

Genesis and catastrophe: the Flood as the major biblical cataclysm

Andy C. McIntosh, Tom Edmondson and Steve Taylor

The Genesis Flood should be regarded as the main mechanism for laying down the fossil record. While there may have been some localised post-Flood disasters, the sedimentary deposits of a continental scale can only have been deposited by the Flood, because of the huge global effect of Flood hydrodynamic activity. Biblically, there is little warrant for insisting that ‘blot out’ means complete removal without trace. Rather, the natural meaning of Genesis 6–8 is the sudden death of many creatures in the Flood. To progress our understanding of some of the apparent anomalies in the fossil record, the various scientific disciplines need to interact far more. Only then can we properly model the complex fluid dynamics of heterogeneous flows and the consequent pattern of sedimentary layering that took place in the Flood year.

Introduction

The Genesis 6–8 account of Noah’s Flood very graphically describes the world-encircling cataclysm that affected the earth. In recent years, there has been a growing interest in understanding rock formation as a result of the Flood and to a certain extent, after the Flood. Nevertheless a debate has begun between geologists,¹ all of whom reject billions of years, but who take different positions concerning where the Flood ends in the rock strata.² Some have argued that considerable sedimentation occurred after the Flood, as the earth adjusted to a new equilibrium. What has led geologists, such as Garner,³ Garton^{4,5} and others to this view, is that many dinosaur and bird tracks have been found in the rocks which (they maintain) can only be interpreted as post-Flood.

Some go further and suggest all fossils of air-breathing land creatures are post-Flood.^{6–10} The traditional view advocated by Morris and other workers has been that rising flood waters engulfed creatures at different stages during the Flood — first the 40 days (Gen. 7:11,12) of the deluge from above and below, and then the persistence of the waters for about 5 months (Gen. 7:24).^{11–14} This view, though sometimes referred to by its opponents as the ‘tranquil Flood’ model, in fact regards the waters as vast surging tidal waves, with water coming from beneath the earth as well as from above (possibly from a pre-Flood vapour canopy). In a companion paper¹⁵ we consider a far stronger alternative view of the origins of the water from beneath.

How any post-Flood activity occurred is not easy to prove since we have no way of doing a full-scale experiment! The various theories are not within the purpose of this brief article — the debate on this continues. But all involved in the debate accept that we must always come back to Scripture to test all our thinking. What then are the key points that can be established?

The Flood was cataclysmic and world-wide in scale

Whatever post-Flood disasters may have taken place, one must never marginalise the Flood itself. Clearly Genesis 6–8 is there to show to mankind that in a very major way, God judged the world in its entirety. The Hebrew word *mabbul* in the Old Testament and the Greek *kataklysmos* in the New are used only of the Genesis Flood. Psalm 29:10 provides a less certain use of *mabbul* outside Genesis, but the destruction of cedar forests (v. 5), the movement of an entire geographical area (Lebanon, v. 6) and the shaking of the deserts (v. 8) seem reminiscent of Flood events. The Psalm shows that the power unleashed was never for a moment out of God’s control. A glance at a concordance will show that there are other Hebrew and Greek words used which can be translated to the English ‘flood’, but *mabbul* and *kataklysmos* are generally the words reserved as technical terms for the Genesis Flood.^{16,17}

In a companion article,¹⁵ we suggest that the geological and meteorological upheavals of the first 40 days were indeed the major event, possibly with water coming from above because of vast fountains ejected from beneath.

The extent of the Genesis Flood is partly determined by the meaning of the word ‘earth’ (Hebrew *erets*) in Genesis 1–10, and (Greek *kosmos*) in 2 Peter 3:5–7. What is *erets* in Gen. 6:1 referring to? It cannot indicate Eden (Gen. 2:8), since Adam and Eve were evicted from it (Gen. 3:23). Nor can it be restricted to the ‘land of Nod’, where Cain and his descendants settled (and from where they may have spread, Gen. 4:16), since those who had increased in numbers included the descendants of Seth (Gen. 5:6ff.). Genesis 6:5–7 suggests that the reference is therefore to the ‘earth’ of Gen. 1:1 and 2:1 (i.e. all that is not the ‘heavens’), for in Gen. 6:7 there is an echo of the creation (Hebrew *bara*) of men and animal life recorded in Gen. 1:20–30. Moreover the words



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of Gen. 8:22 would hardly follow, if the promise in v. 21 applied only to the inhabitants of the early Middle East, for ‘seedtime and harvest’ are universal phenomena, in the same way that ‘day and night’ bring us to the universal context of creation (Gen. 1:5). This apparent universality continues in Gen. 9, where it is not regional man whose life is protected by law, but man made in God’s image (v. 6). Accordingly, the covenant of Gen. 9:9ff. establishes the universally experienced rainbow as the pledge of God’s promise never again to destroy the whole earth (the word again is *erets*).

