

The Biblical Chronologist

WHAT HAS BEEN IS REMOTE AND EXCEEDINGLY MYSTERIOUS. WHO CAN DISCOVER IT?
(Ecclesiastes 7:24)

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The Post-Flood Settlement of Ireland

“I will greatly multiply thy sorrow and thy conception. . .” (Genesis 3:16, KJV).

These words, spoken by God to Eve after the Fall in judgment of her disobedience, are very familiar. Their full meaning, however, is not altogether transparent.

This fact is borne out, for example, by the New American Standard translation of this verse. It reads simply: “I will greatly multiply your pain in childbirth”. But a marginal note informs us that a more literal rendering would be: “I will greatly multiply your pain and your pregnancy” or, even closer to the King James translation given above, “I will greatly multiply your pain and your conception”.

It seems clear enough from the context that Eve’s sentence involved at least the intensification of pain during childbirth. But there seems to be a suggestion of something else here as well. It is found in the words “and thy conception”. It seems possible that, in addition to intensified pain during childbirth, an increased frequency of conceiving and bearing children is implied.

But what does all of this have to do with the post-Flood settlement of Ireland?

Review

Two issues ago I introduced the relict landscape of Céide (pronounced kay’jeh) Fields, Ireland.¹ It consists of miles of stone walls surrounding thousands of acres of agricultural fields, all buried (and hence preserved) beneath several meters of bog

¹Gerald E. Aardsma, “Noah’s Flood: The Irish Evidence,” *The Biblical Chronologist* 5.3 (May/June 1999): 1–7.

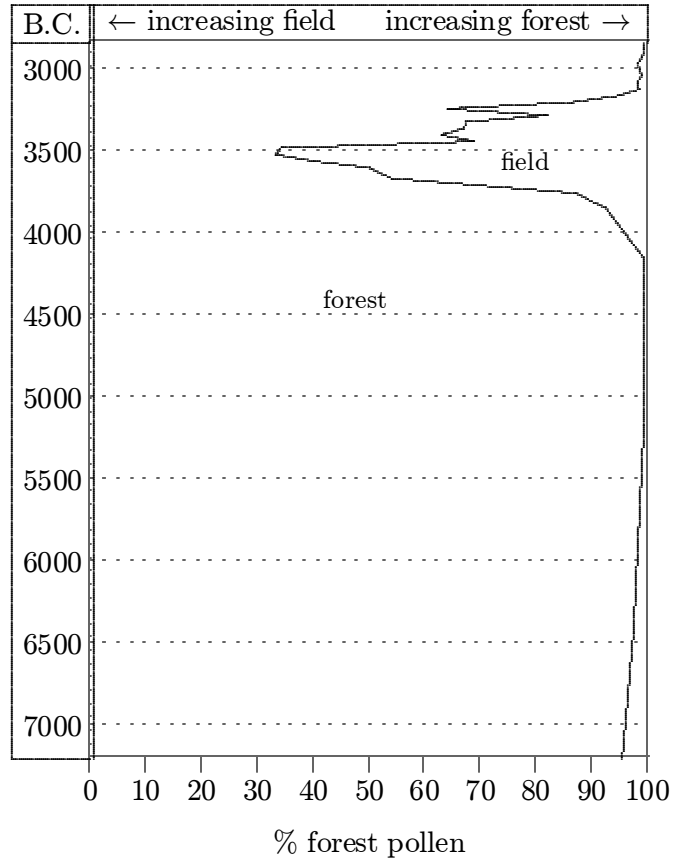


Figure 1: Composite pollen curve from a deep bog in Ireland indicating the relative abundance of forest and field in the vicinity of the bog.

peat today. The stone-walled fields are found in association with megalithic tombs of obvious great antiquity. Radiocarbon dates on pine stumps found in position of growth within the peat covering the fields reveal that the fields ceased to be used within secular dating uncertainties of the Biblical date for Noah’s Flood, 3520±21 B.C.²

²Gerald E. Aardsma, “Chronology of the Bible: 5000–3000 B.C.,” *The Biblical Chronologist* 2.4 (July/August 1996): 1–5.

