenced the origins of the minaret, the technomic signal tower which evolved from victory towers.

In the Near East, Diez likened the role of early minarets to the roadside indicators built by the Assyrians and Babylonians.[20] Along with the Romans, the Assyrians and Babylonians maintained roads with marked signs and with guard posts that offered travelers safety and repose.[21] According to Diez, early historical references described minarets as markers for caravans and as watch towers.[22]

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[18]Ibid.

[19]Ibid., 228.

[20]Ibid.

[21]Lionel Casson, *Travel in the Ancient World* (London: George Allen and Unwin, 1974; reprint, Baltimore and London: The Johns Hopkins University Press, 1994), 50.

[22]Diez, *Islamische baukunst*, 59.
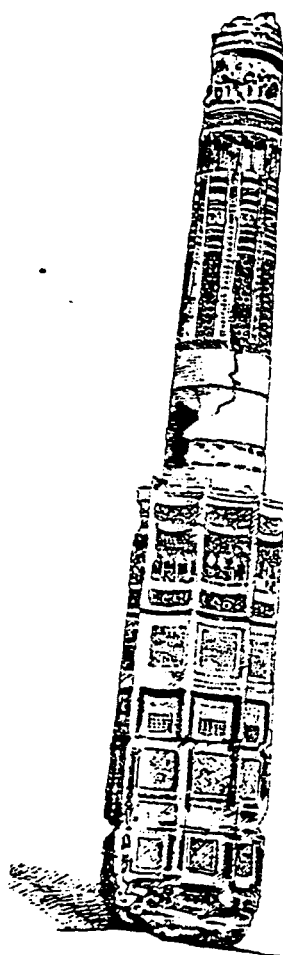
Fig. 22.   Ghazni tower, Ghazni, Afghanistan.   The Ghazni
tower dates to the rule of Masud III ca. 1098-1115 C.E.
Tower in its original state drawn by Arthur Upham Pope, ed.,
*A Survey of Persian Art from Prehistoric Times to the
Present*, and replicated in Bloom, *Minaret*, 158.

These structures were round in form and often provided
shelter for caravan travelers.[23] He noted that a minaret at
Herat, Afghanistan, was also a signal tower. The Herat
minaret was composed of stone and lime with an outer
covering of tiles; it was built on the top of a hill in a
commanding position and seemed intended as a signal tower
(**Figure 23**).

However, Diez added that these signal towers were not
called manaras. For instance, in Afghanistan, an Islamic
signal tower examined by Diez and Oskar von Niedermayer at
Ghazni was called an *amah*; a similar one in Herat was known
as the *imarat*.[24] He claimed that early references indicated
that these minarets were intended to be indicators for
caravans and to be watch towers. These towers stretched out
across the Asiatic plains all the way to China.[25]

Diez concluded that the tower evolved into its fullest
expression as a minaret with the mil. The Persian word,

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[23]Donini, *Arab Travelers*, 48.

[24]See also Oskar von Niedermayer, *Afghanistan* (Leipzig:
Verlag Karl W. Hiersemann, 1924), 59. The terms are
interchangeable: amah is Farsi, which is spoken primarily in
western Afghanistan and Iran, while imarat is Dari, Afghani.
Farsi developed after the arrival of Islam and is spoken in
eastern Afghanistan. Dr. Imam Abdul Shakur Farhadi,
personal communication, 2 July 1996, electronic message,
East Carolina University, Greenville, North Carolina.

[25]*EI*[1], "Manara," 227.
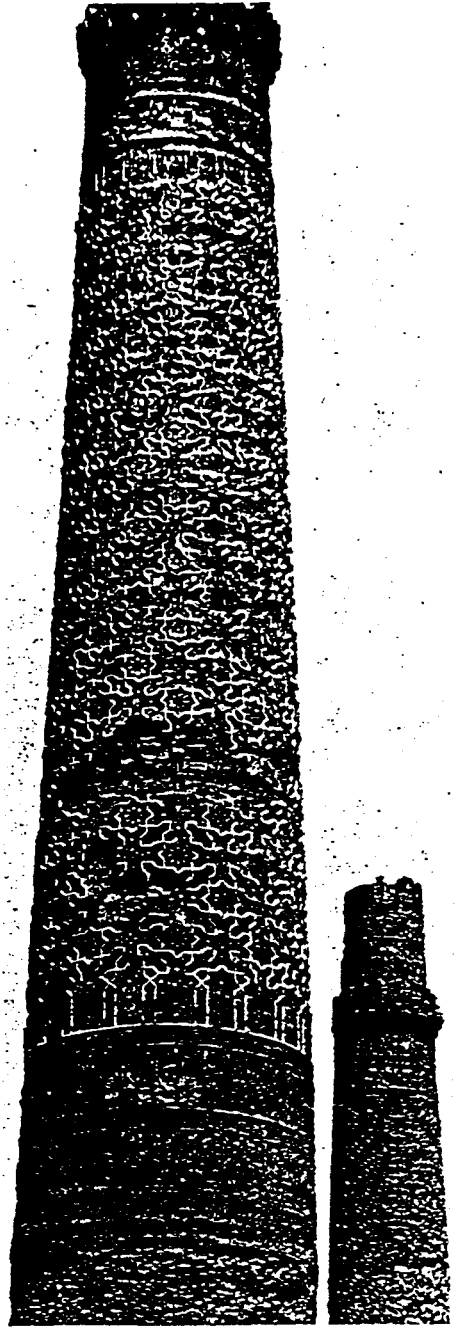
Fig. 23.   Herat Minaret, Afghanistan. · One of the two
remaining towers surrounding the Husayn Bayqara madrasah
(1469-1506 C.E.).   Hill, *Islamic Architecture*, fig. 133.

mil, could denote either a tower, minaret, or signal post.[26]
The mil was a round, Islamic structure that traditionally
marked a significant spot. The mil's form prevailed, in
Diez's opinion, because of the westward movement of
migrating peoples. Diez distinguished Western minarets as
structures that still resembled buildings for habitation,
while Eastern ones incorporated a symbolism of the absolute.
Diez concluded that religious towers are true minarets.[27]

Creswell disagreed with Diez's elaborate evolutionary
arguments. In Creswell's opinion, Diez left no room for the
Umayyad square minarets in his interpretation of Eastern
minaret influences. Creswell rejected the idea that any
Mesopotamian ziggarut or that the minaret at Samarra could
be the forerunner of square minarets. Creswell argued that
in Egypt, for example, minarets had square-bases, octagonal
centers, and spiral cylinders, such as the two minarets of
the Cairene Hakim mosque built between 990-1013 C.E.
Creswell believed that because square bases supported many
minarets, the origins of the minaret were Umayyad and that
the other shapes above the square base were adaptations of

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[26]Kuban, *Muslim Architecture*, 6. Lammens also noted
these etymological connections and proposed that the
victory-tower design particularly influenced the round
minaret, which dominated the Eastern landscape from China to
Constantinople. Lammens, "Phares, Minarets," 17.

[27]*EI*[1], "Manara," 228.

later Abbasid minarets.[28]

The ziggarut-minaret connection becomes tenuous when one considers that ziggaruts may have been abhorrent to Muslims who were fervent anti-idolaters. Gottheil argued that Muslims would not have adopted Assyrian and Babylonian features, and ziggarut remains were not common, if even available, when minarets were constructed.[29] However, there was a temporal gap of over two thousand years between ziggarut and minaret manifestations. Furthermore, Roman temples and Byzantine churches, for example, were built on the sites of former pagan towers.

When one interprets Diez's arguments using Binford's methodological approach to artifacts, early tower structures had an antecedent role in the minaret's function and design. Ziggaruts exhibited technomic qualities. In a time of war, ziggaruts could have easily been employed as points of observation. The ziggarut had sociotechnic qualities; it stood high above the Babylonian and Assyrian skyline representing the advancement and wealth of the city-state. The ziggarut also had obvious ideotechnic characteristics, as it included temples and observatories for the religious

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[28]Creswell additionally concluded that the octagonal minaret design was a Persian influence, not Egyptian as Thiersch had suggested. Creswell, "Evolution of the Minaret," 291-296.

[29]Gottheil, "Origins of the Minaret," 139.

cults of the people. On a functional level the ziggarut fulfills all the requirements of what is required for a minaret, as shown in the Aden Minaret case study.

Other early forms emphasized a tower's sociotechnic and technomic qualities as it evolved into the stambha, victory column, and signal towers. The stambha, for instance, revealed the sociotechnic nature of tower construction. For Diez, signal towers formalized the ideotechnic role of minarets. Towers were built not only for extractive use but also for symbolic and religious purposes. As mentioned earlier, Creswell disagreed with Diez's theory of minaret evolution because the early tower forms had no chronological connection with minarets. The next section will describe and evaluate Creswell's perspective on minaret development.

Syrian Bell Towers

A leading architectural historian of the Islamic era, K. A. C. Creswell, claimed that Syrian church bell towers served as the primary influence on minaret design (**Figure 24**).[30] In his argument, Creswell identified the first minarets as the four "sawami" erected on the roof top of the Fustat mosque of medieval Cairo by the ninth Umayyad

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[30]Creswell, "Evolution of the Minaret," 291-296.
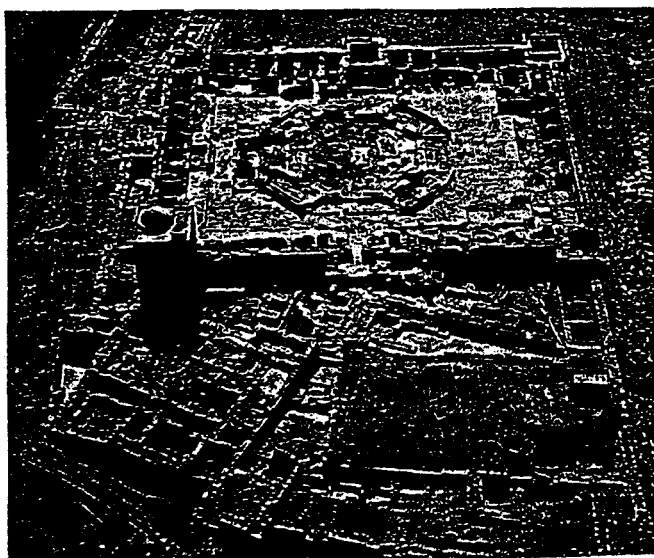
Fig. 24. Byzantine church tower. Remains of a Byzantine church and one of its towers on Mount Gerizim, West Bank. Photo by Shlomi Amami reproduced in Boris Weintraub, "Second Temple Replica May Lie Under Church," *National Geographic* 189 (May 1996): xxv.

governor of Egypt (ca. 673 C.E.). Creswell quoted Egyptian

historian al-Maqrizi (1364-1442 C.E.), who made the earliest

known reference to minarets. Al-Maqrizi wrote that the

Umayyad Caliph Mu'awiya ordered his vassal Maslama (the

governor of Egypt),

> to build sawami for the call to prayer. So
> Muslama constructed the four for the mosque at its
> four corners. He was the first to construct them
> in it, there having been none before his time.[31]

Caliph Mu'awiya established the Umayyad seat of power

in Damascus, a Syrian city controlled by Byzantine

Christians until 644 C.E. Creswell maintained that the

impetus for minaret construction was not initially Islamic

but came from Christian Syrian tradesmen.[32] Creswell felt

that an understanding of Islamic architectural history first

required a comprehension of the "Arab Conquest." The manner

in which Islam spread had a profound and direct effect on

Muslim architecture. Creswell concluded that when the

Muslim invaders reached Syria, impressive Christian

architecture and the availability of weather-resistant

limestone aesthetically overwhelmed the invaders. Creswell

believed that the Muslims encountered beautiful cut-stone

churches, frequently with bell towers, and chose, with few

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[31]Al-Maqrizi, *Al-Mawa'iz wa-t Itibar fi Dhikr al-Khitat wa-1 Athar*, 2:270, lines 21-24 cited in Creswell, *Short Account*, 15.

