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ANCIENT EGYPT, THE ICE AGE, AND BIBLICAL CHRONOLOGY

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ABSTRACT

The history, archaeology, geography, and geology of ancient Egypt are examined with respect to the post-Flood Ice Age. It is shown that the Ice Age must have ended before the formation of the Nile Delta, and therefore well before the beginnings of Egyptian civilization and Abraham's visit to Egypt. It is shown that more time for events between the Flood and Abraham is needed than the Masoretic timeline allows; the longer chronology of the Septuagint is therefore most likely correct.

INTRODUCTION

Creationist historians and archaeologists have not generally considered the role of the Ice Age and related geology in developing their views of the past in the biblical lands of the Middle East. Conversely, creationist scientists have largely based their models of the post-Flood period and Ice Age on geological studies of North America without regard to the known history and archaeology of the Middle East. As a result, the two groups have gone their individual ways without much exchange of knowledge between them. This dichotomy is especially evident with respect to the early history of Egypt and the Ice Age.

THE GEOGRAPHY OF EGYPT AND THE NILE RIVER

Any discussion of early Egypt must begin with a look at its geography, because in ancient times its boundaries bore no resemblance to those of the country as it exists today. The country basically consisted of a narrow strip of land along each side of the Nile River, along with the Nile Delta on the north, and the Faiyum area southwest of what is Cairo today (see fig. 1). It was a strangely shaped country, much like a stylized papyrus plant stem with a flower at the top and one leaf off to a side. The territories beyond this were not considered part of Egypt: this included

the desert lands on each side of the Nile, and further east, beyond the Gulf of Suez, the Sinai peninsula.

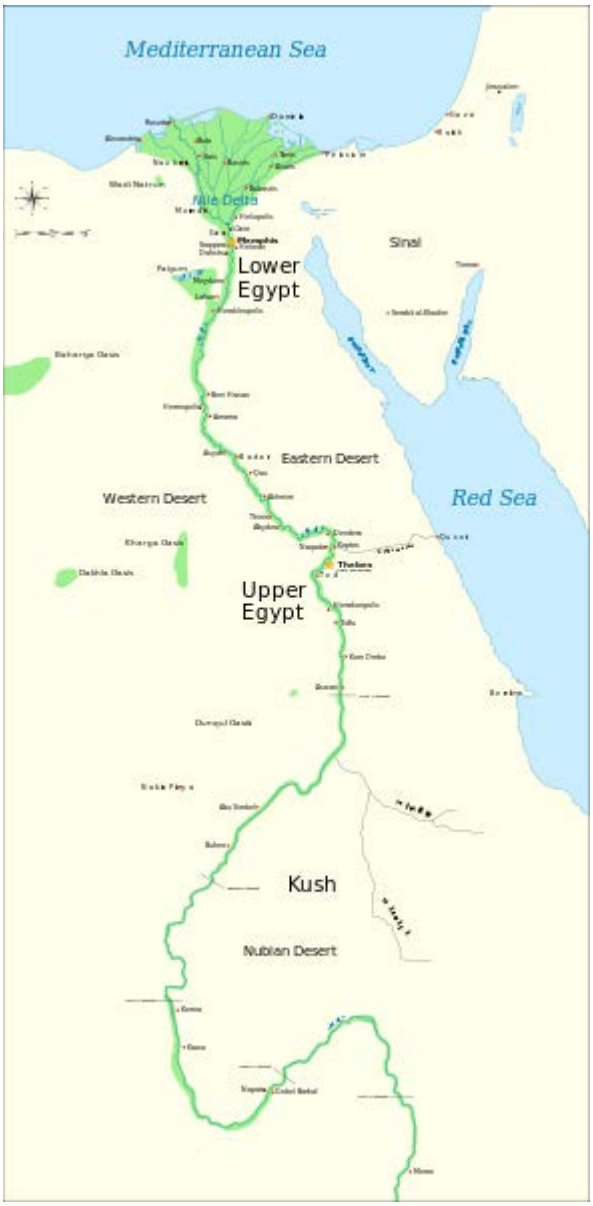

Figure 1. Map of ancient Egypt at the beginning of the Dynastic period**.**
(Jeff Dahl, 2007, *Wikipedia*.)

Egyptians historically have been farmers of the cultivatable land along the Nile River and in the Delta, even as they are today (Murray, 2000, p. 514.) The Nile was famous for its annual

flooding that covered the narrow strip of land along each side of it with a new layer of silt, making the land fertile for agriculture. For thousands of years, the people of Egypt depended on this annual inundation, which determined whether they ate well or starved. The Pharaoh in Old Kingdom times was responsible for seeing that the river gods were appeased so that the Nile's annual flooding would not be too high or too low, as either was problematic (Dumont, 2009, p. 14; Frankfort, 1948, pp. 57–59). Judging by history, the Pharaohs did not always succeed in doing their duty. It is only in more recent times when the Aswan dams were built that the Nile flow has been controlled, although other problems have since developed because the dams have not permitted the annual fertile layer of silt to be laid down as before (Bohannon, 2010).

The Nile river is about 6,800 km long, the longest river in the world (measurements vary slightly with different sources). With its tributaries, the Nile drains about 10% of the area of Africa, a territory of about 2.9×10^6 km^2. Although we tend to think of the Nile with respect to Egypt, only about 1/6th of its length is within today's borders of Egypt, and the rest flows through nine other African countries to the south. Two rivers merge south of Egypt to form the main Nile, the White Nile, originating in Lake Victoria in Uganda, and the Blue Nile, originating in Ethiopia. Some differences in the pattern of this drainage area may have existed in ancient times. (Water Politics in the Nile Basin, 2002, p. 2288; Dumont, 2009, pp. 2–8; El-Shabrawy & Goher, 2011).