Last issue I used data from the science of palynology to show that Céide Fields was initially settled near 4000 B.C.³ Pollen data from a deep bog in Céide Fields, reveal the arrival of the first settlers in that region at that time (Figure 1). The settlers arrival is recorded by a sudden decline in arboreal (tree) pollen, and a simultaneous increase in the sorts of pollen one gets from field plants. This results from the clearing of the primeval forests by the settlers to make room for agricultural fields.

The pollen data go on to show a steady decline of the forests and growth of the fields, up until roughly 3500 B.C., at which time the expansion of the fields is halted and then reversed (Figure 1). When the palynological data from Ireland are placed side by side with Biblical historical data (Figure 2) the halt in the expansion of the fields is seen to be synchronous with Noah’s Flood, in complete harmony with the radiocarbon dates on the pine stumps discussed above.

Thus the destruction of a mature (half a millennium old) Irish culture by Noah’s Flood is clearly revealed. The many acres of stone-walled fields found buried beneath blanket peat in Céide Fields, northwestern Ireland today, are, as previously observed, a vast monument to the Flood.⁴ They are relics of a thriving, pre-Flood culture, suddenly terminated by the Great Flood 3520±21 B.C.

Resettlement

Ireland is well populated today, of course. This simple observation tells us immediately that people rediscovered and resettled Ireland following the Flood.

How long did it take for Ireland to be rediscovered and resettled? And what does this length of time imply? These are the questions which occupy our interest in the present study.

Back to Palynology

The problem of finding the date of the resettlement of Ireland following the Flood is best addressed in

³Gerald E. Aardsma, “The Pre-Flood Settlement of Ireland,” *The Biblical Chronologist* 5.4 (July/August 1999): 1-7.

⁴Gerald E. Aardsma, “Noah’s Flood: The Irish Evidence,” *The Biblical Chronologist* 5.3 (May/June 1999): 1-7.

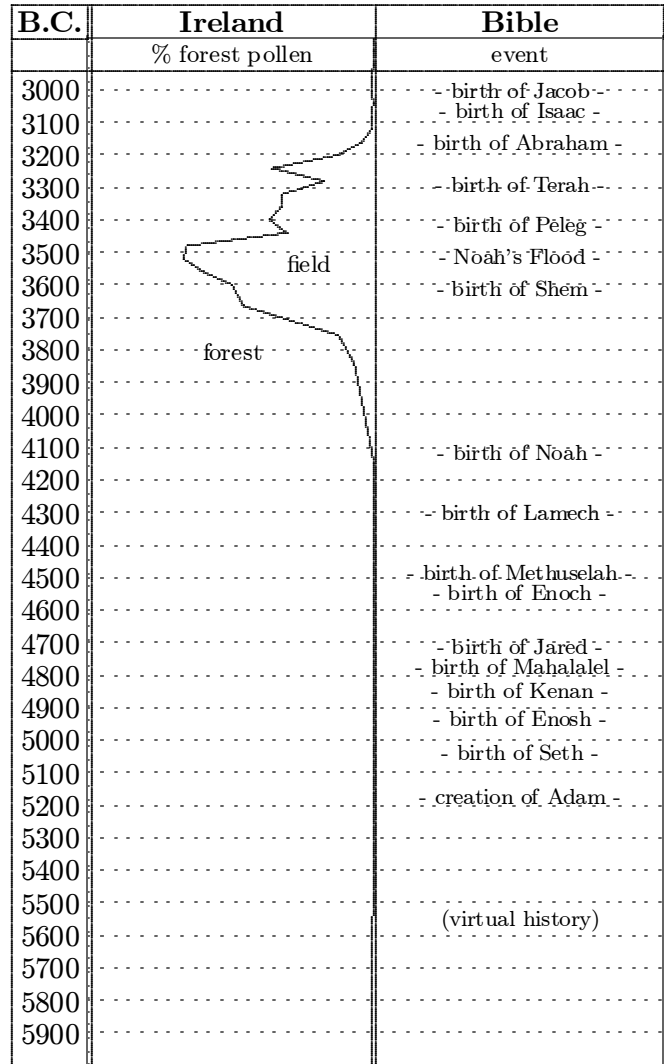


Figure 2: Pollen data from Céide Fields, Ireland, compared with key events from Biblical chronology.

the same manner as the question of the date of the initial settlement of Ireland was tackled last issue. That is, it is best addressed by recourse to the science of palynology.