[32]Richmond, *Moslem Architecture,* 7.

exceptions, to preserve them.[33]

Creswell also asserted that the Muslims initially took Syrian churches and converted them. If a town surrendered without resistance, the Muslims simply divided the village church and adapted one portion, usually the southern, Mecca-facing half into a mosque.[34] Creswell believed that the Arab invaders "were untouched by architectural ambitions," and, simultaneously, the Muslims had no desire to use the architectural talent of the conquered peoples for religious buildings. When they did, it was for political reasons.[35]

On the Christian Syrian landscape, the most impressive sites were stone churches with tall, square towers. At the top of the tower was the *semantron*, the Byzantine version of the church bell tower.[36] Creswell believed that the square shaft of the Byzantine bell tower was significantly

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[33]Creswell, *Short Account*, 5-10. For descriptions of Byzantine architecture in Syria, see Jean Ebersolt, ed., *Monuments d'architecture byzantine* (Paris: Les editions d'art et d'histoire, 1934), 113-115.

[34]Creswell, *Short Account*, 17. Muslim invaders treated societies in different ways. In Azerbaijan, upon negotiation, the Arabs agreed not to massacre villagers or to destroy local religious fire temples. Many fire temples survived the conquest. Ibn Hawkal, *Kitab al Masalik Walmamalik*, 189 cited in Tritton, *Caliphs and Non-Muslim Subjects*, 44. In Spain, the Muslims were less tolerant and destroyed every church bell. Makkari, *Nahf ut tib*, 1:171 cited in Tritton, *Caliphs and Non-Muslim Subjects*, 45.

[35]Creswell, *Short Account*, 17.

[36]Hillenbrand, *Islamic Architecture*, 130.

shortened when it was modified for the adhan. This Islamic modification resulted in a bevelled corner; the square was no longer a shaft but rather a reinforcement of the wall of the mosque, which was not structurally broad enough to support a high tower.[37]

Creswell also believed that the square Syrian bell tower evolved under Islam for two centuries. The tall, square shafts with domed lanterns resembling Byzantine church towers were still visible as late as 1085 C.E. in Syria. By ca. 1340 C.E., a change, initiated by the Persian mil style, occurred: the minaret was moved in relation to the mosque and was placed above the roof. It had a Persian-influenced octagonal-based shaft that reinforced the mosque's wall, and the lantern was replaced by a small dome supported by columns and known as the *mabkhara*.[38]

Creswell added that Arabs initially used the term manara to refer to the Pharos of Alexandria, then to indicate lighthouses in general, and then, only later, to describe most mosque towers.[39] Creswell postulated that the relationship between a lighthouse and minaret is coincidental. He failed to view the relationship between

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[37]Creswell, "Evolution of the Minaret," 258.

[38]Ibid.

[39]Creswell, *Short Account*, 16.

the two tower forms as homologous. In the early days of Islam, the bell tower of Christian churches served as "the functional and formal prototype" of the minaret, and early minarets were called sawma'a after the hermit cells found in Christian Syria.[40] Michell and Lammens agreed with Creswell. They believed that the minaret-adhan linkage developed in Syria during the Umayyad dynasty. As the Umayyads conquered areas under Christian influence, they adapted the towers that adorned Christian churches.[41]

However, opponents of Creswell's argument believed the Syrian bell tower was not the "true" antecedent of the minaret because bell towers have antecedents themselves that

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[40]Creswell, "Evolution of the Minaret," 134. Al-Masudi noted that when the Umayyad prince al-Walid (705-715 C.E.) converted the Church of St. John the Baptist into the Great Mosque of Damascus, "the sawami in it were not changed and they serve for the call to prayer at the present day." The Umayyads preserved the four squat towers associated with the Christian church. Al-Masudi, *Les prairies d'or*, 4:90. Medieval Islamic travellers Ibn Jubayr and Ibn Battuta also discussed the division of this church. Battuta, *Travels of Ibn Battuta*, 1:124; and [Muhammad ibn Ahmed Ibn Jubayr], *Travels of Ibn Jubayr; being the chronicle of a mediaeval Spanish Moor concerning his journey to the Egypt of Saladin, the holy cities of Arabia, Baghdad, the City of the Caliphs, the Latin Kingdom of Jerusalem, and the Norman Kingdom of Sicily*, trans. R. J. C. Broadhurst (London: Jonathan Cape, 1952), 272-274. Creswell listed other writers that described the mosque and its minarets. Creswell, *Short Account*, 64-65.

[41]Michell, ed., *Islamic Architecture*, 99; and Lammens, "Phares, Minarets," 7. Elie Lambert also showed how mosques incorporated architectural elements from Byzantine Christian churches. Lambert, "Les origines de la mosquée," 15.

were architectural innovations. Doutté showed that
Hellenistic and Roman watch towers were the antecedents of
early Byzantine church bell towers.[42] Rivoira agreed that
bell towers were derived from watch towers and astronomical
observatories used in the Hellenistic period (312-65 B.C.E.
in Syria); these towers evolved into Roman temple towers and
later Byzantine architects modified the towers into
Byzantine church towers.[43] Lewcock also believed that
minarets were modeled after pre-Islamic watch towers, which
were low-square masonry towers. Lewcock added that Islamic
architects wished to make towers higher in stature to
reflect the minaret's importance in the religion.
Therefore, architects resorted to the multi-storied
constructions typical of Roman lighthouses; for example, the
al-Hakim Mosque minarets in Cairo (1002-1013 C.E.) (**Figure
25**).[44]

Richard Hartmann proposed that Syrian bell towers may
have been lighthouses or signal towers and that under the

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[42]Doutté, "Les minarets," 340.

[43]Le Strange, *Palestine under the Muslims*, 234; and
Rivoira, *Moslem Architecture*, 92.

[44]Lewcock in Michell, ed., *Islamic Architecture*, 143.
Lewcock asserted that the common form of the minaret
developed over a short period from a square structure, to a
polygonal one, and then finally to a cylindrical structure.
The balcony was added later by constructing superimposed
niches.
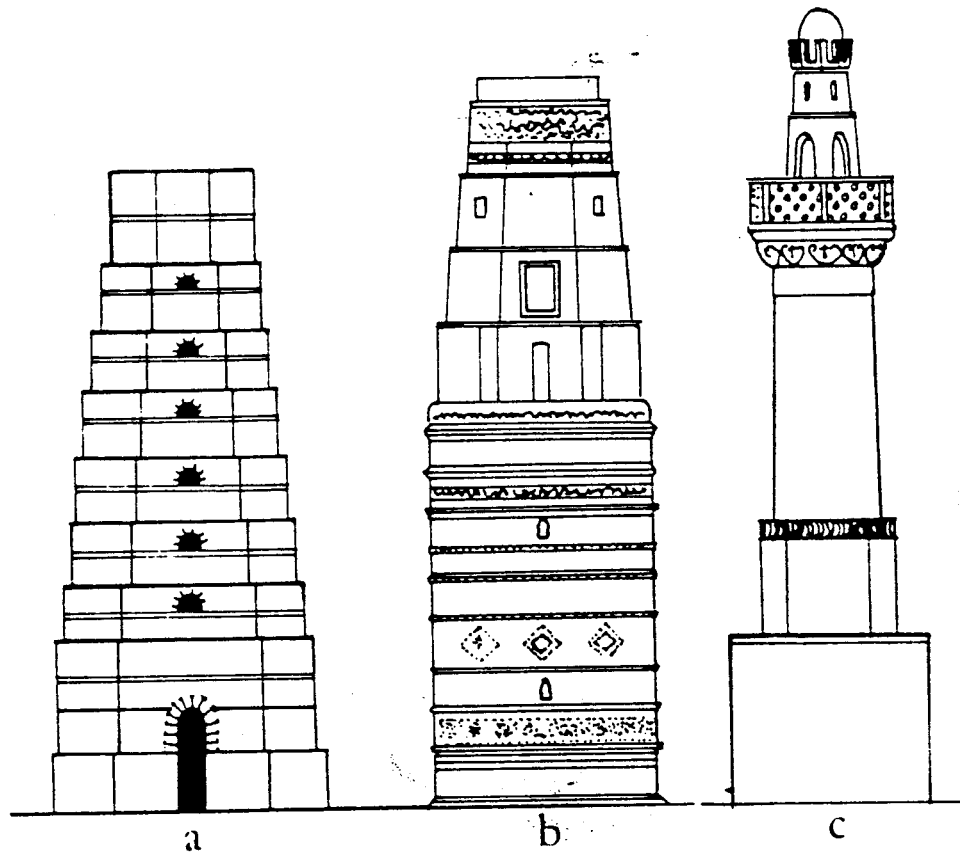
Fig. 25. Evolution of the minaret. According to George Michell, minarets started as low, square masonry towers. As soon as Islamic architects desired to make them higher, they resorted to a stepped, multi-layer construction typical of lighthouses, as shown above (a) the lighthouse of Dover, England. Examples are the minaret of the Great Mosque (b) at Kairoun, Tunisia (724 C.E.) and the minaret of the al-Hakim (c) Mosque (1002-1012 C.E.) in Cairo, Egypt. Later minaret types incorporated a square base, octagonal center, and cylindrical top. Michell, ed., *Architecture of the Islamic World*, 143.

Umayyads the bell and watch tower design was promoted

throughout the empire for technomic, military purposes.[45]

He cited the example of the Kairoun minaret, built in

Tunisia ca. 866 C.E. as a vast, battlemented tower. The

Kairoun tower functioned as a minaret and a watch tower.[46]

Nevertheless, the bell tower, in conjunction with its

predecessor the watch tower, exemplifies the processes of

cultural change. The bell tower existed at the time of the

Arab Conquest and, regardless of its antecedents, provided

stimulus for the emergent minaret. The bell tower stood

above other buildings in a town and therefore served

defensive purposes. In this mode, the bell tower has

similar technomic qualities as its antecedent watch towers.

In a technomic fashion, the bell tower announced religious

services to the community. The Syrian bell tower also had

sociotechnic qualities: it revealed the mastery of Byzantine

Christian culture over Roman paganism. The bell tower

revealed dominance and an ability to use the tower for

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[45]Hartmann, "Minaret und Leuchtturm," 388.

[46]See also Creswell, *Early Muslim Architecture*, 2:170;
Golvin, *Essai sur l'architecture*, 3:190; and Bloom, *Minaret*,
97-98. Rif tribes in Morocco still used minaret-watch
towers in the early twentieth century. Doutté, "Les
minarets," 348. Before the French occupation of Morocco,
the Rif tribes used these minaret-watch towers in their
tribal warfare. See E. Masqueray, "Documents historiques
recueillis dans l'Aurès," *Revue Africaine* 21 (March-April
1877): 121-122.

multiple purposes. The bell tower, as a visible landmark, proclaimed Byzantine cities to visitors. It had ideotechnic functions as well. When the tower was referred to as sawma'a in pre-Islamic poetry, it housed recluse monks who were held in awe (**Figure 26**).[47] Additionally, the bell tower announced religious services.

