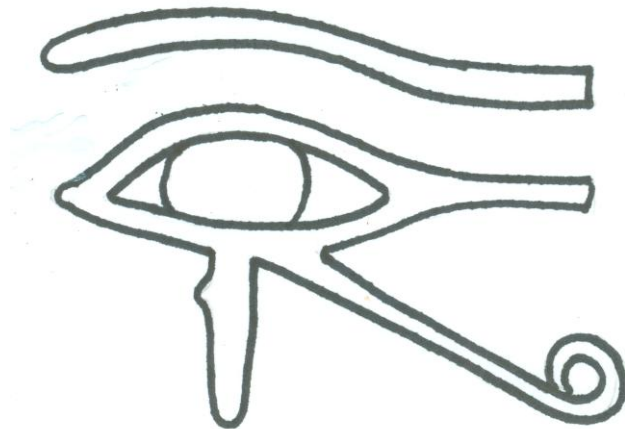


CLASSIC EGYPTIAN SETTLEMENT PATTERNS

~ An Ekistic Evaluation ~



E. Christopher Mare

WSD Independent Study

Winter 2001

COPYRIGHT © 2001/2012 – Village Design Institute – All Rights Reserved

TABLE of CONTENTS:

PAGE :

3	INTRODUCTION
6	PREHISTORIC CONDITIONS
12	GEOGRAPHIC CONDITIONS
18	SETTLEMENT PATTERNS
24	CONCLUSION
26	BIBLIOGRAPHY

INTRODUCTION

Much can be inferred about the culture and world-view of a people by careful study and analysis of their settlement patterns – how they construct and organize their built environment to suit their needs. Attention can be directed toward: the spatial distribution of buildings on the landscape, the relative concentration of population in a center, the emphasis given to certain specialized structures over others, the relationships provided between and within personal living spaces, the relationships between personal living spaces and public domains and the comparative balance between private and public projects, the presence of distinct morphological cultural forms and stylized patterns or motifs, the definition in the compartmentalization or zoning of interior settlement space, the specific geometric patterns used in design and layout, the degree to which the settlement is integrated within the local ecology, including the relative segregation of agriculture and other land uses, the functional use of flow patterns and nodes, the compactness of the settlement and the presence or absence of distinct perimeters, etc. This list can be quite long as every purposive detail and aesthetic nuance of a human settlement can be interpreted as an indication of how the inhabitants view their particular place in the world. More inclusively, the quality and characteristics of the built environment in no small way reveals and is a direct reflection of a people's perceived psycho-mental-spiritual relationship with the Cosmos.

Such a scientific, multi-disciplinary approach to the study of human settlements has been termed 'Ekistics' (Doxiadis, 1968). This fairly recently emerging discipline was conceived as a comprehensive advisory, analytic and design tool to fit and harmonize the uniquely complex, technicized, human constructed environment within the larger natural biosphere. The ekistic solution arose as a response to the awareness that the majority of current human settlements are destructively impinging upon, depleting, and in many cases completely exhausting their underlying and supporting local ecologies, causing widespread environmental degradation and associated human misery. Even when deliberately planned, the well-intentioned, though not so-well-informed, practices of the institutionalized planning profession usually serve to somehow perpetuate the accelerating pace of degradation. Thus, in a sad irony, contemporary humanity continually and progressively alienates itself from its natural base – and, arguably, from its own human nature – in the fundamental necessary effort to provide shelter.

With all this in mind, the student of Ekistics – that is, the individual who is attempting to understand the complex, interwoven, multifarious dimensions of a human ecology focused on its settlement patterns – will benefit immensely from the study of prior settlement patterns. In the interest of sustainability, particular attention should be focused on those arrangements of the past in which a relative balance was achieved between an admirably high cultural attainment and a relatively benign, if not co-productive, relationship with the natural world. This type of study has the potential to reveal patterns, relationships, and structures that not only worked well previously, but that might be *consciously designed* into current settlements with the intended effect of promoting high-quality, aesthetically pleasing, culturally sophisticated, long-term viability. Beyond that, on a more sublime level, specific configurations or constellations may be re-cognized that had the effect of contributing to an elevation of consciousness (*con + scio* = thinking together) and that may be incorporated or at least experimented with in the present to reconnect humanity with the natural world and expand the possibilities of human potential. The ultimate goal of such a scientific study will be to gather and document various illumined, naturally integrative and ecologically sustainable cultural solutions from the past into an Ekistic Library that can be referred to when skillfully designing settlements in the present.

While it is understood that culture is a localized phenomenon growing out of a particular place at a particular time – a specific spatio-temporal adaptation to survival and livelihood – there may be, nonetheless, universal archetypal patterns, relationships, and structures that are appropriate everywhere, anytime. In this era of attempted forced global consumer monoculture, the wisdom, opportunities, and benefits exhibited by a respectful culturally relativistic review of the very best of the entire range of human experience cannot be easily dismissed. While even well-informed design may ultimately be limited in its application due to the vagaries and uncertainties presented during implementation, it does provide a useful starting point for conceptualization and purposeful intent.

In the present ekistic analysis, the settlement patterning of the Classic Egyptians¹ is given a close scrutiny. The Classic Egyptian situation is chosen for its high level of cultural attainment in those qualities usually associated with advanced civilization – science, astronomy, religion, art, monumental architecture, writing, a specialized economy and centralized government, etc. – coupled to an impressively durable, sustainable socio-cultural presence. Historically, and generally, a society's rise to 'civilized' prominence has been expressed in a rapid florescence followed by the

¹ The 'Classic' period refers broadly to the years 3150 BC – 30 AD, but more specifically to the time between 3150 BC – 1674 BC, the so-called Thinite, Old Kingdom, First Intermediate, and Middle Kingdom periods, the time before Ancient Egypt was unduly influenced and adulterated by external conquest.

depletion and exhaustion of its resource base (often coinciding with defeat at the hands of an upstart rival), then an inevitable subsidence to relative oblivion as a new ‘civilized’ center achieves prominence. The Classical Greeks, for example, ascended and then declined in about 300 years. Imperial Rome lasted for approximately 600 years. The mysterious Classical Maya flourished majestically for almost 800 years before abandoning their civilization. Great Britain’s heyday as foremost imperial ‘civilized’ power lasted for about 200 years. The United States has been in prominence for less than 100 years and is already showing signs of waxing.² The Classical Egyptian culture, by comparison, “seems to have emerged, already fully formed, towards the middle of the 4th millennium BC, eventually vanishing at the end of the 4th century AD. For almost *forty centuries* Egypt possessed an air of unchanging stability and a political system that did not appear to be shaken by anything – even the occasional invasion” (Grimal, 1992, p. 17, added emphasis). There surely must have been characteristics revealed in their settlement patterning that contributed to this high quality sustainability, characteristics that the student of Ekistics may glean for his or her own understanding. The following report is an attempt to discover just what these characteristics were.

