



Catastrophic Geological Event Illuminates Egyptian Kings List Anno Mundi Reference

Judith Giannini

Independent Researcher/USA

ABSTRACT

The preponderance of catastrophe myths in ancient cultures around the world indicates the importance of contemplating the ancient beginnings. This paper considers the legendary Egyptian beginning of the world event, Anno Mundi, to which Eratosthenes referenced the reign of the first king of the Unification, Menes. Menes' identity is still in question, and the nature of the event is left undefined. First, the dates for the possible candidates for the person Menes as a starting point to locate AM in time are considered. Next, possible event types that might qualify as world-defining events are considered. Finally, it is concluded that a geological event (an unrelenting series of closely spaced eruptions on Mount Erciyes in Anatolia) in 8200 BP is consistent with the expected date for the Anno Mundi, and the reign date for King Scorpion(I) who is proposed as the most likely Menes based on all of the considerations. It is believed the identified date and Menes candidate provide a plausible explanation for the otherwise unsubstantiated legendary event.

Keywords: Egyptian prehistory; 8200 BP event; Anatolian volcanic eruption of Mt. Erciyes; Anno Mundi; King Menes; Carl Jung and the Collective Unconscious.

INTRODUCTION

Every ancient civilization has tales from the earliest times. Most are accepted as “only” unsubstantiated legend or myth. Carl Jung, the founding father of analytic psychology, believed myths reveal the ancient knowledge contained in the “Collective Unconscious” [1]. He proposed that this knowledge (he termed the “Racial Memory”) is stored as deeply encoded images in the psyche (physical location unknown), and is recoverable during altered states of consciousness.

It is assumed that, although it is risky to take the recovered ancient knowledge literally, the underlying factual base is still there and amenable to validation by correlating it with recorded scientific data. Progress is being made in this area by identifying likely candidates where natural phenomena can illuminate the possible historical nature of these mythical moments in the deep past. These hypothesized correspondences demonstrate a possible kernel of truth in the stories, albeit likely embellished in the retelling of the actual events.

One familiar example of recent efforts includes the incredible voyage of Odysseus in the Odyssey [2]. Baikouzis and Magnasco [3] supported the possible reality of the voyage by considering the astronomical references in Homer – though the validity of his encounters with the Cyclops and the sirens is left to other considerations. Another example of a story once accepted as historic, then questioned as not fact-based, is the existence of the Xai dynasty in China and Yu's taming of the Great flood [4], [5]. Wu, *et al.* [6] discussed new dating of an

outburst flood four thousand years ago as a possible explanation of the Yu event, lending it credibility.

Giannini [7] correlated the biblical Creation Days events with corresponding recognized scientific record events using a non-linear-time Kinematic Relativity mapping. This provides a BCE calibration for the biblical Days, and, demonstrates the possibility that the two perspectives represent the same physical events – moving the spiritual text from the realm of mostly myth to more a knowledge of reality.

This paper addresses yet another legendary event the Anno Mundi (the Egyptian beginning of the world). It is assumed to be a catastrophic moment in Egyptian pre-history. Ancient legends all over the world speak of great catastrophes. These events, often attributed to the wrath of the gods, are described as destroying the human population except for a chosen few. For example, the Bible [8] tells the story of the Great Flood of Noah. Sumerian legends tell of the Great Flood of Ut-napishtim [9], also noted in their Kings List [10]. Some consider the Sumerian flood to represent the same event as Noah's flood.

The Egyptians do not have a specific flood legend paralleling the biblical or Sumerian stories. However, in his Histories [11], the Greek historian Herodotus (c. 430 BCE) recounted the words of the Egyptian priest who told of repeated great floods where only those in the right place at the time survived. The priest did not allude to timing of the events, but, he implied they were different from the familiar annual flooding of the Nile.

Some legends speak of repeated events that lead to a sequence of New World Ages. For example, the Mayans of Mesoamerica [12] and the Hindus of the Indus River Valley, have long period calendars predicting the timing of the repeated arrival of New World Ages [13] – sometimes even describing the agent of destruction.