2 Peter 3 clinches this line of reasoning, for in this chapter, Peter refutes uniformitarianism (v. 4) and proclaims that uniformitarians are ‘willingly ignorant’. He then states that after the creation of the heavens and the earth in Gen. 1:1–2, the ‘world [Greek. *kosmos*] that then was, being overflowed with water, perished’ (v.6). The fact that the ‘heavens and earth which are now ... are ... reserved unto fire’ (v. 7), and will be replaced by ‘a new heavens and a new earth’ (v. 13) strongly suggests that the ‘world’ in v. 6 (equivalent to the *erets* of Gen. 6) was universal in extent.

The agent of the Flood was water

That water was the main agent of destruction may seem obvious, but it needs stating clearly. 2 Peter 3:6 states that the mechanism for the *mabbul* (Flood) recorded in Genesis was that ‘the world being overflowed with water, perished.’ In principle, the same command, but a different mechanism

(fire) will bring in the Day of Judgment to come (2 Peter 3:7). This is relevant to those who suggest that in just the first few days of the Flood **all** air-breathing land creatures were entirely destroyed without a trace. To remove bones in their entirety would generally require fire, which is **not** the primary agent recorded in Genesis 6–8. We accept that fire may have played some part during the Flood, with magma flowing from volcanic eruptions, but scripturally the main agent of destruction was water. Fire could not have been the dominant force. Biblically, as discussed later on with the phrase ‘blot out’, it is difficult to make a strong case for all air-breathing land creatures being destroyed without trace. The argument requires that the word *machah* (Gen. 6:7 — ‘destroy’ in the KJV) have only one possible meaning, as ‘blot out’. However, there are other equally valid, but more plausible translations of *machah* as discussed later.

Scientifically, it is very difficult to justify that all air-breathing land creatures were entirely destroyed (bones and all) by the hydrological action of the water alone. One can accept that some creatures out of the millions engulfed by the violence of the first 40 days were dismembered, and that other creatures were pulverised by rocks etc. But to say that **every single one** of the millions of air-breathing land creatures in existence was annihilated is not consistent with the fluid dynamics of heterogeneous mixtures. Certainly the geological evidence does not support the argument that all land air-breathing creatures were annihilated while the sea-going creatures were not. Land creatures are found fossilised

throughout the strata — not only in lower Palaeozoic strata which most Flood geologists accept are Flood deposits, but also in the higher Mesozoic and Cainozoic. The geological evidence suggests that the argued distinction between land and sea creatures is a false distinction since the churning waters would have contained both. Matt. 24:39 confirms that water was the agent responsible for the death of the people for it states ‘*until the Flood came and took them all away.*’ The word translated ‘take away’ is the Greek *airō* which is often used in the sense of ‘take up’ or ‘lift’ (e.g. John. 5:8 ‘*Rise, take up your bed.*’). The biblical evidence is of rushing waters sweeping up people and animals into a vast watery grave. The straightforward truth from Gen. 6–8 is that the agent of global scale devastation by the Flood was water. It is a good rule to take the straightforward meaning of Scripture, unless there is strong testimony otherwise from other Scriptures.

The combination of both words *mabbul* and *mayim*

Garton,⁴ Robinson⁹ and Garner³ maintain that the *mabbul* only lasted 40 days. Kline¹⁸ (no friend of creationism) writes

‘*mabbul ... denotes the cataclysmic phenomena of the 40 day period (7:12, 17) dated in v. 11. Apparently mabbul is also applied in extension of the precise usage in the Flood record proper to the year-long episode (9:11, 15, 28; 10:1, 32; 11:10).*’

Hence there is some warrant for allowing *mabbul* to refer in a general sense to the whole year of the Flood.

