

IN THE BEGINNING...

GEN. 1: 1 In the beginning God created the heavens and the earth.

PROVERBS 3: 19 The LORD by wisdom founded the earth; by understanding He established the heavens.

PSALM 33: 6 By the word of the LORD the heavens were made; And by the breath of His mouth all their host.

REVELATION 4: 11 Worthy art Thou, our LORD and our God, to receive glory and honour and power; for Thou didst create all things, and because of Thy will they existed, and were created.

Thus we are told there was a beginning of all things we know and observe; God by His own wisdom and understanding created and founded the universe.

1959 SURVEY

Now travel forward in time with me to the year 1959 A.D. (I personally prefer A.D. to C.E. for it recognises that Jesus our Lord Messiah is God's pivotal intervention and revelation in the history of mankind.) 1959 was the occasion for a conference in the USA of many of the world's eminent scientists. A questionnaire covering a range of topics was distributed to that august scientific body. The one question relevant to my presentation was this: What is your understanding of the Age of the Universe?

Now, in 1959 cosmology was in its infancy. Certainly, astronomy was there. But cosmology, the physics, was just developing. The results of this questionnaire, and of this question in particular, were initially published in the most widely read scientific journal in the world "Scientific American", and were subsequently re-published just a few years ago.

Two-thirds of the scientists at that conference gave the same answer, as to what is your concept of the Age of the Universe? Two-thirds is a substantial majority. And I am sure you will not be surprised to learn they did not say, "Oh, the universe is very young; our world is 6,000 years old!"

No! In 1959 the great majority answered, "Age of the Universe? We know it's always been here. The Universe is eternal. There was no beginning. The Greeks taught us that. Aristotle and Plato 2,400 years ago told us the Universe has always been here. Matter is eternal. That Bible story that says, "In the beginning God created the heavens and the earth ..." is a soothing story that helps the simple folks rest easy at bedtime. Makes us feel warm and fuzzy. But there was no beginning, and we the learned sophisticates know better. The Universe is eternal.

That was 1959. And the majority of the scientific community held to the theory that the universe is eternal; the universe is unchanging and has always been here. But for 3,300 years, since the revelation at Sinai, the Bible denied that the universe was eternal, and testified, there was a beginning.

The rest is history. For just a few years after 1959 and those published results, mounting scientific cosmological evidence brought a major shift in the scientific community. In particular, in 1965 two scientists, Wilson & Georges Lemaitre, discovered the echo of the Big Bang in the temperature of the night skies, and the accepted cosmological paradigm was revolutionised, turned on its head. The Universe had a beginning!

It cannot be overstated. Science will probably never make a greater change in its understanding of our world relative to the Bible, than the fact that we now know the first words of Genesis are correct --- "In the beginning ..." There was a beginning. Gerald Schroeder states, "Evolution, dinosaurs, cavemen are all trivial controversies when compared to the concept of a beginning." And while a beginning does not for the scientists confirm there was a Beginner, it does open the way for that possibility.

Now we come to the rub. The question is: When did the Universe begin? How old is the world? Science says the Universe began about 15 or 16 billion years ago. Genesis seems to say, the beginning was just 6,000 years ago. As you are aware, The Church and the secular world have drawn their battle lines over this question. Clearly they both can't be correct. Or can they?

THREE CREATIONS IN GENESIS

The Hebrew word for 'create' (*bara*) means to bring into being that which previously did not exist. It is used for 3 special creations in Genesis 1...

1. The Heavens and the Earth with their laws of nature. God "created" the heavens and the earth. Referred to as the ex nihilo creation.
2. Day 5, animal life (*Nephesh*). Genesis 1:21 says God "created" "every living creature that moves..."
3. Day 6, the creation of the *Neshamah*, the soul of human life. Genesis 1:27 says God "created" man in His own image.

BIBLE CALENDER & ROSH HASHANAH (JEWISH NEW YEAR)

At the beginning of the Jewish New Year 3 trumpets are blown and it is 3 times announced, "This is the birthday of the world". Notice, not the birthday of the creation of

the Universe. Jewish New Year announces the last of the three creations that occurs in the 6 days of Genesis... the creation of Adam.

Leviticus Raba (chap. 29:1) states, "Everyone agrees that Rosh Hashanah [Jewish New Year] commemorates the creation of the soul of Adam." That is, 1,500 years ago the 6 Days of Genesis were taken out of the calendar when there was no need for them to be separate. The reason is that time was described differently in those 6 Days of Genesis. Day by day we read, "there was evening and there was morning". The staggering truth is that these Talmudic commentators tell us 1,500 years ago that the Bible has two clocks!

The Jewish New Year announces that the Genesis clock on earth started counting roughly 6,000 years ago from the creation of the “breath of life”, the *‘neshamah’* of Adam. The clock in Genesis relative to mankind does not start ticking until the creation of Adam. The six previous days are separate. So Genesis has two clocks that are ticking. One starts from the beginning, the creation of the Universe, with its space, time and matter. The other starts from Adam when God created him by breathing into him the “breath of life”.

TALMUDIC COMMENTARY. Allow me to anticipate a common objection from the scientific community that is raised against those of us who happen to believe the Genesis account of creation. As each new scientific discovery comes along, they allege, we bend the text to suit the discovery. Thus they charge, “You Bible believers are giving us a modern rationalizations of a text that is thousands of years old. You just bend the text this way then that way to fit in with the latest scientific discoveries.”

This is where I like Schroeder. He has been an MIT-trained nuclear physicist and oceanographer with impeccable scientific credentials. He is also a Jew who comments on the text by quoting the Talmudic Commentators, most notably Onkelos (ca. C.E. 150), Rashi (Solomon ben Isaac, C.E. 1040 -1105), Maimonides (Moses ben Maimon C.E. 1135 -1204) and Nahmanides (Moses ben Nahman, C.E. 1194 -1270). These Talmudic commentators wrote long before the dawn of our modern scientific era, long before modern physics, long before modern cosmology. By citing their ancient commentary we avoid the temptation of bending Bible interpretation into modern scientific discoveries. Indeed, Schroeder shows it is the other way round. It is modern science that is always catching up with its understanding of the Biblical record as understood by the ancients.