² Actually the game has changed in the 21st century. Individual, *national* geographic centers of power have now been eclipsed by the non-localized, fluid, secretive “New World Order.” It is no longer accurate to describe the United States as a civilized center of power, in the sense of a sovereign unity, because the persons making strategic decisions affecting the people and the resources located within the arbitrary national boundaries designated as the US are now spread across the globe and are hardly concerned with ‘national interest’ anymore. That is to say the imperialistic center of power now lacks a land base.

PREHISTORIC CONDITIONS

To survey the entire range of human presence in the Nile Valley, the cradle of Egyptian civilization, and thus to glimpse the proto-cultural context that was the basis for the eventual establishment of permanent settlements of a purely “Nilotic” character, one must begin the investigation practically at the dawn of the emergence of hominids. The oldest human fossil remains found to date, an *Australopithecene* estimated to be 5 – 5.5 million years old, were discovered near Lake Turkana, Kenya, near the Ethiopian border (Phenice, 1972, p. 91).³ A wealth of other ancient remains can be traced from this site down through to Olduvai Gorge in Tanzania, encompassing in totality the southern and eastern portions of an area called the Lake District. This Lake District is the mountainous source of the Nile *and* the birthplace, the provenance of humanity.

As these early ancestors successfully adapted to the challenges of life by evolving a system of survival strategies passed down from generation to generation – that is, a *culture* – their growing numbers compelled them to migrate beyond their place of origin. The Nile Valley provided a natural corridor for their expansion to the North. Like an artery coming straight out of the heart of Africa, the Nile channeled and pumped hominids up to the Mediterranean and onto the Near East – and from there throughout the globe. This migration persisted for millions of years until by the Late Paleolithic scattered races and peoples could be found on every continent, including diverse groups immediately within and surrounding the land base that is now Egypt. There were not yet permanent settlements along the Nile during this phase as the valley was mostly an inhospitable, swampy jungle “in character rather like the marshy districts found today on the Upper White Nile” (Kees, 1961, p. 18). Besides, these hunting and gathering bands were on the move following game, and at most would make only temporary seasonal camps along the river banks. The Sahara, the Red Sea hills, and the Sinai were not yet desertified for the duration of this period, sporting instead savanna and even scrub forest spread out to the horizon, home to large populations of wild cattle, wild asses, antelope and gazelle, ostriches, lions, even giraffe and elephant, etc. Yet the Nile

³ Diodorus would write in 50 BC: “Now the Ethiopians were the first of all men.” And, “...the larger part of the customs of the Egyptians...are Ethiopian.” (van Sertima, 1989, p 44). This assertion serves to demonstrate that even as late as the Ptolemaic period, Classic Egyptian culture was understood to be fundamentally African in origin. This can be confirmed by linguistic studies which show Ancient Egyptian to be rooted in African dialects with a later, distinctly Semitic, overlay.

Valley would still have dominated the cultural landscape, and with its ever-flowing motion northward, would have provided the directional impetus for continued diffusion.

By the time of the Pleistocene, as the Ice Ages advanced and receded, the Nile Valley and its encompassing environs alternated between a more moderate, temperate regime during times of glaciation, with adequate rainfall throughout the year, followed by interglacial dry periods as the tropical doldrums would reset themselves at this latitude. At the onset of an interglacial period, as the climate would begin to warm again, the high mountains of the Lake District would release their accumulated snow pack in a torrent of flooding that cut the limestone valley miles wide in some sections. By the time the last glaciation began to recede some 30,000 years ago, corresponding with the advent of *Homo sapiens*, a more permanent human presence could finally be ascertained in the Nile Valley proper. This stage has been called the “Khormusan:” “[T]he Khormusan [culture] was more reliant on the river valley, combining the subsistence of the savannah – exploiting wild cattle, antelopes and gazelles – with the products of fishing, thus demonstrating that the populations driven out of the Saharan zones by drought were adapting to the Nilotic environment...The desertification of the Saharan zones seems to have driven even the inhabitants of the Libyan oases into the Nile Valley” (Grimal, 1992, p. 20).

The permanent settlement and inhabitation of the Nile Valley proceeded slowly, in graded steps. The first settlements were located high on the levees at the desert edge, and over time gradually descended further and further down the banks. Soil deposition studies show that the Nile High Water Curve crested consistently up to 30 meters above the modern floodplain from 23,000-18,000 BC; it averaged 20 meters and frequently crested to 28 meters above the modern floodplain from 14,000-10,000 BC; it still crested some 14 meters higher than present in 8000 BC, before finally making a precipitous drop to its current level around 3000 BC, synchronistically occurring at the onset of Dynastic times (Wendorf, 1968, p. 58). The floodplain has remained fairly level ever since, though experiencing much annual variation around this mean. This dramatic geological activity left behind a wide, alluvial, extremely fertile and inhabitable floodplain that literally became the soil out of which Classic Egyptian civilization would grow. It is relevant to note that a similar geologic sequence was occurring in the Tigris and Euphrates river valleys, within which the contemporaneous, mutually-influencing, and eventually rival Mesopotamian civilization was taking root.⁴

⁴ It is also interesting to note that the people of Mesopotamian civilization originated in agricultural villages in the hills surrounding the great river valleys and only moved down to the lowlands as a consequence of population pressure (Whitehouse, 1977, p. 30).

As the banks of the Nile receded down from the foothills, flat terraces of vegetative-free mud were exposed. By 10,000 BC, there is evidence of an early experiment with agriculture in these plots, deduced from the discovery of primitive scythe-like tools with pollen grains on them (Grimal, p. 21). This marks the world's first attempt at agriculture – though humanity's actual initiation into permanent agricultural lifestyles is attributed to the Mesopotamians between 8000 and 6000 BC. In Egypt, “the transition to [permanent] agriculture took place...around the middle of the sixth millennium BC. The influence of the Near East is thought to have been involved, despite the earlier indigenous attempts at agriculture...The first domestic animals were distinctly African types” (ibid). By the middle of the sixth millennium BC, “efficient, primary village agriculture had already been established in Southwest Asia for some time” (Butzer, 1976, p. 9). One may empathize with the Ancient Egyptians for their reluctance to finally settling down to a sedentary, agricultural existence, despite being aware for a long time of the potential for intensive methods of cultivated land use; after all, agriculture is hard work, with lower productive output per man-hour, and diminished nutritional value. Throughout the ancient world, and even into the more recent world of the indigenous Americans, incidents of the acceptance of sedentary, agricultural lifestyles came only after inducement by population pressure and depletion of wild food sources; that is, people did not ‘discover’ agriculture and enthusiastically adopt it because it was a socially progressive innovation. In Egypt, the transition was also concomitant with weather change and the desiccation of the Sahara.