But we must also consider a second word, that is *mayim* which means ‘waters, sea(s), ocean’. The way the two key Hebrew words *mabbul* and *mayim* are used is instructive. It seems from their articles that Garton, Robinson and Garner consider *mabbul* refers to the catastrophic precipitation and release of subterranean water, resulting in the *mayim*. However, they miss the fact that in the Hebrew, the words *mabbul* and *mayim* are linked, so that one is part of the other. This is shown by the fact that they are in the standard grammatical construction to show the genitive (possessive) relationship. In Hebrew, the noun which is possessed is in the *construct* form, followed by the possessor noun in its normal form.¹⁹

Thus, for example, *sus ham-melek* means ‘the-horse [of] the-king’; and *devar han-nabi* means ‘the-word [of] the-prophet’. In the Flood narrative the words *mabbul* and *mayim* occur in **reversible genitive relationships**. In Gen. 6:17 the Lord says, ‘*I will bring floodwaters [literally, “the-mabbul (of) the-mayim”] upon the earth.*’ Then in Gen. 7:7 Noah and his family ‘entered the ark to escape the-*mayim* (of) the-*mabbul*’ (cf. Gen. 7:10: ‘The-*mayim* [of] the-*mabbul*’ came [Hebrew ‘were’] on the earth). **Therefore the *mabbul* may be part of the *mayim* and the *mayim* may be part of the *mabbul*.** Unlike (say) ‘the king’s horse’ or ‘the prophet’s word’, where the order cannot be changed, the two nouns are reversible. This implies that the *mayim* is **not** simply the effect of the *mabbul*, unless by the same token *mabbul*

can be regarded as the effect of the *mayim*. Thus the most sensible way to interpret these expressions is to see that in the Flood narrative *mabbul*, *mayim*, *mabbul-ha-mayim* and *mayim-ha-mabbul* are all the same thing.

So the warning in Gen. 6:17 is that God will bring a catastrophic deluge and release of subterranean waters which will inundate the planet and wipe out the whole of life. The catastrophe would not end after 40 days.

Similarly in Gen. 7:4 (where neither *mabbul* nor *mayim* are used) the rain ‘will wipe from the face of the earth every living creature’. But if the rain had been able to drain off the land, there would have been no *mabbul*, for *mabbul* necessarily implies *mayim*. In consequence ‘the-*mabbul*’ was literally ‘*mayim* upon-the-earth’ (7:6), for *mabbul* and *mayim* are two sides of the same coin, so to speak. Obviously the *mayim* of 7:24 are still the *mayim* of the *mabbul*, and it is the end of the *mabbul* which is described in 8:13 (‘the *mayim* had dried up from the earth’). This is underlined in 9:28 where it says that Noah lived 350 years after the *mabbul*. Since he was 599 at the outset of the *mabbul* (7:11) and just turned 600 at its end, it is obvious that the *mabbul* lasted one year, showing that *mabbul* must here refer to the whole Flood year.

This shows that *mabbul* and *mayim* are used almost interchangeably and underlines the importance of regarding *mabbul* as connected with the whole Flood year notwithstanding the fact that there are places in the text (e.g. Gen. 7:17) where *mabbul* is especially used in reference to the first 40 days.

Thus the destructive force of the 150 days of the waters ‘*increasing*’ (7:17), ‘*prevailing*’ (7:18), ‘*increasing greatly*’ (7:18), ‘*prevailing exceedingly*’ (7:19), ‘*returning from off the earth*’ (literally ‘going and returning’, 8:3) should not be underestimated. It is significant that the death of living creatures (7:21–24) is recorded **after** the waters had covered ‘the high hills’ (7:19). The account of chapters 6–8 is so detailed an account of all the events before and during the Flood, that it is difficult to escape the conclusion that biblically there was a process of at least 150 days (7:24) involved in destroying all the land creatures (including man). The only other alternative is to have the waters covering ‘the high hills’ (7:19) after 40 days with protracted coverage till 150 days (7:24) — which still implies that the destruction of 7:21–23 carried on till the end of the whole 150 day period. Certainly the vast majority of land creatures would have been destroyed in the first 40 days, particularly if the waters from above were due to gigantic fountains of water emanating from beneath the earth (see our companion article where possible models are discussed).¹⁵ However, the Scriptures record the final destruction of all land creatures (which was always the expressed purpose of the Flood) near the end of the first 150 days (7:21–24). The significance of this important point will be considered with the meaning of the word ‘blot out’ in a later section.