Rain, or lack of it, in Egypt itself has little effect on the Nile flow; it is pluvial events in the Nile basin thousands of miles south of Egypt that determine how much water flows northward to Egypt at any given time.

THE PREHISTORIC PERIOD OF EXTRAORDINARY NILE FLOW AND FORMATION OF THE NILE DELTA

Geological studies of Egypt show that there was a period of truly extraordinary Nile flow in the past, called the time of the "wild Nile," when the river turned into a raging torrent that was especially high during the summers, repeatedly flooding to 8 or 9 m above its floodplain (Butzer, 1982, p. 274; Van Neer *et al*., 2000, pp. 269–73). So vigorous was the Nile's flow that massive amounts of coarse gravel were washed from Nubia in the south all the way northward to Cairo (Butzer, 1976, p. 13). Perhaps the most important effect of the Nile's rage was that it produced the entire delta at the mouth of the Nile where the river poured into the Mediterranean. Before this time, there had not been any delta (Butzer, 1976, p. 9fn; Butzer, 1982, pp. 274–75).

This "wild Nile" event has been placed at about 12,000–11,500 yrs. BP (before present) by Butzer (1982, see timeline chart on p. 275). This period conveniently coincides with the new Pleistocene—Holocene boundary that divides the Quaternary period, which has been set recently at 11,700 yrs. ago by the United States Geological Survey (Divisions of Geologic Time, 2010). They define this boundary "on the basis of an abrupt climate change recorded by indicators in a

Greenland ice core." Formation of the Nile Delta is considered by some geologists to have taken place somewhat later, around 8500–6500 yrs. ago (Stanley, 2005; Woodward *et al*., 2007, p. 284; Hamza, 2009, p. 77).

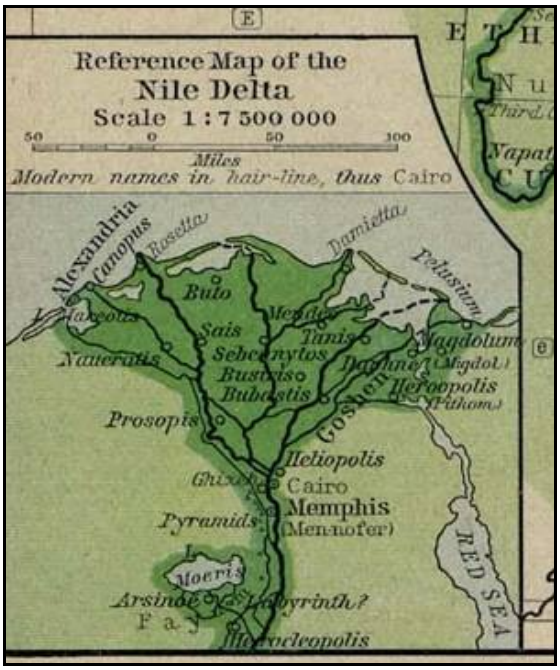

Figure 2. The Nile Delta, 1450 BC. The term *delta* comes from the shape of a landform that develops at the mouth of a river from deposited sediments; this shape resembles the upper-case Greek letter delta, written as Δ (Celoria, 1966). The Nile delta is widely considered to be the most famous river delta in the world. (From The *Historical Atlas* by W.R. Shepherd, 1923)

Whatever dates geologists select, it is clear that the Egyptian delta is extremely recent in earth's history, considering that their overall secular Ice Age period goes back a total of 2.3 billion yrs. (Barnes-Svarney & Svarney, 2004, p. 260). An examination of the geologic map of Egypt shows that the deposits distributed along the length of the Nile and covering the Nile Delta are Quaternary (Geologic Map of Egypt, 1981). The Nile Delta's formation, therefore, occurred some time after the "Last Ice Age" that ended 15,000 to 10,000 yrs. BP by the secular timeline (Berger, 2002).

Also, the argument cannot be made that sediments washed northward over the millennia could have gradually formed or enlarged the Delta. According to Butzer (1970, p. 67), bore profiles indicate that the northern shoreline of the Nile Delta has changed very little over the last 8,000

yrs. (secular timeline). Thus, the entire Delta was the result of geologic events that took place over a short time in history.

Secular geologists believe that this Nile flow was caused mainly by large amounts of rain in the vast southern territory of the Nile's catchment basin at the end of the "Last Ice Age" (Dawson, 1992, pp. 147–48; Said, 1994, p. 24; Tawadros, 2001, p. 413; Williams *et al*., 2006). Bard (2007, p. 79) says that the rain was mainly in the highlands of Ethiopia, which started the White Nile (which had been dry) flowing again. But there is evidence of extensive Quaternary glaciers in Africa in the Ethiopian and Eritrean Highlands and the East African mountains of Kilimanjaro, Kenya and Rwenzori, Elgon and Aberdare (Rosqvist, 1990; Goudie, 1999; Nyssen *et al*., 2004; Osmaston, 2004; Osmaston & Harrison, 2005); melting of these glaciers would have affected the amount of Nile flow as well. This effect is not taken into consideration by secular scientists because they spread out melting of the ice over thousands of years; in their scenario, the effect of slowly melting ice over this long period of time would not greatly affect the Nile's flow. However, creationists collapse the meltdown of the world's ice into a mere two hundred years in the current model and in the case of African mountain glaciers this melt time could have been less. This could suggest that the Nile's wild flow was partially due to melting glacier ice as well as to rain.