In summary, here is a speculative sequence for the evolution into agriculture in Egypt, and thus the emergence and eventual proliferation of permanent human settlement in the Nile Valley (from Butzer, p. 8):

- 1) Intensive hunting and collecting, ca. 15,000-9,000 BC.
- 2) Possible indigenous domestication of some large, local mammals...and of seed grasses...prior to 5000 BC.
- 3) Introduction of more successful winter-rainfall crops (emmer and barley) and herd animals...from Asia to Egypt, where they were rapidly incorporated by an already receptive economy to become the regular agricultural staples [5000 - 3000 BC].
- 4) Experimentation with local mammals and avifauna as well as use of minor, local grains persisting through the Old Kingdom.

Once the diverse bands in northeastern Africa were made to settle down and take root, the distinctly unique Egyptian form of culture sprouted and rapidly matured. With the transition to sedentary existence, the bridge from pre-history to history was

traversed and the foundation for civilization was laid. During the two thousand years between the advent of agriculture and the emergence of civilization in 3000 BC, what is called the *pre-dynastic* period, the people of the Nile Valley were adjusting to the realities of higher human population densities in a tribal, village-scale type of existence: producing fine pottery and basketry, weaving linen and processing animal skins, developing specialized indigenous economies, and organizing themselves into socio-political groupings and associated settlement patterns. During these two thousand years, virtually all the essential qualities and characteristics of Egyptian civilization appeared in rudimentary form. The emergence of the actual Dynastic period in 3150 BC roughly coincided with the appearance of metal-working, the organization of irrigation projects, and most significantly, the unification of Upper and Lower Egypt into one political body under the rule of the 'god-king,' Pharaoh, the first being the legendary Menes. Pharaonic power seems to have manifested in a rush, with a sophisticated writing system that blended pictograms, ideograms, and phonograms; a science that applied detailed astronomic knowledge, including the world's first 365-day calendar; a geometrically precise architecture; an organized, priestly-class religion; and a stylized art form that became uniform throughout the entire length of the culture – in effect, all those characteristics generally associated with civilization – already seemingly established, mature, and fully formed.

This is the enigma of that brilliant, unique chapter in human history – Classic Egyptian civilization. One is prone to ask, "From where did all this cultural sophistication originate?" That is a fair question. It took about two thousand years to evolve from the first attempts at scattered, sedentary agricultural settlements to a fully culturally-unified nation. Two thousand years may seem like plenty of time to develop a civilization, especially from our perspective; but, one must remember, for the ancient Egyptians there was no precedent to draw from: they were purely pioneering new ground. In those two thousand short years, the people of the Nile Valley went from settling down from a semi-nomadic, hunting and gathering, band level existence to establishing one of the most sophisticated, aesthetically-refined cultures of *any* Age. Just five hundred years after their unification they were building some of the grandest, most magnificent architecture ever to grace the face of the Earth. What was the impetus, the motivation, the attractor to strive for such achievement in the absence of any precedent? What is even more puzzling is that the first wave of monumental architecture, exemplified by the pyramids and necropolises on the Giza plateau of the 4th Dynasty (2625-2510 BC), is – in precision of craftsmanship, in quality of materials, in beauty and scale – the finest to be constructed throughout the reign of Egypt. They seemingly did it best at first, then slacked off somewhat thereafter.

Of course, the rapid Egyptian rate of growth could be explained by the fact that there was a rival civilization beginning in Mesopotamia that actually appears to have had a head start; but that culture was crude by comparison, ruled by patriarchal warlords who had to maintain a constant state of military vigilance because they were situated on a heavily trafficked and vulnerable desert plain. The people of those lands had to gather in densely packed, walled cities for protection – and once inside they proceeded to manufacture for the first time that uniquely abstract, isolated from Nature, *urbane* form of culture, with all its decadence and superficiality, its artificial class hierarchies, social exploitation, and arbitrary power manipulations. Those people built massive ziggurats but they were as much military look-out towers as they were reverent religious architecture. With all this in mind, it ought to be remembered that so much of what was Mesopotamia became the root of Western Civilization as a whole, including their system of writing and numerics, their use of money tokens, their form of civil law as embodied eventually in the Code of Hammurabi, etc., and especially their imperialistic war-like attitude (for more on this perspective, see Schmookler, 1984).

The Egyptian civilization was light and breezy, bright and cheerful by comparison, in all aspects: clothing, jewelry and cosmetics, cooking vessels and domestic products, social customs and manners, architecture, art, music and dance, psychology, cosmology...and, we may assume, settlement patterning. The Classical Egyptian culture embodied an elegance, grace, and refinement that set it far apart from its contemporaries – and, it may be argued, from any culture since. Egypt, after all, was looked over by an actual god, Pharaoh, so surely the land and the people were living a blessed life in munificent and magnanimous relations with the Heavens. The Classical Egyptians, we could say, more than any other people had an opportunity to build a ‘Heaven on Earth.’

What can we learn from their example? Who exactly was this Pharaoh and what was his lineage? Somehow it seems a far stretch of the imagination to assume that he was the vanguard of a long line of tribal chieftains. When do the people ever recognize the chieftain, one of their own, as a god? It seems probable, therefore, that Pharaoh came from outside the kin group, perhaps from a distant land.⁵ Could Egypt really have been populated by the survivor-priests of the legendary sinking Atlantis, as Plato puts forth in his *Timaeus*, ‘gods’ who interbred with the local groups and passed down their ancient knowledge? This line of questioning is diverging from the ekistic purpose of this paper yet somehow seems relevant, if only in passing: Egypt remains such a great

⁵ Butzer touches on this question: “The sum total of evidence consequently favors an introduction in the Neolithic, but from a northwest rather than northeast source. The new groups involved were intrusive, but they were North African” (1976, p. 11). Are we to conclude then that the gods came from Libya, or present day Algeria or Morocco? This too seems unlikely since those groups had none of the very real cultural advantages of the Nile Valley.

mystery! Perhaps she had far more of an influence on western civilization than is generally realized – a hidden or ‘occult’ type influence. Moses after all was raised in the court of Ramses II, and the “Ark of the Covenant” was a vessel taken from there.

These and many other associated speculations have been the imaginative field-day of writers and scholars throughout the ages. While often fanciful, and better left in the realm of mythology, the sheer volume of the writing is a testimony to the immortality of the grandeur that was Classical Egypt.

GEOGRAPHIC CONDITIONS

A human settlement grows out of a specific geographic location, a particular spot of earth; accordingly, its characteristics, potentialities, and very destiny are derived from the qualities of that particular place. The settlement draws its sustenance from and adapts its economy to the surrounding indigenous flora and fauna, to the mineral treasures of its encompassing landforms, and to the entire resource base of its more inclusive bioregion, including its soils, forests, and waterways. A beneficial initial placement bestows enormous economic and strategic “comparative advantages” in relations and trade with other settlements or other societies.

The associated climatic factors involved in geographic placement will be direct influences on such details as the choice of building materials, the substance and purpose of local crafts and industries, the subsistence patterns of food production and storage, the structure of socio-cultural and kinship organization, and even the interpretation of numinous supernatural phenomena resulting in a religious or spiritual predilection. Especially in pre-industrial times, before the creation of settlements became a predominantly engineering problem with a standard blueprint applied to all situations, a human settlement could be considered a unique ‘anthropomorphological’ outgrowth of specific bio-geographic circumstances, custom fit to serve a particular function within the larger whole of the composite society. With all these considerations, human geography becomes an indispensable comprehension tool in the ekistic analysis of a culture’s settlement patterns.