Once we come to the creation of Adam the flow of time is described in completely different terms. We begin to read about years. From Adam onwards, from Adam forwards, the flow of time is totally human. But prior to Adam, time is almost an abstract concept.

DEUTERONOMY 32:7 reads,

“Remember the days of old,
Consider the years of all generations.
Ask your father and he will inform you,
Your elders, and they will tell you.”

Here, Talmudic commentators inform us that Moses breaks the Bible’s calendar into two parts:

1. The Days of old; then separately...
2. The many generations. Remember, the Talmud says, 1. There are the 6 Days of Genesis and, 2. There are the years of the many generations from Adam onwards.

So the second clock in the text teaches us the age of the world is 6,000 years plus 6 Days. It is only with the appearance of Adam that the accounting of time changes dramatically (p. 46 SoG). From Adam onwards we are introduced to human years. Adam & Eve live 130 years

and become the parents of Seth (Gen. 4:25; 5:3). Seth lives 105 years and fathers Enoch (Gen. 5:6). The passage of time is now totally tied to the events on earth being described.

So, the puzzle is this: If, as those ancient commentators claimed, the six days of Genesis are 24-hour days, then why not include them in the calendar? Why not have the calendar start ticking six days earlier? And why must these commentators then tell us these days were indeed 24-hour days but somehow they contained all the secrets and ages of the universe? The confusion is intense because, if these six days are ages, why refer to them as six 24-hour days?

The commentators realized this truth was in the text, even if they did not scientifically understand it. They could read for example, Genesis 2: 4 “These are the generations of the heavens and the earth when they were created in the day the LORD God made earth and heaven”. They could read for example, in Genesis 5:1 “This is the book of the generations of Adam. In the day when God created man [Adam].” In both verses generations are juxtaposed to days of Genesis. Somehow the Talmudic commentators understood that time from Adam onwards was being accounted differently, to the time that had transpired previously. What’s the answer? [We will come to Albert Einstein shortly, who has taught us that we need an understanding of time that is not obvious to our unaided senses. Einstein has taught us that time is relative. The rate at which time passes is not the same in all places in the universe. Einstein has taught us that time can stretch and time can be squeezed, depending on local gravity and velocity. More of the science which has unlocked the Genesis secret soon.] But first ...

DAY ONE

We come to a critical matter of interpretation from the Hebrew text into our English translations. I don’t know what translation you are reading now, but for example, the KJV reads in Genesis 1:5 that after God separated the light from the darkness, “there was evening and there was morning the first day.” This reading, “the first day” is most unfortunate and leads to a false understanding. It should read, “there was evening and there was morning, Day one”.

There is a qualitative difference, the Talmudic commentator Nahmonides informs us, between “one” and “first”. One is absolute. First is comparative. Genesis 1:5 could be translated, “The Day of Day one”.

Rashi gives us this phenomenal insight into the text here. He comments that “Day one” was when time was created! I can understand Genesis 1:1 when it says “in the beginning God created the heavens and the earth.” I can understand matter and space being created. But time? How do you create time? I can see distance and space and matter. I can feel energy. But time? I can’t see it. Can’t hold it. But here Genesis 1: 5, says Rashi, thousands of years ago, the Bible tells us time was created, “Day one”. Time starts now.

EINSTEIN

This is exactly what Einstein taught us. Einstein taught us in the law of relativity that time itself was created.

So, because “Day One” is absolute and not comparative, Genesis tells us the Bible’s view from those first six days. We look at the Universe and ask, “Hmm. How old is it?” And looking back with our scientific observations we say, “Oh, its about 15 billions years old (that’s 15,000 millions of years). That’s our view of time.

But what is the Bible’s view of time from the beginning? It is different. And Einstein has taught us time is relative. The perception of time depends on the viewer’s position. Einstein has proved that a minute on the moon goes faster than a minute on earth. And a minute on the sun goes slower than a minute on earth. You wouldn’t feel these slight but measureable differences in time, because when in those places your biology would be a part of that local system. But time passes at different rates from one system to another. Time can be stretched out. Time can be squeezed. Depending on the velocity and the gravity of each local system.

If you visited another planet in a far off galaxy for say a year, then returned to earth, you might find 100 years had passed by on earth! You experienced 1 year of your time. Meantime, the earth experienced 100 years for your 1! If you were 20 years old when you left and landed on that far off planet, when you returned, you would be 21 years old, but everybody else, assuming they were also 20 when you left, and assuming they could live that long, would now be 120 years old! Einstein’s law of relativity has proved that both times are correct! It all depends on the position of the observers. One minute can equal a year. Or one year can equal a minute. This is not theory. This is scientifically observable fact!

Remember PSALM 90: 4? “For a thousand years in Thy sight are like yesterday when it passes by, or as a watch in the night”.

Is there a hint here that time is relative to the perspective of the observer? Is there a hint that the passage of time depends on the relative positions of different observers? That time can stretch or indeed shrink, depending on the observation point of its observers; that depending on where the observer is, a day can be a thousand years and a thousand years pass in the blink of an eye?

There are billions of locations in the universe where if you could place a clock at that location it would tick so slowly, that from our perspective it would take 15 billion years, but on earth it would take only 6 days! Fact!