It is generally recognized by secular geologists that most of the great river deltas of the world were formed at the end of the Ice Age**.** A key factor in this Holocene delta formation is believed to be deceleration in rise of the world's ocean levels from the ice meltdown (Hori & Saito, 2007, p. 87; Stanley & Warne, 1993, 1994). The Nile Delta is therefore not unusual in this regard. In other examples, the lower half of Iraq is a delta largely formed by sediments washed south by the Tigris and Euphrates rivers at the time of the Ice Age meltdown; all of the ancient cities in this area, known to historians as southern Mesopotamia, were built only after the Ice Age, a fact that has ramifications for the location of the Tower of Babel (Habermehl, 2011). Also, the well-known gigantic Missoula Ice Age flood (as one of its many accomplishments) formed a large delta at the mouth of the Columbia River at Portland, Oregon (Bretz, 1969; Evarts *et al*., 2009).

Although secular scientists now recognize that there has been catastrophic flooding on the earth as an aftermath of the Ice Age (e.g., Dawson, 1992, pp. 151–61), they have not always done so. Baker (2007, pp. 65–74) describes how progress was being made up to the middle of the nineteenth century in scientific studies of the role of cataclysmic flooding in explaining features such as scoured bedrock and accumulations of huge, water-transported boulders. He adds,

> This whole branch of science was seriously retarded because of the popularity of Charles Lyell's logically flawed notion of uniformitarianism.

Not that modern geologists were willing to admit without a struggle that there had to be a place for catastrophism in explaining the geomorphology of the earth's surface**.** J Harlan Bretz first proposed in 1923 that there had been a superflood cataclysm in the western United States (the Missoula flood, referred to above). He endured great tribulations from the geologists of his day because of their reluctance to accept his view that some historical changes in the landscape are best explained by catastrophism (Soennichsen, 2008, passim).

Creationists, of course, do not have a problem with catastrophism, which is inherent in both the biblical Flood and the Ice Age. However, they do not all agree with secular geologists that the great river deltas are post Ice Age. Snelling (2009b, p. 768) describes an immediate post-Flood period of centuries of heavy rainfall, when he believes that intense erosion of canyons around the world caused the great river deltas to form. This poses the question of whether the deltas of the world were all formed at about the same time (after the Ice Age) or not. Clearly, further study by creationists on the matter of river deltas is needed.

HISTORY OF HUMANS IN EGYPT

Besides the geological indications, there are archaeological and historical reasons to believe that the Nile Delta was formed after the Ice Age.

Archaeologists find evidence of human settlement along the Nile and in the eastern and western desert areas in earliest times, which they call the Lower Paleolithic era. Secular chronology places these first settlers back as far as half a million to a million years (Bard, 2007, pp. 69–71; Midant-Reynes, 2000, p. 25; Vermeersch *et al*., 2000, p. 321; Wendorf & Close, 1999, p. 2). Biblical scholars believe that the descendants of Mizraim, son of Ham (Gen. 10:6) settled in Egypt; interestingly, Misr is the official Arabic name for Egypt today (Egypt, 2012). Habermehl (2011) argues that Shinar, where the Tower of Babel was built, was in northeast Syria, North Mesopotamia. The journey to the Nile area would have been about 1100 km for the group of Noah's descendants who migrated in that southwest direction.

These first Nile settlers lived a primitive hunter-gatherer lifestyle. They have left many stone tools behind of a style called *Acheulean* by archaeologists, named after the site of St. Acheul, France (Bard, 2007, pp. 67–79; Lewin, 1999, pp. 145–47). This stone tool design was used widely in Europe, Africa and the Middle East by the most ancient peoples, suggesting that it may have been based on technology known before the Babel dispersion.

People continued to live in the Nile Valley through the Middle Paleolithic (about 250,000–50,000 yrs. ago) and Upper Paleolithic (about 50,000–12,000 yrs. ago) (Bard, 2007, pp. 73–78). These figures for the secular eras are approximate and vary with different sources. Because the ice sheet did not extend to Egypt during the Ice Age, as it did in Asia and other parts of the

world, early people continued to live in Egypt along the Nile during the main glaciation period when conditions were very arid (Maisels, 1999, p. 39). The climate in Egypt during the Ice Age would have been much cooler than today. There appear to have been glaciers surprisingly close to the Nile, as is shown by moraines in the Sinai Peninsula (Huxley, 1883; Hume, 1901; Kurter, 1997, p. G1). Even those who are reluctant to accept this admit to the glacial evidences (Greenwood, 1997; Smykatz-Kloss *et al*., 2003, p. 112).

According to historians, those early people who had lived along the Nile moved westward after the Ice Age during the time of wild Nile flooding. They lived in the Sahara, which had become green and habitable from the northward-shifted monsoon rains and showed a sudden blossoming of archaeological sites (Goudie, 1999). During this period, there were no evidences of human habitation along the Nile. Humans stayed in the Sahara until the monsoon rains moved southward again, and the Sahara started to become a dry desert as before. Around 5300–3500 BC, secular timeline, these people then moved back to the Nile, which by now had settled down (Carey, 2006).

Some secular historians seem to miss the Ice Age as a factor in the pattern of human movement—e.g., Grimal (1992, pp. 17–22), who describes a break (end of 7th millennium BC, secular timeline) between the prehistory of Egypt and its history, for reasons that are "poorly known." He does not mention either the Ice Age or the Nile's wild flow. This shows that secular scholars can have the same problem of lack of crossover of geology and history as young-earth creationists.