Classic Egyptian civilization, initially, was confined to an extremely narrow band of river valley approximately 750 miles long, from the point where the Nile breaks through the barriers of granite at the cataract of Aswan to the Mediterranean Sea; thus it was overtly bi-directional, North-South in its orientation.⁶ In the fifth century BC, Herodotus called Egypt “the gift of the Nile” (Wilson, 1951, p. 9). More contemporary writers have described Egypt as “a riverine oasis.” To this day, 95% of Egypt’s 64 million people reside and make a living solely within the Nile Valley and its delta, making it one of the most densely packed agricultural areas in the world (Phillip, 2000). Four of the world’s first five civilizations sprang up in the floodplains and alluvial valleys of major

⁶ Even to this day, Egyptians, no matter where they may be trans-located in the world, speak of North as “up river” and South as “down river” (Fathy, 1973).

rivers – the Yangtze, the Indus, the Tigris and Euphrates, and the Nile.⁷ These commutable, fertile, resource abundant riverine placements provided the most optimum initial conditions for a settlement to grow into the complexities of civilization, suggesting that the associated irrigation projects and surplus food stores are a precursor.⁸

Classic Egyptian civilization, perhaps to a greater degree than the others, was a direct product of the gifts and circumstances of their river valley. This is especially true because of the Nile Valley's isolated, insulated geographic position. By the time of the Dynastic periods, the Nile was flowing through expanding deserts on both sides with neighboring populations limited to nomadic Bedouins. There were Libyans to the West but they were confined to scattered oases or lined along the Mediterranean coast and posed only a passing nuisance from time to time. There was the developing Mesopotamian culture to the East, with which there was some cultural exchange, but they were separated by a vast distance, buffered by the Sinai, and during the formative period posed no military threat. Then there were the Nubians to the South, but their geographic realities precluded the highly centralized and organized sociopolitical conditions necessary for civilization, so they always remained at a tribal level and had only a circumferential influence on the developing Egyptian civilization, usually in the context of conscription as laborers, police, and soldiers.⁹

The Classical Dynastic Egyptians, then, grew up in relative cultural isolation and safety; this allowed them to incubate and develop a uniquely stable and harmonious, unified, achievement-oriented culture free from the tense and fearful influence of military necessities. "This relative sense of security bred in the Egyptian an essential optimism about his career in this world and the next, and it permitted a marked *element of individual freedom*...In contrast to his neighbors [the Mesopotamians, who were geographically located at the confluence of numerous migration and invasion routes]...the ancient Egyptian was not constrained by slavish obedience to authority...His rules were general and well understood, but within these rules he enjoyed a relatively high degree of liberty to exercise his own personality...[with] confidence in himself and in his world" (Wilson, 1951, p. 12, added emphasis).

⁷ The highland Mesoamericans are the exception.

⁸ Another view has it that these fertile, resource abundant riverine conditions allowed such a high population density that eventually irrigation, extensive agriculture, and hierarchical planning and management was needed to feed all the people. The distinction is important. Is the sequence: irrigation (i.e. technological development) led to surplus food led to increased population density led to civilization? Or is the sequence: increased population density (first) led to irrigation (out of necessity) led to surplus food led to hierarchical exploitation and control led to civilization? In this scenario, overcrowding is the impulse that results in the social *adjustment* of civilization. In the first, more commonly believed scenario, it is forward-looking technological innovation that leads to the social *advancement* of civilization. Which is it?

⁹ Until the very end of the Classic period, that is, when a Nubian Dynasty briefly overtook the throne.

This sense of security, optimism, confidence, and associated freedom of expression afforded by the geographic insulation of the Nile was also instilled in the Egyptian by the very behavior of that riverine lifeline. Consistently and predictably, every August, the Nile flood would begin to rise and spill its banks, inundating the lower reaches of the valley and depositing fresh new silt. By mid-October, the river would begin to recede again, exposing the banks for the commencement of a new agricultural season. This regular, cyclic occurrence – this pulse from interior Africa – was the calendrical framework upon which the entire civilization was erected; and this is not an overstatement. “In general, the Nile flood regime is more predictable and reliable than any other world river, thanks to the multiplicity of its water sources in sub-Saharan Africa, and the basic regularity of the monsoon rains” (Butzer, 1976, p. 41). In other words, the Egyptian could be assured that the water would come.

While regular and consistent in its periodicity, the actual *volume* of the annual flood was far more variable, oscillating around a mean average in trends that could last for years, decades, or even centuries. Exceptionally high water events could breach the levees, wiping away villages and livestock, while flooding and damaging low lying temples. Exceptionally low flood levels would fail to fertilize and irrigate the *hoshas*, leaving them parched and unfit for cultivation. Flood events in either extreme had the very real potential of causing catastrophic famine and loss of life. The demise of the Old Kingdom, for example, is believed to have followed an extended period of low water levels resulting in agricultural collapse, with widespread starvation, economic and political failure, and ensuing social anarchy. It is believed that throughout Dynastic times the Valley of the Nile never reached full population carrying capacity for these very reasons.¹⁰ With so much depending on optimum flood levels, the entire irrigation network was in a continual state of adaptation; thus the Egyptian was forever seeking to bring everything back into balance. The need for *balance* was such a vital element in the ancient Egyptian psyche that it was represented in their cosmology in the personification of the premier goddess Maat, the goddess of balance, worth praying to.

The Egyptians also were immured in a sense of dualities, and this significantly influenced their attitude toward and conception of life. One of the ancient Egyptian terms for their country was “the two lands.” There was Upper Egypt beginning roughly at the first cataract of the Nile and extending all the way down to the Bahr Yussuf, a tributary of the Nile that flows into the Faiyum depression. Along this route the river valley is narrow, often lined with cliffs, the climate is hyper-arid, the water moves more

¹⁰ Population estimates are as follows: roughly 1.1 million for the more prosperous millennia of the Old and Middle Kingdoms, expanding to 1.6 million in Ramessid times and perhaps 2.4 million under the Ptolemies. This compares with an 1882 census of just 2.8 million (from Butzer, p. 84). The 2.4 million figure, in the centuries just preceding the birth of Christ, would still have made Egypt one of the densest population centers in the ancient world.

swiftly, and there is a feeling of integrally being part of Africa. Then there is Lower Egypt, the region where the river valley begins to widen into a broad alluvial plain and finally an expansive delta. The water begins to meander here, cooling northerly winds can be felt, and there is a feeling of association with the Near East and the Mediterranean. Thus there are two distinct geographic realities and associated subcultures along the length of the same river – and in their relations with one another the ancient Egyptians always made sure that the distinction was apparent. Some Dynasties located the national capital at Memphis in the north, and others at Thebes in the South, depending on the political realities of the day.

