

change — they would be geographically and stratigraphically varied. Thus species 'x' of TAB 3d can be 'correlated' with species 'y' of the same TAB-type province some distance away.

The effects of hydrodynamic sorting, ecological zonation, preservation bias and simple chance can work for, against, or be neutral in respect to the TAB process. Thus factors which happen to work **with** a TAB process will result in highly segregated, generally short-range fossil patterns, while such factors working against the process, would result in fossils being 'smeared' across several stratigraphic horizons, giving the impression of being long-range (long-lived) organisms.

There are still a number of outstanding issues such as apparent *in situ* stromatolite structures which require further research and explanation.

It is hoped creationists will be encouraged to explore and examine **every** possibility regarding Flood geology. We cannot afford to overlook **any** potentially advantageous ideas.

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Robinson, Ref. 2, p. 51.  
Colbert, E. H., 1991. **The Evolution of the Vertebrates**, John Wiley and Sons, New York, p. 327.  
Colbert, Ref. 12, p. 323.  
Holt, R. D., 1996. Evidence for a Late Cainozoic Flood/post-Flood boundary. **CEN Tech. J.**, **10**(1):128-167.  
Woodmorappe, Ref. 6, p. 137.  
Woodmorappe, Ref. 6, p. 153.  
Holt, Ref. 14.  
Holt, Ref. 14, pp. 130-131.  
Woodmorappe, J., 1996. Studies in Flood geology: clarifications related to the 'reality' of the geologic column. **CEN Tech. J.**, **10**(2):285-286.  
Woodmorappe, Ref. 6, pp. 159-162.

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### DID DINOSAURS LAY EGGS AND HATCH YOUNG DURING THE FLOOD?

**Dear Editor,**

In recent articles in the **CEN Technical Journal** Holt, Oard, and Woodmorappe have arrived at a consensus conclusion: the Flood/post-Flood boundary could **not** have been either at the end of the Cretaceous or at the end of the Carboniferous worldwide.<sup>1-3</sup> They also are agreed in stating that dinosaur nesting activities occurred during the first 150 days of the Flood, or approximately during the first half of the Flood. This latter conclusion they base upon Scripture. The question must rightly be raised, 'Does Scripture indeed allow up to 150 days for dinosaur nesting activity during the Flood event?' The answer to this question, as given below, allows for the Flood/post-Flood boundary to be either at the end of the Carboniferous or at the end of the Pliocene/Pleistocene, the latter option being proposed by Holt, Oard, and Woodmorappe. However, it does not allow a period of approximately 150 days for dinosaur nesting activity during the Flood.

The key to understanding the timing of

various events in the Flood narrative *is* the discovery of the chiasmic structure of the Flood. This has been accomplished by Biblical scholars, such as Umberto Cassuto and Bernhard W. Anderson. Their excellent studies have provided a foundation for William H. Shea's study,<sup>4</sup> who goes a step further and uncovers the chiasmic arrangement for the chronology of the Flood as shown in Table 1. Similarly Old Testament scholars, Gordon J. Wenham,<sup>5</sup> and Victor P. Hamilton,<sup>6</sup> note this same chiasmic structure, thus indicating that its validity has been widely accepted.<sup>7</sup>

We must pause to define a chiasmic structure as an arranging of a Biblical or non-Biblical passage in reverse-order parallelism. If we designate each paragraph, verse, or smaller unit with alphabetic characters, then a chiasmic arrangement would be as follows: A, B, C, D, E, etc. E', D', C', B', and A'. This means that the first and last units are in parallelism, the second and second to the last also in parallelism, the third and third to the last in parallelism, and so forth. The centre of the chiasm is often a pivotal turning point in the narrative. In the Biblical Flood account the chiasmic centre is found at the end of the 150 days, when the waters begin to subside. This is the turning point in Flood history. It is also a theological running point. Just when it appears that God has abandoned the human race (Genesis 7), the statement is made, 'But God remembered Noah' (Genesis 8:1).