To answer the question of when Ireland was initially settled, we made use of pollen data from a deep bog located within the pre-Flood, stone-walled field system of Céide Fields. The pollen data we used were obtained from the bog earlier this decade by two scientists, Karen Molloy and Michael O’Connell, of the Palaeoenvironmental Research Unit, Department of Botany, University College Galway, Ireland.⁵ They: 1. located

⁵Karen Molloy and Michael O’Connell, “Palaeoecolog-

the deep bog, 2. made numerous trial corings at the site to determine where the deepest, most ancient part of the record might be found, 3. obtained a ten centimeter diameter core some five and a half meters (roughly seventeen feet) long from top to bottom of the bog, 4. sectioned the core back at the lab to obtain more or less evenly spaced, one centimeter thick samples for analysis, 5. submitted each of these one centimeter samples to an elaborate process to separate the pollen it contained from everything else one might find in a peat bog, 6. mounted each resultant pollen sample on a microscope slide, 7. identified the individual type of up to 1000 pollen spores from each sample by viewing at 500 \times through the microscope, 8. graphed the frequency of the different types of pollen versus the depth from which the sample was obtained in the peat core, 9. had a number of radiocarbon dates performed on peat from the core, and, finally, 10. used these dates to construct a chronology (i.e., table of date versus depth) for the core.

I will use the Molloy and O'Connell chronology for the peat core without alteration again this issue, as I did last issue.⁶ From evidence internal to this chronology I estimate it to be accurate to ± 150 years (3σ) in absolute date back to the 5.00 meter depth (ca. 3900 B.C.). As pointed out last issue, chronological uncertainty at greater depths is larger and difficult to quantify. This results from: 1. a lack of radiocarbon dates at greater depths, and 2. a probable hiatus in the core below 5 meters due to an ancient fire on the bog surface. Uncertainty in the oldest portion of the chronology, much before 4000 B.C. (not of interest to the present study), should probably be placed at half a millennium or more.

The "Ireland" column of Figure 3 shows the pollen data of Molloy and O'Connell discussed last

issue, together with more of their pollen data from the same peat core for more recent times. All of these pollen data are plotted using Molloy's and O'Connell's chronology for the core.

Landmark events from Biblical chronology are shown in the "Bible" column of the figure for comparison.⁷

The sudden decline in forest pollen near 2400 B.C. is reminiscent of the similar phenomenon we are already familiar with near 3700 B.C.—people had obviously returned to Ireland by 2400 B.C.

Now before I take this further, notice several side points of interest from this figure. First, notice that the post-Flood fields never reach the extent, relative to the forest, of the pre-Flood fields. This is not too surprising when we consider what we know about Céide Fields itself. Prior to the Flood Céide Fields was a vast agricultural field system. Following the Flood, we have seen,⁸ the mineral soil of these fields was quickly overgrown by blanket peat and pine trees. It is one thing to convert forest to fields, and quite another to convert acidic, meter-deep, blanket peat bog to fields. In fact, while there have been precious few trees in this region of Ireland for a very long time, the removal of peat from the land continues to this day. Obviously, post-Flood Céide Fields did not possess the same agricultural potential pre-Flood Céide Fields had proffered.