There is no avoiding the Biblical text. God took just 6 days, six 24-hour days to form mankind from the material produced at the creation. The Talmud tells us the duration of the 6 days of Genesis is no more than the six 24 hour days of our working week. Indeed, all the ancient commentators say nothing other than the days are 24-hour days as we know and experience them. They also tell us that although the days are each 24 hours they contain all the secrets of the ages of the world. But cosmology proves that the process took 15 billion years to

accomplish the same thing. So, which time is correct? It took Einstein and his law of relativity to figure it out and to allow us to harmonise Genesis and the Bible.

The staggering truth is, and with no allegorical modifications of the Biblical text, both times are correct! Schroeder: "It is unequivocal. Six 24-hour days elapsed between "the beginning", that tick of time at the start of the Big Bang expansion, and the appearance of mankind, and, simultaneously, it took some 15 billion, 365 days to get from "the beginning" or the Big Bang as astrophysicists call it, to mankind." Two clocks. Both are set at the right time.

Theological protestations based on faulty understandings of either scientific cosmology or the Biblical text are counterproductive to a search for God-honouring truth. You ask how we can stretch 6 days to encompass 15 billions of years? Or the reverse, how can we squeeze 15 billion years into 6 days? Ps. 90 reveals that God's perception of time is quite different from our earth-bound perspective. The literal meaning of this verse suggests time is relative, time seems to pass at different rates for different participants in an event, but not necessarily being different in reality. Relativity is an empirically observed fact.

ILLUSTRATION OF PULSE OF LIGHT

In our imaginations, let's try to go back to the very beginning, what science calls "The Big Bang". Let us imagine there was an intelligent community there at the very beginning, and that intelligent community shot out a laser of light. Every second that laser pulses. One thousand one, Pulse. One thousand two, Pulse. One thousand three Pulse. And encoded in that pulse of light that community encoded the message, "We are sending you a pulse of light every second". And every second they shoot out their pulse of light, with its message. [Just by the way, we do transmit messages in light. It's called fibre-optics.] A pulse of light every second goes forth with its encoded message. Pulse. Pulse. Pulse.

And here today, right now in Atlanta, is our intelligent community. We have set up a big receiving dish, monitoring, waiting, listening, for any signs of intelligent life out there. Now, by chance, suddenly, right here and right now, our dish picks up a pulse of light. Beep!

Now, light travels at 186,000 miles per second (300 million metres per second). So remember, that intelligent community at the very outset of the Big Bang creation of the universe sent out their pulses into the expanding universe every second. So, the pulses are each separated by 186,000 miles. It is a scientific fact that our universe is stretching, expanding and has been since the beginning. So as these pulses of light travel through the ever-expanding universe, through space, what's happening to the pulses? That's right. They are getting further and further apart. The spaces between each pulse are stretching. They are now separated by the space of massive, almost incalculable distances.

When we hear that first pulse that beeps with it's message "We are sending you a pulse of light every second", we all gather round the receiver to get the next pulse. Wow! A pulse from intelligent life out there and they are sending us a pulse every second! Wait for it! Where is it? It should be here any second, "We are sending you a pulse of light every second", that's the message. Who knows what's out there!

But no pulse arrives. Maybe our antenna needs re-tuning? Maybe the dish needs re-positioning? But we are disappointed. No message arrives. There is no second beep the next second, not even the next 60 seconds, or indeed, the next year of seconds. Will it ever arrive? Was it all a delusion? No. That second pulse won't arrive in your lifetime. Maybe that second beep won't arrive on earth for another billion years. You see, it all depends on how long in distance the pulse has travelled in space that is forever stretching.

This is standard cosmology. The great scientist Hevelius said, "The standard interpretation of the stretching of information is in effect the expansion of the universe [and] predicts that the same stretching factor of the universe applies to the observance of the rates of the occurrence of events". Hevelius is one of the heavy-weights of Big Bang cosmology.

We look at time going backwards. We see 15 billion years. It's a huge universe. But at the beginning, looking forwards, it was a very small universe: Billions of times smaller. The general relationship between the beginning and the time today is a million million (a 1 with 12 zeros).

So, if the view from that intelligent community from the beginning said, "We are sending you a pulse of light every second", we from our present day perspective see it stretched out every million million seconds. Time has stretched because the universe has expanded. But speaking of creation the Bible does not say "every second" does it? The Bible says, "every day". There were 6 days, six literal 24-hour days, of God's creating and making.

When the first message pulsed out it was indeed every second on their clock. But from our receiving end we don't perceive it every second on our clock. And both clocks are true! Genesis says, from the beginning God sent you information every 6 days. But looking back we did not receive that information every 6 days according to His clock. We have received it as 6 million million days. This is standard cosmology and I think, acceptable Biblical interpretation. I sit 6 million million days since creation in the beginning. What's that in years? Well, divide 6 million million by 365 days and you get 16 billion years! As Schroeder says, not a bad guess from a text that is 3000 years old!

Every time the universe expands to double its size, time is stretched double. Every time the universe doubles in size, time stretches to twice as long. It's exponential. When the universe was small, time doubled slowly [Cosmology has proven this observation by its measurement of Cosmic Background Radiation or CBR.] So, the days of Genesis, as viewed from the start of time for the earth, Day One, can indeed remain days and yet contain all the bygone ages of the universe.

Who was present and watching the clock before Adam was created? God, of course. And that is the key. During the development of the universe and prior to the appearance of mankind, God had not yet established a close association with the earth. Although verse 1 says "In the beginning God created the heavens and the earth" the word 'heavens' does not mean the stars and other celestial bodies for they came forth only on Day 4 (Genesis 1:16). More likely the 'heavens' here corresponds more accurately with our modern understanding of the term 'space', such as when we say the universe is space and time. In other words, the text is telling us in the beginning God created the basic space-time universe. And the term 'earth' in verse 1 refers to the component of matter and not this planet Earth. Don't forget, for the first one or two days the earth did not exist! We are specifically informed, "the earth was without form". The word for 'earth' here is '*eretz*' and is often translated as 'ground' or 'land', so "this verse must speak essentially of the creation of the basic elements of matter, which thereafter were

to be organised into the structured earth and later into other material bodies.” (Henry M. Morris, p. 41.) So what Genesis 1:1 is saying, is that in the Big Bang beginning, God created the space-time-energy-matter of our universe. The primeval substance was created and from this substance the host of the heavens and the Earth would be made in the subsequent 6 Days.