What follows is a further elaboration of the scholarly studies by Shea, Wenham, and Cassuto — a chiasmic structure that I have developed

- |   |
|---|
| <p>A. Seven days until 40-day storm (Genesis 7:4)</p> <p>B. Seven days until the Flood (Genesis 7:10)</p> <p style="padding-left: 20px;">C. 40 days of the Flood (Genesis 7:12, 17)</p> <p style="padding-left: 40px;">D. 150 days waters prevail (Genesis 7:24)</p> <p style="padding-left: 60px;">E. The Flood crests, the Ark rests,<br/>God remembers Noah (Genesis 8:1)</p> <p style="padding-left: 40px;">D'. 150 days the waters abate (Genesis 8:3)</p> <p style="padding-left: 20px;">C'. 40 days first birds sent out (Genesis 8:6)</p> <p style="padding-left: 20px;">B'. Seven days next bird sent out (Genesis 8:10)</p> <p style="padding-left: 20px;">A'. Seven days last bird sent out (Genesis 8:12)</p> |
|---|

*Chiasmic arrangement for the chronology of the Flood (after Shea<sup>4</sup>).*

to demonstrate the unique role of chronology in the Flood narrative. This should answer the critical question, 'Did the Flood last 40 days, 150 days, or even 370 days?'

**Chiastic Structure of the Flood Narrative, Genesis 6-9**

Some may wonder whether this chiastic structure exists solely in the mind of the reader, or whether this was also in the mind of the original author (see Table 2). One way we can ascertain that this structure is not superimposed externally upon the

Genesis 8:15-16. It could not have been placed later or earlier in the narrative without disrupting the chiasm. The only two places where the 'covenant' is referred to are in A and A'; the only two places where 'food' is mentioned in the narrative are in B and B'; and the only two places where the words 'hills' or 'mountains' (the same word in Hebrew) are mentioned are in H and H' — all of these cases being in exact chiastic parallel!

Seemingly insignificant allusions in the first half of the narrative are

these two types possibly being foreshadowed in the distinction between 'oph and tsippor in E.<sup>8</sup>

In his publication in 1753, the French physician, Jean Astruc, noted that the book of Genesis alternates between the use of Yahweh and Elohim as names for God. This later became the backbone of the documentary hypothesis, fully developed by Julius Wellhausen and popularly known as the JEDP hypothesis. Genesis 6-9 has been paraded as a prime example of duplication and repetition, including the use of the divine names. Now the chiastic structure provides an alternate interpretation of this narrative to replace the JEDP theory that divides the passage into several sources and authors. For example, in the use of the name Yahweh (translated 'Lord' in the KJV and most translations) we find a chiastic arrangement. It is used just five times in Genesis 7 and 8. Four of those five instances are in chiastic relationship. Two of them (Genesis 7:1,5) come under C above, in response to the command to enter the Ark, and the other two (Genesis 8:21,21) are under C, in response to the command to exit the Ark, starting with Genesis 8:16. Apparently the Biblical author wished to reinforce the chiastic connection between the two halves of the Flood narrative, so he choose to depart from his usual practice of using 'Elohim for the word God in Genesis 6-9 and instead used the word *Yahweh*. Thus, the chiastic structure as set forth above eliminates or negates the JEDP hypothesis — a hypothesis that fragments the unity of the narrative and undermines its historicity.

The chiastic arrangement, then, would suggest deliberate intent in the mind of a single author, rather than the varied preferences for divine names among two or more authors. Having established that this arrangement is by design, not by chance, we can thus apply its chronology to determining the length of the Flood and the time it took for Flood waters to cover the Earth. The question is whether it was 40 days

<p>Prologue: 6:1-16</p> <ul style="list-style-type: none"> <li>A. Promise of a covenant (Genesis 6:18)</li> <li>B. Provision of food for man during the Flood (Genesis 6:21)</li> <li>C. Divine command: 'Enter the ark!' (Genesis 7:1)</li> <li>D. Complex <b>chronology</b>: '600th year of Noah's life, second month, 17th day of the month' (Genesis 7:11)</li> <li>E. Description of animals, emphasising birds, entering the Ark (Genesis 7:14-15)</li> <li>F. God's role in closing the Ark (Genesis 7:16)</li> <li>G. Simple <b>chronology</b>: 40 days (Genesis 7:17)</li> <li>H. Tops of the mountains covered (Genesis 7:19-20) <ul style="list-style-type: none"> <li>I. Destruction of air-breathing creatures not on the Ark (Genesis 7:21-23)</li> <li>J. Remembrance statement: 'But God remembered Noah' (Genesis 8:1a)</li> <li>I'. Preservation of air-breathing creatures on the Ark (Genesis 8:1b)</li> </ul> </li> <li>H'. Tops of the mountains uncovered (Genesis 8:4-5)</li> <li>G'. Simple <b>chronology</b>: 40 days (Genesis 8:6a)</li> <li>F'. Man's role in opening the Ark (Genesis 8:6b)</li> <li>E'. Description of birds leaving the Ark (Genesis 8:7-12)</li> <li>D'. Complex <b>chronology</b>: '601st year of Noah's life, 1st month, 1st day of the month' (Genesis 8:13)</li> <li>C'. Divine command: 'Exit the ark!' (Genesis 8:15-16)</li> <li>B'. Provision of food for man after the Flood (Genesis 9:3-4)</li> <li>A'. Fulfilment of the promise of the covenant (Genesis 9:9-17)</li> </ul> <p>Epilogue: Genesis 9:18-29</p>
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**Table 2.** Chiastic structure of the Flood narrative, Genesis 6-9, according to my analysis.