Second, notice that with this second clearing of the land, the fields, though diminished in geographical extent, persist in time. Though there are ups and downs in the % forest pollen curve after 2400 B.C., indicating advances and retreats of agriculture in the region of Céide Fields over the centuries following resettlement of the land, agriculture in Ireland does not die out 500 years following the second settlement as it did 500 years

ical investigations towards the reconstruction of environment and land-use changes during prehistory at Céide Fields, western Ireland," *Probleme der Küstenforschung im südlichen Nordseegebiet* 23 (1995): 187–225.

⁶The Molloy and O'Connell chronology of the core is a piecewise linear interpolation between fixed points. Last issue I used only the oldest portion of the chronology, based upon four fixed points: (534 cm, 10,163 cal BP), (500 cm, 5835 cal BP), (488 cm, 5565 cal BP), and (396 cm, 4647 cal BP). This issue I add two more points: (353 cm, 4324 cal BP) and (256.5 cm, 2998 cal BP). This entire section of the chronology incorporates eleven radiocarbon dates on peat from the core.

⁷Gerald E. Aardsma, "Chronology of the Bible: 3000–1000 B.C.," *The Biblical Chronologist* 1.3 (May/June 1995): 1–3; Gerald E. Aardsma, "Chronology of the Bible: 5000–3000 B.C.," *The Biblical Chronologist* 2.4 (July/August 1996): 1–5; Gerald E. Aardsma, "Toward Unification of Pre-Flood Chronology," *The Biblical Chronologist* 4.4 (July/August 1998): 1–10; Gerald E. Aardsma, "A Unification of Pre-Flood Chronology," *The Biblical Chronologist* 5.2 (March/April 1999): 1–18.

⁸Gerald E. Aardsma, "Noah's Flood: The Irish Evidence," *The Biblical Chronologist* 5.3 (May/June 1999): 1–7.