Numerous authors have considered the impact of nature on ancient people, and civilizations. To name just a few, Masse, *et al.* [14] explored the possibility that the nature of the myths might reflect verifiable catastrophic events in the ancient past. Barrientos and Masse [15] considered the effects of cosmic impacts on the hunter-gatherers in the mid-Holocene. Gusiakov, *et al.* [16] discuss the effect of oceanic impacts leading to mega tsunamis and rapid climate change, focusing mostly on the last 5,000 years and discussing particular impacts that some consider may have been related to the Great Flood.

The early Egyptian Kings Lists referenced each king's reign to Anno Mundi (AM – year of the world). It is proposed here that AM indicates a past natural catastrophe that destabilized the pre-Egyptian people, motivating migration from the homeland to establish dominant rule over the inhabitants of the Nile area population. The modern BCE dates for the earliest kings are correlated with geological record events to provide a possible natural explanation for the civilization-changing AM. Section 2 addresses the expected date-range for the first king and for AM. Section 3 considers climate and geological events within those candidate dates.

DATING THE ANNO MUNDI EVENT

Dating current events is a well-ordered process that is referenced (at least in the Western world) to the event about 2000 years ago known as the birth of Jesus Christ which began year 1 AD (Anno Domini –currently Current Era, CE). Prior events are years BC (Before Christ – currently Before the Current Era, BCE).

The nomenclature of the “before time” and the “after time” around the break-point owes its relevance to the dominance of the Christian Church in the Western world in political and religious matters well into the Renaissance. Other long-term calendars from non-Western cultures (for example, the Mayan, the Hebrew, the Chinese) can be synchronized with the current Gregorian (Renaissance era) calendar on a point-by-point basis to provide a more-or-less consistent global historical chronology back for thousands of years.

Theologians are studying the historical nature of Jesus and reasons for His importance to history [17]. The 1 AD date for the birth event is questioned, though it is maintained for calendar consistency. Arguments, based on astronomical records, correlated with sacred writings, estimate the actual date is more like 6 BCE [18] – though the timing of the break-point maintains the originally determined date. After 2000 years, the actual event of the birth has taken on a somewhat legendary aura in many circles; and, the shift from AD to CE and from BC to BCE is the recent effort to secularize the break-point – shifting the event even further into the realm of legend.

Using a common reference so far back provides a timeline that is both relatively consistent, as well as, calibrated from a global perspective. This convenient state of affairs, however, was not available in ancient Egypt – an inconvenience that extends to the identification and dating of the AM event. Without a common and more ancient time reference, events in the ancient world were dated relative to the particular ruling king in any given country. The order of the kings on any one list did not necessarily match the order on other lists, making a consistent universal timeline difficult to achieve.

As a result, the BCE calibrated dates for the kings is a puzzle of comparisons and judgments about the order of the kings (eliminating co-regents and competitors), the lengths of their reigns, and a limited collection of ancient astronomical observations and datable artifacts and writings. Even the names can be uncertain because traditionally the kings had several (such as, given name, throne name, and others), and, depending on the source, the spelling of any given name in records varied.

The oldest survivor of historically-based lists of Egyptian kings comes from Manetho's *Aegyptiaca* [19], [20], compiled in the third century BCE. Manetho provided the dynastic structure that is the main-stay of Egyptian chronologies. He identifies Menes as being the first king of the first dynasty, but the mystery of the actual identity of Menes makes dating his reign problematic. This contributes to the dating uncertainty of this first king by making it difficult to identify appropriate artifacts to date. In the late second century BCE Eratosthenes [21] compiled an Egyptian Kings List that references each king's reign to Anno Mundi (AM). His list of kings includes pharaohs from the first to the thirteenth dynasties. There are no dynastic designations given, but the beginning of Menes reign is given as 2900 years after AM.

The likely identity of the first king, Menes is now considered. This can provide an estimated modern BCE calibrated date for that king. Then using Eratosthenes 2900 years reference, an expected calibrated date-range for AM is estimated.

Candidates for the Real Menes

Manetho had little to say about Menes – only that he was the first king, that he reigned for 62 years, and that he was carried off by a hippopotamus and perished [20]. By tradition, Menes is credited with unifying Upper and Lower Egypt, implying he was the first king, but his identity is uncertain. Most current lists attach the position to Aha. Budge [19] indicated that Aha, Tcha, Khent and Mer-Net probably reigned during the first dynasty but their positions were uncertain. He notes identifying Narmer or Aha with Menes is not certain.