Biblical narrative is by noting the number of unique words and phrases that occur in precise sequence. A few examples will suffice. In only two places in a narrative filled with chronological references do we find what I have called a statement having 'complex chronology' —that is the day, the month, and the year for the event is given (D and D' above). These occur in exactly the right place in the narrative. The second one, D', is located in Genesis 8:13, just after E' in Genesis 8:12 and just before C' in

anticipatory of chiastic connections or parallels with something significant in the second half of the narrative. In Genesis 7:14 two different words are used for birds— 'ophmdtsippor. The first one appears 12 times in the Flood account, while the second one is used only once. The use of the two words in juxtaposition is not unnecessary repetition, but it denotes a parallelism between E and E' in the above outline. Two types of birds are sent out from the Ark in the E' section — a bird of prey (a raven) and a song bird (a dove),

(Genesis 7:17) or 150 days (Genesis 7:24) before the tops of the mountains were covered by Flood waters.

F	- closing of the Ark by God: beginning of the 40 days
G	- the first 40-day period
H	- covering of the mountain-tops: end of the 40 days
This sequence is reversed in the second half (H', G', and F'):	
H'	- uncovering of the mountain-tops: beginning of the 40 days
G'	- the second 40-day period
F'	- opening of the Ark by Noah: end of the 40 days

**Table 3.** The chiasmic sequence that incorporates the two 40-day periods within the Flood chronology.

The chiasmic sequence, F, G, and H, in parallel with F', G', and H', suggests that it took a maximum of 40 days for the mountain-tops to be covered. In the first half (F, G, and H) we have the two-step sequence shown in Table 3. Note that we have two distinctly different 40-day periods, but they serve the same function to link two events in the narrative together.

If it is true that 40 days elapsed from the time the mountain-tops were first seen, on the first day of the tenth month (Genesis 8:5-6a), to the day that Noah opened the covering of the Ark (Genesis 8:6b), then it is equally true that 40 days elapsed from the time that God shut Noah and his family in the Ark (Genesis 7:16-17), to the time when 'all the high hills that were under the whole heaven were covered' (Genesis 7:19). The mention of the 150 days in Genesis 7:24 during which time the waters prevailed started with the Lord shutting Noah and family in the Ark, but it could not have ended when the tops of the mountains were covered.<sup>9</sup> If it did, then the chiasmic sequence is shattered!

One should also note the unique use of the word *mabul*, translated 'flood'. This word is applied only to the 40 days: 'the flood (*mabul*) was forty days upon the earth' (Genesis 7:17). This may be a subtle inference, but it is significant that *mabul* is not used in reference to the 150 days in either Genesis 7:24 or Genesis 8:3. The word 'waters' (Hebrew *mayim*) is employed instead in these two instances. Likewise, the word 'waters', not the word 'flood', is used

in connection with the drying up of the Earth on the first day of the first month of Noah's 601st year (Genesis 8:13).

