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794TH ORDINARY GENERAL MEETING,

HELD IN COMMITTEE ROOM B, THE CENTRAL HALL,  
WESTMINSTER, S.W.1, ON MONDAY, JANUARY 20TH 1936,  
AT 4.30 P.M.

ALAN STUART ESQ., M.SC., F.G.S., IN THE CHAIR.

The Minutes of the Meeting of January 6th, 1936, were read, confirmed and signed, and the HON. SECRETARY announced the following elections :— Major E. F. Holland as a Member, W. A. Pite, Esq., F.R.I.B.A., Rev. J. R. S. Wilson, B.D., and F. Junkison as Associates, and Dr. Williams's Library as a Library Associate.

The CHAIRMAN then called on Lt.-Colonel F. A. Molony, O.B.E., to read his paper on "The Noachian Deluge and its Probable Connection with Lake Van."

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*THE NOACHIAN DELUGE AND ITS PROBABLE  
CONNECTION WITH LAKE VAN.*

By LT.-COLONEL F. A. MOLONY, O.B.E.

IT is now generally agreed that the art of writing is extremely ancient. R. C. Thompson says: "The epic of Gilgamesh would appear to have had its origin with the Sumerians at a remote period, perhaps the fourth millennium or even earlier. Three tablets exist which cannot be much later than 2000 B.C." The *Encyclopædia Britannica* says: "2100 B.C., while its text was apparently derived from a still older tablet." Hence it seems possible, and even probable, that some record of the Flood was made by a member of Noah's family.

A great deal has been written to prove that Noah's Flood was universal and covered the whole earth. Two main arguments are used. One of these is that tribes all over the earth have traditions of a great flood. But not only are we told in the Bible that the earth was peopled by Noah's descendants, but there is much other evidence that the races of men spread

from one centre. If this dispersion took place after the Flood, they would, of course, carry traditions of that great deluge with them. The other argument is that there is geological evidence that almost all continents have been submerged. This is indisputable. But to prove that Noah's Flood was universal, it would be necessary to prove that this submergence was simultaneous, and this, I believe, has never been done.

We were taught, as children, that Noah's Flood covered the whole earth; and we naturally would like to prove this to be true. But there are several other passages in the Bible referring to the whole earth which we never take literally.\* By insisting that this flood covered everything, we put a great obstacle to belief in that early record. If Noah's Flood was not universal, what did it cover? The Bible gives us one clue, in saying that the ark rested on the mountains of Ararat. Now Sayce, in his book on the Hittites, says that the name Ararat was applied in ancient times to the district around and *south* of Lake Van: that is, to Mesopotamia. The events described in Genesis, both before and after the Flood, seem to be located in Mesopotamia, making it probable that the Flood took place there.

The eleventh tablet of the Gilgamesh Epic plainly refers to Noah's Flood, because it speaks of the great boat made water-tight with pitch, of Noah, his family and the animals, of the flood and the drowning of multitudes, of the sending out of the raven and dove, and of Noah offering a sacrifice when he left the ark. And the epic says that the ark was built at Shurippak, which has been identified with Fara, on the banks of the Euphrates, south-east of Babylon.

Now the part of the great Mesopotamian plain which lies below the 500 feet contour is as large as England without Wales. Hence it is probable that Noah and his sons never saw a mountain in their lives. Words and expressions alter in meaning, especially when translated. We have a notable case in Gen. vii, 20: "Fifteen cubits upwards did the waters prevail, and the mountains were covered." Fifteen cubits is only about 23 feet, so it would seem that the word we translate, "mountains," would be better rendered mounds, probably raised by human labour.

You have doubtless heard of the discovery, in the south part of the plain, of a layer of clay, 8 feet thick, with no potsherd

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\* Gen. xli, 57. Deut. ii, 25. Kings x, 24. Luke ii, 1.

in it, whereas there are potsherds above and below it. This has been dug through in three places, and comes where a great flood would form a backwater, or where the water would be so quiet as to deposit its sediment. It seems highly probable that this was Noah's Flood. But what can have caused so great a flood? The Bible speaks of forty days of rain, but hints at another cause when it says: "All the fountains of the great deep were broken up." Some think that this referred to a great wave, caused by an earthquake, sweeping up from the Persian Gulf. Others think that the "great deep" refers to subterranean waters. I beg to direct your attention to another very probable cause, the great Lake Van, at the head waters of the Tigris. Its extent is about 1,500 square miles. Its height is 5,680 feet above the sea, and it has no surface outlet.