Historians describe human occupation first in the southern part of Egypt, with migration northward to the delta region later. The first agricultural settlements in the Nile Delta date to about 5,000 BC on the secular timeline (Holtz, 1969). This is well before Abraham's Egyptian visit, as we shall see shortly.

When people moved from the Saharan desert back to the Nile, Egypt started to develop gradually from many groups of people with very primitive living conditions to a more sophisticated civilization**.** At first they lived in separate city states, probably each centered around the worship of its own local god (Erman, 1894, p. 17). These city states developed into provinces called nomes (Egyptian "sepats"), ruled by leaders called nomarchs. In Lower (northern) Egypt, essentially the Delta, nomes were added as the delta land was drained and made habitable (Petrie, 1911, p. 29). Possibly the earliest Delta city was Buto, first settled nearly 5,000 BC secular time (Kemp, 2006, pp. 86–89; Midant-Reynes, 2003, p. 56).

There is now much historical material available about the late Predynastic Period, called Dynasty 0 by some (Raffaele, 2003; Bard, 2003, p. 57). A large number of

kings are known to have reigned during this time, but some of these could have been ruling concurrently, since unification of Egypt under one pharaoh is believed to have occurred later at the beginning of the 1st Dynasty (Bard, 2003, pp. 63–64). Both the red crown of lower (northern) Egypt and the white crown of upper (southern) Egypt worn by the pharaohs for thousands of years are attested quite early in this Predynastic Period. The separate cultures of the two Egypts were therefore already developed before unification (Wainwright, 1923; Bard, 1994; Midant-Reynes, 2003, pp. 41–56; Yale News, 2011). An indication of late Predynastic occupation in the northern Nile Delta is an artifact found buried 7.4 m below the surface near the Mediterranean coast. The long, thin piece of dolomite is believed by scientists to have been carried there by humans and could not have been deposited by either the Nile or the sea (Stanley *et al*., 2008).

We can, therefore, conclude that there was considerable human activity along the Nile and on the Delta after the Ice Age but before the era of the Dynastic pharaohs.

A reliable indicator of climate is the clothes that people wear. All the depictions of the ancient Egyptians point to a very warm climate. For instance, the famous Narmer palette, a flat carved stone in the Cairo Museum, dating to the beginning of the 1st Dynasty, shows the king wearing only a very short kilt; captives and others are shown naked (El-Shahawy & Atiya, 2005, pp. 23–25). Clearly the Egyptian weather was warm by this early time, and the cool Ice Age weather was long gone.

Recognition that the entire Ice Age from beginning to end preceded the start of Egyptian civilization has clear implications for those who write about chronological matters. Wright (2008) states that there is a window of about 150–250 yrs. after Babel before Egypt began constructing the 4th-Dynasty pyramids. Courville (1971, pp. 140–52) believed that the Babel dispersion must have occurred only 37 yrs. before the unification of Egypt (beginning of 1st Dynasty). Usshur (2003, p. 22) says that Ham led his colony into Egypt around 2188 BC, about 54 yrs. after the Babel dispersion; he then lists the Hyksos kings of Egypt (13th Dynasty) as starting to rule in 2084 BC. In these problematic examples, there is no room for the Ice Age.

WHEN DID ABRAHAM VISIT EGYPT?

One potential synchronism between the Bible and secular history is Abraham's temporary migration into Egypt, forced by a severe famine in Canaan (Gen. 12:10–20). The Bible does not tell us the name of Abraham's pharaoh, and that omission introduces uncertainty as to when in Egypt's history Abraham was there. An earliest date of about 1920 BC for Abraham's Egyptian visit is based on 1921 BC for his entry into Canaan (Jones, 2007, p. 25). Scripture does not tell us how long Abraham was in Canaan before going to Egypt. (The LXX reduces these dates by 40 yrs. In I Kings 6:1, the time from the Exodus to beginning the building of the temple is 440 yrs. instead of 480 yrs. as in the MT.)

Abraham's visit to Egypt would have occurred about 200 years before Joseph became vizier of Egypt. The placement of Joseph in the 3rd Dynasty of Egypt as the famous vizier Imhotep is argued by Habermehl (2013). Imhotep's era is generally placed around 2700–2600 BC on the secular timeline (Tyldesley, 2009, p. 32). Because we know the secular timeline to be more extended than the biblical one, it would therefore be plausible that Abraham's visit might have been about 300 yrs. (secular timeline) before Joseph. If so, this would put Abraham's visit to Egypt somewhere around 3000 BC on the secular timeline, near the beginning of the 1st Dynasty.

There is some known ancient history that may support this date. The first king of the 1st Dynasty is generally believed to be King Aha, whose reign began c. 3000 BC on the secular timeline (Tyldesley 2009, p. 22; Shaw 2003, p. 481). During this king's reign, the colonies of Egyptians who had been living in south Palestine abandoned their residences and returned to Egypt for unknown reasons, but then returned to Canaan later on during the 1st Dynasty (Raffaele, 2003; Porat, 1992; Watrin, 1998, pp. 1224–26). This author suggests that the same severe famine in Canaan that drove Abraham to Egypt may have caused these Egyptians to return home at this time.

We also note that Abraham did not appear to have the option of circumventing this powerful pharaoh. For his own personal safety (because of Sarah's beauty), Abraham might have liked to pasture his animals in a section of Egypt that was not under this pharaoh's rule. But the fact that he did not do so would indicate that he was obligated to deal with this particular pharaoh. According to historians, King Aha ruled Egypt early after the unification of Egypt (Tyldesley, 2009, p. 22), and would have held sway over essentially all the available land. This shows that the civilization of Egypt had already developed to the point of having a powerful pharaoh who obviously had a reputation for ruthlessness as indicated by Abraham's fear of him.