Underground water was involved

The ‘fountains of the great deep’ seem more consistent with subterranean water pushed up from large, deep, under-



Water was the main agent of destruction for the Flood

ground cavities rather than relatively small terrestrial springs. Although the latter may explain the removal of all land creatures quickly, it is not consistent with the straightforward understanding of Gen. 7:17–24, which speaks of the waters prevailing (7:18), and then prevailing *exceedingly* (7:19) for 150 days (7:24). However, this prevailing is entirely consistent with subterranean fountains issuing water to the oceans with, no doubt, tsunami of continental proportions criss-crossing the globe and leading to gigantic tidal waves on reaching the shorelines of any exposed land.

The floodwaters had to drain off the land, and since all the high ground of the pre-Flood earth was inundated, new ocean basins had to be formed to accommodate the much greater amount of water now on the earth. This fits well with Psalm 104:8 which probably speaks of the mountains rising and the valleys sinking. This implies huge geological upheaval.

The ‘fountains of the great deep’ were literally the ‘springs of the ocean’. Were these **visible**? Being the springs of the **oceans** would they be on a vaster scale than those on land? If they were (and the hydroplate model referred to in the companion article¹⁵ would suggest this), considerable geological activity must have taken place on the ocean floor.

The stated purpose of the Flood

Genesis 6:7, 17; 7:21–23 state clearly God’s purpose was to destroy all air-breathing land creatures. The word ‘destroy’ used in Genesis 6:7 is *machah* which means to wipe out. That used in Genesis 6:13; 9:11; 9:15 is *shachath* which means to ‘corrupt, ruin, decay’. In particular, Gen. 9:11 speaks of never again destroying either the earth or all flesh (Gen. 9:15). The earth was not annihilated (that is made non-existent or all traces removed), though it was devastated. Similarly by implication, neither were the creatures totally annihilated. That is why Gen. 7:4 states that all creatures would be destroyed ‘*from off the face of the earth.*’

In the New Testament, Luke 17:27 says ‘*the Flood came and destroyed them all.*’ The Greek word here is *apollumi* which, with persons as the object, means to ruin or destroy.²⁰ The Greek word *apollumi*, is also commonly translated to ‘kill’ (e.g. Gen. 20:4; Mark 3:6; Luke 19:47). Obviously the action of killing results in a corpse, therefore Luke 17:27 does not support the idea that the Genesis Flood caused total annihilation. The word *apollumi* does not demand or imply destruction without trace. Vine writes, ‘... *the idea is not extinction, but ruin, loss, not of being, but of well-being.*’²¹

Generally the word *apollumi* means ‘ruin’, ‘destroy’, ‘lose’ or simply ‘failure to obtain’. The force of this word comes out in another passage in the same Gospel. The **same** word *apollumi* is used in Luke 15:32 ‘*for this thy brother*

was dead ...was **lost** but now is found.’ The lost son was not utterly removed without trace. Rather the prodigal son was **removed** from the father.

We also have a further insight from Matthew 24:39 that ‘the Flood came and **took them all away**.’ The operative word is *airō* which means ‘to take away, bear away, carry off’. Could this be clearer? All of these shades of meaning to the word *airō* simply say that the Flood swept all air-breathing land creatures out of sight. Extinction and annihilation of all remains is not ruled out, but is very unlikely in the light of the specific reference to the final death of all creatures taking place at the end of the 150 days. The strong suggestion is death by the initial onslaught of the enormous force of flowing water, or subsequent drowning if some creatures survived the initial waves. This is all consistent with violent, catastrophic burial by sediments and the fossils we observe today.

The word ‘destroy’ in Gen. 6:7 (Hebrew *machah*) is matched in the Septuagint by the corresponding Greek word *apaleiphō* which, in classical Greek, means ‘to wipe off, expunge, esp. from a register’.²²

The NIV also translates *shachath* as ‘devastate’ (Joshua 22:33); ‘destroy’ (1 Sam 23:20 — at the worst this would have left Keilah in ruins); ‘ruin’ (Jer. 12:10: in a parallel expression ‘trample down my field’); and ‘destroy’ (Ezek. 26:4). In this last reference the extreme nature of the destruction is indicated: ‘I will scrape away her rubble and make her a bare rock.’ However Wiseman says that excavations have traced some of the ancient foundations of Tyre.²³ Evidently, even in this context, ‘destroy’ did not imply that no traces would survive.