EXODUS 31:17 explicitly expounds this, “...for in six days the LORD *made* heaven and earth ...”. From what were the heavens and the earth “made” or formed in those six days? Answer: From the created primeval substance of space-time-matter brought into being in the beginning. The important point to remember is that there was no Earth in the beginning of the universe, so there was no possibility of a blending of the reference frames, there was no common calendar between God and the Earth. Einstein has taught us in the Law of Relativity that “it is impossible in an expanding universe to describe the elapsed time experienced during a sequence of events occurring in one part of the universe in a way that will be equal to the elapsed time for those same events when viewed from another part of the universe. The differences in motions and gravitational forces among the various galaxies, or even among the stars of a single galaxy, make the absolute passage of time a very local affair. Time differs from place to place.

In the universe a billion clocks were and still are ticking away, each at its own, locally correct time. Schroeder states, “The passage of time on any one star could be as different from the passage of time on other stars as six days is different from 15 billions years. As such, there is no one correct age for the Earth or the matter contained therein. The duration of days or years or even billions of years is only a relative observation. It is only locally correct. Until the observer and the observed are joined in a single space-time frame, there is no one-to-one correlation. For the Creator and the created, the union of frames of reference occurred when mankind, represented by Adam and Eve, absorbed the image of God, some 5,700 years ago.” (GatBB p. 157).

Indeed, it was not until the creation of Adam that God signalled a monumental change in relation to the Earth. With the creation of Adam, both the created and the Creator became inseparably linked. And at this juncture one clock out of the possible billions of clocks ticking in the universe, was irrevocably chosen as the one by which all future acts would be measured. At Adam’s appearance our world started to operate in the same space-time reference as its Creator.

This is remarkable. The ancient account of the Genesis creation, with its two ticking clocks, was understood millennia before, and therefore in isolation from, the current scientific observations of current cosmology. It is not that theology has had to respond to science. Rather it is that science through its progressive observations of our universe has come to agree with theology.

In the first six days of our universe’s existence, the Eternal clock saw 144 hours pass. We now know that this quantity of time need not bear similarity to the time lapse measured at another part of the universe. As dwellers within our part of the universe we estimate the passage of time with clocks found in our local time frame, clocks such as radioactive dating, geologic placement, and expansion distances in our expanding universe. It is with these clocks our humanity travels. (GatBB p. 53).

'FORMED' & 'CREATED'

The Bible makes a distinction between God creating and God forming or making. Compare carefully the wording of these two texts:

GENESIS 1: 1 In the beginning God *created* the heavens and the earth.

EXODUS 20:11 For six days God *made* the heavens and the earth.

Note carefully, "in the beginning" all was created [*ex nihilo*] but it took 6 days of *making* from the creation to '*form*' the heavens and the earth and everything in them.

SABBATH

GENESIS 2:1-3 "Thus the heavens and the earth were finished, and all the host of them. And on the seventh day God ended His work which He had made; and he rested on the seventh day from all His work which He had made. And God blessed the seventh day, and sanctified it: because that in it He had rested from all His work which God created and made."

Biblical sages long ago warned us that our perception of the events of the first 6 days of Genesis would be inconsistent with our understanding of nature for the time following Adam. They learned this also from the descriptions of the Sabbath rest (contained in the Ten Commandments such as Exodus 20:11, Zechariah 5:11 and 2 Samuel 21:10) where the same word for resting is used. The sages wrote that when we read, "Thus the heavens and the earth were finished, and all the host of them. And on the seventh Day God ended His work which He had made; and He rested on the seventh day from all the work which He had done" that the intent is not that God Himself needed a rest. He was of course, not tired or exhausted needing to recuperate. The meaning rather, is that the Creator caused a repose to encompass the universe that had been made in the first 6 days. According to Maimonides, our perception of God's rest is that from this first Sabbath, the laws of nature, including the flow of time, would function in a "normal" manner. In contrast, the flow of events that occurred in the first 6 days would appear illogical, as if the laws of time and nature had been violated.

The first Sabbath marks the start of the post-Adam calendar. The sages' predictions of a perceived incongruity between Biblical and scientific views of the early universe have thus been met!

Schroeder says, looking at this rate of expansion from that initial Big Bang creation, taken exactly from the principles of physical cosmology, and relating it to this relationship between the beginning and now, we arrive at an uncanny correspondence between science and Genesis...

- Day one lasted 8 billion years.
- The second day (24 hrs.) was 4 billion years.
- The third of the 6 twenty-four hours was 2 billion years.

- The fourth 24 hour day was 1 billion years.
- The fifth 24 hour day was half a billion years.
- The sixth 24 hour day was a quarter of a billion years.

The total is 15 and three-quarters of a billion years! And the really ‘freaky’ thing is that we can now tell which day of Genesis existed in the past. So, the Bible goes out on a limb and not only tells you the age of the universe, but tells you exactly what happened on each day! Schroeder says that nuclear physics, archaeology, palaeontology, cosmology and all the empirical sciences perfectly match each day of the Genesis record. It’s enough to send chills up and down your spine!

Is the Universe 15-16 billions of years old? Yes! Is the Earth a mere 6,000 years plus 6 days old? Yes! Two clocks. Both are correct. But as always, science is just catching up with the Bible!

It’s enough to cause us to break forth into praise to the Almighty God Who by His wisdom created the heavens and the earth and by His understanding founded the earth. Age unto age and Day unto day utters His praise!