Placing Abraham in Egypt near the beginning of the 1st Dynasty would be earlier in Egypt's history than many scholars have led us to believe. The well-respected Cook (1871, p. 447) thought Abraham was in Egypt between the 11th and 13th Dynasty. Ashton & Down (2006, p. 37) put Abraham in Egypt in the time of Kufu (4th Dynasty). However, those who place Abraham later on in Egyptian history have a problem, in that they have to fit even more historical events into the period between the Ice Age and Abraham's visit.

We can conclude that by Abraham's time the Ice Age was long past because it had ended earlier at the time of the Nile's wild flow, and all development of Egypt's civilization had taken place after that. This also means that Job did not live during the Ice Age, as is believed by various writers (e.g., Northrup, 1996). Job lived several generations after Abraham (Job 42:17 LXX).

THE ICE AGE AND ITS TIMELINE IMPLICATIONS

Our best-known creationist Ice Age model has now been around since 1990, when Oard published *An Ice Age Caused by the Genesis Flood*. As the book's title states, his basic thesis is that climatic conditions in place at the end of the Flood set things in motion for the onset of the Ice Age. This thesis has been generally accepted (e.g., Snelling, 2009b, pp. 773–75; Vardiman, 2011; Nienhuis, 2006, passim; Brown, 2008, pp. 109–44); when creationists speak of "the Ice Age" it is generally understood that this refers to the Oard model.

Oard describes an Ice Age that began immediately after the Flood and lasted an estimated 700 yrs. overall: 500 yrs. of ice buildup and 200 yrs. for the meltdown (Oard, 1990, see graph on p. 117). Where this Ice Age fits into a history timeline depends on what date we choose for the Flood, a date that, in turn, depends on how many years the Children of Israel were in Egypt and, finally, on whether we use the MT or LXX manuscript. On the surface it looks as if Ex. 12:40–41 in the MT specifies a sojourn of 430 yrs. in Egypt; therefore many people calculate a date for the Flood of about 2550 BC. However, the 430 yrs. of sojourning has been shown to be the total time from Abraham's entry into Canaan to the Exodus. The NETS LXX reading of Ex. 12:40 is clearer:

> Now the residence of the Sons of Israel during which they dwelt in the land, Egypt, and in the land of Chanaan was four hundred and thirty years.

The Apostle Paul specifies that the law was given 430 yrs. after the promise to Abraham (Gal. 3:16–17); Josephus (100, 2.15.2, pp. 74–75) says clearly that they were only 215 yrs. in Egypt.

It is questioned by some whether the Children of Israel could have achieved the numbers given in Ex. 12:37 ("six hundred thousand on foot that were men, beside children") in only 215 yrs. This easily works out to over 2 million people, raising questions about the logistics of such a large group in the wilderness. Wood (2009) addresses this:

> "The number of Israelites who left Egypt at the time of the Exodus is a vexed problem. … At the heart of the issue is the meaning of the Hebrew word *eleph.* It is usually translated "thousand," but has a complex semantic history."

In other words, an ancient meaning of "eleph," long lost, could reduce the numbers of the Exodus considerably. More research is needed on this subject.

Based on a 215-yr. stay in Egypt, the Flood was around 2350 BC on the MT timeline. Usshur (2003, p. 21) and Jones (2007, p. 25) concur. A 700-yr. Ice Age therefore would have lasted from about 2350 BC to 1650 BC.

According to the Oard Ice Age model, the ice would still have been in place in the northern latitudes for most of Abraham's life, with the meltdown starting only about 25 yrs. before his death (Abraham was born around 2000 BC, and died 175 yrs. later) (Jones, 2007, p. 47). However, as we have seen earlier in this paper, both formation of the Nile Delta and the earliest beginnings of pharaonic civilization took place only after the period of the ice meltdown; and Abraham's visit to Egypt occurred subsequent to these events. We also note that Jacob and his family settled on the Nile Delta in Goshen when they entered Egypt in about 1700 BC (Jones, 2007, p. 66); at that time, by Oard's model, the Delta would still have been in the formation stage during the Ice Age meltdown. In fact, we know that the Delta was then the best pastureland in Egypt (Gen. 47:6). The obvious conclusion is that the currently accepted model of the Ice Age must be incorrect in its placement between 2350 BC and 1650 BC.

This now leads to a major chronology problem. Between the Flood and Abraham's visit to Egypt we count 425–35 yrs. (MT timeline), depending on how soon Abraham went to Egypt after arriving in Canaan. (Whether we calculate 215 or 430 yrs. for the Children of Israel in Egypt does not change the number of years between the Flood and Abraham). There simply isn't enough time for a 700-yr. Ice Age, repopulation along the Nile (Neolithic era), and development of Predynastic society.

This means that anyone who has been accepting the current model of the Ice Age as well as the standard MT timeline has been holding an untenable position. Changes of some sort are going to be needed, whether in the Ice Age model, the timeline, or both, to solve this chronological difficulty.

THREE POSSIBLE CHRONOLOGICAL SOLUTIONS

Solution I: Shortening the Ice Age

One way to overcome this time problem would be to drastically shorten the overall Ice Age. This would mean a very rapid ice buildup, a short duration of the ice, and a fast meltdown. If it could be shown that there was less ice than the Oard model postulates, this would be helpful in attempting to shorten the Ice Age. However, studies published since 1990 indicate that there may have been *more* ice.