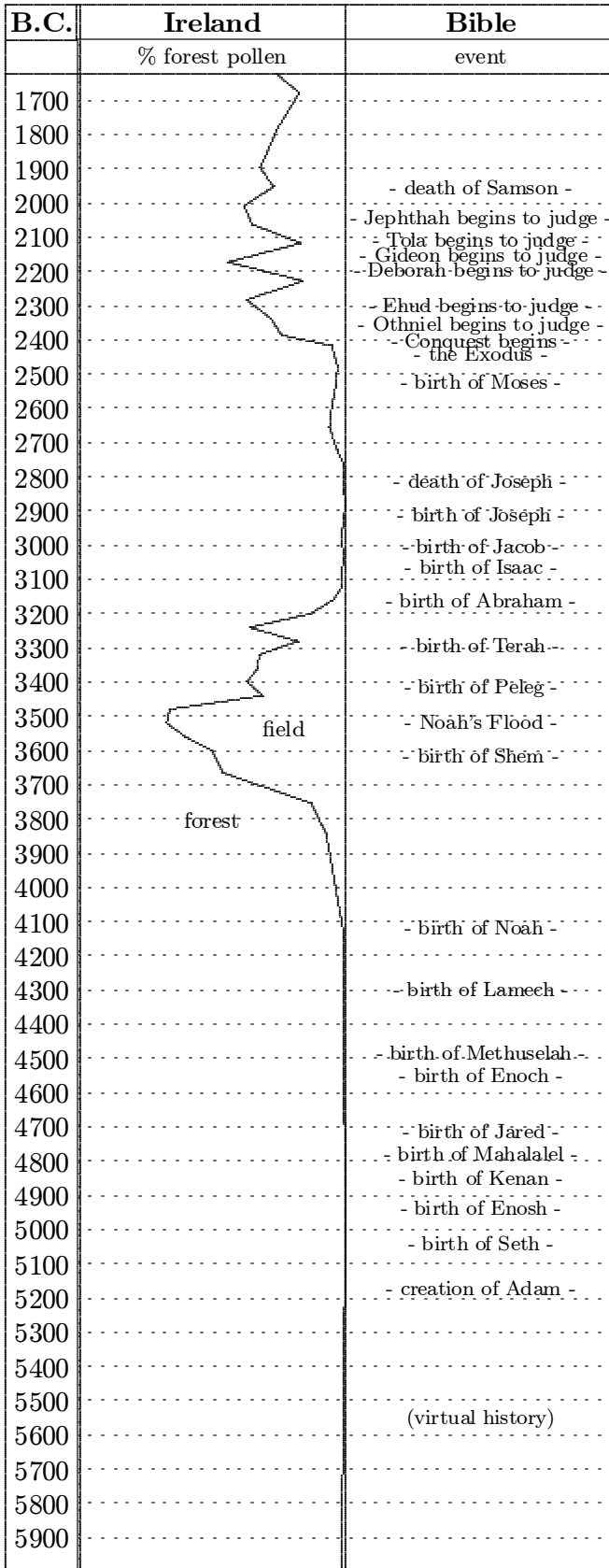


Figure 3: More pollen data from Céide Fields, Ireland, compared with key events from Biblical chronology.

following the initial settlement. The Flood happened only once, 3520±21 B.C., just as the Bible says.⁹

Third and final, just by way of mnemonic, notice that the resettlement of Ireland takes place at roughly the same time as the Israelites were reentering Palestine following their enslavement in Egypt.

The Date of Resettlement

The determination of precisely when people returned to Céide Fields is complicated by the fact that the % forest pollen curve in Figure 3 takes a slight dip beginning about 2750 B.C. This dip is probably not due to people cutting trees. Its proper explanation likely lies in the spreading bogs which swallowed Céide Fields in the centuries and millennia following the Flood, resulting in waterlogged, acidic soil, increasingly unfavorable to trees.

The sharp decline in % forest pollen near 2400 B.C., however, seems unambiguous evidence of renewed agricultural activity. We are not likely to be too far out, therefore, if we place the date of resettlement within about 100 years of 2500 B.C.

Implications

This date has a number of interesting implications. Notice, for example, that it places the resettlement of Ireland a thousand years after the Flood. That is, it took *one thousand years* for mankind to rediscover and resettle Ireland after the Flood.

Effectiveness of the Flood

This, of course, has much to say about the effectiveness of God's judgment of mankind by the Flood. Human civilization after the Flood obviously did not simply pick up where it had left off before the Flood. In Ireland, at least, 1,500 years elapsed following the Flood before people had regained even the duration of local cultural history which had been erased by the Flood.

⁹Genesis 8:21-22; 9:11.

Genesis 3:16

But there is another implication which I want to draw attention to. It is not a trivial one to discuss because it involves the concept of virtual history in proleptic time. This concept was introduced in *The Biblical Chronologist* just three issues ago.¹⁰ It is still far from familiar. But let us not be intimidated by the unfamiliar.

It seems reasonable that the millennium it actually took for Ireland to be inhabited after the Flood is typical and representative of what one should find in all such cases. That is, if we imagine repeating this “experiment” many times over—of drowning nearly everybody and starting again with just a few survivors like Noah and his family in the mountains of Turkey—then, I suggest, we would find that a millennium is typically the length of time it takes for Ireland to be rediscovered and reinhabited. This is simply an assertion that we should regard what *actually did* happen after the Flood as characteristic of what *should be expected* to happen in all such cases, rather than as some bizarre irregularity which just happened to strike the one and only time the “experiment” was actually run.

(Now I suspect that it could be shown, using quantitative models of the geographic spread of growing populations, that a millennium is a very reasonable figure for the rediscovery and resettlement of Ireland, starting from a few survivors in southeast Turkey following a disaster like the Flood, but I will not attempt this here.)

Given that a millennium is a normal time for humans to take to discover and settle Ireland starting with just a handful of people in the mountains of southeast Turkey, then an interesting question arises. Why was Ireland only initially discovered and settled 4000 B.C., just 500 years before the Flood? Why was it not discovered many thousands of years before the Flood, way back in virtual history?

Now I sense that I need to pause and explain what it is I am asking here and why I am asking it.