The reason is that the Flood did not end on that particular day, but on the day that the heavy rains stopped (Genesis 7:12, 17). One indication of this may be the etymology for the word *mabul*. Attempts to link this word with an Akkadian cognate or derivate have not been successful, but most likely it is related to the Semitic verb, *ybl*, which has connections with the Egyptian 'to overflow'.<sup>10</sup> It can be applied to a fountain or spring that overflows. One can extrapolate further and suggest that this word applies to the condition of the Earth when waters 'overflowed' the mountains. It suggests submergence. The word refers only to the first 40 days of the Flood narrative by the end of which time the waters covered 'all the high hills under the whole heavens' (Genesis 7:19). This word is not applied simply to rivers overflowing their banks. The New Testament Greek retains the same connotation of submerging when applied to Noah's Flood: 'The world that then was, being **overflowed** with water, perished' (II Peter 3:6).<sup>11</sup>

If the word *mabul* is limited to the 40-day period of heavy rains and overflowing waters, as we have suggested, then it is most likely that the Biblical author wished to convey the thought that all mountains (= hills) were covered by the end of the 40 days. The 150-day period of Genesis 7:24 does not have the connotation of rising waters that the 40-day period has. Of that period it simply states the waters 'prevailed upon the earth' (Genesis 7:24), whereas of the 40-day period it states that the 'waters prevailed exceedingly' (Hebrew *meodh meodh*, literally 'greatly greatly', or 'more and more', Genesis 7:19). Again there is a subtle, but important, distinction

made between the waters of the 150 days and the waters of the 40 days. The destructive force of the Flood completed its work in the first 40 days of heavy rains, resulting in the destruction of all air-breathing terrestrial creatures. Only during this period were Flood waters becoming greater and greater.<sup>12</sup>

By two lines of independent reasoning, the first involving a chiasmic comparison between the 40 days in Genesis 7:17 and the 40 days in Genesis 8:6, and the second derived from applying the Hebrew *mabul* to the first 40 days of water activity, we have concluded that all terrestrial air-breathing creatures would have been destroyed within six weeks from the start of the Flood (40 days plus perhaps an extra day or two of creatures floundering in the waters without food or rest before perishing). Our conclusion — the applying of 40 days, not 150 days, to the period of destruction in the Flood story — has supportive parallels elsewhere in Scripture.<sup>13</sup>

Flood length has important implications for determining the Flood end-point. Creationists today end the Flood at three different geological points — the end of the Carboniferous, the end of the Cretaceous, and the end of the Cainozoic. Strictly speaking, the 'flood' (Hebrew *mabul*) accomplished its purpose within about six weeks, the purpose being the extermination of air-breathing land animals, including man, except for those preserved on the Ark. The world was submerged by water by the end of 40 days (somewhat sooner in some places), according to the chiasmic parallels between Genesis 7 and Genesis 8. The 40 days of rain were part of the 150 days, or five months, of water being strong (KJV 'prevailing') on the Earth. The remaining 110 days of the 150 days would be denoted as a time when no terrestrial vertebrates were living and moving on the Earth. Hence, all dinosaur activity — the building of nests, the laying of eggs, and the making of trackways — must have

occurred during the first 40 days of the Flood, if indeed dinosaurs were exterminated during the Noachian Flood. This conclusion stands in direct contrast with statements recently made, such as,

*'The data from these theories can be fitted into a Flood model, a model in which the dinosaurs perished at different times within the first 150 days (of the Flood).'*<sup>14</sup>

The question can be rightfully raised: Are we able to compress all dinosaur activity as exhibited in Mesozoic rocks within a 40-day period? Several observations ought to be made in arriving at an answer:-

- (1) Dinosaur eggs were laid by living dinosaurs. Eggs are not found inside of dinosaur skeleton remains. In at least three cases from two opposite parts of the world one *Troödon* and two *Oviraptor* dinosaur skeletons lie atop nests with eggs.<sup>15,17</sup> In these cases eggs were in sediments, not inside of the original animal.
- (2) Rarely, but in a few instances, dinosaur embryos have been found inside of an eggshell, suggesting a period of incubation, perhaps the most famous example being the discovery of an *Oviraptor* embryo from China.<sup>18</sup>
- (3) Skeletons and bones from very young dinosaurs have been found by the thousands in Montana at Upper Cretaceous dinosaur nesting colonies with an abundance of dinosaur eggshell fragments. This suggests not only incubation of eggs, but also the hatching of eggs at those sites.<sup>19</sup>
- (4) Dozens of dinosaur eggs have been found at Rennes-le-Chateau, France, with evidence of having hatched. The operculum, or 'hatching lid', is most often found upside down in the egg — a fact which provides good evidence that the embryo (or hatchling) must have evacuated the egg prior to the time the operculum was deposited on the bottom of the emptied egg.<sup>20</sup>
- (5) Today reptile and bird eggs require a continuous supply of oxygen in

order for the embryo to mature. If dinosaur eggs were at all like reptile and bird eggs, they also would require oxygen. The rising of Flood waters during the 'inundatory stage' most likely would have covered the dinosaur eggs for one or more days at a time, so that no dinosaurs could have hatched.