Structurally, Syrian minarets resemble the bell and watch tower, so the bell tower may have influenced the design of minarets in Umayyad Syria. The Syrian bell tower fulfilled the multiple requirements of a minaret. Therefore, the minaret could have been influenced by the Syrian bell tower on both structural and functional levels.

Lighthouse-Minaret

This section will conclude with a review of the lighthouse-minaret evolution theory. However, before reviewing the theory linking lighthouses to minarets, this portion will begin by examining lighthouses and their role and function in society. This section will focus on the Alexandria Pharos, historically the largest lighthouse, and then look at other coastal and riverine lighting examples.

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[47]Ebersolt, ed., *Monuments d'architecture byzantine*, 71-72.
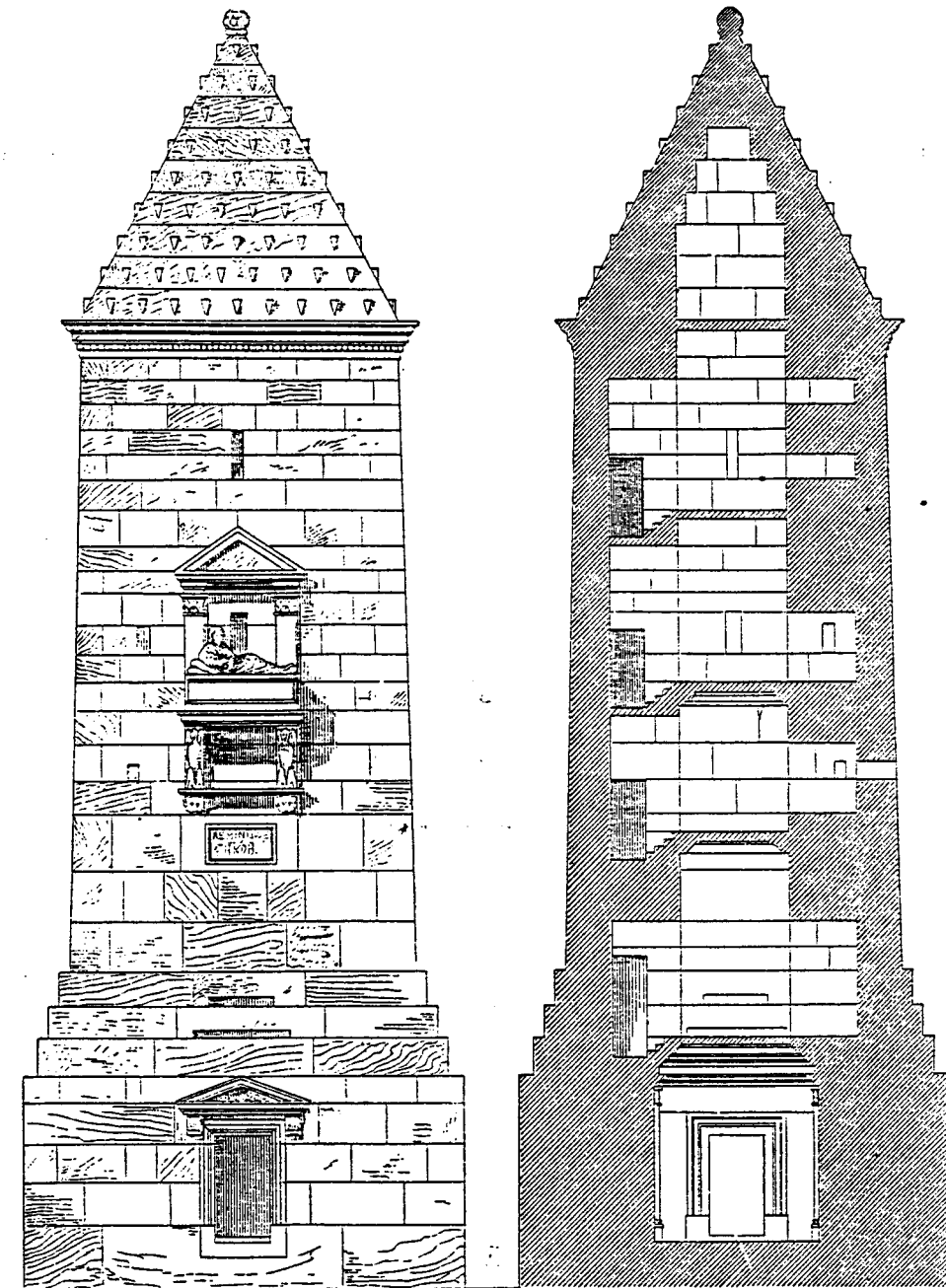
Fig. 26. Palmyra Basilica tower, Syria. Each story of the
tower was built to house monks. H. Holtzinger, *Handbuch der
Architektur*, vol. 3, *Altchristliche und byzantinische
Baukunst* (Leipzig: Alfred Kröner Verlag, 1909), 135.

Lighthouses. According to William Falconer's *Marine Dictionary*, a lighthouse is

> a sort of tower erected upon a cape or promontory
> on the sea-coast, or upon some rock in the sea,
> and having a great fire, or light formed by
> candles, upon its top, in the night time, which is
> constantly attended by some careful person, so as
> to be seen at a great distance from the land. It
> is used to direct shipping on the coast, as they
> might otherwise run ashore, or steer an improper
> course, when the darkness of the night, and the
> uncertainty of currents, etc. might render their
> situation with regard to the shore, extremely
> doubtful.[48]

This eighteenth-century C.E. definition describes both the appearance and function of a lighthouse, but offers no insights regarding origins. Lighthouse evolution is a complicated, multi-staged process. Scholars agree that the first lighthouses were not structures; rather, they were simple fires kindled on high ground or promontories. These fires were lit so that fishermen coasting aboard vessels at night could identify familiar features for navigational assistance.[49] Homer made some of the earliest written

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[48]William Falconer, *Falconer's Marine Dictionary* (London: T. Caldwell, 1780; reprint, New York: Augustus M. Kelley, 1970), s.v. "Light-house."

[49]Jason Cooper, *Lighthouses* (Vero Beach, FL: Rourke Enterprises, 1991), 9; Patrick Beaver, *A History of Lighthouses* (London: Peter Davies, 1971), 1; Léon Renard, *Les phares* (Paris: Librarie de L. Hachette, 1867), 2; Robert L. Vann, "The Drusion: a candidate for Herod's maritime lighthouse at Caesarea," *The International Journal of Nautical Archaeology and Underwater Exploration* 20 (1991):

references to coastal lights or fires in the *Iliad*.[50]

These water-borne navigation techniques, however, were related to and descended from those employed even earlier on land. Landscape archaeologists have shown that early land trackways usually followed the paths of least geological resistance, for example, running along ridges and avoiding valleys.[51] Land travelers used prominent features and, later, sighting stones that eventually evolved into towers; these towers followed tracks made by surveyors and other travelers.[52] Similarly, mariners used natural features, such as rock pinnacles, to navigate. Most voyages in humankind's early history were coastal rather than deep-sea adventures, and seafarers relied on recognizable landmarks, such as familiar hills and cliffs, tall trees, or clumps of trees, visible from the sea.[53]

Coastal dwellers eventually constructed man-made features, such as temples, shrines, or forts, atop prominent coastal hills. These temples and fortresses were built not

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124; and Paula F. de Coetlogon-Williams, "Roman Harbours," *International Journal of Nautical Archaeology and Underwater Exploration* 5 (1976): 73-79.

[50]*Iliad* 8.510.

[51]Naish, *Seamarks*, 11.

[52]Ibid., 12.

[53]Ibid., 11; and Mary Ellen Chase, *The Story of Lighthouses* (New York: W. W. Norton, 1965), 22.

only to ease the problem of coastal recognition but also to recognize a set of widely-accepted beliefs within a society, commonly expressed as religion.[54] Therefore, early lighthouses exhibited technomic characteristics as sea marks and, in some cases, ideotechnic characteristics as temples. Early lighthouses also could have sociotechnic qualities if the structures revealed the presence of a city. The technomic quality of early lighthouses is significant in that it reveals how simple efforts in lighting evolved into magnificent structures that, in turn, aided the growth of extensive maritime travel.[55]

One important purpose of a lighthouse was to warn ships that there were land, rocks, or shallow water near their sea-route.[56] Lighthouses were built so that their beacon could be seen from great distances at sea. The range of a lighthouse depended upon three factors: weather, beacon brilliancy, and height of the light above sea level.[57] Some structures were built close to sea level, while others were located on headlands. Generally, local conditions and available materials dictated how and with what material

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[54]Naish, *Seamarks*, 12, 15.

[55]Ibid., 11; Cooper, *Lighthouses*, 9; Beaver, *History of Lighthouses*, 1; and Renard, *Les phares*, 2.

[56]Cooper, *Lighthouses*, 5.

[57]Beaver, *History of Lighthouses*, 3.

lighthouses would be built.[58]

There are three categories of lighthouses: 1) main lights to mark shoals, rocks in the sea, or landfalls; 2) coastal lights to mark headlands; and 3) secondary lights to mark hazards that lie near a main shipping route.[59] Lighthouses with fixed lights represented the earliest type of lighthouses.[60] Initially, fixed lights served to mark the entrance to harbors; they did not distinguish reefs and other submerged physical features.[61] At night, fire illuminated these fixed signal towers; during the day, smoke billowed from their towers.

Robert Vann noted that the function of lighthouses changed over time. Early examples, such as Roman lighthouses, marked harbor approaches and did not necessarily indicate dangerous shoals, projecting headlands, or difficult waters.[62] In the Middle Ages, lighthouse functions became more developed as maritime trade networks became more defined and, in some cases, more lengthy. By the Elizabethan era (sixteenth century C.E.), fixed lights

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[58]Ibid., 4; and Cooper, *Lighthouses*, 9.

[59]Beaver, *History of Lighthouses*, 2.

[60]Ibid.

[61]Vann, "The Drusion," 124.

[62]Ibid. De Coetlogon-Williams, "Roman Harbors," 74.

in England were supplanted by other lighthouse types that indicated the specific danger associated with the seamark, rather than merely indicating that a danger existed or that a safe harbor lay nearby.

The Theory. In the late nineteenth century, A. J. Butler suggested that minaret and lighthouse structures are linked by etymology, structure, and evolution.[63] Butler reached this conclusion while conducting historical research in Cairo. After examining several minarets in the city, he wrote:

> . . . having Abdellatif's [al-Baghdadi] account of the Pharos fresh in mind I was struck by the remarkable coincidence between the details of the minaret before me and those of the Pharos in his description. He says that the Pharos stood at the epoch in four stories: the first square, 121 cubits in height, the second octagonal (81 1/2 cubits), the third round (31 1/2 cubits) and lastly, a 'lantern' (10 cubits). The minaret also rose in four stages square, octagonal, round and on top a lantern or small cupola. Since then I have noticed dozens of other minarets with the same four divisions in the same order and have no hesitation in saying that Abdellatif's description of the Pharos is, in all except absolute altitude, the typical description of the early minaret. In fact, it is quite exceptional in Cairo to find an early minaret which does not reproduce in miniature the colossal tower. . . . So singular and so universal a coincidence cannot be the result of an accident. It must be remembered that the Mohammedan conquest of Egypt took place after

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[63]Butler, "Ancient Pharos," 681. Some authors still link purely etymological connections to minarets with lighthouses. See Vann, "The Drusion," 138, n. 3.