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WHAT ABOUT DINOSAURS AND CAVEMEN?

I grew up believing dinosaurs walked with men. They were destroyed by Noah's flood. There were pictures in the Christian books I used to read my kids of dinosaur footprints alongside of man's footprints. I remember the "evidence" of the Peluxus Valley in Texas. A man had run in terror through mud. A dinosaur had also run in haste through the mud. And the footprints of both man and dinosaur were forever fossilised together. Perhaps some unidentified threat had caused both to flee in haste? Perhaps the man was running from that terrible giant Lizard? Either way their telltale footprints were preserved alongside each other for all to see.

Men and dinosaurs had to have co-existed, I believed because death did not exist in the world until Adam's rebellion. Does not Romans 5: 12 say, "Therefore, just as through one man sin entered into the world, and death through sin ..."? Up till Adam introduced sin into God's perfect world nothing had died. So I was taught. So I believed. And so I taught others.

As I grew older I became alarmed at the growing and reliable scientific evidence to the contrary. If a range of scientific disciplines was to be trusted, the dinosaurs existed long before Adam who, according to the Bible account, only recently came on the scene about 6,000 years ago. Yet many scientific disciplines were combining to indicate the dinosaurs walked on earth around 75 million years ago. I became alarmed at the desperate measures some Christian apologists adopted to counter this empirical evidence. Surely radioactive dating is unreliable? Or, perhaps God had put their bones into the ground to make it look like the earth was older than mankind? After all, if God had created Adam already mature [he had no navel supposedly!] could He not have put dinosaur bones into the rocks to give the impression of antiquity also? Perhaps God put those dinosaur bones in the ground to test our faith? Would we believe what He tells us in the Bible, or would we choose rather to believe what godless and atheistic science was telling us?

And why doesn't the Bible seem to say anything about dinosaurs? Once again I have to give credit to my source when I answer this. This is not my original exegesis, but Gerald Schroeder's. Turn with me to ...

GENESIS 1:21 "And God created the great sea monsters, and every living creature that moves, with which the waters swarmed after their kind, and every winged bird after its kind; and God saw everything that it was good".

On Day 5 God creates the basis of all animal life. This is the second special creation, the creation of '*nefesh*', conscious life. Among the categories of animals listed is a category called "*taninim Gedolim*". English translations have at least 5 different meanings for the plural word '*taninim*': Whales, alligators, sea monsters, even dragons. Yet '*taneen*' the singular of '*taninim*' is a word that appears elsewhere in the Bible and we know its meaning.

In EXODUS 3 God speaks to Moses in the burning bush and tells him to go back to Egypt and lead the Hebrews out of slavery. Moses feels inadequate to the task so the LORD God gives him a sign. "What's that in your hand?" Moses replies, "A staff." A stick. "Throw it on the ground!" So Moses threw it on the ground. And behold! "It became a '*nahash*' ... a snake" (Ex.

4:3). Moses ran from the snake. God next says, pick the snake, the '*nahash*', by the tail. Moses picks the snake up by its tail. And the snake becomes a staff again.

Armed with his staff Moses returns to Egypt and stands before Pharaoh. Pharaoh asks him for a sign. Moses throws his staff on the ground and it becomes a '*taneen*' (Ex. 7:10). Why didn't it become a '*nahash*', a snake?

Just 5 verses later God tells Moses, "Get to Pharaoh in the morning, behold he goes to the water, and stand by the river's edge and the staff which turned into a '*nahash*' take in your hand" (Ex. 7:15).

It's the same staff. The change is first referred to as a '*nahash*' then as a '*taneen*', then as a '*nahash*'. We know '*nahash*' means snake from its use elsewhere. '*Taneen*' must be a general category of animals since it appears in the creation chapter where, other than Adam, only general categories are listed. So, the plural, '*taneen*' must be the general category within which '*nahash*' [snake] falls. And the general category for snakes is ... reptiles!

The biggest reptiles were dinosaurs. But the author of Genesis did not specify dinosaurs directly as that would have broken the pattern of categories listed in Genesis. The entire account in Genesis is stated in terms of categories [phyla or classes] of creatures known or knowable to those present at Mt Sinai 3,300 years ago. Dinosaurs were not part of their world. But the hint, the intimation, was there in the text for subsequent generations. Genesis 1:21 tells us of the *taninim gedolim*, "the giant reptiles" that came in Day 5.

Once again modern science has caught up with the Bible!

THE CAMBRIAN EXPLOSION OF LIFE

The fossil record testifies to a sudden explosion of life. It's worth remembering that until the 1970's the scientific theory of the origin of life claimed that billions of years passed on the newly cooled earth during which inorganic elements randomly coupled and broke apart, and finally after myriads of these random trials a self-replicating molecule formed that led to primitive life.

To the amazement of the scientific community the fossil record shows life started, not after the predicted billions of years, but immediately on the cooled earth. "The billions-of-years-to-produce-life theory had to be discarded ...The Cambrian explosion of life is one of the greatest discoveries of the last few decades. "Consistently new organisms, whether among plant groups or animals, make their first fossil appearance highly specialised and fully developed" (TSoG p. 30). To account for life's immediate appearance, today's scientific theory has even posited that life on earth was seeded from aliens from outer space! They have been forced to this because "according to the fossil record, gradual evolution has been found to be false at every major morphological change" (TSoG p. 29).

In other words, the theory of gradual evolution is unsubstantiated by the fossil record. Gradual evolution is a fundamental tenet of Darwin's theory. But there is no rhythmic flow from the simple to the complex. Staccato is a more accurate description of the fossil record. And most serious palaeontologists now accept that a form of punctuated evolution is the best that can be derived from the fossil record. A life form appears. There may be changes within that form, but its basic structure remains until it disappears and a new, different structure

arises suddenly in its place. “A gradual, or slow, evolution of a new species from one that predates it, is never seen in the fossil record. In fact, an account of the fossil record shows that as far as macroevolution is concerned, stasis, not change, is the trend with all species yet formed” (Ridley, ‘Evolution and Gaps in the Fossil Record’, Nature 286 (1980): 444,). This is in agreement with the Biblical record which tells of a punctuated development of life.