Returning to the Genesis account of the Flood, the Lord says in Genesis 6:11, 12a and 12b, that the earth was ‘corrupt before God’. The word for ‘corrupt’ is the same as that used in Genesis 6:13, ‘I will **destroy** them with the earth.’ The

key to the Flood account lies in this word ‘destroy’ (*shachath*). God did not annihilate all evidence of the creatures, any more than He annihilated the earth. Rather, as men were already corrupt spiritually, God had them destroyed physically, drowned, and removed from sight (‘from the face of the earth’). This is exactly the same way that at the final judgment unbelievers will be put into outer darkness, destroyed (*apollumi*) and cast into hell (*gehenna*) (Matt. 10:28). This does not mean, of course, that all fossils of all people destroyed in the Flood are preserved, but suggests that we should expect to find some evidence of catastrophic burial.

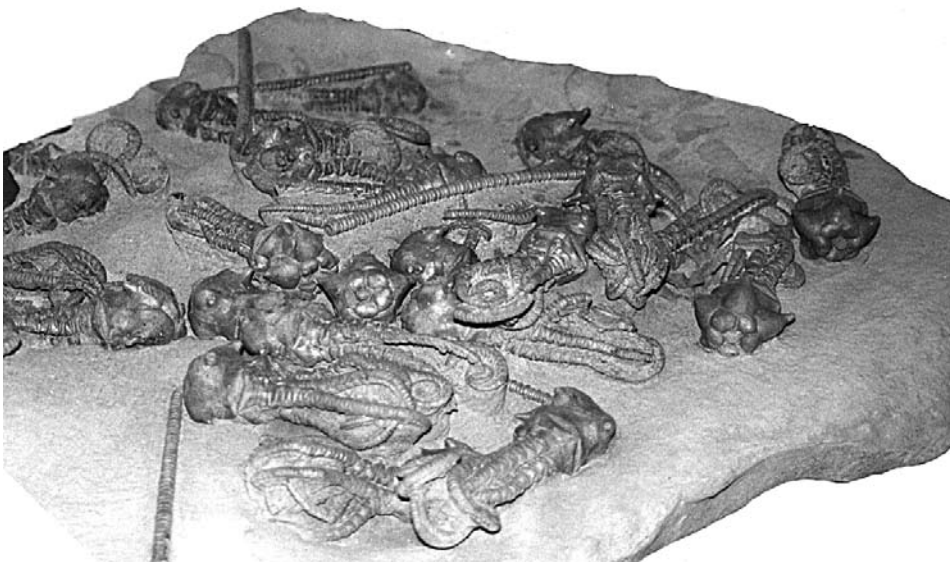
The word ‘blot out’ in Genesis 6:7

Robinson, Garner and Garton all consider that the Flood requires ‘blot out’ to mean ‘eliminate *without trace*’ and claim Psalm 51:1 as support. If the word ‘blot out’ does not mean ‘eliminate without trace’ in Psalm 51:1, they ask what sort of salvation do Christians have? If our sins have been totally eliminated without trace by the saving work of Christ, then the pre-Flood world must also have been eliminated without trace. Hence, the fossils must have been formed after the Flood etc. This may seem a strong argument.

However, the passages listed in Young’s Concordance under the Hebrew word *machah* do not support Garton and Garner’s view. Consider Psalm 51:1 which speaks of David’s adultery with Bathsheba and its subsequent cover-up. David asks God to blot out his sin which God does. However, the fact that we know of David’s sin implies that God did not blot it out completely. It is still recorded in Scripture. Revelation chapter 5 teaches us that even those in heaven worship the *Lamb*, that is the Lamb of God who took away their sin and by that redemptive act redeemed His people by His own blood (Rev. 5:9). Therefore, not *all* trace of

the sins of God’s people will be eliminated, for the Lamb will be a continual reminder of our great debt. McCheyne’s hymn, ‘When this passing world is done’, expresses this thought at the end of every verse with the statement, ‘*then Lord shall I fully know, not till then how much I owe.*’