Clayton [22] (2006) began predynastic Egypt with Dynasty 0 (the Scorpion king, and Narmer) followed by Dynasty 1 (with Hor-Aha as the first of seven kings). He indicated that fragmented evidence shows Scorpion only wearing the White crown of Upper Egypt but not the Red crown of Lower Egypt, implying the two lands had not yet been unified. He noted that in the Narmer artifacts, the king is presented wearing both crowns, but a raised mace indicates hostilities are not yet over implying unification is not complete. Finally, he noted that Hor-Aha, as Narmer's successor, is the first to inherit, both by right and by conquest, the unified kingdom. Aha's royal *nebti* name "Men" which means "established", but his Horus (king name) name means "Horus the fighter" indicating hostilities remained despite unity in the kingdom. This diminishes the likelihood that Aha was Menes (if peace is the overwhelming criterion for that identification) even though he is accepted as the first king of Dynasty 1.

It is recognized Scorpion as the likely direct predecessor of Narmer. In addition to the fragmented Macehead showing Scorpion wearing the White crown there is another fragment showing him wearing the Red crown with a falcon present (an indication of kingship), but it is unknown what part, if any, he played in uniting Egypt, so for this reason, Scorpion is placed in Dynasty 0.

Tradition implied the unification of Egypt was an abrupt event engineered by a single ruler. However, there is an argument that unification likely took place over time before stability became the norm. Allen [23] and Wilkinson [24] proposed that unification was not just a military event, but was also a cultural one. There is evidence that trade rather than military occupation appeared to dominate Narmer's reign. Allen noted that the Narmer Palette is often taken as a confirmation of Narmer's role in a political unification, but the Palette is not necessarily evidence that a single ruler (Narmer) is solely responsible for the total unification effort.

Both Allen and Wilkinson proposed the consolidation of Upper Egypt and Lower Egypt into a single country started between the reigns of the Abydos U-j tomb owners (Scorpion ~3200 BCE, and Narmer ~3150 BCE) – though some see Scorpion (possibly I and/or II) as a contemporary rival(s) to Narmer. It is suspected that unification itself was only completed by the start of Dynasty 3 (with Djoser, ~ 2691 BCE), but, Raffaele [25] notes that it may have started considerably earlier even than Scorpion without speculation on a time frame.

Stevenson [26] cautioned that even though state formation is now recognized as a long-term multi-faceted phenomenon, as opposed to a single event, reconstructing political history with King Scorpion or a “mythical” King Menes is questionable. Assigning affiliations, domains and conquests based on their archaeology can be futile. It is proposed here that the driving factor (the precipitating event that began the process that eventually lead to the dynastic system) was the Anno Mundi event to which the Kings Lists reference the pharaohs’ reigns.

Likely Date Range for Menes and for the AM Event

Given the discussion in the previous section, the uncertainty in the actual identity of the king that modern investigations equate with Menes is addressed. The three most likely candidates have been identified after considering the identity debate: Aha, Narmer and Scorpion (II). The ability to determine a calibrated date for AM from references of Menes depends on obtaining a BCE calibration for the three kings in question, along with a measure of the uncertainty in their dates.

Estimates from the eighteenth and nineteenth century CE for the beginning of the first king of the first dynasty ranged from 5869 BCE to 3623 BCE [27]. The estimate was greatly improved when radio dating was added as a tool in the early twentieth century – placing the beginning of the first dynasty at ~3100 BCE with an uncertainty between 200 and 400 years.

Using statistical modeling with radio dating, Ramsey *et al.* [28] provides dates for the third dynasty onward with greater precision than with the standard techniques. For the Old Kingdom and Middle Kingdom dates, it is ~76 years and ~53 years respectively. For the New Kingdom, their average precision is ~24 years. However, this improvement is subject to the validity of the model assumptions. Dee, *et al.* [29] extended this enhanced dating back to the beginning of the first dynasty, beginning with Aha’s reign (starting between 3218-3035 BCE at the 95% confidence range).