Authors of school textbooks and teachers of biology in our colleges ignore this data. Students to this day are being taught the tale of invertebrates gradually evolving into vertebrates. It is no secret that each individual phylum first appeared as simple aquatic forms and became more complex with the passage of time. The Bible proclaimed this fact 3,300 years ago: first came aquatic animals, then winged creatures and land animals, then mammals. That’s Genesis 101! The Bible knows about development. Humans are the last, not the first of the animals mentioned in Genesis 1. “It is inter-phylum development that has been proven to be a fantasy” (p. 40 SoG). As Schroeder says, “Render unto science that which is science’s proven method for investigating our universe. But render unto the Bible the search for purpose and the poetry that describes the purpose” (p. 40 SoG).

“Among professionals active in evolutionary biology, such as Gould and Dawkins, Eldredge and Smith, a battle rages over whether gradual evolution ever occurred and if it did, why it is not evident in the fossils. The ferocity of the battle sometimes suggests that sudden leaps in the record would imply God’s direct role in evolution while gradualism would mean randomness and no role for God. This is nonsense. Contrary to popular lay opinion, the Bible is mute concerning the driving mechanism behind macro-evolution...” (p. 32).

The Bible tells us correctly not only the timing of the origin of life --- immediately after the appearance of water--- but also proposes the mechanism for life’s origins: “The earth brought forth [life]” (Gen. 1:11). No mention of a special creation is mentioned at this point when life on earth started. Evidently the Creator had placed within the earth itself the special properties to orchestrate the beginning of life. Those properties are the catalysts we observe in the ‘laws of nature’.

Stop for a breather! This is momentous. Science has in the last couple of decades made two of the most important paradigm shifts it could ever make in respect of the Genesis account of creation: 1. There was a beginning to our universe. 2. Life burst forth rapidly on earth, and not via millennia of purely random reactions.

CAVEMEN

It may come as a shock to learn that the ancient commentators and the Talmudic commentators knew about cavemen before modern science discovered the existence of the Neanderthals and Cro-Magnons. They knew of these pre-human animals by reading the Genesis text closely. These commentators point out these ‘cavemen’ were animals with human shapes and characteristics but they lacked the ‘*nehsamah*’ or “the breath [spirit] of life” to make them human (Talmud Keliim 8: 5 and Maimonides in ‘Guide for the Perplexed’, 1:7). According to these ancient commentators, these hominids walked the earth at the time of Biblical Adam and before.

Christians have long struggled with the discovery of the Neanderthals and the Cro-Magnons, because these animals show high degrees of social organisation. They accumulated material

wealth. They used various tools. They engaged in artwork, and had three-dimensional perspectives within two-dimensional representations, and even had finely fashioned sculptures of various animals. Neanderthals even buried their dead respectfully in graves. They lived in communities, in housing. There are well-documented pre-Adam settlements extending from France to the Ukraine. Their cranial cavities are the same as ours, and sometimes considerably larger. And the shapes of the interiors of these brain cavities show they even had the three-layered structure of our brains for at least hundreds of thousands of years pre-Adam, and possibly extend back a million years. Indeed, there is a 2 million-year record of the animal genus Homo. So, the record is all but irrefutable. Either we believe the Creator placed these fossils in the Earth to test our faith in a literal understanding of Genesis or we must acknowledge that a form of animal life very much like human life predated Adam & Eve. "Well within the scope of Biblical tradition is the fact of a directed evolution of man..." (GatBB p. 149).

Ten times in Genesis 1 we read "and God said" which means God was directing the flow of cosmic events towards a goal. We know that goal was the making and the creating of Adam. Each day we are told, "And there was evening and morning". The Hebrew word "evening" is 'erev' and its root meaning is mixed-up, stirred together, disorderly. The idea is that as the sun is setting, and darkness begins to rule, objects become blurred, obscure, indistinct.

The Hebrew word for morning is 'boker' and is the opposite of 'erev' in that when the sun begins to rise, and darkness begins to flee, objects become clear, discernable, distinguishable, and everything appears orderly. The sequence is significant. First, evening, first, disorder, then morning, that is, order. The old commentators observed that Genesis is telling us something crucial about the flow of matter and life in our world. God is directing events in a systematic flow from chaos to cosmic order. This concept is repeated and so emphasised for our instruction.

Now look at the text closely. On the sixth day, God decides to make Man: "Let us make man in our image..." Adam in Hebrew means, "earth" or "soil" ('adamah'). We are specifically told that our physical origin is indeed the Earth (Gen. 2:7).

Man 'FORMED' & 'CREATED'

We have already seen the Bible makes a distinction between God creating and God forming or making. Compare carefully the wording of these two texts:

- GENESIS 1: 1 In the beginning God *created* the heavens and the earth.
- EXODUS 20:11 For six days God *made* the heavens and the earth.

We have noted carefully, "in the beginning" all was created [*ex nihilo*] but it took 6 days of *making* from the creation to 'form' the heavens and the earth and everything in them. This distinction is critical when it comes to understanding man's own development and creation.

The Bible first states that God will make man in His image and likeness (Gen. 1:26). In the following verses it is written, "God created man in the image of God..."(Gen. 1:27). So, both making (forming) and creating are used in Adam's arrival. Note the order. First, the making tells us mankind is formed from a previously existing substance. In fact, it is the same substance, the same material as was used to form the animals and the fowls, "And out of the

ground the LORD God formed every beast of the field, and every fowl of the air....” (Gen. 2:19). Animals and mankind alike come initially from the ground.