The remarkable point is that six different valleys lead out of the depression in which Lake Van lies. That is, if the waters of Lake Van were raised by various amounts totalling 1,062 feet it would empty itself by six wholly different routes, of which two lead to the Euphrates and four to the Tigris. These passes, or "cols," cover an arc of 85 miles, and high mountains usually lie between them. Now in the case of such depressions geologists usually infer that the valley first formed must have got temporarily blocked, causing the formation of a lake, the waters of which rose until they found a different depression, which they proceeded to cut into a valley. In the case of the Lake Van depression, this blocking must have happened several times. Old shore lines have been noted above Lake Van, 15, 40 and 100 feet above its present level. Only a rise of 260 feet would be needed to cause the lake to shift its overflow sixty miles.

The blocking of the valleys was probably caused either by volcanic action or by glaciers. The broadest valley leading from the Lake Van depression is that to the south-west of the lake. Six miles north of this valley is Nimrud Dagh, a very large volcano, with a crater over four miles in diameter. It erupted violently as recently as A.D. 1441, and was "Rent asunder to the breadth of a city." A geologist writes: "An eruption of cindery basalt dammed up Lake Van." It appears from Oswald's geological map of Armenia that lava has flowed from this volcano via the Bitlis valley for 30 miles. Lava would make a permanent dam, cinders a permeable dam; but

volcanoes often emit mud, and mud would make an impermeable dam, but one that would give way rapidly once the water rose high enough to top it.

Several instances have been known of valleys having been so blocked by glaciers that considerable lakes have formed. In such cases the material of the dam, being lighter than water, gives way with great suddenness, causing a flood very dangerous to life in the valley below. T. G. Bonney gives interesting details of the inundation of the valley of the Drance in 1818. It was caused by "the advance of the glacier of Gétroz, which dammed up the river and formed a lake about 10,000 feet long, 400 wide, and 200 deep; containing, it was estimated, about 800,000,000 cubic feet of water. The danger of the situation being recognised, about two-fifths of the water was successfully drained off by means of an ice tunnel, and people in the valley were warned of their danger; but the dam suddenly broke up, the water came down like a wall, and fifty lives were lost."

The case of a glacier blocking a tributary of the Indus, near its head waters, will be remembered by many. A very dangerous flood was the result. We were told that a flood similarly caused had once drowned a Sikh army. It is generally believed that the "parallel roads" of Glen Roy are due to a similar cause; if so, it proves that ice can hold water up to a depth of 700 feet.

The best-known instance of a glacier creating a lake is the creation by the Aletsch glacier of the Marjölen See, north-east of Brieg, in the valley of the upper Rhone. This lake is a mile long, by 550 yards wide, and is about 90 feet deep. Bonney gives half a dozen other similar cases and writes: "Though a large mass of ice can act for a time as a dam, this is very liable to give way." He says that he once saw the Marjölen See drop 60 feet in twenty-four hours.

Before considering whether a glacier could have come down as low as Lake Van in Noah's time, it is essential that we assign some date to that much-discussed deluge.

Archbishop Usher put the date of the Flood at 2448 B.C. It has long been recognised that this date is too recent. The Babylonian "King lists" would put it very much earlier; but if we adopt the recently proposed and reasonable method of assigning to these kings average reigns of twenty-five years, this gives the date for the great Flood as 4500 B.C., say 6,400 years ago. The evidence that the Ice Age was then not long

past its greatest intensity is partly astronomical but mostly geological.

Astronomers do not profess to be at all certain about the causes of Ice Ages. The theory which they favour most is that the ellipse of the earth's orbit is elongated every 21,000 years. At present, winter in the northern hemisphere occurs when the earth is nearest the sun, but 10,500 years ago the opposite condition prevailed, and there must have been a long succession of very cold winters. If this caused the last Ice Age, then, at the date we are assuming for Noah's Flood, 6,400 years ago, the Ice Age was indeed passing away, but the melting had not yet reached its fastest epoch.

Geologists have lately come to believe that the last Ice Age was much nearer our time than they formerly supposed. Rocks like those round the English lakes, which have obviously been polished by ice, do not look as if they had been exposed to all weathers for more than 7,000 years.