Without reliable information, the possibility for dating the other two candidates, Narmer and Scorpion, is more problematic. One approach is to estimate dates from references describing the lengths of their reigns. Various translations of Manetho [30] set the length of reign of Menes as 30, 60 or 62 years. Waddell [31] identifies Menes as reigning 62 years, followed by Narmer for 56 years, and followed then by Aha – though Waddell’s absolute calibrated dates for Menes and Narmer are much too recent to be credible. However, beginning with Aha’s earliest likely starting date and working backwards 56 years, the estimate of Narmer’s starting date is ~3274 BCE. Then backing up another 62 years, Scorpion II’s starting date is estimated as ~3336 BCE (assuming Scorpion II is Manetho’s Menes) [32]. This implies the earliest expected calibrated date for AM of 6236 BCE (8186 BP = 6236 BCE + 1950 years to BP reference).

However, considering Egypt’s predynastic chronology can provide additional information on the dating of the rulers before Aha. Although habitation in the region had begun by ~700,000 BP, two well recognized cultural periods just prior to the Unification (Badarian and Naqada) are of particular interest. Raffaele [25] noted that the Naqada (IIB-C1 subdivisions) occurred slightly before Narmer’s reign, with the IIC-III A2 subdivisions assigned to Dynasty 0 (Narmer and Scorpion), Earlier periods were assigned to Dynasty 00 (pre-Scorpion rulers).

Dee, *et al.* [29] indicated the Badarian period (4489-4266 BCE) saw the shift from mobile pastoralism to a more sedentary, crop-production orientation. They noted that the Naqada (IID-III A subdivisions, 3377-3238 BCE, saw the first writing in the region and the transition from mostly cultural to more political unification. It was this last period that directly preceded Aha's reign. Based on this, they stated that the Foundation of the State occurred 3375-3175 BCE at the 95% confidence level. This Foundation period encompasses the proposed estimated reign-beginning-dates for both Narmer (~3274 BCE) and Scorpion II (~3336 BCE). It also appears to agree with Allen's [23] and Wilkinson's [24] ideas that the Unification began some time between Narmer and Scorpion.

Given this, it is hypothesized that Dee's Foundation-dates likely reflect the point of Menes's reign that is 2900 years after the AM event. This means that one can infer an AM date as early as 8225 BP (Foundation-date 3375 BCE + 1950 years to the BP reference frame + 2900 years before Menes and the Foundation-date), or as recent as 8025 BP. It is seen that the estimate of the earliest AM date (8186 BP) is consistent with the estimated date-range derived from Dee's Foundation-date.

At this point, the likely location of the event is addressed. Then the geological record is considered for events around the proposed time.

THE ANNO MUNDI (AM) CANDIDATE EVENT

Throughout history, the transition of political control of a region from one group (tribe) to another has often been associated with migration and military conflict. One motivation for this is to escape the impact of severe environmental stress – that is, the need to find a less hostile environment in which to flourish. It is hypothesized that this is the situation faced by the immigrants who predated the earliest predynastic kings, migrating from their homeland and ultimately coming to rule the newly-formed State under Menes. It is proposed the migration was motivated by a catastrophic natural event, and was most likely a series of smaller moves that included military action at each step to establish domination, and culture and trade integration to secure their position that eventual resulting in the State Foundation in Egypt. The details of the ultimate destination, at the start, may have been undetermined, but generally identified (as it was for many of the early American pioneers who knew they generally were heading “West”). The task here is to identify the point-of-origin that was the homeland, and the natural catastrophe that precipitated the move.

The Homeland of the Predynastic Immigrants

As the climate became more arid ~9,000 BP, settlements started to appear around the Nile with migrants from the eastern desert areas. Stanley and Warne [33] suggested that the viability of these settlements became possible when rising Mediterranean sea-levels enabled the development of the Delta flood plain. One possibility that might be inferred is that the eastern desert and its indigenous population were the homeland and source of the eventual dynastic rulers in Egypt.

An alternative hypothesis was proposed by Petrie [34] who observed that the Egyptian *Book of the Dead* embodied the traditions of the Caucasus region. He concluded there was evidence of an ancient tribe (with notably different physical characteristics from the indigenous population

[35]) that invaded Egypt, establishing the ruling dynasties [36]. As a whole, Petrie's theory of a superior invading race has generally been rejected in favor of the indigenous population model. However, the non-indigenous State founding rulers has some support – though the concept of the invaders as racially superior has no validity.