There are two measures that tell us how much ice there would have been at the peak of the Ice Age (maximum glaciation): the amount of ice remaining on land today, plus how much lower the world's ocean level was then. This latter measurement tells us how much water from the oceans had evaporated and frozen on land to form the ice at its maximum. For a discussion of factors involved in ocean level variation (i.e., eustatic changes), see Siddall *et al*. (2006, p. 75).

Secular scientists calculate that if the Greenland and Antarctica ice sheets (where most of the earth's ice is today) were to melt, the sea level would rise about 70 m (see, e.g., Alley *et al*., 2005). Also, the consensus of scientists today is that the oceans lowered around 120–35 m (below the current level) at the Ice Age maximum; this is based on scientific evidences such as corals and marine fossils (McCulloch & Esat, 2000; Yokoyama *et al*., 2001; Clark & Mix, 2002; Peltiers & Fairbanks, 2006; Murray-Wallace, 2007). Adding the two figures together, the maximum ice would have been the equivalent of about 190–205 m of water from the worldwide oceans.

However, Oard gives a considerably lower figure. He calculates only 45–50 m of ocean rise from melting of the Greenland and Antarctica ice sheets, and 50–60 m of ocean lowering at the height of the Ice Age (based on his model). Adding these figures together, he gets 95–110 m of ocean water that froze on land. (Oard's current figures for melting of the Greenland and Antarctica ice vary slightly from those in his 1990 book and are based on a 2013 personal communication.)

Secular scientists therefore calculate approximately twice as much ice at the glacial maximum as Oard does. If the higher amount is right, creationist models need to account for a buildup of all this ice in a much shorter time, as discussed earlier. Furthermore, the thesis that end-of-Flood conditions caused the Ice Age imposes considerable constraints on building these models.

Perhaps we need to consider that the Ice Age might not have been connected to the Flood at all. We know from the Bible that God started and ended the Flood; He could have done the same for the Ice Age. An advantage of this version of events would be that modeling a fast and catastrophic Ice Age would have fewer constraints.

Why might God have caused the Ice Age, if it was not related to conditions at the end of the Flood? Perhaps He sent the Ice Age as a punishment on the rebellious people who scattered from Babel. If so, the Ice Age most likely would have been initiated immediately after the Babel dispersion. We cannot rule out the possibility that the Peleg division (Gen. 10:25) was a literal breaking up of the continents, and that the resulting catastrophic geologic events were a factor in the start of the Ice Age. By contrast, most creationists currently believe that the "dividing" of Gen. 10:25 refers to the linguistic dividing at Babel, rather than literal physical dividing of the continents. The explanation usually given for rejecting continental division at the time of Peleg is that this would involve immense geological catastrophe that they cannot accept (e.g., Snelling, 2009a, pp. 284–85). But the underlying reason is that current Flood models require that the continents divided during the Flood, not afterwards, and therefore Gen. 10:25 cannot mean this land division (Snelling, 2007).

We may not have considered all the possibilities here, and perhaps we need to think more broadly. As an example, one hypothesis offered is that the Ice Age resulted from super-cold ice that rained down on earth (Patten, 1967, pp. 101–36).

Solution II: Incomplete Genealogies

Another chronological solution is offered by those who claim that the genealogies of Gen. 5 and 11 in the MT manuscripts are not meant to be complete, and that there are gaps where generations are missing. Based on this concept, the current model of the Ice Age would not require changing because the timeline could be adjusted by adding in enough theoretical generations before Abraham to give the necessary 700 yrs. plus whatever time would be needed for development of Egypt's civilization.

This position is attractive because it appears to offer the best of all worlds; it permits us to stretch out historical time elastically to whatever length we need for the Ice Age or anything else, but at the same time hang onto the MT manuscript. Those who advocate this concept of an incomplete timeline in the Bible are unable to say when the Flood took place or when the world was created. It should be understood that these individuals are not old-earth creationists, but merely young-earth creationists who are extending the Genesis biblical timeline back beyond the Usshur figure of 6000 yrs. to Creation (Usshur, 2003, p. 17).

An example of this line of reasoning is presented by Whitcomb and Morris (1961, pp. 474–83). However, the arguments that "begat" meant "ancestor of" do not make sense in these specific genealogies where actual numbers are given for the time from one generation to the next. For example, Eber did not live for 34 (or 134 in the LXX) yrs. and only then become the ancestor of Peleg; Eber became the ancestor of Peleg the day he (Eber) was born. This point is missed by those who put forth the gaps argument, even by Whitcomb and Morris.

In addition, the careful listing of the number of years from one generation to the next in these two genealogies indicates that they are obviously meant to form a real timeline. The early church clearly understood it this way, as we can see from various writings that have come down to us. Africanus (221) wrote that the time from creation to Jesus' birth was 5501 yrs., obviously a calculation based on the LXX. Rouse (1856, pp. 13–21) lists many ancient church writers who gave similar figures. Josephus stated the concept of accuracy of the time back to the Flood in no uncertain terms (100a, 1.3.3, p. 33):

> …and the time is written down in our sacred books, those who then lived having noted down, with great accuracy, both the births and deaths of illustrious men.

If we accept the claim that the genealogies of Gen. 5 and 11 are not complete, we open the door for old-earth creationists to make a case for a practically open-ended timeline back to Adam and Eve—and they do. Hugh Ross stretches the genealogies back to Adam and Eve as much as 60,000 yrs. (Ross, 2001, pp. 108–9; Rana & Ross, 2005, pp. 46–47).