Lining this north-south bisection, there is a marked difference between the east and west banks of the Nile. The east side is generally steeper, often sporting limestone cliffs with a narrower bank, while the west side stretches out more with broad sandy foothills, especially toward the North. In the earlier Dynasties, the Ancients would quarry limestone on the east bank then ship the blocks across the river to construct their necropolises on the west bank.

Another stark duality in the Egyptian's life was the sharp contrast between the hot, bright solar day and the cool, soft darkness of night, with hardly a variation between these two extremes. The radiant solar disk rising in the East, the land of the living, was the deity Ra bringing life to the world, racing across the sky before descending in the West, the domain of the dead.

This sense of vivid duality in the world also appeared, of course, in the Egyptian cosmology. From out of the primordial chaos, Nun, arose the sky mother Nut – clothed in a black robe with dazzling stars – and the earth father Geb.¹¹ From out of their union arose four offspring, including two sons Seth and Osiris. In a precursor to the Cain and Abel story, a jealous, ambitious, and immoral Seth slays his better brother. Osiris is dismembered and scattered to the four directions before finally being recovered and reassembled by Isis, his sister, who eventually becomes his wife. The Isis/Osiris archetypal relationship became the prototype for the Egyptian royal couple, and Osiris, having suffered, became the empathetic model for common humanity to aspire to.

Besides the inherent duality, or division by two, imprinted on the Egyptian psyche by the geographic disposition in which they were embedded, the number *twenty-two* also played a significant role. In prehistoric times, the long length of the Nile was proportioned into twenty-two distinct flood basins, each a separate bioregion that would come to be called by the Greek “nome.” Each nome was inhabited by a tribal group that considered itself semi-autonomous, developing subcultures and economic solutions unique to the microclimate and micro-geography of that subregion. Each nome had its own political and kinship organization that was responsible for maintaining

¹¹ Isn't it interesting that most other cultures regard the Earth as a feminine archetype?

social order within that particular sub-grouping, and each nome had an economic center that was usually also a market town. Trade in goods and communication between the nomes was conducted primarily by river travel. The nomes were by no means uniformly populated or prosperous.

The organic organization of the twenty-two bioregional nomes was wisely perpetuated as the country was integrated into a single political unity with the arrival of the first Pharaoh, Menes. Each nome continued to be responsible for maintaining its daily and seasonal socio-politico-economic organization while producing surplus to be donated to the symbolic center of the nation: Pharaoh (which originally meant “great house”). In this reciprocal relationship, Pharaoh’s role was to serve as the fountainhead of spiritual essence as he was truly believed to be divinity incarnate. He was responsible for ensuring Maat, or balance and harmony with the universal order during his reign, and for making sure that the Nile flood would be adequate, that the solar disk would rise, and, later, that the people would be protected from invaders. He maintained the continuity of all that was unique to Egyptian civilization by launching monumental building projects: temples, tombs, fortresses, courts, whole builder’s towns, and, of course, his own final resting place in the pyramid.¹² The role of the nomes was to provide food and materials for the royal court, and in times of bounty, to the centralized coffers and granaries for eventual redistribution in times of scarcity. The nomes provided manpower for the massive building projects¹³ and military excursions, and ensured the ongoing spiritual benediction of Egypt in its perceived special placement in the universe by offerings of treasure and tribute to Pharaoh.

This type of geo-political national organization was a substantial contributor to the long-term sustainability of Ancient Egypt. Because these bioregional nomes manifested *themselves*, organically, over the course of millennia, they were anthropomorphological delimitations of particular geographic and ecological conditions – living systems; they were not imposed arbitrarily from outside, like most modern states and nation-states (which leads to their unsustainability) but were instead natural human developments in the much broader perspective of the natural history of the place. This ‘nomal’ organization was a brilliant working example of the oft-cited phrase “unity in diversity,” or perhaps more accurately, “wholeness in diversity.” The diversity was accentuated and celebrated from time immemorial by each nome adopting its own totem (for example: the falcon, the crocodile, the plumed serpent, the black dog, etc.) with its own associated ‘deity of place’ who had a position in the divine family hierarchy.

¹² It is important to note that there was an occasional female Pharaoh-queen.

¹³ Herodotus estimated a labor force of 84,000 employed 80 days a year for 20 years to erect the Great Pyramid of Cheops. These laborers could not all have been slaves; so one must assume that the people of Egypt, in the idle time of their off-agricultural season, willingly and devotedly participated in this great national undertaking.

“The existence of this formative totemic phase presupposes the existence of an Egyptian cosmology which was able to explain the way in which *power was shared*...This religious geography thus established the rules of Egyptian political organization since it precisely delimited each region’s place in the hierarchy and identified in each locality a representative of the universal system into which they were all integrated” (Grimal, p. 40, added emphasis).

As with all things in Classical Egypt, this normal national political organization seemed to work best at the outset of the Dynasties. In the purity of its nascence, Classical Egypt was indeed a land ruled by a god with the nomes willingly cooperative and subservient. As time wore on, this purity diminished and some of the later Dynasties that ruled Egypt were staffed by Asiatics, or Libyans, or Greeks. These people were not gods; they were the victors of war and conquest, arbitrarily and presumptuously placing themselves at the center of the nation. Pharaoh was reduced to an executive administrative, legal, and military figurehead. The tribal chiefs, the provincial administrators, and especially the institutionalized priesthood increasingly vied for power with the central authority, and the office of Pharaoh was resigned to make deals and compromises, with the associated intrigue, loss of honor and credibility, and occasional assassination.

What went wrong? During the period when Egypt enjoyed geographic cultural isolation, it flourished in unequalled noble splendor. When its boundaries became permeable to the influx of base, aggressive peoples raised in continuous warfare conditions, Egypt was forced to reduce herself to their level as a matter of practical defense. The situation deteriorated to the point that by the 20th Dynasty, the Ramessid, Pharaoh himself became the aggressor, adopting an uncharacteristically imperialistic attitude and glorifying himself in campaigns of conquest, pillage, and terror, even taking the image of the reprehensible Seth as his patron deity. Amazingly, even with all the wild fluctuations and uncertainties at the central authority level, the people of the nomes continued in their stable traditional ways, recreating and immersing themselves in the cultural and art forms of a remembered, more glorious past – the point of inception – much as they do today.

SETTLEMENT PATTERNING

As has been demonstrated, an ekistic evaluation of a society's settlement patterning is an exceptionally multi- and inter-disciplinary investigation. In the previous sections, it was necessary to overview geology and climate, to describe how these were determining factors of geography and ecology, to relate how these were contributing factors in agriculture, economics, and general land use, and finally, to propose how all these interrelated conditions contributed to a psychology, a worldview, a cosmology, and to a form of sociopolitical organization. It was also important to touch upon prehistoric origins, including heritage, and relationships with neighboring societies. The creative human response to all these interwoven dimensions, as expressed in daily life, manifests itself in a distinct *culture* – and a society's culture is reflected in its settlement patterning. The same is as true for the ancient Egyptians as it is for 21st century North Americans, and any group in between.