Waddell [37] makes the case for a Sumerian invasion with its kings (of Caucasian origin) as the original Dynasty 1 Egyptian kings – though his dates are not consistent with traditional dates. More recently, Rice [38] proposed the invaders came from the north by a route called “The Way of Horus” with arguments similar to Petrie's but without the racial supremacy implication. Dating of the invasion was not specified. Like Waddell, Rohl [39] concluded that a foreign elite from Mesopotamia established a colony in Egypt from which the dynastic line descended. Rohl dated the beginning as during the Naqada III (Dynasty 0) period.

More recent support for the Anatolian homeland comes from DNA analysis of ancient Egyptians (mummies) and modern populations in Egypt and in the broader regions. Platt *et al.* [40] reconstructed population expansion following the Post-Glacial Warming noting that arid conditions restricted large groups to “refugia” sites around fertile areas like the Mediterranean and Black Sea. Warming and agricultural growth allowed some groups to expand beyond their Anatolian homeland to the Fertile Crescent, the Levant, and the Horn of Africa. They dated the expansion by determining the genetic drift resulting from group isolation caused by their movement. Their results showed an early divergence ~8,400 BP between the non-migrant Caucasians and the rest of the population whose multi-step movements ultimately lead to Egypt and other surrounding areas. Schuenemann, *et al.* [41] found that the DNA of ancient Egyptians was more closely related to Neolithic and Bronze Age populations in the Levant and Neolithic Anatolia – with much less Sub-Saharan ancestry. They concluded the ancient genetic alleles contributed to lighter skin pigmentation that was consistent with the Neolithic Anatolian region.

Based on all of these considerations, it is assumed invaders from an Anatolian homeland represent the immediate ancestors of the of the earliest people that established dynastic rule in Egypt. The question now addressed is the nature of the catastrophe – the AM event that motivated the migrations.

The Nature of the Catastrophe

Three categories of events come to mind as sufficiently catastrophic to displace a people from their homeland at the proposed time of AM. One is a massive flooding that would permanently take away livable land. A second is a rapidly deteriorating climate expected to permanently impact the ability to provide food (crops or hunted game). A third is volcanic activity that would make the environment inhospitable and toxic to the long-term life of the tribe. Each type is addressed with the possible relevance to the AM timing (8225-8025 BP).

The Black Sea Flood Event

Ryan and Pitman [42] hypothesized that a biblical-type flood event occurred when a breach in an earthen dam at Gibraltar allowed Atlantic water to salinate the fresh water lake at the site of the current Black Sea. They determined that in ~9300 BP, this event rapidly raised the water level ~350 feet in less than 40 years [43], permanently submerged more than 100,000 km² of

coastal land that was home to farming settlements. This would force a massive migration to other areas like Egypt. (The issue of rapid filling vs. slow influx resulting from the breach is a matter of debate [44], [45], [46], [47], [48].

It is well known that fresh water and marine water dynamically have exchanged over thousands of years due to climate change. During glacial periods, as global sea-level fell, enclosed bodies, like the Black Sea, tended to gradually evaporate into fresh water lakes. During warming periods, sea level rose and enclosed bodies tended to revert to a marine state. Badertscher [49] indicated that the Mediterranean Sea and Black Sea were connected for long periods at least twelve times as a result of sea-level rise. Brisset, *et al.* [50] noted there were five marine flooding phases during the Holocene in the Mediterranean area (9500, 9100-9000, 8750-8650, 8450-8200 and 8100-7300 BP) matching Atlantic melt-water pulses – possibly the reality of the Egyptian priest's ancient memory to Herodotus of repeated floods (Herodotus, c. 430 BCE). The 9300 BP event proposed by Ryan and Pitman is not totally inconsistent with Brisset's earlier phases, but they are all too early to be consistent with the proposed AM event. However, either of Brisset's last two phases would fit AM (8225-8025 BP). Given such an event, if it were sufficiently rapid (only a few years), it might well have been perceived as the beginning of a new world age by the survivors. There are however other possibilities.