Solution III: LXX Timeline

The remaining solution is to use the timeline of the alternate biblical manuscript available to us, the LXX. In this third-century BC Greek translation of the OT, often called the Alexandrian version because it was translated in Alexandria, Egypt (Brenton, 1851, pp. i–ii), the genealogies of Gen. 5 and 11 differ from the MT in the ages at which the men fathered sons, the LXX adding at least 1350 yrs. to the MT time back to Creation. On the LXX timeline, the Flood would have occurred at about 3100 BC; however, some LXX manuscripts add an additional 100 years to the fatherhood of Nahor in Gen. 11:24 (e.g., Brenton LXX). This would push the LXX Flood to 3200 BC. The Babel dispersion would have taken place about 530 yrs. later (assuming that this event occurred at or near the birth of Peleg). These figures are calculated from the LXX by this author; they include the controversial Kainan of Gen. 11:12 (LXX) in the genealogy. This author takes the view that Kainan (or Cainan), son of Arphaxad, most likely existed, as well as his uncle Kainan (6th son of Shem), who is also missing from the MT. Kainan, son of Arphaxad, is listed in the genealogy of Luke 3:36.

On the LXX timeline, the total time between the Flood (3200–3100 BC) and Abraham's visit to Egypt (1880 BC, allowing for 40 yrs. less than the MT) would be as much as 1300+ yrs.; between Babel/Peleg and Abraham's visit, as much as 800 yrs. The LXX therefore allows considerably more time than the Masoretic for fitting in the Ice Age along with the subsequent pre-Abrahamic Egyptian historical events.

In spite of this extra time, some change to the current Ice Age model would be required to accommodate it to the LXX timeline. If the ice started to melt 500 yrs. after the Flood, it would be melting even before the Babel dispersion. We know that this did not happen because people had scattered widely from Babel long before the ice began to melt. These early long-lived people have been shown to be Neanderthals (Cuozzo, 1998, passim; Habermehl, 2010), who lived during the Ice Age and died out well before the maximum glaciation (Lewin, 1999, pp. 156, 209; Pinhasi *et al*., 2011). Therefore the Ice Age model would have to be adjusted to delay the onset of the meltdown to more than 500 yrs. after the start of the ice buildup.

If, however, the Ice Age was not caused by the Flood, but was caused by other factors, as discussed earlier, this would offer the possibility of a different pattern of growth and melting of the ice; indeed, the ice could have started to build up only hundreds of years after the Flood ended. In that case, the buildup of ice could have been rapid, and its duration shorter. An Ice Age

model would need to reflect this. Snelling (2009b, p. 759) suggests that there was a delay of some centuries after the Flood before the ice buildup, although he believes that the Flood caused the Ice Age.

We can, therefore, conclude that the LXX chronology allows the time required for inserting the Ice Age; however, the current Ice Age model would need to be revised.

IS THE SEPTUAGINT A LEGITIMATE BIBLICAL VERSION?

If the LXX is to be considered as the basis for a true biblical timeline, we need to frankly consider the issue of its credibility.

How great the differences between the MT and LXX manuscripts are would seem to depend on the particular agenda of who is criticizing which manuscript. In this paper, we are interested only in what is perhaps the biggest and most distinctive difference, the ages to maturity in the genealogies of Gen. 5 and 11. Because these genealogies form the backbone of calculating how many years ago God created the world, the 1300+ extra years in the LXX are significant.

The subject of the reliability of the LXX is not new to the ICC. At the fifth conference, Young (2003) presented an extensive paper comparing the Samaritan, Septuagintal and Masoretic genealogies of Gen. 5 and 11. Her conclusion:

> "…the greater ages found in the Septuagint may be more independent, older, and possibly more original, with a stronger claim to authenticity than the lower ages reported in the Masoretic Text or the Samaritan Pentateuch."

In spite of this, the LXX has encountered great resistance from those who adhere to the MT. The preponderance of opinion has been that the LXX is corrupt, and therefore only the MT should be accepted as inspired scripture (e.g., Jones, 2007, p. 15, who calls the LXX "corrupt, depraved, and morally impaired"). Any suggestions otherwise have been beaten down with various arguments that are largely based on the preemptive assumption that the MT is the most accurate manuscript, and any LXX deviations from the MT "prove" corruption of the LXX (Jones, 2007, pp. 10–15; Sarfati, 2004, pp. 288–89; Williams, 1998). This is circular reasoning.

A favorite "proof" that the LXX must be a corrupted manuscript is the age of Methuselah at paternity in Gen. 5:25, which appears to show that Methuselah lived on after the Flood. Young (2003) discusses this rather intricate subject at great length, ultimately concluding that the *Codex Alexandrinus* version of the LXX is our best listing of ages of the patriarchs, even with an error in the age of Methuselah that may have occurred in antiquity. Ironically, proponents of the MT overlook the many inconsistencies that are inherent in its genealogies (for instance, Jared

fathered Enoch at 162 yrs. old, but Mahalaleel was only 65 when he fathered Jared). Also, Shem's son, Arphaxad, has a son at 35 yrs. old (Gen. 11:12 MT); Arphaxad therefore arrives at maturity at only 8% of his lifespan (438 yrs.). However, if we take the LXX figures, the maturity of Arphaxad as a percentage of lifespan is 24% (135/565), a figure closer to what we might consider normal.

Textual arguments based on examination of the manuscripts appear to comprise the largest part of the discussion with regard to the LXX. But other information must not be overlooked. For instance, it is well known by those familiar with the LXX that Jesus and the writers of the NT used the LXX; much study has been devoted to showing hundreds of places in the NT where the LXX was quoted (e.g., Jones, 2000). The Apostle Paul quotes a whole section from the LXX that is not in the MT anywhere: Rom. 3:12–18, found in Psalm 14:3 in the Brenton LXX . This quoting of the LXX in the NT would by itself seem to be an obvious reason for us to view the LXX as the more authentic manuscript.