- (6) Today eggs from turtles normally take at least seven or eight weeks to hatch, while crocodile eggs generally take more than ten weeks.<sup>21,23</sup> Most songbirds incubate their eggs for about two weeks, but oceanic birds, such as the albatross, may incubate eggs up to 80 days.<sup>24</sup> No one knows how long dinosaur egg incubation took, but certainly the whole process of incubation, hatching, and growth of juveniles that we find in evidence in the Upper Cretaceous took more than ten weeks.<sup>25</sup>
- (7) Several thousand feet of sediment lie stratigraphically below the Upper Cretaceous in the western United States. Its formation cannot be compressed into one day or one week. If we conjecture that it would have taken 20 days for all pre-Cretaceous sediments to be deposited, then dinosaur egg incubation, hatching, and juvenile growth would have to be compressed into a 20-day period, that is, if dinosaurs were buried in Flood (*mabul*) waters. This then is an impossibility! Other lines of evidence from the Cretaceous of the western United States, such as the biohermal mounds from the Edwards Limestone of Texas<sup>26</sup> and the growth rates for coccolithophores from the thick chalk deposits of Kansas,<sup>27</sup> give additional support to the concept that all of Cretaceous activity cannot be compressed into a 40-day period.

### Conclusion

Upper Cretaceous dinosaurs from the western United States and Canada,

from France, and from China were not buried during the Noachian Flood. Of the three Flood models now being suggested and seriously discussed — the end-Carboniferous, the end-Cretaceous, and the end-Pliocene/Pleistocene — we can suggest that the end-Cretaceous Flood model is the least workable and the least likely to be correlated with both Biblical and scientific data.<sup>28</sup>

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### REFERENCES

1. Holt, R. D., 1996. Evidence for a Late Cainozoic Flood/post-Flood boundary. *CEN Tech. J.*, 10(1): 128-167.
2. Oard, M. J., 1996. Where is the Flood/post-Flood boundary in the rock record? *CEN Tech. J.*, 10(2):258-278.
3. Woodmorappe, J., 1996. *Studies in Flood Geology: Clarifications related to the 'reality' of the geologic column.* *CEN Tech. J.*, 10(2):279-290, especially 284-285.
4. Shea, W. H., 1979. The structure of the Genesis Flood narrative and its implications. *Origins*, 6:8-29.
5. Wenham, G. J., 1987. *Word Biblical Commentary, Vol. 1, Genesis 1-15*, Word Books, Waco, Texas, pp. 155-158.
6. Hamilton, V. P., 1990. *The Book of Genesis, Chapters 1-17 (The New International Commentary on the Old Testament)*, William B. Eerdmans Publishing, Grand Rapids, Michigan, p. 290.
7. Clifford, R. J. and Murphy, R. E., 1990. *Genesis. The New Jerome Biblical Commentary*, Prentice-Hall, Englewood Cliffs, New York, pp. 15-16. Clifford and Murphy indicate their endorsement of the chiasmic approach:- *'The Flood story in Genesis is narrated in a chiasmic arrangement, that is, each element in the first part is echoed and elaborated in the second part, with the center, God's remembering of Noah, expressing the main point. Chiasm ("envelope " or "sandwich " construction) is common in Biblical narrative .. .' (See Table 4).*
8. The word '*oph*' is the generic word for winged creature in the Old Testament. In some cases it is applied to birds of prey (1 Kings 14:11, Psalm 79:2, Jeremiah 7:33, Ezekiel 29:5, etc.). The word '*tsippor*' is most commonly applied to peaceful birds, song birds, birds that are likely to be near houses (Genesis 15:10, Psalm 84:3; 102:7; Ecclesiastes 12:4). The fact that '*tsippor*' was used by Israelites as food (Nehemiah 5:18) suggests that it could not have been a bird of prey, which was forbidden as unclean. The only