> the Hegira. There is historic evidence that the
> Pharos existed at least six hundred years
> subsequently, and I have no doubt whatever, that
> it served as a model for Mohammedan architects.
> The Pharos is the origin of the minaret (**Figure
> 27**).[64]

Butler saw the creation and form of the minaret as directly
influenced by the Pharos, a massive lighthouse built along
the coast of Alexandria, Egypt, during the Ptolemaic dynasty
that ruled Egypt from ca. 300 B.C.E. to 33 C.E. Butler knew
that the last remains of the Pharos disappeared by the
fourteenth century C.E. following several destructive
earthquakes. However, Butler insisted that even if

> the Pharos has long vanished, the tradition of its
> grace, and even of its use, has been preserved in the
> Egyptian minaret, to which it gave its name and to
> which it served as model. Though the medieval minarets
> of Cairo vary in combination of design, in many of them
> one may see exact reproductions of the design of
> Sostratos, which was a tower springing four-square from
> the ground, changing to a smaller octagonal to a still
> smaller shaft and crowned on the top with a lantern.[65]

Hermann Thiersch read Butler's report and expanded upon
the observations. In his seminal treatise entitled *Pharos,
Antike, Islam und Occident*, Thiersch first emphasized the
etymological connection between minaret and lighthouse,
represented by the word manara. Next, Thiersch detailed

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[64]This was a published letter. Butler, "Ancient
Pharos," 681; and Thiersch, *Pharos*, 97.

[65]Alfred J. Butler, *The Arab Conquest of Egypt and the
Last Thirty Years of the Roman Dominion*, ed. P. M. Fraser
(Oxford: Oxford University Press, 1902; reprint, Oxford:
Oxford University Press, 1978), 398.
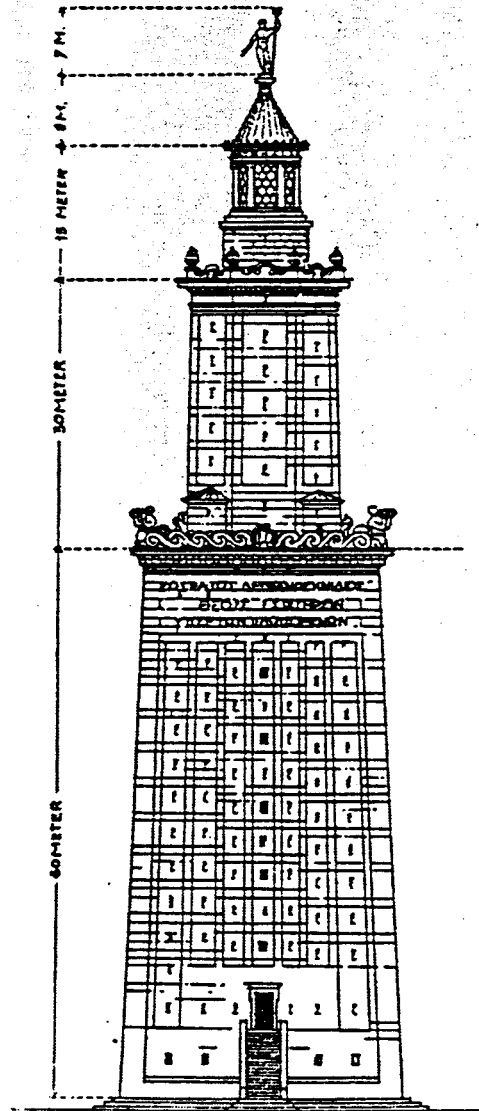
Fig. 27. Pharos of Alexandria, Egypt. Hermann Thiersch's
rendering of the Pharos of Alexandria in Thiersch, *Pharos*,
Pl. 1.

several minarets in Egypt and in Syria, which had three,
differently-shaped layers, in addition to a small lantern or
cupola on top.[66] By examining literary, numismatic, and
visual sources, Thiersch developed a pictorial evolution,
linking the Pharos with the minaret. In the second half of
his work, Thiersch included Syrian Byzantine church towers
in his illustrative evolutionary list.[67] Ultimately,
Thiersch believed that, while the Pharos provided a key
stylistic precedence, Syrian church towers were the direct,
ideotechnic source of recent minaret design.[68]

Creswell believed that Thiersch weakened the minaret-
lighthouse linkage by including Egyptian minarets with
Syrian ones.[69] According to Creswell, Thiersch confused
Ptolemaic Egypt (ca. 300 B.C.E. to 30 C.E.) with Byzantine
Syria (ca. 400-600 C.E.). Creswell also showed that
Thiersch's evolutionary list was incomplete and contained
incorrect dates.[70] Creswell supported his assertions by

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[66]Thiersch did not consider the lantern or cupola as a
separate tower story or level.

[67]Thiersch, *Pharos*, 97; and *EI*[1], "Architecture," 422.
Creswell commented on Thiersch's strange development.
Creswell, "Evolution of the Minaret," 134-140, 250-252, and
290-298.

[68]Thiersch, *Pharos*, 102.

[69]Lammens agreed with Creswell. Lammens, "Phares,
Minarets," 26.

[70]Creswell, "Evolution of the Minaret," 257.

showing that minarets combining square, octagonal, and circular designs in three stories are the rarest architectural design; as most minarets are square. Finally, Creswell noted that the first minaret built with three stories of different sections appeared no earlier than the fourteenth century, oddly when the Pharos finally disappeared. The upper portion of the Pharos lighthouse collapsed by the end of the twelfth century C.E.; the remainder fell by 1353 C.E., nearly seven centuries after the first adhan was announced from the sawami in Cairo.[71]

Thiersch included the extant Ptolemaic Pharos of Taposiris in his evolutionary list; this Pharos had a square base and featured both octagonal and circular stages. Medieval Muslim architects thus had an extant model for a three-staged tower, as late as the fourteenth century.[72] Based on this additional evidence, Hillenbrand felt that Creswell's argument that the Syrian bell tower and not the Pharos influenced minaret design was too methodological and thus limited temporally and spatially. Additionally, Creswell ignored the resemblance of three-tiered minarets at Qairawan, Syria, and Sfax, Tunisia, to lighthouses, because he could not accept the lighthouse as a predecessor to the

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[71]Ibid., 252.

[72]Behrens-Abouseif, *Minarets of Cairo*, 18.

minaret (**Figure 28**).[73]

Classical Mediterranean Lighthouses. While Islamic
texts did not always mention the use of extensive maritime
lighting, lighthouses existed in Upper Egypt long before
Islam. The earliest recorded lighthouses were built by the
Pharonic Egyptians and their Nubian counterparts,
inhabitants of Upper Egypt. Utilitarian structures, such as
lighthouses and bridges, built by these people served both
technomic and ideotechnic roles. For early Nubian sailors,
for example, lighthouses were also temples to their deities.
When river traders returned from a long journey, they would
offer sacrifices within these lighthouse temples, each of
which was named after a particular deity.[74] Beaver and
Renard believed that the inner walls of these early Nubian
lighthouses were engraved with charts, and suggested that
lighthouse keepers were also priests. Additionally,
lighthouse keeper/priests taught seamanship, pilotage,
astronomy, and hydrography in lighthouses.[75]

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[73]Hillenbrand, *Islamic Architecture*, 138, 161.

[74]Beaver, *History of Lighthouses*, 9; Renard, *Les
phares*, 4; and Eric Samuel De Maré, *The Nautical Style: An
Aspect of the Functional Tradition* ([London]: Architectural
Press, 1973), 45.

[75]Beaver, *History of Lighthouses*, 9; and Renard, *Les
phares*, 4.
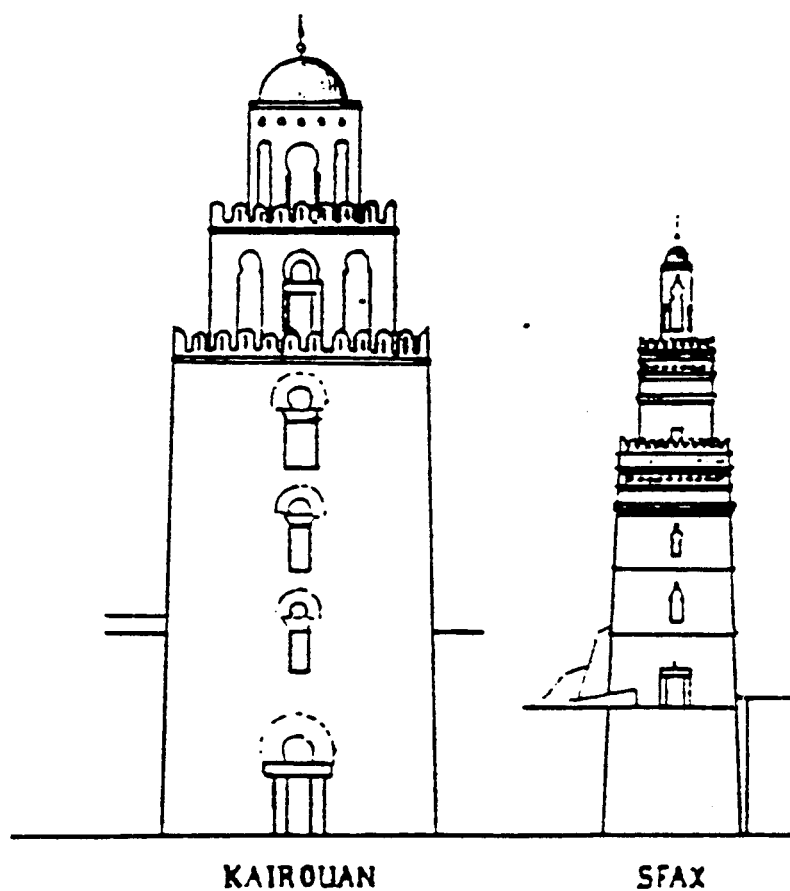
Fig. 28. Kairoun and Sfax Minarets, Tunisia. These
minarets represent an evolutionary development from the
Pharos to minaret-lighthouses. Golvin, *Essai sur
l'architecture*, 1:48.

Naish speculated that the Nubians built lighthouses for riverine navigation.[76] Throughout the day and night lighthouse keepers kept wood fires burning in iron braziers fashioned to resemble dolphin gods and suspended from the towers by long poles.[77] Renard noted that during the day the lighthouses, which had a high vantage point over the Nile, were used as watch towers.[78]

Classical Greek legends attested to the existence of lighthouses. One Greek myth described Leander of Abydos, who fell in love with Hero, the priestess of Aphrodite at Sestos. Every night Leander swam across the Hellespont to see Hero. To guide Leander across the strait, Hero burned a light atop a tower. One night, a storm blew out the light while Leander was swimming, and tragically, he drowned.[79]

Lesches, a minor poet, wrote the earliest account of a regularly operating lighthouse ca. 660 B.C.E. He described a lighthouse on the Sigaeum promontory in the Troad, strategically located to guide ships to Troy, the Hellespont, the Sea of Marmora, the Bosporus, and the Black

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[76]Naish, *Seamarks*, 17.

[77]Beaver, *History of Lighthouses*, 10; and Renard, *Les phares*, 4.

[78]Renard, *Les phares*, 4.

[79]Ovid, *Heroides*, 18, 19; Strabo, *Geographica*, 13.1.22; and Virgil, *Georgics*, 3.258-261.