The 8200 BP Climate Event

In addition to Black Sea flooding, Brisset [50] indicated environmental effects accompanying 8200 BP climate event further fostered inland migration from the coastal boarder lands. This combination impacted the social structure of the region. As the last Ice Age glaciers began melting, there was a 700-year transition from the Mesolithic hunter-gatherers to the Neolithic first farmer societies.

Ullman, *et al.* [51] examined the effect of the deglaciation of the Laurentide Ice Sheet on the Holocene climate, describing the response times of abrupt climate events to ice sheet melting. They noted that the Labrador Dome, the largest remnant of the retreating Laurentide Ice Sheet, deposited moraines during North Atlantic cold events in ~10300, 9300 and 8200 BP, with the Hudson Bay becoming seasonally ice free at ~8200 BP and the majority of the ice sheet melting abruptly within a few centuries.

Herrle, *et al.* [52] reported that sea surface salinity records from the Northern Aegean Sea indicate two meltwater events (~8400 and ~7600 BP) resulting from the final decay of the Laurentide Ice Sheet. A rapid salinity drop ~8400 BP, with a rebound ~8200 BP, resulted in cool dry conditions that lead to a drop in the Black Sea lake levels. They noted that the key impact of the cool dry phase was a rapid decline in newly-established settlements ~8400 BP, followed by stasis until ~8200 BP. Then there was an increase in settlement establishment from 8200-7700 BP, followed by another decrease ~7600 BP. Manninen [53] indicated that the cooling in the Northern Hemisphere during this period was accompanied by an increase in aridity in lower latitudes where settlement patterns and agriculture changed with the climate.

The 8200 BP event (8400-8000 BP) was the most abrupt and widespread climate event in the past 10,000 years. Walker, *et al.* [54] proposed that it marked a well defined sub-division boundary within the Holocene paleo-records. The minimum in atmospheric methane, followed

by an increase in CO₂, accompanied by a strong volcanic signal, reflects the abrupt nature of the climate cooling and the global nature of the event. Cronin, *et al.* [55] described the cooling and sea-level rise reflected in the Chesapeake Bay region. Li *et al.* [56] analyzed the sea-level jump in the Mississippi Delta relative to abrupt climate cooling. Barber, *et al.* [57] indicated that temperatures dropped by 4-8 °C in Greenland and 1.5-3 °C at marine and terrestrial sites around the northeast North Atlantic.

Turney and Brown [58] indicated there was a relatively constant rate of Neolithic new settlements in Europe commencing ~12,900 BP with the establishment of farming by ~9200 BP, but there were no new settlements between 8300 and 8200 BP. They determined the cooling event date was 8350-8230 BP at the 1s level, noting its timing is indistinguishable from the sea-level rise time for the Black Sea that corresponded to land-loss and subsequent migration.

Renfrew [59] indicated by ~9500 BC the first agricultural economy began to appear in the Levant Corridor, spreading out from there and disseminating evolving languages as it went. He noted that changes in food production during the Holocene brought about an expansive, new economy that laid the foundations for the Neolithic Revolution in the Middle East, Egypt, northern India and Europe, and ultimately set up the framework for the succeeding Urban Revolution. Phillips, *et al.* [60] hypothesized that the changing climate conditions likely brought about substantial socio-economic changes associated with the predynastic culture that extended into dynastic times.

Both a flood event and the 8200 BP climate event provide evidence that converges to a common time consistent with AM ~8200 BP. Unfortunately, neither has a sufficiently rapid impulse beginning (a compact short-duration occurrence) as would be expected for the traumatic nature of the AM event. This leads to the consideration that it is possible that a volcanic eruption ~8200 BP provides the precipitous, expected event.

The Anatolian Volcanic Eruption

Anatolia is often referred to as Asia Minor and occupies territory that is about the western two-thirds of the Asian part of modern Turkey. It lies between the Black Sea to its north and the Mediterranean Sea to its south. The Aegean Sea (and the Greek islands) is to its west, and the Tarsus Mountains are to its southeast. Its eastern-most portion and the other lands to the south along the eastern coast of the Mediterranean (Syria and Israel down to the Red Sea) is the area generally referred to as the Levant. Further to its south and east, along the Tigris and Euphrates Rivers down to the Persian Gulf is Mesopotamia. The western coast of Anatolia is tectonically active resulting from the collision between the African and European crustal plates. Central Anatolia is bounded by a fault to its north and a fault to its east. The westward movement of the bounded region plays a major role in the volcanic activity which is most pronounced in Central Anatolia's two stratovolcanoes Mount Erciyes and Mount Hasan (Erciyes Dağ and Hasan Dağ) in Cappadocia between the northeast-most coast of the Mediterranean Sea and the Black Sea [61]. (Stratovolcanos, also known as composite volcanos, are characterized by periodic violent explosive eruptions sending massive amounts of rock, steam and ash high into the atmosphere.)