- Introduction: Noah, a just man in an unjust generation (Genesis 6:9-10)
1. Lawlessness in God's creation (Genesis 6:11-12)
  2. First divine address: Destroy! (Genesis 6:13-22)
  3. Second divine address: Enter the Ark! (Genesis 7:1-10)
  4. Beginning of the Flood (Genesis 7:11-16)
  5. Rising of the Flood waters (Genesis 7:17-23)
  - GOD REMEMBERS NOAH
  6. Receding of the Flood waters (Genesis 7:24-8:5)
  7. Drying of the Earth (Genesis 8:6-14)
  8. Third divine address: Leave the Ark! (Genesis 8:15-19)
  9. God's resolve to preserve order (Genesis 8:20-22)
  10. Fourth divine address: covenant blessing and peace (Genesis 9:1-11)

**Table 4.** Clifford and Murphy's endorsement of the chiasmic approach (see Ref. 7).

one exception where *tsippor* is applied to a bird of prey is where the prefix 'ravenous' is used to describe it (Ezekiel 39:4,17). Thus in the Flood account the peaceful 'dove' would have been included among the *tsippor*. The use of this particular word just one time in the Flood narrative then confirms the chiasmic connection between E and E'.

9. The events of the 150 days are distinct from the events of the 40 days, as far as the Flood narrative is concerned. Notice the miniature chiasmic structure formed by the 150 days shown in Table 5.

We must first note that the order here is chiasmic, not necessarily chronological. The 'heavy rains' (Hebrew *geshem*) lasted 40 days (Genesis 7:12), and the 'restraining' of those rains probably started at the end of the 40 days and continued for another 110 days. The events of the 150 days, as given above, are all gradual. Nothing happened in one day.

10. Botterweck, G. J., Ringgren, H. and Fabry, H.-J. (eds), 1997. **Theological Dictionary of the Old Testament**, Vol. 8, William B. Eerdmans Publishing, Grand Rapids, Michigan, p. 61.

11. Elsewhere in the Bible, Isaiah 54:9 underscores the idea of the Flood waters being waters that overflow the Earth: 'For this is as the waters of Noah unto me: for as I have sworn that the waters of Noah should no more go over the earth; so have I sworn that I would not be wroth with thee.' (Emphasis added.) Thus Scripture, both Old and New Testaments, emphasises the Flood (*mabul*) in its first phase — the overflowing phase, which Genesis 7 and 8 in chiasmic construct describe as occurring only in the first 40 days of rising waters. Technically when we today speak of 'post-Flood' events, we should be describing events happening after the first 40 days of the Flood event.

The waters triumphed over the Earth for 150 days (Genesis 7:24)  
 (Chiasmic centre: God remembered Noah . . . , Genesis 8:1a)  
 — So God caused a wind to pass over the Earth, and the waters receded (Genesis 8:1b)  
 C — Then the springs of the great deep and the windows of heaven were sealed (Genesis 8:2a)  
 C' — And the heavy rain from heaven was restrained (Genesis 8:2b)  
 — Then the waters gradually receded from the Earth (Genesis 8:3a)  
 And the waters had declined by the end of 150 days (Genesis 8:3b)

**Table 5.** The miniature chiasmic structure formed by the 150 days. Words in this structure are verbatim from Wehham, Ref. 5, p. 150.

12. During the 150 days the waters began to decrease 'gradually' or 'continually' (KJV), according to Genesis 8:3. See Ref. 9.

13. The period of 40 days, not 150 days, as the 'era of destruction' is consonant with the predicted 'destruction' of Ninevah:

'Yet forty days and Ninevah shall be overthrown!' (Isaiah 3:4). Forty days of mercy — 40 days till destruction! Many scholars see a connection between the 40 days for the destruction of the antediluvian world, and the proposed 40 days of probation prior to the destruction of the Assyrian capital. Jonah may have even used the Flood account as part of his appeal — a Flood story that archaeologists have demonstrated was well-known in various versions in that part of the world in ancient times. Two other examples of the use of 40 days in Scripture as a period of probation are first Moses' pleading for the sparing of his people for 40 days (Deuteronomy 9:8-9, cf. Exodus 32:32ff, 34:28), and second, Goliath's threatening the Israelites for 40 days before being killed by David (1 Samuel 17:16ff). In the first example the precise wording of Genesis 7 is employed, 'forty days and forty nights'. Usually Scripture simply states, 'forty days'.

14. Oard, M. J., 1997. The extinction of the dinosaurs. **CEN Tech. J.**, 11(2): 149. Compare this with another statement in the same article:

**'It is possible that during the first 150 days of the Flood the Maiasurs laid eggs and that the babies hatched and grew to 1m long'**  
 In light of the above evidence, one will have to rephrase this statement to read: 'It is not possible that during the first 150 days of the Flood . . .'