Sea.[80] By the fifth century B.C.E., the most important

entrepôt in the classical world was Piraeus, the port of the

Athens, and classical sources mention that Piraeus was

demarcated at night by open fires.[81]

Beaver suggested that the Colossus of Rhodes, a

monumental sculpture of Apollo, was also a lighthouse.[82]

The Colossus of Rhodes measured over 30 meters and was made

of bronze. Apollo held a torch that, according to legend,

was lit at night to guide ships into the harbor. It is

unlikely that the Colossus of Rhodes was a lighthouse,

despite its lit torch. Nevertheless, the enormous statue

must have served as a prominent seamark, much like the

Washington Monument towers over the landscape of Washington,

D. C. Depending upon a navigator's height above sea level,

the Colossus theoretically could have been seen eleven

nautical miles away.[83]

The Pharos of Alexandria, one of the "Seven Wonders of

the World" represented one of the most important

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[80]Renard, *Les phares*, 5; and Beaver, *History of Lighthouses*, 10.

[81]*Oxford Classical Dictionary*, s.v. "Lighthouses."

[82]The Colossus of Rhodes was built by a pupil of one of the greatest Greek sculptors, Lysippus, ca. 300 B.C.E.; eighty years later, the Colossus was toppled by an earthquake. Beaver, *History of Lighthouses*, 10.

[83]Ibid., 4.

developments in the history of lighthouses. Given the

number of prominent authors who describe the Pharos, it was

certainly regarded as an extremely important architectural

feature.[84] Measuring over 120 meters high, the Pharos was

the tallest lighthouse in history. Built off the coast of

the city of Alexandria, Egypt ca. 261-242 B.C.E., the

lighthouse was constructed upon an island surrounded by sea-

walls that Jewish writer Josephus described as "immense

artificial defenses."[85] The island was known as Pharos; the

island's name was attached to its unique architectural

feature.[86] According to a legend initiated by Pliny the

Elder, a well-known architect of the Hellenistic age,

Sostratus of Gnossos, designed the structure.[87] Fraser

debated the veracity and accuracy of Pliny's statement and

believed that the Pharos was probably a gift to the city of

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[84]The Pharos was not included in early lists of the
Seven Wonders until Bishop Gregory of Tours' (539-594 C.E.)
compilation. Michael Ashley, *The Seven Wonders of the World*
(Glasgow: William Collins Sons, 1980), 19-20. Fraser noted
that classical writers referred to the Pharos in language
that illustrated that it was regarded as unique. P. M.
Fraser, *Ptolemaic Alexandria* (Oxford: Oxford University
Press, 1972), 2:44, n. 91. See Strabo, *Geographica* 17.1.6;
Josephus, *Jewish Wars*, 16, 144; Lucian, *Icar.* 12; and Julius
Caesar, *Alexandrian, African and Spanish Wars*, 1.14, 19, 26.

[85]Josephus, *Jewish Wars*, 4.603.

[86]Cooper, *Lighthouses*, 9; Fraser, *Ptolemaic Alexandria*,
1:18; and Butler, *Arab Conquest*, 389.

[87]Pliny, *Natural History*, 36.83.

Alexandria from a wealthy Ptolemaic courtier and that its architect remains unknown.[88]

No scholar challenges the Pharos' role as a lighthouse. Although there is little pre-Islamic historical evidence regarding the methods of Pharos lighting, Islamic historical works described lighting techniques.[89] At the apex of the Pharos was an open fire that could theoretically be seen twenty-nine nautical miles away.[90]

Beaver theorized that the magnitude of the Pharos's construction revealed the importance of the lighthouse to Ptolemaic maritime society. The project was an immense undertaking, and in Beaver's opinion nearly "on the scale of the much earlier Pyramids."[91] No other lighthouse in world history rivaled the Pharos' size and duration of service (1,500 years). In the thirteenth century C.E., the geographer al-Idrisi visited the Pharos and described it:

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[88]Although Sostratus is known for architectural buildings throughout Egypt, epigraphic evidence indicates that Sostratus was a dedicant or at most a contributor to the building, but not the architect. Fraser, *Ptolemaic Alexandria*, 1:19-20.

[89]For example, Nasiri Khusrau describes an incendiary mirror on top of the Pharos. Yarshater, ed., *Book of Travels*, 42.

[90]Butler, *Arab Conquest*, 376.

[91]Beaver, *History of Lighthouses*, 10. Pliny claimed that the Pharos cost over 800 talents to build. Pliny, *Natural History* 36.83.

> The lighthouse has not its equal in the world for
> excellence of construction and for strength, for
> not only is it conducted of a fine quality stone .
> . . but the various blocks are so strongly
> cemented together with melted lead that the whole
> is imperishable, although the waves of the sea
> continually break at its northern face; a
> staircase of ordinary width constructed in the
> interior, extends as high as the middle of the
> structure, where above the gallery the tower
> becomes smaller and smaller until it can be
> embraced by the arms of a man. From the same
> gallery there is a staircase much narrower than
> the tower, reaching to the summit; it is pierced
> by many windows to give light within and to show
> those who ascend where to place their feet. At a
> distance the light appeared so much like a star
> near the horizon that sailors were frequently
> deceived by it.[92]

The featureless Egyptian coastline made the Pharos

useful at Alexandria. Egyptian coastal recognition was

difficult, as Josephus described:

> For Egypt is difficult to enter by land, and the
> coast is almost harborless. . . . It is difficult
> even in peacetime for ships to approach the harbor
> of Alexandria; the entrance is narrow, and
> submerged rocks make a straight course impossible.
> The left side is shut in by artificial moles; the
> right of the island of Pharos lies offshore, and
> from this rises an enormous lighthouse whose fires
> are visible thirty-five miles away, warning
> visiting ships to anchor at night well away from
> the shore because of the difficulty of making the
> port.[93]

Additionally, any seamark related to an early port or harbor

had to be man-made to be visible from at least twenty

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[92]Al-Idrisi cited in Beaver, *History of Lighthouses*,
10.

[93]Josephus, *Jewish Wars* 4.603.

nautical miles offshore.[94]

Butler posited that the Pharos was also used as a signal tower.[95] Communication with the town of Alexandria occurred when enemy ships were sighted; the lighthouse keeper would light a fire to warn the town. Along the Mediterranean coast from Alexandria as far as present-day Tunisia, fires were lit to alert communities of approaching enemy ships. Naish posited that the architects of the Pharos intended it to be a lighthouse pivotal to a coastal signaling system and thus a key to Alexandria's defense.[96]

The Arabs used and maintained the Pharos after their conquest of Egypt in 642 C.E. Despite Butler's assertion that the Arabs treated the Pharos well, historian George Fadlo Hourani believed that the Arabs were directly responsible for the deterioration of the Pharos.[97] Hourani

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[94]Naish, *Seamarks*, 17.

[95]Butler, *Arab Conquest*, 389, 394.

[96]Naish, *Seamarks*, 16. A system linking the coast of Tunisia to Alexandria, Egypt, existed under the Ibrahim b. Muhammad b. Muhammad b. Al-Aghab, governor of Ifriqiya (Tunisia). In 874-875 C.E., the governor built fortifications and watch towers, known as ribats, along the sea coast. These structures were linked by fire signals whereby a message could reach Ceuta (Sabta) to Alexandria in one night although the distance on foot between the two cities was a journey of several months. Al-Maqrizi, *Al-Mawa'iz wa-t I'tibar fi Dhikr al-Khitat wa-l Athar* (Cairo: n.p., 1967), 324 cited in El'ad, "Coastal Cities," 2:155.

[97]Butler, *Arab Conquest*, 389. George Fadlo Hourani, *Arab Seafaring in the Indian Ocean in Ancient and Early*

judged that the Arab invaders did not know how to repair the
Pharos. It is more likely, however, that the Pharos had
already fallen into disrepair before the Muslim conquest,
and the Muslim invaders could not rival the Ptolemies'
building expertise and almost limitless treasury. Any
damage encountered, especially before and perhaps after the
Arab conquest, would have been too expensive to repair.
Medieval Islamic traveler Ibn Jubayr (1145-1217 C.E.), who
visited the Pharos in 1183 C.E., noted that

> God had erected by the hands of those who were
> forced to such labour as 'a sign to those who take
> warning from examining the fate of others' (*Quran*,
> Surat Al-Hijr 15:75) and as a guide to voyagers,
> for without it they could not find the true course
> to Alexandria. It can be seen for more than
> seventy miles, and is of great antiquity. It is
> most strongly built in all directions and competes
> with the skies in height. Description of it falls
> short, the eyes fail to comprehend it, and words
> are inadequate, so vast is the spectacle.[98]

The Pharos withstood the ravages of wind, seas, and the
Arab invasion, but in 955-956 C.E., it was severely damaged
by an earthquake that could be felt in areas as far north as
Syria and as far west as the Maghrib.[99] In the thirteenth
century C.E., another severe earthquake toppled the Pharos.

Medieval Times, Princeton Oriental Studies, vol. 13
(Princeton: Princeton University Press, 1951), 61.

[98]*Travels of Ibn Jubayr*, 33.

[99]Butler, *Arab Conquest*, 396; and Fraser, *Ptolemaic
Alexandria*, 2:46, n. 99.

Portions of the Pharos were still visible in the mid-fourteenth century when Islamic traveler Ibn Battuta recorded its remains.[100] In 1995, divers found colossal statuary associated with the original Pharos.

Naish and Hartmann believed that while the Pharos was in operation during the Roman era, other towers existed along the Mediterranean coast at strategic points, such as at Antioch in the Gulf of Iskendrum.[101] To solidify their control and organization of trade in the empire, the Romans built artificial harbors, where lighthouses became integral parts of shipping and trade.[102] By the first century B.C.E., a lighthouse was a standard feature of Roman port architecture. Minor ports during the Roman era probably had simple lighthouses; these were inexpensive to construct because they were often merely columns set out along a harbor side with fires burning on top. These lighthouses could be seen at a reasonable distance and were easy to maintain. For example, the Roman harbor at Ostia

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[100]Ibn Battuta visited the remains of the Pharos and stated: "I visited the lighthouse [again] on my return to the Maghreb in the year 750 [1349 C.E.], and found that it had fallen into such ruinous condition that it was impossible to enter it or to climb up to the doorway," *Travels of Ibn Battuta*, 46.

[101]Naish, *Seamarks*, 17; and Hartmann, "Minaret und Leuchtturm," 389.

[102]*Oxford Classical Dictionary*, s.v., "Lighthouses."

incorporated a fire tower placed on top of a ship filled with concrete and sunk in the harbor entrance (**Figure 29**).

Other towers along the Sea of Marmora and the Hellespont were built at the ends of moles. Archaeological evidence suggests that, in some cases, the Romans built on early Phoenician towers; for example, surveys of the tower at Cadiz (Gadis), Spain, revealed that the base of the lighthouse was constructed prior to the Roman era most likely by Phoenicians.[103]

De Coetlogon-Williams believed that colossal marble statues positioned in prominent places may have served as lighthouses when fires were lit in the crowns of their heads. Even without burning fires, a large marble figure would be a prominent site and seamark for sailors.[104] For example, the statue of an unknown boy at Porto Raphti in Attica and possibly two other sites in Crete may have served as lighthouses. These colossal statues may have served Binford's multiple functions: to mark harbors as a technomic artifact; to beautify Roman cities as a sociotechnic statue; and to proclaim a deity as an ideotechnic artifact.