Niagara receded 4.4 feet a year before so much of its water was taken for power purposes. The post-glacial gorge which it has cut is seven miles long. In strict proportion this should have taken 8,400 years to cut. Gilbert puts it at 7,000 years. By counting mud markings, De Geer seems to have clearly established that the ice margin retreated north past Stockholm only about 9,000 years ago. Sir H. H. Howorth says: "We must allow that in the last period of the earth's history there was a development of glaciers on a large scale in nearly all latitudes where high land existed . . . this view . . . seems to be established beyond question." Felix Oswald, in his geology of Armenia, mentions several glaciers still existing in the Armenian highlands. He writes of a "quite imposing glacier" on the west side of Ararat, and another "at the head of the great Akhury chasm descending to as low an altitude as 8,000 feet." The Aletsch glacier in Switzerland descends to 5,500 feet, a little lower than the level of Lake Van. The latitude of the glacier is 46.20, of the lake 38.20. So we have to account for a glacier descending to the same level in 8 degrees of latitude further south. J. Geikie, in his book, *Prehistoric Europe*, shows the ice cap on the Caucasus coming down to the shores of the Black Sea in latitude 44. Nowadays they come down to sea level in latitude 62 only. Assuming the astronomers to be right about their theory of Ice Ages, and that the peak

of the last was 10,500 years ago, then the latitude at which glaciers descend to sea level has shifted 18 degrees during this period, which probably equals 9 degrees during the half-period of 5,250 years. It would therefore clearly shift more than 8 degrees during a period of 6,400 years.

Considering all this evidence, it seems almost certain that glaciers did come down to Lake Van in Noah's day. In view of the raised beaches and numerous valleys leading from the basin of the lake, we may also infer that there were blocks temporarily raising the water level.

As regards the volume of the flood sent down, the area of Lake Van is 1,476 square miles. If it rose 100 feet, its area would be 1,771 square miles: taking the mean of these, we find that if the water ran off to its present level when the lake had been filled to the height of the 100-foot raised beach, it would send down 30 *cubic miles of water*. Now this is 5,600 times what the burst of the Gétroz glacier sent down, even taking that at 800,000,000 cubic feet of water, which is obviously an over-estimate, as it is got by multiplying together the *maximum* length, breadth, and depth of the temporary lake. Let us take another instance to help us realise what a 30-cubic-mile flood means. It is 468 times the volume of the flood sent down by the bursting of the glacier on the Indus, taking the figures as published in the journal of the Royal Geographical Society, and reckoning as in the last case. The topography is such that the flood from Lake Van may have been 400 cubic miles.

The gradient of the Tigris valley is 23 feet per mile for the upper 240 miles, then 4 feet per mile for 240 miles, and then only 1 foot in 3 miles for the last 330 miles to the Persian Gulf. Needless to say, this marked flattening of the gradient is precisely what makes for a great and wide-spreading flood.

Sixty miles north-west of Mosul, or Nineveh, the Tigris comes out of the high hills, and from there to 20 miles south of Mosul the contoured map shows low, rounded hills, all rising to about the same graded plane, and looking very much as though they were made of the coarser silt deposited by some tremendous flood. We have already seen evidence of 8 feet of fine silt deposited in the south part of Mesopotamia. If the flood had come up from the sea, the fine silt would have been deposited near Mosul, and the coarse silt in the south.

## EVIDENCE FROM THE RECORDS.

The earliest version of the story of Noah's Flood is the Sumerian. The late Dr. L. W. King, F.S.A., published in 1918 a book entitled *Legends of Babylon and Egypt in Relation to Hebrew Tradition*. He used early texts inscribed towards the close of the third millennium B.C. These texts are very much damaged, but say

"By our hand a flood will be sent  
To destroy the seed of mankind."

The missing portion of the fourth column must have described Ziusudu's building of the great boat in order to escape the deluge, for at the beginning of the fifth column we are in the deluge itself.

"All the mighty wind storms together blew.  
The flood . . . raged  
When for seven days, for seven nights  
The flood had overwhelmed the land  
When the storm wind had driven the great boat over the  
mighty waters."

The reader is requested to note the last line, as we shall have occasion to refer to this wind later.