15. Horner, J. and Dobb, E., 1997. **Dinosaur Lives: Unearthing an Evolutionary Saga**, Harper-Collins, San Francisco, California, p. 162.

16. Norell, M. A., et al., 1995. A nesting dinosaur. **Nature**, 378:774-776.

17. Holden, C., 1996. Another nesting dino. **Science**, 272(5263):819.

18. Norell, M. A., 1994. A theropod dinosaur

embryo and the affinities of the Flaming Cliffs dinosaur eggs. **Science**, 266:779-782.

19. Horner and Dobb, Ref. 15, chapters 6-8.

20. Cousin, R., Breton, G., Fournier, R. and Watte, J.-P., 1989. Dinosaur egg-laying and nesting: the case of an Upper Maastrichtian site at Rennes-le-Chateau (Aude, France). **Historical Biology**, 2:157-167, especially p. 160.

21. Airman, P. L. and Dittmer, D. S. (eds), 1972. **Biology Data Book**, 2nd edition, Vol. 1, p. 145. Data on four species of turtles is given in this book.

22. Ernst, C. H., Barbour, R. W. and Lovich, J. E., 1994. **Turtles of the United States and Canada**, Smithsonian Institution, Washington, D.C., pp. 42, 310. The marine turtle, *Chelonia mydas*, has an incubation period that averages 50-55 days, while the freshwater turtle, *Trachemys scripta*, takes 60-80 days to hatch.

23. **Grzimek's Animal Life Encyclopedia**, 1975, 1979. **Reptiles**, Vol. 6, Van Nostrand Reinhold Co., New York, p. 141. The Nile crocodile's eggs are incubated 11-14 weeks, depending on the temperature of the nest.

24. **Grzimek's Animal Life Encyclopedia**, 1975, 1979. **Birds I**, Vol. 7, Van Nostrand Reinhold Co., New York, p. 70.

25. Horner and Dobb, Ref. 15, p. 117.

One could argue that dinosaurs were precocial in their early developmental stages, thus avian egg maturation would be the better analogue for dinosaur maturation. But this still does not solve the problem. Very white and fairly small turtle eggs representing a freshwater turtle have been found in the same beds in Montana with dinosaur eggs. They have well-developed embryos. Such could not have matured during the 'inundatory phase' of the Flood, nor would the time constraints of less than 40 days allow for their development, according to Refs. 21-23.

26. Roberson, D. S., 1972. The paleoecology, distribution and significance of circular bioherms in the Edwards Limestone of Central Texas. **Baylor Geological Studies, Bulletin No. 23**.

Roberson has aerial photographs of very large circular or elongate rudistid and caprinid mounds that are sometimes 50-100 m in diameter. They have up to 14 or 15 concentric rings. If the rings are interpreted as seasonal cycles, then each mound may have taken at least 14 to 15 years to form. At any rate it would have been impossible for these mounds to form within the 40 days allotted to the action of *mabul* waters. The rudistids and caprinids grew *in situ* with their long axis in an upright position, thus the circular bioherms could not have been washed in from elsewhere. Below the Edwards Limestone is the Paluxy Sand, both of which are in the Fredericksburg Formation. The Paluxy is named after the famed Paluxy River where dinosaur footprints have been found. Thus, marine 'reef-life' structures have been produced in Texas in Cretaceous rocks immediately overlying rocks with evidence of dinosaur

- tracks and bones.
27. Johns, W. H., 1995. Letter to the Editor: Coccolithophores and chalk layers. **CEN Tech. J.**, 9(1):29-36.
28. Tyler, D. J., 1997. Flood models and trends in creationist thinking. **Creation Matters**, 2:1-3. Tyler has perhaps the best summary of the three Flood models in current creationist literature. I am indebted to him for the wording used to describe these Flood models.

## EARTH'S DIVISION IN PELEG'S DAY?

Dear Editor,

I am saddened that your journal published the article by John A. Watson,<sup>1</sup> for I fear it will bring some disrepute to our mutually held perspectives on creationism. In fact, the article reflects indiscretion in the area of Biblical studies (I cannot speak on the issue of geology; to do so would be to commit the logical fallacy of appeal to misplaced authority).