The Romans may have imitated the Pharos design in their

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[103]Naish, *Seamarks*, 18.

[104]De Coetlogon-Williams, "Roman Harbors," 74. The author pointed to the prominent locations of the seamarks on several mosaics from Praeneste and a painting from Herculaneum.

Fig. 29. Ostia Pharos, Italy. Relief of the Roman port of
Ostia's lighthouse found on a sarcophagus. The lighthouse
resembles the Pharos of Alexandria. Douglas Bland Hague,
"Lighthouses," chap. in D. J. Blackman, ed. *Marine
Archaeology*, Proceedings of the 23rd Symposium of the
Colston Research Society, 1971 (London: Butterworth, 1973),
296.

coastal architecture. Coins and reliefs depict lighthouses

that resemble Pharos architecturally.[105] Aside from

inscriptions, a comment made by the popular historian

Suetonius suggests that the Romans imitated the Pharos:

> [Caligula] made the troops fill their helmets and
> tunic-laps with them [sea shells]; commemorating
> their victory [in Boulogne] by the erection of a
> tall lighthouse, not unlike the one at Pharos, in
> which fires were to be kept going all night as a
> guide to ships (**Figure 30**).[106]

The Roman lighthouse in Dover, England, the remains of

which are still visible, appeared very similar to the Pharos

in structural design.[107] The Dover lighthouse had technomic

qualities as a seamark and lighthouse. The structure

functioned as an sociotechnic feature on the Roman landscape

of England. Based on current evidence, the Dover lighthouse

did not exhibit ideotechnic qualities.

Despite descriptive legends of lighthouses and

portrayals of the Pharos, Arab authors did not refer to

lighthouses in pre-Islamic times. Beaver suggested that

lighthouses may have been so commonplace and numerous that

few writers mentioned or described them.[108] Heap believed

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[105]Vann, "The Drusion," 134.

[106]Suetonius, *Caligula*, 46.

[107]Alexander George Findlay, *The Lighthouses of the World and Coast Fog Signals*, ed. William R. Kettle, 31st ed. (London: Richard Holmes Laurie, 1891), 2.

[108]Beaver, *History of Lighthouses*, 11.
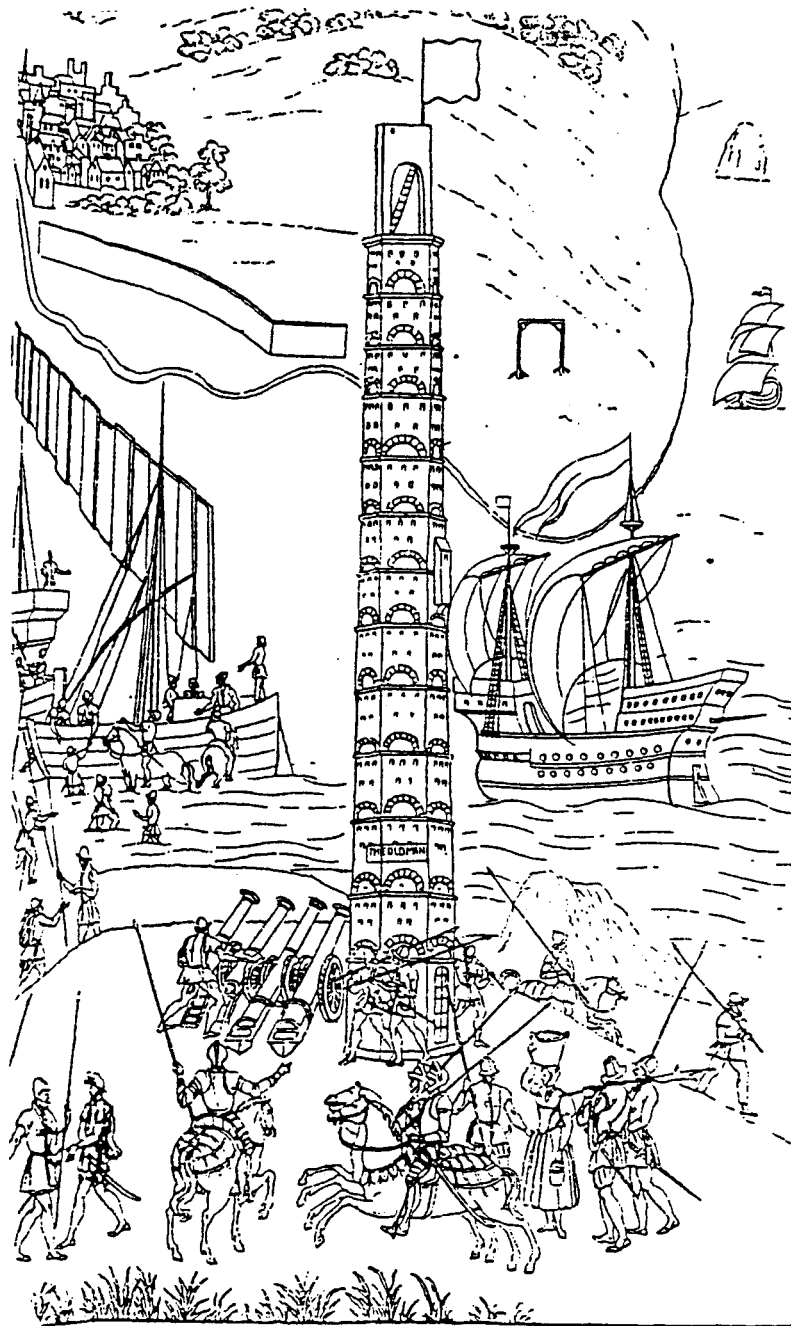
Fig. 30. Roman-built Pharos. This is a fanciful
representation of Caligula's Pharos at Boulogne, France.
Reproduced from W. H. St. John Hope, *Cowdray and Easebourne
Priory*, Pl. XV in R. E. M. Wheeler, "The Roman Lighthouse at
Sea," *Archaeological Journal* 86 (1929); 2d ser., 36 (1929):
38.

that there is "incontestable evidence" that lighthouses existed in ancient times, but that authors chose to refer infrequently to them.[109] With virtually no remains of ancient lighthouses, it becomes difficult to prove any connection between lighthouse and minaret design.

The lack of archaeological remains of lighthouses is due in part to their location. Towers are the least stable of architectural features and are therefore more vulnerable than most structures to the elements.[110] Situated in exposed sites, lighthouses are subject to the ravages of sea, wind, and storms. The combined force of high winds and waves assaulting a tower can exert a pressure of more than 4,000 pounds per square foot.[111] Also, lighthouses and signal towers tend to be exposed to enemy attacks as they are highly visible. Also, harbors undergo frequent changes involving filling in and building up low points and dredging high submerged areas enhancing a lighthouse's location. Thus, it is difficult to prove where the first lighthouses were located because of the very nature of the sites.[112]

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[109]Heap, *Ancient and Modern Lighthouses*, 1.

[110]Beaver, *History of Lighthouses*, 12; and de Coetlogon-Williams, "Roman Harbors," 73.

[111]De Maré, *Nautical Style*, 45.

[112]Vann, "The Drusion," 125. One author described the elements that affect the architecture known as "the nautical style." De Maré, *Nautical Style*, 9.

Functionally, the Pharos exhibited technomic functions as a lighthouse and possibly as the major structure in a series of towers used for defensive purposes. The Pharos also illustrated the height of Ptolemaic culture, a sociotechnic quality. Furthermore, the Pharos met Binford's idea of an ideotechnic artifact because it had temples, such as the Pharia Isis, dedicated to Egyptian deities.

Binford's vision of cultural change suggested that the Pharos could have been the proto-type of a minaret. The Pharos, as a tower type, had direct influence upon the Islamic minaret. However, could there have been any other tower influences upon the minaret? Structurally, the Pharos design was replicated in later, seventh-century and fourteenth-century, Egyptian minaret designs. As shown earlier, minarets often have multiple stages similar to the Pharos' various levels. Egyptian rulers made the minaret a popular structure in Islam so this minaret design could have been replicated in other areas of the Islamic world.[113]

The Pharos fulfills the requirements of Binford's processual interpretation, but it was not the only attempt at coastal lighting in the Middle East. Since there were other lighthouses or seamarks, the minaret could have been influenced by these other structures. Alternatively, the

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[113]Hillenbrand, *Islamic Architecture*, 161.

Pharos alone may have influenced the minaret, especially in Egypt. The next section of this thesis will examine early attempts at lighting and whether the structures involved could have influenced the minaret's design and use.

Semitic Attempts at Lighting. The Old Testament does not mention maritime lighting, but Beaver and Renard concurred that the absence of maritime discussion is not surprising because the Jews were not a maritime people.[114] However, the Jewish king, Solomon (973-933 B.C.E.), imported shipbuilders and sailors to make long range maritime expeditions down the Red Sea (1 Kings 9:26-28). King Solomon's patronage implies navigational skill and expertise on the Gulf of Aqaba and the Red Sea as early as the tenth century B.C.E.

Extant pre-Islamic Arabian epigraphic sources did not mention maritime lighting either.[115] The lack of coastal lighting references in pre-Islamic Arabia led some scholars to believe that Arabs had little maritime experience and that lighthouses were not a part of everyday life.[116] Alternatively, lighthouses may have been so commonplace pre-

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[114]Beaver, *History of Lighthouses*, 9.

[115]*EI²*, "Manar, manara (A), lighthouse," 358-9.

[116]Ibid., 359.

Islamic writers did not bother mentioning them in their elaborate, ritualistic poetry. Epigraphic sources chronicled the lives of famous rulers and warriors, not items associated with the more mundane, yet omnipresent, aspects of living.[117]

The Arabs practiced extensive maritime navigation in the pre-Islamic "Days of Ignorance," and this knowledge formed the basis of the later Islamic mercantile and cultural ties to the Far East.[118] Tarafa, a poet who wrote twenty to twenty-five years before the advent of Islam, described coastal navigation in his poetry.[119] In addition to pre-Islamic poetry, pagan religious texts, old Arabic lexicons, archaeological evidence, and Graeco-Roman sources reported Arabia's expansive trade network with India, Africa, and south-west Asia.[120]

Islam gained its greatest number of converts by sea trade routes, not by the *jihad* (holy war); Indonesia, the most populous Muslim nation in the world, illustrated this

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[117]See Michael Thompson, *Rubbish Theory: The Creation and Destruction of Value* (Oxford: Oxford University Press, 1979), 4. See also Donini, *Arab Travelers*, 13.

[118]Navdi, *The Arab Navigation*, 3 and Hourani, *Arab Seafaring*, 36. Navdi cited several pre-Islamic poets.

[119]Navdi, *The Arab Navigation*, 2-3, 15.

[120]Ibid.

point.   Many Indonesians were converted through regular

trade contacts and still maintain those contacts.