Classic Egyptian culture expressed itself in two fundamental patterns of settlement: 1) organic, riverine, agricultural villages; and 2) elaborate, engineered, geometric temple complexes. This last group included ostentatious artistic palaces for the living royal court, and monumental necropolises, or 'cities of the dead,' so that Pharaoh and his entourage could enjoy everlasting life. These two fundamentally distinct patterns were usually separated spatially but conjoined in the overall cultural worldview.

The agricultural villages were the abodes of the common people, who lived out the cycles of their daily lives in the same locale generation after generation, rooted to a particular place on Earth. The descendants of these 'people of the land,' the *fellaheen* of Egypt today, still live basically the same type of existence as their ancestors, inextricably linked to the natural cycles of the Nile, the Sun and Moon, and to the human cycles of birth, maturation, marriage, culmination, decay, death and rebirth. Though perhaps lacking in sensationalism, it was (and is) a very stable, secure, sustainable, *timeless* mode of existence, having a common bond with agricultural villages everywhere.

The villages were sited offset somewhat from the river, on ground high enough to resist all but the most devastating floods. Trails oriented orthogonal to the river provided corridors from the villages to the agricultural plots, the *hoshas*, where in seasonal rotation the people planted, tended, and harvested the staple crops of lentils, chick peas, beans, barley, wheat, and onions. Perennial crops such as date palms, fruit

and nut trees, and herbs were situated around and within the villages, providing a sort of edible and functional landscaping. Heavy livestock were left to graze in the forest and brush between settlements or up on the desert plateau; smaller animals were an integral part of the village. Villages were also sited so as to have easy access to the 'marinas' on the river, for fish was a big part of the people's diet.

The dwellings in the villages were constructed first of mud, then of mud brick with mud-brick domes for roofs. Timber and wood were too valuable and scarce of resources in the Nilotic climate to be predominant building materials. In a remarkable experiment colored with national spirit, the architect Hassan Fathy in the late 1940s reinvigorated this ancient technique and began the design and construction of a whole village made solely of mud brick. He was able to find Nubian craftsmen in Sudan who were the inherited recipients of an age-old technique for building mud brick domes and vaults totally freehand with just an adze for sculpting. The village he started was never completed for bureaucratic reasons, but the structures he did finish are very impressive, very comfortable and livable, and pleasing to the eye in their simple elegance. (For more about this instructive project, see Fathy (1973) *Architecture for the Poor: An Experiment in Rural Egypt*).

To say that the villages grew organically means that, besides being completely constructed of local materials that returned to the Earth, and composed in a vernacular regional style, they were built entirely by the people who lived there; thus they could be considered *autopoietic*, or self-organizing living systems. They were not built by an outside authority according to a standard blueprint; instead, new structures appeared as they were needed, perhaps as additions to previous structures, but always completely functional and interrelated with what had existed previously. There was no rigid grid pattern that was strictly adhered to; rather, the new buildings were sited topographically on the contours of the land, the flow patterns winding and curving in concord with natural flow patterns. Within the villages, there was a loose social hierarchy arranged around kinship clans, with the clans tending to congregate among themselves compartmentally into their own districts.¹⁴ But when it came time for a new building project, say after a marriage, class barriers would fade and the whole village would come together communally to get the project done and see the new couple off to a good start. The villages tended to be nucleated around a well and a marketplace and stayed compact, facing inward as protection against roving animals or would-be marauders.

The irrigation systems these villages managed, as part of the more inclusive 'nomal' flood basin system, gradually increased in complexity and technical

¹⁴ These kin groups today are called *badanas*, and Fathy defines them as "tightly related groups of ten to twenty families living in neighboring houses, with a recognized patriarch (1973, p.232).

sophistication until the achievement of the relatively complex, year-round irrigation systems of today. It is very important to re-emphasize, as an insight to the overall Egyptian socio-cultural organization, that throughout the Dynastic period the irrigation systems were always managed locally within the nome centers. "Dynastic irrigation was naturally compartmentalized, so that a centralized administration was neither practicable nor purposeful" (Butzer, p. 50). Thus, true economic power always remained *decentralized* and sub-regional. This remained true up until the very end of Classic civilization when the Ptolemaic Greek colonizers instituted and enforced a centralized plan so as to exploit the land as much as possible to provide surplus for export to the Greek (and later Roman) homeland and various satellites. This development was a precursor to the externally owned, cash-crop export agriculture prominent today. As amply demonstrated around the world, this 'vacant landlord' type of agriculture creates an unnatural divisive social stratification, an erosion of traditional family and cultural values, and associated class resentments.

As with so many other socio-cultural manifestations, early Egyptian irrigation organization can be explained in terms of ecological conditions. The gentle longitudinal gradient of the Nile (1:12,000 according to Butzer, p. 47) and the reliable flood surge accommodated the use of linear basin irrigation, where the high water flood was essentially trapped and then contained behind a system of transverse dikes and levees; thus it was a local affair with no need for centralized organization. By contrast, the relatively high waterhead and insufficient flood surge of the Tigris and Euphrates regime necessitated a complex but shallow, radial canal network. In this type of system, the canals are continually filled with silt and a large labor force must be employed to keep the system uncongested. Thus, the Mesopotamian model required a centralized command structure, furthering the entrenchment of that society's despotism. Aggravating matters, blockage of any upstream arm of a radial canal network prevents water from reaching points further down the line, leaving open the potential for sabotage or the worst kind of selfish motivations. Additionally, without a refreshing new flood surge, the radial canal system would soon salinize and large plots would need to be rotationally left fallow to compensate for and neutralize the salts. This was not a problem for the Egyptians, so they could continuously plant the same fields year after year. One can witness the frailty of the Mesopotamian model by the study of archaeological sites like Uruk, where, once the enforced centralized command structure broke down, the irrigation system collapsed and the city was abandoned.

"Human settlements can be studied at two levels: as aggregates, in terms of internal morphology, and as composites, in terms of location and distribution. At each scale, differing aspects of function, interrelationship, and origin provide special foci of potential interest. Such variables are the goal of contemporary settlement geography"

(Butzer, p. 57). A survey of the distribution of settlements along the Nile of dynastic times reveals that they were not evenly dispersed and in no way resembled the patterning of today. Large concentrations could be found in Nomes I through IV of Upper Egypt, centered around the capital of Thebes, an area relatively lightly populated today, and then again in Nomes XXI and XXII, around the capital of Memphis in the present vicinity of Cairo. The delta region, where a large majority of the population lives today, was sparsely populated with widely dispersed settlements up until the end of the Dynastic period, when the political center of gravity shifted permanently northward. In Classical Egypt, “[i]t is probable that terrain-related site location, access to riverine transport and irrigation basins, and the role or status of prominent cult centers played a primary role in settlement patterning” (Ibid, p. 72).