In Deuteronomy 9:14, the threat to ‘*blot out [the name of Israel] from under heaven*’ did not mean that they would disappear without historical trace, for future generations would surely read of them in Scripture. The very formation of a new nation from Moses would require the reason for it to be written down. ‘Blot out’ in this case just means that they would have no



Fossil graveyards require enormous upheaval on a global scale

descendants and cease to exist as a nation. Similarly in the case of the Amalekites, total destruction did not mean annihilation without trace. For although Deuteronomy 25:19 says to Israel: ‘*you shall blot out the memory of Amalek from under heaven*’, they were not eliminated **without trace**. Otherwise their memory ought not to have been preserved in Scripture. As noted earlier in the discussion of *shachath* and *apollumi*, eternal destruction is not annihilation, therefore, the threat of Deuteronomy 29:20 to ‘blot out’ a man’s name ‘from under heaven’ does not mean that God will destroy him without trace.

One use of *machah* which clearly cannot mean ‘eliminate without trace’ occurs in Num. 5:23 which sets out the procedure for trying a woman suspected of infidelity. She has to drink of bitter water, which has previously been used to ‘blot out’ the curses the priest has written in a book. The curses, written in ink on a parchment scroll, were *washed off* (NIV; KJV *blotted out*) into a receptacle containing ‘bitter water’. The curse was removed from the scroll, but not ‘without trace’, since it was an essential part of the ritual **that the ink should continue to exist in solution**. The blotted out curses thus certainly left traces.

Another most instructive use of the word *machah* is in Prov. 31:3b: ‘*Do not give your strength to women, nor your ways to that which destroys kings.*’ This very aptly shows what the word means. The man who lusts after women will find he is **destroyed** spiritually — as many kings and presidents have been. There is no implication of annihilation or wiping out.

We see therefore that the word *machah* does not mean ‘eliminate without trace’. To say it does is to argue from a shaky linguistic foundation. There is no scriptural proof for this position. These points are developed further in the excellent article by Fouts and Wise²⁴ which studies the meaning of the words used in the Flood account in Genesis. They agree there is no clear evidence exegetically that the word *machah* is linked with complete removal without trace. Certainly Robinson’s thesis, presented at the same conference, that the Flood destroyed the earth’s crust in its entirety, is very conjectural.²⁵

The rainbow

Robinson²⁶ argues that graveyards of mammoth, dinosaur and all other land air-breathing creatures are all post-Flood. For thousands of mammoths to be buried across America and Asia after the Flood they would have all had to be descended from the original pair from the Ark and spread across the continents. Though we recognise the possibility that frozen mammoths in the Arctic are examples of post-Flood fossilisation²⁷ (as these seem to be localised burials near the surface), the burial under great sediments of reptiles, dinosaurs, mammals (including other mammoths) is world-wide. Such fossilisation with water borne sediment would require enormous upheaval, such that one requires events on the scale of the Flood itself which God said would never be repeated (Gen. 8:21, 9:11, 15).²⁸ The burial of dinosaurs

ten metres tall, by their thousands in Alberta and Montana⁶ and vast tracts of territory from South Dakota, Kansas and Colorado²⁹ would require vast **continental** instability just before Abraham’s time, 350 years after the Flood.⁶ (The 350 years is required by Robinson, Garton⁴ and others to allow dinosaurs and other creatures to multiply and spread out over the globe.) But such vast continental sedimentation (in some places thousands of feet thick) would not be possible without causing gigantic upheaval in other parts of the earth — in particular in the Middle East where the descendants of Noah were re-populating the earth.

Although one does accept the possibility of some post-Flood disasters as the earth settled to a new environment, the extent of burial in such events must be considered local. Burial on such a vast scale of land air-breathing creatures is surely beginning to break the principle that the Flood was the major event in Earth’s history. Those who consider most of the fossils to be post-Flood must face the important question, ‘How is it that God has destroyed vast numbers of post-Flood creatures, when He clearly said He would not destroy all flesh again?’ (Gen. 8:21,22). And the problem is not removed by saying that these catastrophes only happened for a few years after the Flood as the earth was settling down. Even if we allow that the population of creatures had vastly increased, is it consistent with the Lord’s mercy in the rainbow covenant to instigate such immense destruction? And this so soon after executing a similar judgment (flooding) on a comparable continental scale? This is a very real difficulty rarely addressed by those who advocate post-Flood catastrophes as being the **main** origin of all the fossils.