## GILGAMESH EPIC.

The most important ancient version, outside of the Bible, is the Gilgamesh Epic. Mr. C. P. T. Winckworth, of Cambridge, has kindly given the author the following as the best translation :

"For one day the de(luge . . . )  
Swiftly mounted up (. . . ) mountain (. . . )  
Like a war engine it comes upon the people.  
By six days and nights the wind drives,  
The deluge tempest overwhelms the land,  
When the seventh day arrives the tempest subsides in the  
onslaught.  
Urragal tears out the mast."

The Gilgamesh Epic states that the man corresponding to Noah built the ark at Shurippak, which has been identified in latitude 31° 35' north, and longitude 45° 45' east. If this be

correct, then a flood coming from Lake Van would have emerged from the mountains 430 miles from where the ark was built. The waters would have spread themselves before they lifted the ark ; consequently the bore wave did not cause the ark to capsize, but apparently gave it a very nasty flick, which caused it to lose its mast.

An Irish fisherman once told the author that he was sailing in the mouth of Bantry Ban, where there is a submerged rock on which waves break occasionally. He reckoned that it could not break at the then state of tide and sailed over it. But it did break, and snapped his mast.

The portion of this extract most relevant to our subject is that about a war engine, because such, in early days, generally took the form of a tower, with battering-ram below, which was *rolled* towards the fortress it was to attack. Mr. Bonney writes regarding the flood in the Drance valley already mentioned : " It is said to have issued from the defile of Lourtier like a moving wall or mound, a hundred yards high, the head of the column of water being entirely masked by the confused mass of mud, stones, beams, and trunks of trees which it swept along, and overhung by a dense cloud of dust. The people in the valley had been warned of their danger, nevertheless 50 lives were lost."

The advance of a war engine would appear to be a very apt illustration to describe floods caused by the bursting of glacier dams. The mention of the dense cloud of dust should also be noticed, because the Gilgamesh Epic mentions a " black cloud " in connection with the flood it describes.

When a bore rushes up a tidal river there is generally a main wave or " wall," but a good many rise before and after it. In the same way the flood caused by the bursting of a dam at Lake Van would probably " mount up " after the " wall " had passed. In the south part of the Mesopotamian plain this would probably take a whole day, as described in the first two lines of the foregoing extract from the Gilgamesh Epic.

#### THE BIBLE ACCOUNT.

The rule of climax necessitates putting the strongest arguments last. The biblical account states that the ark was 300 cubits long, 50 broad and 30 high ; and these are very near the dimensions of a pre-Dreadnought battleship. The Sumerian account

says that the length and breadth of the ark were equal, and Dr. King remarks that, if so, it was probably like the circular coracles still used on the Tigris. But if made to the dimensions given in Genesis, its construction would be easier than if made circular, because two logs scarfed together would span it from side to side. It probably drew 15 cubits of water.

The Bible account implies that the flood was due chiefly, but not entirely, to rain. Apparently a spell of wet weather caused the waters of Lake Van to top the dam and break it up. The rain appears to have spread to the south with the flood. There must have been immense evaporation from the water covering the hot Mesopotamian plain. And the raising of the whole atmosphere 30 or 40 feet over a large area would cause considerable atmospheric disturbances.

If you raise the atmosphere 43 feet over a large area, the displaced air must get away somewhere. If you at the same time cause the atmosphere to drop more, over a neighbouring small area, and so create a partial vacuum, a wind will blow from the first area to the second. That is, in this case, up the Tigris. That is from a hot region to a cold one. That means condensation. Hence directly the flood passed any given point, the wind would start, clouds would form, then would come drizzle and rain, all within 24 hours. The evaporation would cause the rain to last many days.

Gen. vii, 4 and 10, show that Omniscient God allowed Noah one week to herd the animals into the ark, Noah having been previously told to prepare for this. Probably Noah and his family embarked on the last day. The above two verses certainly imply that *the Flood began on the first day of the rain*. The chronicler probably knew that this would be thought improbable, but kept to the truth. He realised that such a great and sudden flood could not be due to rain alone; so he said, "All the fountains of the great deep were broken up." Where the great body of water came from he had no means of judging. He knew that the artificial mounds were very seldom more than 15 cubits high. He saw that they were all covered, so he wrote (Gen. vii, 20): "Fifteen cubits upward did the waters prevail; and the mountains were covered." Gen. viii, 3, shows that for 150 days there was nothing but water to be seen. The next verse describes the grounding of the ark at the end of that period, probably on one of the higher mounds. It is likely that this was the

first intimation that the inmates received that the flood was running off, because, if the ark was drifting about, soundings would give unreliable information on that point. Two and a half months later the tops of other mounds appeared. That is, the flood took that time to run off the 15 cubits which the ark drew. Two months later the plain began to dry, but as there was no grass to be seen anywhere, and as travelling to where grass could be got would be rendered very difficult by the fact that every depression was still full of water, God inspired Noah to wait another eight weeks before disembarking.