One characteristic that stands out as most remarkable in this composite view of settlement patterning is that Classical Egypt was completely devoid of large urban centers in the Mesopotamian vein. Memphis may have come close but it was of an entirely different character, being primarily a religious center. This is a most important point: despite all its spectacular unrivaled cultural achievements, Classical Egypt remained always a *village-based* society. It is proposed here that this fact was a direct contributor to its resiliency, its conservative cultural uniformity, *and* its long-term sustainability: village-based societies endure. “As market distribution nodes for agricultural products, as locus of specialized craftsmen or for redistribution of their wares, as harbors in the almost exclusively riverine communication network, as cult centers closely linked with food storage as well as the administration of the far-flung temple estates, and as a nexus for the residence and operation of secular land owners and various government officials” (Ibid, p. 60), some of these villages may have approached ‘town’ size, but what is most crucial is that the people never lost connection with the land, with each other, or with their heritage, tradition, and ancestry. The exact opposite is true of people who live in large, impersonal, abstracted, generic urban centers.

A complete analysis of any of these dynastic village settlements is no longer possible. These organic constituents have long ago returned to the Earth, or have been washed away by the sinusoidal, ever-changing Nile, or more commonly have simply become the foundation for millennia of superimposition by subsequent settlement stages on the same site. Apparently, there were cases when early archaeologists of the 19th century had access to sites where ancient village residue may have been preserved; but in their haste to uncover the more spectacular archaeological finds they systematically and clumsily (by today’s standards) brushed aside or obliterated any of this remaining data. As a consequence, what we are left with are the far more durable

archaeological sites that are, by themselves, unrepresentative of the fundamental basis of Classical Egyptian settlement patterning. The following are a few examples of these.

“[S]ite studies crucial for an analysis of microsettlement patterns at the community level are limited to the ephemeral capital of El-Amarna, the workmen’s village of Deir el-Medina, the town of Kahun, the Ramessid residence of Pi-Ramesse (the former Avaris), and the frontier city of Elephantine” (Ibid, p. 58). All of these were special cases:

El-Amarna was the royal residence of Akhenaten of the XVIII Dynasty, whose queen was Nefertiri. Akhenaten was instituting some religious reform and so constructed this impressive, ornate, expansive complex anew as his capital, to keep some distance from Memphis and Thebes. He soon was discredited as a heretic, however, and the site was eventually defaced, the temples dismantled and blocks shipped across the river to be used in another construction project many years later.

Deir el-Medina was the workmen’s ‘village’ at the religious site of Luxor-Karnak. “The organization of the village is a reflection of a very specific type of social arrangement modeled on that of the expeditions sent by the kings of the mines and quarries, which was in turn based on the system used in the Egyptian navy. Like a boat, the village was divided along its north-south axis, creating two sectors to east and west...each accommodating a team; this ‘team of the right’ and ‘team of the left’ worked alternate shifts. At either end of the street were gates, both guarded and closed at night” (Grimal, p. 280). It could have been the ideal artists’ community, inhabited for over five hundred years by lineages of craftsmen; but it was unnaturally, and therefore stressfully, fabricated, a ‘forced’ settlement compactly arranged on a squarish plan and arbitrarily placed in the landscape. The people who lived there were conscripted for their talents and became, in a sense, in servitude, with Libyans, Nubians, Asiatics, and Egyptians living in very close quarters, at times tensely so.

Likewise, the ‘town’ of Kahun was built all at once to serve as a residence for the teams of workmen who were rapidly subduing the Faiyum to provide new arable land for cultivation and irrigation. Resembling Deir el-Medina in its orientation and overall layout, it was artificially squared and reeked of forced inhabitation. There was a sharp distinction and a wall between the cramped workmen’s families’ homes and the spacious domiciles of the ‘overseers.’ These types of rapidly constructed, artificially compulsive, usually squarish settlements, of any era, always contain an inherent sense of tension in them; thus, the quality of life and sense of comfort for the inhabitants is always diminished.

Pi-Ramesse was another royal residence, rapidly constructed in the delta when the political center of gravity shifted there.

Elephantine was a fortress-complex guarding the southern border of the nation.

With examples like these, one may just as well look to the monumental necropolises for an idea of how the typical Egyptian lived. Of course they have a place in a comprehensive study of “Classical Egyptian Settlement Patterns,” but their relative importance as indicators of dynastic culture must be tempered by a realization of the special circumstances in which they appeared. Would it be prudent to draw conclusions about 21st century American culture by a study of the microsettlement patterning of timber company-towns, or military bases, or the estates of billionaires? Only partially. This line of questioning comes back, once again, as it always does when looking at the Classical Egyptians, to a consideration of those numerous, mysterious, monumental necropolises. They are surely an indicator of culture – yet, as ‘cities of the dead,’ should they be included in a study of settlement patterns? I am left with concluding that real insight into a society’s culture by a careful ekistic analysis of their settlement patterning occurs at the habitation level of *the living*. For the Classical Egyptians, this means an evaluation of their ancient riverine village-based patterning – that broad, terranean *infrastructure* upon which the ostentatious, transitory, pharaonic *superstructure* was placed.

The Workmen's Village: second and third stages

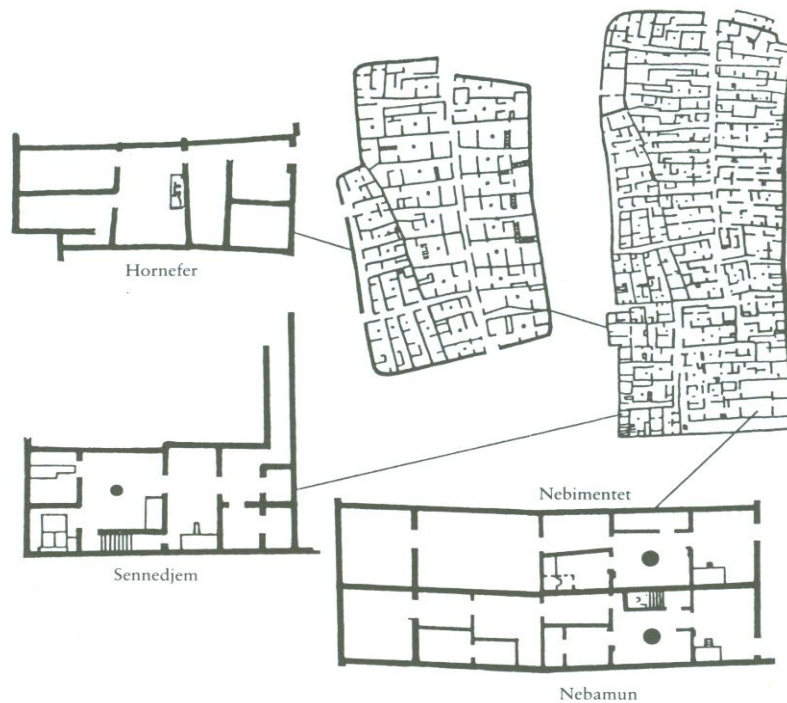


FIGURE 19 Schematic plan of the village at Deir el-Medina and several houses.