There are signs of human habitation in Anatolia since at least the Upper Paleolithic (ending ~12,000 years ago with the beginning of the Holocene). Renfrew [59] noted that one of the earliest farming sites was in Central Anatolia at Çatalhöyük in the Konya Plain of Turkey. It was inhabited from ~7500 BCE (9450 BP) to around 6400 BCE (8350 BP) when it was suddenly abandoned. A wall painting in Çatalhöyük, dated to 6790-6430 BCE, shows the likelihood of an early-Holocene eruption with the settlement map backed by an erupting twin-peaked volcano. Schmitt *et al.* [62] noted that the twin peaks indicate it is probably Hasan Dağ that erupted between 6960±640 BCE. Since the painting was done after (or at least coincident with) the eruption, the most recent date for this event would be 6430 BCE (8380 BP).

Further, Zanchetta *et al.* [63] indicated there is evidence pointing to a major eruption at around 9000-8600 BP, with an extensive distal ash plume southwards across the eastern Mediterranean Sea – which may or may not have been the event in the painting. But, the dates of these two events are both likely to have been too early for the proposed AM event date (8225 BP at its earliest). An alternate possibility, however, is an eruption at Mount Erciyes.

Mt. Erciyes is the largest stratovolcanic complex of the Central Anatolia. It is surrounded by three satellite domes (Karagüllü, Perikartın, and Dikkartın) that erupted in the general time frame of interest to us. The earliest eruption of the three was at the Dikkartın dome (9.03±0.55 ka) which is too early for AM. Friedrichs, *et al.*, [64] noted that the pyroclastic flow from the eruption at the Perikartın dome (7.1±7.3 ka) and the fall-out from the Karagüllü dome eruption (8.2±1.8 ka) are superimposed indicating a sequential eruption without a major hiatus. Climate models indicate the wind direction and speed in the early Holocene were similar to wind conditions today giving an indication of fallout direction and distance. This indicates the impact of these eruptions affected areas as far to the north as the Black Sea, and to the south into the southern-most regions of the Fertile Crescent. The mean eruption time (8200 BP) is consistent with the AM event date, and, such a close sequence of catastrophes could well explain the impetus to rapidly and permanently migrate.

CONCLUSIONS

When the Laurentide Ice Sheet saw its final decay, climate change, coupled with land-loss due to sea-level rise, caused an irreversible loss of a way of life, leading to migration to new lands (to the south for the people of the future Egyptian unified state). At this time, there was a transition from a hunter-gatherer to an agricultural economy that was accompanied by a shift from wild to advantageously domesticated grains – all in only a few generations. But, it is proposed that the traumatizing event, sequential and unrelenting catastrophic volcanic eruptions in the Anatolian homeland 8200 (+25/-175) BP (6250 BCE), was the compact impulse condition that was a truly new (world) era beginning in the lives of the people.

It is suggested that this event was so traumatic to the inhabitants that it shaped the "Collective Unconscious" of the ancient Egyptians' past, extending well into their dynastic period. It is hypothesized this was the event that is referenced in Eratosthenes Kings List as Anno Mundi (the beginning of the "new" world) and the reign of Menes. It is proposed it was at this time that survival of the people fostered the more cohesive urbanization that favored the embrace of the predynastic rulers that finally lead to the memory of the kingship of Menes and the recognized Unification (by him) in all its aspects. Guided by Dee's determination of the likely date-range

for the Foundation (3375-3175 BCE), it is suggested that Scorpion I is probably the Menes of the Eratosthenes Kings List who began the unification 2900 years before AM – followed by Scorpion II, ~3336 BCE. with Narmer, ~3274 BCE, representing the climax of the unification process as the first king of Dynasty 1.

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