¹⁰Gerald E. Aardsma, “A Unification of Pre-Flood Chronology,” *The Biblical Chronologist* 5.2 (March/April 1999): 1–18.

Virtual history review

The discipline of Biblical chronology, in its modern application, teaches us that Creation (i.e., the bringing into existence of the whole of physical reality out of nothing) took place 5176 ± 26 B.C.¹¹ Prior to 5176 ± 26 B.C. there was neither matter nor space nor time.

As we examine the physical substance of the creation today, however, we find that it contains an apparent history stretching back billions of years. This “pre-Creation” “history” is what is meant by the term “virtual history”. We use the term “virtual history” to separate between that “history” (which never actually took place) “prior” to Creation in proleptic (i.e., mathematically assumed; not real) time, and real history (that which actually took place) beginning 5176 ± 26 B.C.

Our justification for making this sort of distinction follows logically from an analysis of creation-type miracles recorded in the New Testament. We observe, for example, that any analysis of the physical substance comprising the bread and the fish which Jesus supernaturally created in the feeding of the five thousand reveals a “history” of the created bread and fish quite different from its true history. The created bread and fish appear, for example, to have been cooked. But we know, in fact, that they were not cooked. They were created already in the cooked state. Thus the physical substance emerging from this creation-type miracle has a virtual history quite different from its true history.

Repeated observations of this sort on a variety of creation-type miracles in the New Testament lead inductively to the general principle that virtual histories are intrinsic artifacts of all creation-type miracles. Application of this principle to the creation period itself (i.e., Creation, Fall, Curse) leads immediately to the conclusion that the creation will necessarily also exhibit a virtual history within its physical substance.¹²

¹¹Gerald E. Aardsma, “Toward Unification of Pre-Flood Chronology,” *The Biblical Chronologist* 4.4 (July/August 1998): 1–10.

¹²For a full discussion of these matters see: Gerald E. Aardsma, “A Unification of Pre-Flood Chronology,” *The Biblical Chronologist* 5.2 (March/April 1999): 1–18.

Questions explained

My questions about the pre-Flood settlement of Ireland are posed within this context. We have previously seen that human remains and artifacts are found to date back beyond 9000 B.C. within the mound of ancient Jericho.¹³ Indeed, anthropologists inform us that mankind has existed in essentially modern form for 25,000 to 35,000 years. (What they are saying by this, though they don't know it, is that the virtual history of modern humans extends some 20 to 30 thousand years into proleptic time.) But if a handful of modern humans in the Middle East can be expected to give rise to a population which overflows into Ireland within about a thousand years, as we have seen to be the case following the Flood, then how did it happen that a good deal more than a handful of modern humans in the Middle East failed to inhabit Ireland in over 20 thousand years prior to the Flood?

Methodological rule

Now I must pause and explain about virtual history here again. You will notice that in this question I am treating virtual history just as if it had really happened, even though I am well aware that it never did really happen. This, I believe, is the proper way to treat virtual history. Just as it is improper to conclude that because the virtual image of yourself in the mirror is not real, therefore what you see in the mirror is meaningless, so it is improper to conclude that just because virtual history never really happened therefore it is meaningless. Virtual history gives every indication of being comprehensible and information rich, not chaotic and information deprived. It is a simple fact, for example, that oil prospectors learn how to locate underground oil deposits more efficiently in the present by studying processes of oil formation in virtual history. Virtual history is comprehensible and information rich.

You will also notice that I am treating virtual history as if it were continuous with real history—as if virtual history graded smoothly into real

history—even though I am well aware that in reality there exists a profound discontinuity at the point at which any creation-type miracle is performed. This, again, I believe to be appropriate. Rays of light are treated, in optics, as if they have come directly from the virtual image in the mirror, even though everyone is well aware that those rays of light have, in fact, not come in unbroken lines from “inside” the mirror at all. In point of fact we know that those rays of light have experienced a complete discontinuity—a reflection—at the mirror's surface.