Understanding the Indian Ocean littoral's maritime history

is essential to understanding the Islamic world, but since

the ruling centers of the Islamic empires were landlocked,

scholars and local historians usually focused on the history

of the interior.   Both Henri Pirenne and Akram El'ad showed

that the rise of the Muslim empire changed the focus from

the Mediterranean and Red Seas to the deserts, from sea

coasts to caravan cities.[121]   Under the Abbasids in

particular, the center of power shifted further east and

inland to Iraq, and the importance of Syria, *al-Sham*,

declined.[122]

Geographic literature illustrated the extent of the

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[121]Henri Pirenne, "Mahomet et Charlemagne," *Revue belge de philologie et de l'histoire* 1 (1922): 77-86; and El'ad, "Coastal Cities," 2:146-167.   El'ad cited Henri Pirenne's thesis that the Muslim conquest of the Mediterranean basin led to the collapse of traditional European order and began the Middle Ages.   Muslims then expanded on to the Mediterranean which became their sea, and all pre-Islamic Syrian trade contacts with Western Europe ended.   For commentaries on Pirenne's thesis, see Eliyahu Ashtor, "Nouvelles refléxions sur la thèse de Pirenne," *Revue suisse d'histoire* 20 (1970): 601-607;   Eliyahu Ashtor, "Quelques observations d'un orientaliste sur la thèse de Pirenne," *Journal of the Economic and Social History of the Orient* 13 (1970): 166-194; and Andrew S. Ehrenkreutz, "Another Orientalist's Remarks Concerning the Pirenne Thesis," *Journal of the Economic and Social History of the Orient* 15 (1972): 94-104.

[122]Collins, *Al-Muqaddasi*, 151.

Islamic world's experience with maritime affairs. For example, Arab geographers, such as al-Muqaddasi (d. 1000 C.E.), described shipping in the tenth century C.E.:

> because of the abundance of rocks, ships are in great danger on entering it [the port of al-Howra in the Persian Gulf]. In fact, from al-Quzum all the way to al-Jar there are such dangerous rocks that ships proceed there only by day. The captain from the crow's nest carefully observes the sea. Whence a rock is espied, he yells: 'Starboard' or 'Port.' Two youths posted there repeat the cry. The helmsman, with two ropes in his hand, when he hears the call tugs one or other to the right or left. If great care is not taken, the ship strikes the rocks and is wrecked.[123]

Some authors believed that such passages suggested that if there were lighthouses in the medieval Islamic world, they were rare.[124] The passage seemed to confirm a belief that most shipping occurred during the day, negating the need for lighthouses for night travel. Both Navdi and Hourani showed, however, that Arab ships ploughed the sea both day and night during the early Islamic era.[125]

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[123]Ibid.

[124]See I. Y. Krachkovsky, *Istoria arabskoi Geograficeskaya literatura* (Cairo: n.p., 1953-1955), ii, and A. M. Attiya, *Adab al-bahr* (Cairo: n.p., 1981), 79-98 both cited in *EI²*, "Manar, manara (A), lighthouse," 359. Also see Tibbetts, *Study*, passim. Navdi disputed the traditional belief that maritime lighting is rare in Arabia; he believed that minarets, lighthouses, and map notations marked dangerous areas for sailors. Navdi, *The Arab Navigation*, 107.

[125]Navdi, *Arab Navigation*, 26, 33; and Hourani, *Arab Seafaring*, 10.

Maritime guides were written by Arabian navigators Ibn Majid in the late fifteenth century C.E. and Sulayman al-Mahri in the early sixteenth century C.E. Ibn Majid, one of the most famous Arab navigators, wrote that monsoon shipping occurred both during the day and night and involved coastal site recognition. Ibn Majid used mountains as seamarks, and he discussed the dangers presented by reefs and other maritime obstacles.[126] The tradition in which mountains were used as seamarks probably was carried over from the pre-Islamic era. Ibn Majid also mentioned a lighthouse in his seminal treatise on Arab navigation:

> When you lose sight of Dun and you are aiming for Munaibar, the sign is the lighthouse of Dahna. It then stands up like the cape of an island.[127]

Regarding signage, pre-Islamic Arabians were also familiar with the use of fire for signaling, at least on land. Clear references to signal fires existed in pre-Islamic poetry.[128] However, Arab coastal fires probably did not involve durable structures in most areas, because many Arabs were nomadic and not tied to one location.

In the early days of Islam, fire signals were also

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[126]Tibbetts, *Arab Navigation*, 453.

[127]Tibbetts has shown that Ibn Majid's translation, which he cites in both Arabic and English text, is from later Arab copies. Tibbetts added that the paragraph was miscopied. Ibid., 198-200.

[128]Fahd, "Le feu," 43.

carried by watch towers and fortifications along the coast.

Al-Maqrizi related that the governor of Ifriqiya (modern

Tunisia), Ibrahim b. Muhammad b. Muhammad bin al-Aghrab,

built towers in 874-875 C.E. to link Ceuta, Morocco and

Alexandria, Egypt. Fire signal messages could reach the

coastal points in one night, whereas the foot journey lasted

several months.[129] Al-Idrisi also described a place called

"Bajanis" that had a stone tower with a fire that was

kindled when enemy ships were seen approaching by sea.[130]

Arab geographer and traveler, al-Muqaddasi (d. 1000

C.E.), mentioned another significant effort at maritime

lighting in the Islamic era. He described Basra, located in

present-day Iraq along the Persian Gulf, as

> the most disastrous place, combining a strait and
> shallow sea. Trunks of palms have been set up in
> the sea, with huts built on them. People are
> stationed in them to light fires at night, so that
> ships will steer clear of those shallow places.[131]

Al-Muqaddasi (d. 1000 C.E.) was referring to the khashaba

(pl. khashabat), durable structures found in the shallow

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[129]Al-Maqrizi, *Al-Mawa'iz wa-t I'tibar fi Dhikr al-Khitat wa-l Athar* (Cairo: n.p., 1967), 1:324 cited in El'ad, "Coastal Cities," 2:155.

[130]Al-Idrisi, *Al Maghrib wa Sudan wa Misr wa Andalus* (Leiden: E. J. Brill, 1866), 198 cited in Gaudefroy-Demombynes, *La Syrie à l'époque*, 258, n. 1. See also El'ad, "Coastal Cities," 2:155.

[131]Collins, *Al-Muqaddasi*, 152.

Persian Gulf.[132] The term khashabat literally means "wooden beams," but the word also referred to pilings driven in the seabed near the entrance to the Persian Gulf, the Shatt-al-Arab. According to Islamic geographer al-Masudi, one set of pillars, built within six miles of Abbadan, Iraq had beacons which guided sailors and signalled the approach of pirates. "There wooden poles are thrust into the sea, and are signs for ships indicating that there is a distance of 300 furlongs from here to Uman."[133] Al-Muqaddasi stated that "long poles are planted in the sea. On them are rooms, where men are deputed to kindle lights in the night so that ships may keep at a distance."[134]

In 1047 C.E., Persian geographer Nasiri Khusrau provided the most exact description of the Abbadan

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[132]*EI²*, "Manar, Manara, (A) lighthouse," 358; and Guy Le Strange, *The Lands of the Eastern Caliphate: Mesopotamia, Persia, and Central Asia from the Moslem Conquest to the Time of Timur* (Cambridge: Cambridge University Press, 1905), 14. Le Strange noted that Nasiri Khushrau saw these poles around 1047 C.E.

[133]Al-Masudi in *Murudi*, 1:230, 330-331, 242, 361-362 mentioned three pillars, and Al-Kharazmi, *Mafatih*, 124 stated that lamps were lit on top. See *EI²*, s.v. "Khashab;" Al-Masudi, *Les prairies*, 1:251; and Navdi, *Arab Navigation*, 107. According to Tibbetts, al-Masudi obtained information by interviewing sailors and merchants. He did not travel outside of his home in Basra. Tibbetts, *Study*, 1. See also Ibn Khordadhbeh, *Kitab al-Masalik wa'l Mamalik*, ed. M. J. de Goeje (Leiden: E. J. Brill) 40-42 cited in Donini, *Arab Travelers*, 30.

[134]Al-Muqaddasi cited in Navdi, *Arab Navigation*, 107.

khashabat. He described the khashabat as four teak columns set obliquely in the water. These columns supported a platform, raised about 18 meters above the water level. On the platform was a small shelter for watchmen, and the last watchman at night lit a lamp protected by a glass casing.[135] Al-Idrisi, a later Arab geographer, added that the watchmen had little boats to bring them to and from the mainland.[136] Few other primary sources describe the khashabat, although historian E. Wiedemann, claimed to have located additional references to these beacons.[137]

While al-Maqrizi, al-Muqaddasi, Khusrau, and al-Idrisi

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[135]Nassiri Khosrau [Nasir-i-khushraw], *Sefer Nameh (travel diary): Relation du Voyage*, ed. and trans. Charles Henri Auguste Schefer (Paris: Ernest Leroux, 1881), 246-247; *EI²*, s.v. "Khashabat;" and Hourani, *Arab Seafaring*, 69. The Chinese geographer, Chau Ju Kua, calls them "ornamented pillars in the sea, on which at night they place torches so that people travelling on board ships at night shall not go astray." In their commentary on Chau Ju Kua, Firth and Rockhill believed that these pillars were located near Cape Mesandum on the Omani coast based on prior geographical descriptions. Istakhri, [Mordtmann's translation], 32-33; and Maqdisi, 17 cited in *Chau Ju-Kua*, 13, n. 1. See also al-Masudi, *Les prairies d'or*, 1:229-230. Le Strange believed that the platforms were "stone-flagged," supported on arches, and were used for a brazier to light a beacon fire. Le Strange, *Eastern Caliphate*, 49.

[136]Collins, *Al-Muqaddasi*, 12; Mez, *Renaissance of Islam*, 513; and Navdi, *Arab Navigation*, 108. See also *Nuzha,* 3d clime, 6th section in *EI²*, s.v. "Khashabat."

[137]*EI²*, s.v. "Khashabat." Wiedemann documents where types of khashabat beacons can be found. See E. Weidemann. "Über Leuchtfeuer bei den Muslimen," *Archiv fur Geschichte der Naturwissenschaft und der Technik* 2 (1909): 151-154.

present interesting examples of maritime lighting, their descriptions do not provide scholars with a clear picture about the structures and whether they served other functions and fulfilled Binford's interpretation of cultural change. The khashabat provided a light source and seamark for Persian Gulf navigators in technomic fashion. The khashabat, however, did not display obvious sociotechnic or ideotechnic qualities. The khashabat might be regarded as sociotechnic, since they were mentioned as Islamic achievements. The khashabat were not influenced by the ziggarut, the Syrian bell tower, or the Pharos. These signal towers can not be connected to the origins of the minaret.

CHAPTER VI: CONCLUSIONS

Michell claimed that all architecture is a "product of cultural and environmental factors and an expression of the way of life of the people for whom it is built."[1] The structural simplicity of early Muslim architecture reflected the rapid and turbulent beginnings of the religion; initially followers were concerned with the elements, as seen, for example, in the early mosque at Basra. Early Muslims also used traditional sites, for example, placing Syrian mosques on former church grounds because of their important symbolic locations within urban centers. Later structures, such as the lofty Ottoman minarets, demonstrated the success of Islam, which overran former Byzantine provinces and destroyed the power base of Persia.

Bloom believed that scholars continually confused the minaret's origins. He did not agree with most scholars that the antecedents of these towers were pre-Islamic. Bloom argued that scholars in the past linked the minaret with the development of the adhan. Bloom noted scholars tended to view the variety of words used for minaret as indicative of geographic rather than historical or functional distinctions. For example, the term sawma'a is currently in

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[1]Michell, ed., *Islamic Architecture*, 7.

use almost solely in North Africa to refer to minarets. Bloom proposed that any analysis of origins must encompass origins of design and use; these items were interrelated but they refer to evolutionary developments that may be separate from architecture.