From Grimal, 1988, p. 281

CONCLUSION

I entered this study believing I would be taking a close look primarily at temple and pyramid architecture, looking for instances of the *Golden Mean* so that I could somehow support the assertion that the Classical Egyptians were an advanced, extremely insightful people. I found these kinds of references. For example, in Badawy's book on Middle Kingdom architecture, he states clearly that "proportions conforming exactly to the harmonic ratio were most used in Egyptian architecture: 1.85:1.40" (1966, p. 107). This corresponds to a ratio of 8:5, or a value of .625. Further down the Fibonacci sequence, $13:8 = .615$, and $21:13 = .619$. This is approaching the Golden Mean, so it was obvious that the Egyptians knew what they were doing.

Yet the more I read the more I realized that in a genuine *ekistic* analysis of their settlement patterns, the objective of this study, this kind of insight was extraneous, or mere adornment. The real understanding came from looking at the *basis* of the society: its agriculture, economics, geography, ecology, social organization, etc. These were the fundamental factors influencing the settlement patterning.

Then it became increasingly important to look closely at and draw contrasts with the contemporaneous Mesopotamians. In this paper the word 'civilization' has been used rather loosely. In a strict sense, etymologically, the word civilization is derived from the Latin root *civitas*, or city. Civilization is essentially the culture of cities – city life. In this sense, 'civilization' is most aptly applied to the Mesopotamians, who initiated the world's first true urban centers, but with the Egyptians the usage became a bit fuzzy, for they never actually organized themselves into cities with/as urban centers. The Egyptians certainly developed in high character all the attributes associated with civilization, but they did so from a broad, decentralized, regional base. This is contrary to established thinking, which assumes that high population densities are a pre-requisite to cultural fluorescence; thus, the Classical Egyptians were an exception.

This is an extremely significant conclusion for me. As an aspiring "Village Designer" I have developed a belief that, in order to be truly sustainable – that is, continued into the *indefinite* future – a society needs to be organized organically at village-scale. I have come to regard cities and urban centers as monstrous mechanical constructions, seriously de-humanizing and corrupting their inhabitants. Besides this distortion of human nature, cities cannot be sustainable because they are incapable of supporting themselves: they require a forced subjugation – either economically,

politically, or militarily – of people in the hinterland to feed their consumption and fuel their engines. The difference is one of highly-centralized, unaccountable, arbitrary power structures vs. decentralized, human-scale, power sharing networks.

Remarkably, the Classical Egyptians are not the only historic case of an admirably high culture coupled to a predominately village-scale settlement patterning. In a previous study, I drew the same conclusions for the Classical Maya. Both cultures far surpassed their immediate contemporaries in cultural elegance and sophistication, in scientific, artistic, and architectural achievements; yet both cultures never developed true urban centers. Is this not fascinating? What is especially significant, perhaps even revealing, is that both the Classical Maya and the Classical Egyptians were not war-like or imperialistic – that is, until they were provoked by their crude and aggressive, urban-based neighbors. Both the Maya and the Egyptians were relatively geographically isolated and, when left to themselves, preferred to exert their energies on the finer, more spiritual aspects of life. May we not conclude that this was a consequence or concomitant of their organic, village-scale settlement patterning?

BIBLIOGRAPHY

- 1) Badawy, Alexander (1966) *A History of Egyptian Architecture: The First Intermediate Period, the Middle Kingdom, and the Second Intermediate Period*. University of California Press; Berkeley and Los Angeles
- 2) Barocas, Claudio (1972) *Monuments of Civilization: Egypt*. Madison Square Press, Grosset & Dunlap Publishers; New York
- 3) Budge, E.A. Wallis (1967) *The Egyptian Book of the Dead*. Dover Publications, Inc.; New York
- 4) Butzer, Karl (1976) *Early Hydraulic Civilization in Egypt: A Study in Cultural Ecology*. University of Chicago Press
- 5) Carter, Howard & A.C. Mace (1977) *The Discovery of the Tomb of Tutankhamen*. Dover Publications, Inc.; New York
- 6) Critchfield, Richard (1994) *The Villagers*. Anchor Books, Doubleday; New York
- 7) Doczi, Gyorgy (1994) *The Power of Limits: Proportional Harmonies in Nature, Art, and Architecture*. Shambhala; Boston and London
- 8) Doxiados, Constantinos A. (1968) *Ekistics: An Introduction to the Science of Human Settlements*. Oxford University Press; New York
- 9) Fathy, Hassan (1973) *Architecture for the Poor: An Experiment in Rural Egypt*. University of Chicago Press
- 10) Fowden, Garth (1986) *The Egyptian Hermes: A Historical Approach to the Late Pagan Mind*. Princeton University Press; Princeton, NJ
- 11) Grimal, Nicolas (1992) *A History of Ancient Egypt*. Blackwell; Oxford, UK
- 12) Hayes, William C. (1964) *Most Ancient Egypt*. University of Chicago Press
- 13) Kees, Hermann (1961) *Ancient Egypt: A Cultural Topography*. University of Chicago Press
- 14) Leakey, Mary (1979) *Olduvai Gorge: My Search for Early Man*. Collins, St. James Place; New York
- 15) Lemesurier, Peter (1977) *The Great Pyramid Decoded*. St. Martin's Press; New York
- 16) Phenice, T.W. (1972) *Hominid Fossils: An Illustrated Key*. Wm. C. Brown Company Publishers; Dubuque, IA
- 17) Phillip, George (2000) *Oxford Atlas of the World, Eighth Edition*. Oxford University Press; New York

- 18) Pritchard, J.M. (1971) *Africa: The Geography of a Changing Continent*. Africana Publishing Corporation; New York
- 19) Redford, Donald B. (1992) *Egypt, Canaan, and Israel in Ancient Times*. Princeton University Press; Princeton, NJ
- 20) Schmookler, Andrew Bard (1984) *The Parable of the Tribes: The Problem of Power in Social Evolution*. University of California Press; Berkeley and Los Angeles
- 21) Taylor, Thomas, translator (1968) *Plato: The Timaeus and the Critias or Atlantis*, Bollingen Series III, Princeton University Press; Princeton, NJ
- 22) Tompkins, Peter (1971) *Secrets of the Great Pyramid*. Harper & Row; New York
- 23) van Sertima, Ivan, editor (1989) *Egypt Revisited: Journal of African Civilizations*. Transaction Publishers; New Brunswick, CT
- 24) Wendorf, Fred, editor (1968) *The Prehistory of Nubia*, Southern Methodist University Press; Dallas, TX
- 25) Whitehouse, Ruth (1977) *The First Cities*. Phaidon Press/E.P. Dutton; New York
- 26) Wilson, John A. (1951) *The Culture of Ancient Egypt*. The University of Chicago Press