A significant feature of Genesis 8:21–9:17 is the expression ‘never again’ (NIV):

‘*Never again will I curse the ground*’ (8:21); ‘*And never again will I destroy all living creatures*’ (8:21); ‘*Never again will all life be cut off by the waters of a flood*’ (9:11); ‘*Never again will the waters become a flood to destroy all life*’ (9:15).

The formation of the sedimentary rocks and the fossilisation of animals on the vast scale said to have occurred would have required a second cataclysm. This would conflict with the promises made after the Deluge.

The one verse which Robinson, Garton, Garner and others propose for justifying a major post-Flood disaster is Gen. 10:25. The division of the earth referred to in this verse is a mystery. In the present state of knowledge, dogmatism is out of the question.³⁰ Wiseman notes that ‘Peleg’ itself means ‘water course, division’ (watercourse = canal?) and suggests ‘*the development ... of cultivation, using artificial irrigation canals (Assyr: plagu)*’.³¹ Kidner simply remarks that it is a ‘*matter of conjecture*’.³² If the division were the physical splitting of the continents, then the ensuing catastrophe would have been world wide. It seems unlikely that Genesis 10–11 could proceed serenely along without more reference to these events than 10:25! Moreover, how could the promises to Noah have been kept, since such upheavals would have had immediate global impact? Kevan thinks it was probably the division of mankind after Babel.³³ Indeed,



The rainbow — a reminder that there will not be another global Flood.

many commentators, writing well before plate tectonics was in vogue, believed that the division of Peleg referred to the linguistic/territorial division resulting from Babel.³⁴

In Genesis 9:13–15, God formed a rainbow to indicate there would be no repeat of ‘*a Flood to destroy all flesh.*’ Holt rightly asserts that to invoke large post-Flood disasters of continental proportions would imply tsunamis encircling the globe.¹² There is a limit to localised activity involving further large sedimentation because it is extremely difficult to avoid immediate effects elsewhere on the globe. The comparatively small eruption of Mount St Helens in 1980 showed this with subsequent atmospheric disturbances, and the eruption of Mt Krakatoa last century in the Far East caused 30-metre tidal waves. Such large quantities of ash were ejected into the atmosphere that Tennyson referred to striking sunsets in England, thousands of miles distant.³⁵ These disasters did not have continental implications. Thus to suggest that Genesis 10:25 — the division of the earth in Peleg’s day — was a possible post-Flood disaster involving the physical splitting of continents (and thus providing a mechanism for catastrophic burial of the fossils) would necessitate gigantic tidal waves across the continents, thus negating the rainbow promise. One must always give biblical priority to the Flood as the major disaster affecting the earth, never to be repeated.

We agree with Snelling’s introduction to the discussion papers on this subject, that there is room for **some** post-Flood activity. But we consider that there is the need to ‘*research strategically, thinking laterally or in novel ways if we have to, in order to find explanations for baffling puzzles.*’³⁶

We agree with Whitcomb and Morris that the best fit

with the Biblical text has most of the fossils produced by the Flood.¹¹ However the Whitcomb and Morris **mechanism** (rising flood water) may not necessarily be the correct model. Morris³⁷ has re-iterated this view of the Flood and though some may disagree with the mechanism, it is hard to escape the important hydrological issues which he and others rightly say must be properly addressed. The hydroplate model advocated by Brown^{38,39} suggests a much more violent alternative. Although we do not say necessarily that this is the only way to postulate the violence of the first 40 days of the Flood year, it nevertheless offers a plausible explanation for the origin of, and evident force for, the underground waters and the waters from above. The hydroplate theory (different in mechanism from that proposed by Morris), still leads to the same conclusion — that the vast majority of fossils were laid down during the Flood. And in the hydroplate model, a good number would be laid down in the first 40 days.