To begin with, Watson claims to employ Isaiah 28:9-10 as '*the Bible's basic interpretative rule*' (p. 71). To name this passage as such is a misapplication of the context at best.<sup>2-4</sup> The Hebrew phrase translated 'precept upon precept, precept upon precept, line upon line, line upon line, a little here, a little there' is basically unintelligible. The context of the passage seems rather to mirror the drunken communication of those who hear Isaiah's message. It is at best reflective of baby talk; at worse, gibberish. In either case, it may also reflect in some way the foreign tongue of Isaiah 28:11, which seems in turn to refer to the Assyrian invaders who will destroy Israel (cf. Isaiah 18:2). The greater context of Isaiah 28:11-13 is that God will discipline His people's rejection of clear warnings which sound to them as gibberish, with the result that they fall into captivity. Thus the phrase is not intended to be a basic interpretative rule of the Bible, but the gibberish of certain judgment.

Secondly, Watson claims Job 38:25 uses

*'the very same word "divided", and thereby qualifies, with its context, to interpret the correlating word "divided" of Genesis 10:25'* (p. 71).

The same Hebrew root *plg* is indeed evidenced in both passages, but the verbal stem in Genesis 10:25 is a Niphal, and in Job is a Piel. Thus, his statement is somewhat misleading, inasmuch as a differing stem often indicates a totally different gloss for a given root. I do however agree that in the case of Job, the additional element of a watercourse is very evident. To argue on the basis of this alone for a similar meaning of *plg* in the Genesis 10:25 passage is tenuous at best. I do agree it is at least possible that this is the case, and there is ample argument with the nominal usages of *plg* which would support his view at this point, which could have been mentioned. My article 'Peleg in Genesis 10:25'<sup>5</sup> cites these.

Thirdly, though Watson properly asserts that 'earth' (Hebrew '*erets*') in Genesis 10:25 is regional, he misapplies the region to that of north-west Arabia and Palestine. In support, he cites that

*'the probable home of Peleg's family (was) in upper north-western Arabia'* (p. 72)

based on Joktan's descendancy. Two problems are immediately evident. First, the whole of the context of Genesis 10-11 is on Mesopotamia, not north-west Arabia (or Palestine). In fact, it would not be until the end of chapter 11 and the beginning of chapter 12 that the focus would move from Mesopotamia to Canaan. Second, Peleg was an immediate ancestor (great-great-great grandfather if all generations are given) of Abram, who was called from Ur of the Chaldees (Ur of Mesopotamia). I would argue that Joktan moved to north-west Arabia which produced a lineage there, whereas Peleg remained in Mesopotamia. As the little brother to Peleg (his name means little one and he is listed second in order) he would not have had family inheritance as the first-born Peleg would have had.

Finally, migration patterns mentioned in Genesis seem to be from Mesopotamia toward Palestine rather than vice versa (hence, Terah to Haran for example, Abram to Palestine).

Fourthly, there is no modern justification whatsoever for Strong's interpretation for Peleg as 'earthquake'. No contemporary Hebrew lexicon of which I am aware does so (I cannot speak about the thinking in Strong's day). For Watson to state categorically that

*'the name Peleg itself indicates that an earthquake occurred, opening an extensive crevasse that widened and filled. . . with water of the sea near the time of his birth'* (p. 72)

is unfounded! Indeed, had he taken the other gloss given in Strong's ('small channel of water, as in irrigation'), his argument would have been much more supportable from Scriptural usage.

David M. Fouts,  
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## REFERENCES

1. Watson, J. A., 1997. The division of the Earth in Peleg's days: tectonic or linguistic? **CEN Tech. J.**, 11(1):71-75.
2. Hayes, J. H. and Levine, S. A., 1987. **Isaiah: The Eighth Century Prophet**, Abingdon Press.
3. Grogan, G. W., 1986. **Isaiah. In: Expositor's Bible Commentary**, Vol. 6, F. Gaebelain (ed.), Zondervan.
4. NASV and NIV marginal notes.
5. Fouts, D. M., in press. Peleg in Genesis 10:25. **Journal of the Evangelical Theological Society**.

Dear Editor,

In the course of my reading I have observed that one of the main reasons why Christians have been attracted to evolution is that in their view it offers an explanation for the distribution of fauna found in continents and islands that are separated by vast distances from the Euro/Asian/African mainland. Not only, as Darwin