So what events led to the existence of these two manuscripts (MT and LXX)? In short, the MT was an edited version of the scriptures produced in the early centuries AD via Jewish leaders who hated Jesus and Christians (Horn, 1987; Setterfield, 2010a). The Gospels devote much space to interaction between Jesus and these hostile scribes, Pharisees and Sadducees, and He had little good to say about them. "Hypocrites" (Matt. 15:7) and "generation of vipers" (Matt. 12:34) are examples; the entire chapter of Matt. 23 is devoted to castigating these people. It should be asked why we would accept the manuscript that they developed instead of the one that Jesus and the early church used?

The history of the changeover from the LXX to the MT documents how reluctant the early Christians were to let the LXX go (for information on this, see Dines, 2004, pp. 63–77; Setterfield, 2010a). Indeed, the Christian church effectively followed the LXX and its timeline until the Reformation. It was then that the Protestant Church left the LXX timeline and accepted the MT, because of anti-Roman Catholic feelings (Rouse, 1856). For further information, see Setterfield (2010a) who gives a detailed history of the Alexandrian LXX manuscript; and Herrell (2000, pp. 51–57) as well as Harrison (1955) for clear discussion and explanation with respect to the LXX.

Our NT scriptures, on the other hand, have remained in the hands of the church from their beginning, and are also more recent than the Hebrew scriptures that were complete by the fourth century BC (Josephus, 100b, 1.8, p. 776). This means that we can expect that the NT scriptures have had minimum corruption over the years, if any. When the NT disagrees with an OT manuscript, we should take the NT as our primary authority. It follows that the ancient Hebrew manuscript from which the LXX was translated is closest to the original scripture because the NT writers used the LXX.

The Neanderthals are an unexpected indicator pointing to the LXX timeline. These ancient people have been shown scientifically to be the early long-lived people of the Bible who lived to several hundred years old (Cuozzo, 1998, pp. 201–19). Their very slow maturing time to adulthood (Cuozzo, 1998, pp. 165–89) backs the longer maturation time indicated by the LXX genealogies of Gen. 5 and 11 (Habermehl, 2010).

Even more telling is a comparison of the MT and LXX, showing where these early long-lived people are placed in the post-Flood timeline of Gen. 11. Some of the MT old people lived right into Abraham's time, and Shem and Eber actually outlive Abraham (Adams, 1871). However, as noted earlier, the Neanderthals died out well before the Ice Age was over**.** Because the Ice Age ended long before Abraham's time, the MT timeline has these ancient people incorrectly living long past the Ice Age. The LXX, however, has these long-lived people all dying out long before Abraham, as we would expect.

Adherents to the MT claim that 100 yrs. was added to the ages of maturity in the LXX Gen. 5 and 11 genealogies. We might wonder why anyone would do this, as life expectancy when the LXX was translated was much the same as today. It would be more likely that they would have shortened those ages by 100 years, as this would have seemed more reasonable. Setterfield (2010b) gives a referenced explanation of the most likely reasons that the genealogies of Gen. 5 and 11 were shortened in the MT. Six hundred years were removed from Gen. 5 to support Jewish traditions that Noah was the second Adam, and 700 yrs. from Gen. 11 to support Shem as Melchizedek.

The Dead Sea Scrolls are a factor in the LXX/MT dispute. Many people treat these fragments as one homogeneous group, but they actually divide into two. The scrolls found in the caves of Qumran are the oldest, dating from about 250 BC to 68 AD; these follow the LXX (Abegg *et al*., 1999, pp. xiv–xv). Those from the other desert caves in the Wadi Murabba'at, the Nahal Hever and the Nahal Se'elim date to the second century AD, and are practically identical to the MT (Horn, 1987). Therefore the Dead Sea Scrolls are a witness to the earlier date of the LXX and to the changeover to the MT.

One objection to the LXX arises from the inclusion of apocryphal books in most editions of the LXX. Harrison (1955) leaves no doubt that these "extra" books were never considered as part of the inspired Canon of 66 books by either Jews or the early Christian church. It has been pointed out that the OT is quoted hundreds of times in the NT, but these apocryphal books are never quoted (Ellis, 1991, p. 51; Archer, 1994, pp. 82–83). Also, they cannot have been part of the original LXX, because they were all attached to it between about 200 BC and 150 AD (MacArthur, 1997).

In view of the foregoing discussion of the LXX, it is suggested here that the issue of its longer timeline should be revisited by creationists in setting up a chronology of historical events. The need for more time than the MT allows is especially noticeable with respect to the placement of the Ice Age.

CONCLUSIONS

We therefore conclude:

1. The significance of the formation of the Nile Delta at the end of the Ice Age cannot be overestimated with respect to the timeline of the history of Egypt and related biblical events.

2. Archaeology and geology show that the Ice Age necessarily ended before the earliest beginnings of Egypt's civilization. Creationist models of the Ice Age need to reflect this.

3. To accommodate the Ice Age and other historical events, we need more time before Abraham than the MT chronology allows.

4. The LXX chronology must be considered in determining a true biblical and historical timeline.

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NOMENCLATURE

OT = Old Testament
NT = New Testament
MT = Masoretic
LXX = Septuagint
LXX Brenton: See Brenton (1851).
LXX NETS (A new English translation of the Septuagint): see Pietersma & Wright (2007).
Quotations in this paper are from the KJV (King James Version) unless otherwise specified.