So, it is not our physical make-up that makes human beings unique amongst God’s creation. There is no theological problem posed by human-like animals having our physical development come through an evolutionary that is, developmental process. “Indeed, Nahmanides comments on Genesis 1:26 that the “us” of, “And God said let us make man” refers to joint contributions by God and the existing Earth. Here Nahmanides repeats that only on Day One was matter created from nothing.” [Nahmanides, “Commentary on the Torah” Genesis 1:26.] Thereafter, all things were formed from the existing elements. For this reason it is written that at God’s command, the waters and the land brought forth life.” [GatBB p.150].

However, mankind although physically related to his human-like predecessors is not connected by a spiritual line of evolution. Homo Sapiens roamed the Earth for some 300,000 years, prior to the appearance of Adam. But neither the Neanderthals nor the Cro-Magnons evolved into human beings. At a critical juncture almost 6,000 years ago a quantum change occurred. This change is the reason for the Biblically stated partnership between God and the Earth in creating mankind.

That special ingredient, not before mentioned that is summoned at this juncture, is introduced when God breathes the ‘*neshamah*’, the “breath of life” into this creature of the ground and in this way Man became a “living being”. The Bible defines a human being as an animal from the soil with a ‘*neshamah*’ or what we may call a spiritual soul, directly bestowed the Creator God. Genesis 2:7, “Then the LORD God formed man of dust from the ground, and breathed into his nostrils the breath of life (the ‘*neshamah*’) and man became a living being (soul)”.

All animals in common with Adam had received the ‘*nefesh*’, the life-giving soul. The individual that was about to become Adam was no exception. However, into the physical form that contained the ‘*nefesh*’ of Adam, God placed an additional spirit or breath called the ‘*neshamah*’.

Genesis 2:7 “And the LORD formed man [Adam] from the dust of the ground [*‘adamah’*] and blew in his nostrils the breath of life [*‘neshamah’*], and the man became a living being [*‘nefesh’*].”

Maimonides in his “The Guide for the Perplexed” makes this remarkable comment. In the time of Adam, he writes, there coexisted animals that appeared as humans in shape and also in intelligence but lacked the “image” that makes man uniquely different from other animals, being as the “image of God”. [Maimonides, “The Guide for the Perplexed”, part 1, chapter 7.]

“Nahmanides on Gen.2:7 observes that mankind developed through three distinct stages. The material of Adam’s body was initially in the form of inert matter (the dust of the earth). In the first stage of growth, there was a force that produced growth, ‘like that in a plant.’ Then with further Divine input, man was able to move, first as the fish and then as the land animals. Here Nahmanides, still commenting on Genesis 2:7 refers to Genesis 1:20 and 1:24. These two verses describe the sequential first appearances of aquatic life and then terrestrial animal life. Prior to attaining the unique attribute of mankind, Nahmanides continues, the animal that was to become man had both the physical structure and the power of perception of a human. Only when this was accomplished was the spirit of God, the ‘*neshamah*’, breathed into him. Nahmanides concludes this discussion with the observation that the grammatical

construction of this verse (Gen. 2:7) indicates that reasoning, speech, and all the other capabilities of mankind, while not being a part of the spirit, are subject to the spirit than was given to mankind alone among the animals. God's direct and newly created contribution of spirit came to man only after the material part was already intact and fully developed.

ADAM BECAME 'TO' A LIVING BEING

Approximately 1900 years ago the Biblical commentator Onkelos highlighted the subtle wording of Genesis 2:7 that is missed in our English translations, and indeed in most foreign language translations, if not all. There is a little Hebrew word not considered necessary when translating the Hebrew into other languages. It is the word "to". The Hebrew text reads, "Then the LORD God formed man of dust from the ground, and breathed into his nostrils the breath of life [the '*neshamah*'] and [the] man became to a living being [*'nefesh*']". The supposedly superfluous word "to", "and man became to a living being" is in the Hebrew to teach us something significant. And Onkelos says it hints at a change from a lower to a higher form of existence. Onkelos read the verse to say, "And the man became a speaking spirit". That is, he understood the text to be teaching that man is not a speaking animal. Man is a communicating being [soul]. Not just that he can reason and discourse with his fellow human beings, but primarily that he can receive and give rational interaction with his Creator God. As a communicating being, man is able to receive God's propositional truth. It is the '*neshamah*', the breath of God that elevates us from being a mere animal and makes us in the image [shadow] of God.

Man is now differentiated from the rest of God's world in that he can stand in love as a created being before his Creator. He can stand in awe of his meaning in God's order. Here stands an un-programmed part of creation ... real man in a real history, a wonder in that he is truly in the image of His Creator God. A communicating, rational, spiritual, living being who bears testimony to Who God is. God has left Himself a witness that cannot be removed. For even fallen man, sinful man the Bible says is still made in the image of God. Indeed, even though he does not realise it, the unbelieving man, the blaspheming man who says, "There is no God!" testifies of God. Even the atheist or the agnostic who falls in love does not realise it, is testifying to what God is. For as a communicating spirit he is the image of God.

The '*neshamah*' placed in mankind by God, was the last act in the making and the creating of mankind." (GaTBB p. 151) Note the Bible's heavy emphasis on this special creation of Adam. We have pointed out that the Hebrew word for create [*'bara*'] is used at just 3 critical junctures in the Genesis story. The first of these 3 crucial moments is the point at which God created out of nothing the heavens and the earth; the second quantum leap is the point at which He created conscious life [1:21]; and the third is the point at which God created Man. Now, also notice that '*bara*' when used of Man's creation is repeatedly used. Notice the triple emphasis in ---

Genesis 1:27 ...

"So God *created* man in his own image, in the image of God *created* he him; male and female *created* He them."