The simple methodological rule I propose for the present is: treat virtual history as if it really happened, remembering all the while that it never really did happen. This rule may well turn out to need fine tuning in the future—I suspect we have much to learn yet about the nature of virtual histories—but it should provide an adequate foundation from which to begin to think about and work with the virtual history of the world which we are actually confronted with.

Technological advancement theory

Back to the main question. If modern humans were living at Jericho in virtual history 9000 B.C., why was Ireland only inhabited 4000 B.C.?

One could argue perhaps that technological advancements in agriculture were needed before a large enough population could be achieved to impel colonization of Ireland's shores. The idea here would be that lack of technological ability impeded food production and hence population growth for many millennia, but once the necessary hypothetical technological advancements had been made population was able to grow rapidly, resulting ultimately in the overflow of population which reached Ireland's shores 4000 B.C. One could go on to argue that these hypothetical advancements were retained by Noah and his family and thus immediately available to people following the Flood. Thus Ireland could be resettled by modern humans following the Flood far more quickly than it was initially settled by modern humans prior to the Flood.

This is a possibility. But it seems to me to encounter some difficulty with the actual field data of archaeology. Specifically, a settled agri-

¹³Gerald E. Aardsma, “Toward Unification of Pre-Flood Chronology: Part IV,” *The Biblical Chronologist* 5.1 (January/February 1999): 1–10.

cultural lifestyle not terribly different from that practiced in many parts of the world up until relatively recent times is seen within the archaeological data many thousands of years before 4000 B.C. For example, Nicholas Postgate, Reader in Mesopotamian Studies at the University of Cambridge, observes that whereas permanent agricultural settlements in South Mesopotamia (where the Eden region was located) presently appear to extend back to the early Ubaid only (i.e., roughly 5500 to 6000 B.C.)¹⁴, “on the North Mesopotamian plains settled agricultural life reaches back thousands of years earlier”.¹⁵

Conception rate theory

Another possibility presents itself with Genesis 3:16, the passage discussed in the introduction to this article. This is the possibility that God supernaturally increased the conception rate at the time of the Curse. This is suggested by the literal reading, “I will greatly multiply your pain and your conception”.

This possibility works out well quantitatively. A thousand years prior to the initial settlement of Ireland takes us back to 5000 B.C. The words of Genesis 3:16 appear to have been spoken by God only a short time after Creation, 5176±26 B.C. These two dates are indistinguishably close in the present context.

The idea that the conception rate within the human species was very much lower prior to 5176±26 B.C. explains the creeping rate of population growth seen within the archaeological record for the several ten-thousands of years of mankind’s virtual history. It also explains the timing of mankind’s first population explosion, between Creation and the Flood, alluded to in Genesis 6:1, discussed last issue. And it explains, in a quantitatively satisfying way, why Ireland was only initially settled 4000 B.C., and then resettled 2500 B.C.

Now I must clarify, in closing, that I am not suggesting that Eve was aware of the ten-thousands of years of virtual history for mankind we find

within the physical substance of creation today as God spoke those words of judgment upon her in the Garden. I am not suggesting that God’s pronouncement “I will greatly multiply your pain and your conception” was relative to what virtual history in proleptic time shows today. The virtual history in proleptic time we see today, I have previously shown, only followed the Curse; it did not precede the Curse.¹⁶ God’s judgment of Eve in Genesis 3:16, as all of His judgments in Genesis 3:14–19, appear to be referenced to what might have been the case in their future had Adam and Eve continued in a state of obedience, not to what had been, or appeared to have been, the case in their past. I am suggesting only that the virtual history of mankind we see today may be invested with the knowledge that the conception rate within the human species was supernaturally altered at the time of the Curse.