This section addresses Bloom's major concern, the functional role of the minaret in Islamic society, while still examining factors that scholars usually study when discussing the historical origins of an architectural structure. The functional role of the minaret and other tower structures has been evaluated using Binford's approach to artifact evaluation. Artifacts exhibit three major qualities in a society: technomic (for daily extractive use), sociotechnic (to reflect the society's advancement and presence), and ideotechnic (to recognize a set of ideas about the universe). Binford provides guidance for a formal analysis of minaret origins. This thesis used Binford as a guide to examine how all factors, including function, evolved over time.

Bloom asserted that the difficulty with understanding minaret origins lay in the statement that cultures of Central Asia, South Arabia, and India, for example, influenced the Islamic tower. He believed that such thinking reversed the role of agent and client. In Bloom's opinion, these cultures had little contact with Muslims;

therefore, Muslims could not have been directly influenced

by them. Rather, Islam must have

> adapted, misunderstood, copied, addressed,
> paraphrased, emulated, parodied, distorted,
> referred to, drawn on, resorted to, appropriated
> from, reacted to, differentiated itself from,
> engaged in a mediation on, responded to, or even
> ignored the traditions of the past.[2]

Bloom presented an interesting argument; clearly, early

Islamic leaders inherited a world with material apparatus

for commercial and military routes. The Arab conquest may

have marginalized some areas, such as the coast of

Palestine; but Muslim invaders used available resources as

they expended more energy on subjugating non-Muslim

populations.

Earlier cultures adapted architectural traditions;

Herodotus described the Achaemenid King Cyrus to whom he

attributed the development of watch towers linking Arabia

with the East. Herodotus wrote: "the whole idea is a

Persian invention, and works like this. . . at intervals all

along the road are recognized stations."[3] In turn, the

Romans defended their Syrian frontiers from their rival

empire-builders, the Parthians, and built the *limes*

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[2]See Michael Baxandall, *Patterns of Intention: On the Historical Explanation of Pictures* (New Haven and London: Yale University Press, 1985), 58-62.

[3]Herodotus 7:27.

arabicus, a line of solid stone forts that possibly served as models for later Islamic caravanserais. Analogous structures existed further east, where Buddhist monasteries are found along trade routes from China to Central Asia.[4]

It is possible, as Eleanor Sims asserted, that by the eighth century C.E. the lines of architectural evolution were so blurred that plans for frontier fortresses could be used for caravanserais, and with some modifications, as mosques and religious schools.[5] Ernst Diez and Antony Hutt noted that a minaret at Zarand may have served as a guide to travelers:

> Given the size of the base and the gentle taper it
> would have been possible for this minaret to
> attain a considerable height so that a light
> placed at its top would have been visible as a
> guide for some distance, useful in an area where
> daytime heat renders night travel essential.[6]

In Tunisia and along other parts of the North African littoral, cylindrical towers, referred to as manaras, were attached to Islamic fortresses and served as beacons and lighthouses.[7]

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[4]Sims in Michell, ed., *Islamic architecture*, 98; and Hillenbrand, *Islamic Architecture*, 147.

[5]Sims in Michell, ed., *Islamic Architecture*, 102.

[6]Diez, *Islamische baukunst*, 59; and Antony Hutt, "Three Minarets in the Kirman Region," *Journal of the Royal Asiatic Society (1969-1970) of Great Britain and Ireland*, n.v. (1970): 174.

[7]*EI*[2], "Manar, manara, (A), (1)," 362.

A common thread in minaret development seems to be regionalism. On a regional level, minarets should be viewed as towers rather than as minarets.[8] The word substitution denotes a neutral term rather than a religious one, as towers have two major characteristics: taller than broader, and height. Minarets are an entirely Islamic architectural form; towers are not. In a few early Islamic portrayals, the muezzin called prayer from a low place, from a structure that was inward looking, the dar. Present-day minarets have height and loud speakers, both of which reflect the stature of Islam as a dominant world religion. Minarets are also outward-looking. The architectural form mimics the strength and power of this religion.

The addition of a tower as a feature of the mosque was a change in Islamic architecture.[9] On a sociotechnical level, it advertised the presence of a mosque that outwardly held no other distinguishable features. More importantly, it severed a tie with the pre-Islamic past. Adding a minaret to a mosque changed the early building form from a house to a religious building. In Syria, adapting the Christian towers to an Islamic use reflected a continuity. Early Islamic structures had the same features and the same

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[8]Bloom, *Minaret*, 18.

[9]Ibid., 19.

height as pre-Islamic buildings, perhaps because they were pre-Islamic buildings. Over time, height increasingly became a feature of Islamic architecture, and almost a symbol of Islam itself.[10]

The tower was introduced as a symbol that possessed legitimate uses and meanings. In Syria, the tower was indicative of Christian religious activity. It evolved into a symbol of Islam itself.[11] The first literary evidence for a minaret, Maslama's sawami of Fustat (673 C.E.), revealed the political impetus behind the minaret. Maslama's overlord, Mu'awiya, styled himself as a leader who required a panoply to impress his Christian and Muslim subjects, whom he claimed demanded such symbolism.[12] Over time, the minaret became less a technomic feature of the mosque and more a sociotechnic artifact, or symbol. The minaret became taller, and by the Ottoman era had doubtful technomic use. A minaret over fifteen-meters high could be only of minimal technomic use; without twentieth-century amplification equipment, the human voice could not be heard above the noisy, urban setting.[13] Except in South Yemen where Islam

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[10]Ibid.

[11]Ibid., 20.

[12]Hillenbrand, *Islamic Architecture*, 130.

[13]*EI²*, "Manar, manara (A), (1)," 361.

was variably suppressed until unification of the two Yemens
in 1990, minarets in Yemen have great stature. Notably, a
number of minarets viewed by the author in Aden, Mukalla,
and al-Hami were small in comparison with their counterparts
in Sana'a, the capital city of Yemen.

The case study of the Aden lighthouse, for example, was
not an attempt to secularize an Islamic symbol; rather, the
Aden Minaret maintained its sociotechnic status as a symbol
of Islam but also revealed possible technomic, as a
lighthouse, and ideotechnic, as a tower for the adhan,
functions, in addition to its sociotechnic role.   S. D.
Goitein wrote that "prayer is the quintessence of Islam; no
other duty compares in scope and in intensity and no other
trait marks a sincere Muslim."[14] Certainly, the minaret was
linked to a function without which the mosque could not
fulfill its purposes as a place of worship.[15] As with the
Aden Minaret and minarets along the coast of East Africa,
religious observance was also attached to them; therefore
the structures had an ideotechnic role for the local
population and mariners.

Islamic architecture reflects the spirit of the
religion as it adapted and modified itself for the people to

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[14]Goitein, *Islamic History and Institutions*, 73.

[15]Behrens-Abouseif, *Minarets of Cairo,* 10.

whom it was preached, much like the way it adapted its
architecture. Islamic culture was known for its mobility,
for example, the Hajj. It was also a religion revealed by a
merchant trader; not coincidentally, the religion encouraged
safe passages for trade. Travel in the early days of Islam
required watch towers for provisions, safety, and shelter.[16]

Moreover, the notion of secular and sacred does not
operate in Islam, as it does in Christianity.[17] For
example, whether in the marketplace, along a caravan route,
or en route to perform the Hajj, trade was encouraged,
particularly by the Abbasids. Prayer was made anywhere and
a mosque was not required to pray. Islamic religious
architecture had formal and functional parallels to both
Islamic trade and travel. Minarets provided beacons of
light to traveling merchants whose revenues from their
commercial enterprises financed religious institutions, as
well as major edifices such as mosques, madrasas, and tombs.

Attaching a meaning of light to the word manara or
minaret was conceivable if one examined the *Quran*. The
"Surat al-Nur" was dedicated entirely to the subject of
light in religious practice and daily living. Light was
used as a metaphor that allowed a human to move closer to

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[16]Sims in Michell, ed., *Islamic Architecture*, 97.

[17]Michell, ed., *Islamic Architecture*, 111.

understanding Allah: "The lamp is on the shrine in which God has permeated that his name be extolled and repeated where he is celebrated from dawn to dusk." (Surat al-Nur 24:35-36).[18]

According to the Islamic historian Ali Mubarak, the mu'adhdhin used a minaret for purposes other than the adhan. Ali Mubarak described how the deaths of important religious men of al-Azhar were announced from a minaret.[19] During the reign of Ibn Tulun (866-884 C.E.), mu'adhdhins called *takbu*, or *Allahu akhbar* ("God is great") as signs of protest from the minarets when people were angered by the civil authority's unjust practices. Examples included someone wrongly beaten or punished, or the lack of sugar and its subsequent high cost on the market.[20] In addition, al Jabarti reported similar events taking place from minarets in al-Azhar.[21] Therefore, the minaret served other than purely religious purposes. Clearly, however, throughout the medieval era the role of the minaret revolved around two polarities: a sign of power and an instrument for the adhan, and these sociotechnic, ideotechnic and technomic functions

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[18]Melikian-Chirvani, "Sufi Shrines," 118.

[19]Ali Mubarak cited in Behrens-Abouseif, *Minarets of Cairo,* 11.

[20]Ibid.

[21]Behrens-Abouseif, *Minarets of Cairo*, 11.

"were not mutually exclusive."[22]

The minaret's tower design most likely pre-dated the Islamic era and, in areas along the Arabian coastline, reflected the form of a lighthouse. The minaret had more than one function, and the word manara, "place of fire," indicated that the structure served technomic, sociotechnic, and ideotechnic functions.[23] The Manara Aden, for example, served all of these functions. The word manara did not lend itself to any precise meaning unless the context surrounding the structure offered more clues. Following van Berchem's evaluation of Islamic architecture, the case study of the Aden Minaret illustrated historical, geographical, and architectural factors that revealed its use as a lighthouse.

The Aden Minaret lacked a mosque, was strikingly whitewashed, and its brick construction was not native to Aden's volcanic rock, but more like ballast from foreign vessels. The seaward side of the minaret was eroded, and most importantly, the direct line of sight was open to Sira Bay where, in medieval times, ships were beached at low tide or moored along Sira Mole. Additional sight lines led to Aden's tallest peak, Jabal Shamsan, where British fortifications probably were laid on top of older

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[22]EI^2, "Manar, Manara (A), (1)," 362.

[23]EI^1, "Manara," 227.

structures, and to Ma'alla Pass which had an aqueduct and was the only pass available for traversing Aden's rocky peninsula to the mainland. The Aden Minaret also resembles in construction the Ana Minaret, a Saljuq-built minaret that was known to be a seamark in the Euphrates River. The Aden Minaret was a Saljuq-influenced lighthouse.

The minaret first developed along technomic lines; over time, the minaret's technomic functions also exhibited ideotechnic and sociotechnic characteristics. The tower likely developed with extractive efficiency; in other words, the tower was used for purposes of observation and for the adhan. Over time, these practical qualities acquired other characteristics, ideological and aesthetic, much along the lines of other architectural and cultural developments. Binford's approach shows that despite regional variations, each tower exemplified multiple uses connecting it to the minaret. The general term, tower, was similarly used for technomic, sociotechnic, and ideotechnic purposes. Tower distinctions, ziggaruts, bell towers, lighthouses, and minarets, may be evolutionary and regionally dependent, but they are also societal. Like any artifact, tower forms represented a particular society at a certain point in time. Their unique forms reflected the temporal and spatial uniqueness of that society.

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