Genesis 5:1-2 strengthens the triple emphasis when speaking of man's creation --- "This is the book of the generations of Adam. In the day that God created

man, in the likeness of God made he him; Male and female created He them; and blessed them, and called their name Adam, in the day when they were created.”

Both passages put a triple emphasis on the word “create” when talking of Adam. It is as if God is putting multiple exclamation marks saying, ‘See. I have done something most special when I created mankind. Yes, I created the universe out of nothing. Sure, I created conscious life, sentient life, animal life. But do you get how special Adam is? In case you don’t get it, let me tell you once three times, no (!) let Me tell you twice three times. I created Adam. I created man and woman in My image. I created Man! Did you hear Me? I said, I created Adam! Indeed, I created Adam & Eve. Exclamation. Exclamation. Exclamation.

Schroeder adds that based on the literal meaning of Genesis 2:7 and 2:19 man and land animals and birds were formed, and they were formed from the same substance, the ground or the earth. There is, in the two verses an important difference in the spelling of the verb ‘formed’. Although in both verses the tense and person of the verb are identical and the structure of both verses is the same, when describing the formation of mankind an extra grammatically superfluous Hebrew letter ‘yod’, is added to the word ‘formed’. ‘Yod’ is the first letter in the Hebrew name of God and is also used as an abbreviation for God’s Name. By the addition of the extra ‘yod’, we have been told that in the forming of mankind, God touched mankind in a way that was unique. (GaTBB p.152). This is why the description of man’s progress in civilization is recorded in the Bible from Adam onwards. The eternal and the earthly have become intimately linked in mankind. From Adam onwards, the space-time frames of God and the Earth are the same.

So, Genesis defines a human as an animal with a ‘*neshamah*’, the spiritual soul of humanity. There is no Biblical problem with human-looking creatures predating Adam! As the Talmudic and ancient commentators point out, the ‘cavemen’, the Neanderthals and the Cro-Magnons were animals with human shapes but lacking the ‘*neshamah*’. Thus, Adam is now described as being in the “image” of God. We are meant to be God’s shadows, God’s representatives, God’s agents in His world.

The conclusion of all this is to say, that the existence of pre-Adam animals with physiques and intellects similar to humans was discussed at least 1,000 years ago by the Biblical commentators and has been discussed in the last 150 years or so by the archaeologists. The data should not be a threat to either theology or science. It is not by chance the Biblical calendar is dated from the appearance of Adam and not from the creation of the world. Einstein’s Law of Relativity has proven the flexibility of time during those 6 pre-Adam days of Genesis. As Schroeder shrewdly concludes: “If we are ever to reach an understanding of our cosmic origins, an understanding that is compatible with all the information we have, then sceptics looking over each of my shoulders must look carefully into each other’s texts as well.” [GatBB p. 176]

APPENDIX- ARCHAEOPTERYX

Genesis 1:20 records the appearance on Day 5 of a category of animals referred to as 'oaf'. This Hebrew word often mistranslated as 'bird' is more accurately a winged animal. The Hebrew word for bird is '*tsepoor*' (e.g. Gen. 7:14).

Current scientific theory holds that the first appearance of wings was on some water insects about 330 million years ago. There is no fossil evidence of primitive wings prior to that appearance of fully developed winged insects. It's hard to explain the sudden leap from winglessness to fully developed wings with 30cm spans. Unless of course wings were programmed into the DNA in the same way a butterfly's wings are programmed into the DNA of the caterpillar.

"In the entire fossil record, with its millions of specimens, no mid-way transitional fossil has been found at the basic levels of phylum or class, no trace of an animal that was half the predecessor and half the successor." (p. 95).

Well, that's not entirely true. One such fossil has been found and to some Darwinian theorists it is conclusive proof of transitional evolution. That fossil is the archaeopteryx and to the Darwinist demonstrates that a line of reptiles developed into birds. The specimen at the British Natural History Museum is the only fossil of the museum's myriads of fossils that is locked separately. Such is its importance. A few other specimens have been discovered in a region of western Germany.

Archaeopteryx existed in the late Jurassic period about 150 million years ago when reptiles were the dominant ecological life form. Some of the specimens were so gently fossilised that the structure of their feathers is preserved. And feathers on wings speak of birds, don't they? Archaeopteryx had a feathered tail, too. But this animal had jaws with teeth, not a beak. It had a long, bony tail and claws on its wing-like arms and its feet. It begins to sound like a reptile and not a bird. Or was it a mix of the two, a perfect transitional example of evolution from reptiles to birds? It combines two distinct classes, reptile and bird, in a single animal.

Some critics have doubted the genuineness of archaeopteryx and have alleged it is a forgery where a bird and a lizard have been pressed together so as to prove evolution right and the Bible wrong. But Schroeder, a keen student of the Bible and a reputable scientist, says he is all for its authenticity. He shows archaeopteryx is the link that never was missing in the first place.

LEVITICUS 11- This chapter lists clean and unclean animals. The animals are divided into categories, in one place, insects, then fish in another, etc. In Leviticus 11:18 birds are listed. Among them we find the '*tinshemet*'. Twelve verses later in Leviticus 11:30 the reptiles are listed. And amazingly, the '*tinshemet*' appears again! The same name spelled identically in the Hebrew is given for a bird and a reptile because at one level of Biblical meaning the animal fell into both categories! "In the entire Bible, there is the one reference to an animal that falls into two categories, the '*tinshemet*'. In the entire fossil record there is one fossil that falls exactly midway between the two classes of animals, the archaeopteryx, an animal part reptile and part bird. Now do I think this animal/bird-like creature listed in Leviticus 11 was archaeopteryx? I don't think so, because archaeopteryx probably died out with the dinosaurs

75 million years ago. But I am sure there was a strange reptile/bird-like creature that Moses and the Israelites were familiar with in their time. It is the link that never was missing.

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