And in all of this I am hoping to point the way for Christian men and women of talent and understanding to begin to explore the past, free of the bondage to naturalism under which the evolutionary paradigm has so long labored, and free of the ignorance of the necessity of virtual history in proleptic time which has stunted Christian perceptions and explanations of the remote past to the present time. ◊

Research in Progress

Over the years of writing and publishing *The Biblical Chronologist* I have formulated a number of policies to help keep this endeavor on track. One of my policies is that research takes precedence over writing. Said another way, my overriding responsibility is to see to it that the research which so desperately needs to be done in the field of Biblical chronology at present actually gets done. This is in contrast with the idea that my job is to churn out newsletter pages. If the present issue seems less bulky than some, you may find the explanation within the (pleasingly) hectic pace of research on several important fronts over the past few months.

It would be imprudent to share all that is happening on all research fronts at this time—not all

¹⁴Gerald E. Aardsma, “Toward Unification of Pre-Flood Chronology,” *The Biblical Chronologist* 4.4 (July/August 1998): 9.

¹⁵J.N. Postgate, *Early Mesopotamia: Society and Economy at the Dawn of History* (New York: Routledge, 1994), 23.

¹⁶Gerald E. Aardsma, “A Unification of Pre-Flood Chronology,” *The Biblical Chronologist* 5.2 (March/April 1999): 1–18.

who read these pages are friends of this effort by any means—but I am free to mention two things I think you will find of interest. First, of course, must be an update on the ark search project.

Update on the Ark Search

The research team worked frantically during the early part of August to place an order with SPIN-2, a Russian satellite, for a custom photo of IO3. It was clear this would be our last opportunity to obtain a custom satellite photo of IO3 this year. All else was necessarily dropped in an attempt to make the August 12th order deadline.

Several days were spent working out particulars and checking specifications (e.g., photographic resolution, cost, final image format, satellite coordinates, etc.) with the U.S.-based commercial satellite imagery company.

Unfortunately, the team learned, in the eleventh hour, that the SPIN-2 camera was incapable of obtaining a photo at the angle we required. This restriction turned out to be fatal to the entire effort.

It presently appears we will need to wait until next summer to obtain the modern satellite photos we are presently seeking. Expectations are that more modern satellites, with better resolution and greater photographic flexibility, will be available to us at that time.

Meanwhile, the team is working on improving its ability to monitor snow cover on Mt. Cilo, and exploring other possible means by which photographic coverage of the south side of the mountain might be obtained.

Ageing Research

I have once again begun to delve into the question of why human life spans shortened the way the Bible says they did following the Flood. Why did people live 925 years on average before the Flood while they only live 75 years on average today? I have worked on this question off and on in various ways for nearly two decades now. Now that we have an accurate model of the Flood to work with I feel the time is right to launch a serious assault on this question.

There have been a number of suggested answers to this question in the past. One which surfaces frequently in lay circles is that there was a water

canopy above the atmosphere prior to the Flood which filtered out harmful cosmic radiation, allowing people to live longer. This theory is easily falsified by any one of several considerations. For example, it is a fact that people who live at high altitudes today are exposed to much more cosmic radiation than people who live at sea level, yet there is no discernible difference in the average longevity of these two groups. Note also that the hypothetical canopy is supposed to have collapsed at the time of the Flood. Thus, if the difference in longevity before and after of the Flood is due to a canopy, then human life spans should have changed suddenly to 75 years immediately following the Flood. But the Biblical data show they changed gradually over the course of a thousand years. Finally, I need to point out again, as I have in the past, that the whole canopy idea encounters seemingly insurmountable scientific problems and lacks any real Biblical support anyway.

But it is possible to fashion more credible theories of the cause of reduced longevity following the Flood, and that is what I have been working on. I hope to begin to report on this soon. So stay tuned—who knows but what reading *The Biblical Chronologist* may add a few more years to your life!

The Biblical Chronologist is a bimonthly subscription newsletter about Biblical chronology. It is written and edited by Gerald E. Aardsma, a Ph.D. scientist (nuclear physics) with special background in radioisotopic dating methods such as radiocarbon. *The Biblical Chronologist* has a threefold purpose:

1. to encourage, enrich, and strengthen the faith of conservative Christians through instruction in Biblical chronology,
2. to foster informed, up-to-date, scholarly research in this vital field within the conservative Christian community, and
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