Another theory advocated by Baumgardner *et al.*^{40,41} proposes catastrophic tectonic plate activity. In this model, part of the earth’s crust is subducted with the initiating of a global-scale flow of the mantle beneath the earth’s crust and vast volcanic activity. All these studies warrant further careful research which should not necessarily regard the geological column as sacrosanct (these alternatives are considered in a companion article¹⁵). The events of those first 40 days and right through the Flood year may well have laid and possibly re-laid sediments on a continental scale. In the light of this, it is not wise for some to suggest that the thesis of Whitcomb and Morris is ‘fundamentally flawed’. It is premature to draw any such conclusions on the Flood/post Flood boundary while much research continues — particularly in

the area of hydrological sedimentation. We believe there is room for some post Flood fossilisation (which Whitcomb and Morris¹¹ did not address), but the biblical text strongly implies that the evidence of catastrophic water-borne sediments burying vast numbers of land (and sea) creatures is due primarily to the Flood.

Conclusion

We recognise that there is a clear need to be open minded concerning some post-Flood catastrophism as the earth settled to a new equilibrium after the gigantic disturbances of the Flood year. However it is not exegetically correct to suggest all air-breathing land creatures were annihilated without trace by some unknown force. Biblically, the words *machah* (blot out), *shachath* (destroy) in the Old Testament Hebrew, and *apollumi* (lose, destroy) in the New Testament Greek, do not justify such an interpretation. The context strongly indicates that the logical and straightforward meaning of these words is that the greater part of air-breathing land creatures were buried by water-borne sediments.

That there may have been some post-Flood disasters is not precluded by the text, since fossilisation is not referred to in the Flood account. But to regard the vast majority of fossils as being from post-Flood disasters, runs the risk of (a) marginalising the Flood, (b) weakening the force of the rainbow promise (thousands of feet of sediment over continents hardly seems consistent with God's promise not to destroy flesh (animal as well as man) by a flood), (c) gives too much weight to our supposed knowledge of the order of deposition (i.e. the geological column).

There is a great need to gather scientists from all disciplines to consider the problems that have been rightly brought to the attention of the biblical creationist community — problems such as footprints of dinosaurs above vast stretches of sediment and dinosaur eggs at high positions in the strata. The role of sedimentology and the flow of heterogeneous mixtures requires hydraulic engineers, fluid dynamicists as well as geologists to carefully unravel these difficulties. Experience shows that major research problems require inter-disciplinary teams to make progress.

Acknowledgements

The authors are grateful for the helpful exchange of ideas with a number of colleagues which includes Dr Peter Williams (who kindly checked the original manuscript and made very helpful suggestions), Dr David Tyler, Dr Michael Garton, Mr Randall Hardy, Dr Andrew Snelling, Dr Peter Senior and others. Not all will agree with our conclusions, but the spirit of open and courteous debate is to be encouraged.

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relatively stable world) to have such vast numbers of mammoths around in Siberia alone. However the burial so close to the surface and in present river valleys suggests they might have been buried by flash floods from melting ice (see for example, How did millions of mammoth fossils form? *Creation* 21(4):56, 1999). This article argues that a population of 8 million mammoths would have been possible 550 years after the Flood — that is, up to the end of the probable Ice Age subsequent to the Flood. Some mammoths could have been buried in ice bursts similar to those observed recently in Iceland in 1996 (see Snelling, A., Iceland's recent 'mega-flood', *Creation* 21(3):46–48, 1996).

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North Wales, completed his Ph.D. in Combustion Aerodynamics in 1981, and obtained a D.Sc. in 1998. Author of many articles on combustion and fluids, Andy speaks widely on Creation, and authored the book '*Genesis for Today*'.

Tom Edmondson holds degrees in music from Trinity College of Music (London University) and also a degree in history and philosophy from the Open University. Together with his wife, he did linguistic and translation work among the Ejagham people of SE Nigeria and SW Cameroon with Wycliffe Bible Translators for a number of years. He is a founding member of the Bradford Creation Science Group.

Steven Taylor is a Reader in the Department of Electrical Engineering and Electronics at Liverpool University. His Ph.D. thesis was concerned with the inductively coupled plasma oxidation of silicon. He has published over 100 papers in refereed journals and conferences in the field of silicon microelectronics, plasma processing and ion physics. He is currently Chairman of the UK Dielectrics Club and formerly a member of the Program Committee of IEEE Semiconductor Interface Specialist Conference.

Andy McIntosh is Reader in Combustion Theory at the University of Leeds in the Department of Fuel and Energy, researching into fluids, explosions, ignition, and heat transfer. He read Applied Mathematics at Bangor University,