The Bible account certainly represents the Flood as taking a surprisingly long time to run off. We have seen, however, that Lake Van might send down a most colossal flood. And the gradient of the Mesopotamian plain is so slight, that when the wind was from the south-east and strong, the water would hardly run off at all. W. K. Loftus, in *Travels and Researches in Chaldea and Susiana* (re Bagdad), says: "The Tigris rose 22½ feet, and it was a full month before the people could ride beyond their walls."

Thus it would seem that we have hitherto been dealing with perfectly clear and credible statements, consistent with our idea of the Flood proceeding from Lake Van. Now we come to a more debatable passage, for Gen. viii, 4, states that the ark rested upon the mountains of Ararat, and not at the south-east end of the great plain, though we should expect a flood coming from Lake Van to carry it there.

There seems scant reason why we should take this passage to refer to the particular mountain we now call Ararat. Dr. A. H. Sayce says that the name was given in ancient times to the whole district around and south of Lake Van.\* The Jews have a tradition that the ark grounded on the Judi Dagh, which is east of Mosul, and about 50 miles south of Lake Van. Other accounts state that it grounded further to the south and east on mount Nisir. How could we account for it grounding among the foothills north-east of the great Mesopotamian plain? Noah would naturally wish to avoid the ark being carried out to sea. He may have rigged jury masts and sails, and anchored when the wind was northerly.

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\* *The Hittites*, p. 71.

My supposition accounts for *all* the inhabitants of the plain being drowned. Had the flood been due to rain alone, many of the dwellers on the borders would have escaped to the hills.

#### SUMMARY.

The raised beaches on the south shores of Lake Van prove conclusively that in past times its waters have stood at higher levels than they do now. The number of valleys leading from the depression of the lake implies that this was due to temporary blocks of the outlet and not to ordinary processes of denudation alone. These blocks may have been caused by volcanic mud, landslides or glaciers. Records show the latter to have been a very probable cause, and it is known that when ice dams break, they do so suddenly.

We then found reason to believe that Noah's Flood may be dated about 4500 B.C., at which date the last Ice Age would not have passed from so high a lake as Van.

We then noted the colossal volume of the flood that Lake Van could send down, the steepness of the upper drop, but the flatness of the great Mesopotamian plain. The low (gravelly ?) hills round Mosul and the 8-foot bed of clay at Ur, both point to a very huge flood, which cannot have come up from the sea.

We then turned to the ancient records, and found that the Sumerian speaks of the Flood overwhelming the land for seven days, while the Gilgamesh Epic says that it mounted up in one. The description of the Flood coming upon the people like a war engine, and the tearing out of the mast, both imply that the Flood was extremely sudden. The Bible account says that the Flood began on the same day as the rain, and is perfectly consistent in its account of how the Flood ran off, though the time it took to do so was longer than we should have expected.

Finally, we saw that the Bible statement that the ark grounded on Ararat need not force us to abandon a theory for which there is so much evidence. The Bible and other documents all agree as to the fact of the Flood ; recent excavations at Ur confirm it, and the author trusts that the suggestion of a flood coming from Lake Van may explain as eminently reasonable what has hitherto appeared to be unlikely or incredible.

## CHAIRMAN'S REMARKS.

I am very glad to have been given an opportunity of being here to-night at the reading of a paper on a subject which is of perennial interest to Biblical students and especially to myself, a student of geology as well.

It is true to say that even for non-Christians, Noah's flood has passed from the realm of folk-lore into that of history, and it only remains to discuss the natural causes which God set in motion to bring it about. The first point is, I agree with Col. Molony, that whereas it is true there is evidence that almost all the continents have been submerged, this must not be taken to mean that a universal deluge has taken place since man appeared on earth, for the geological evidence of fossils only proves that different parts of the continents were submerged at various times. There is no geological evidence known to me that proves a universal deluge, or that some dry land has not existed since it first appeared out of the primeval sea. Again, fossils of sea-shells to be found in rocks composing the highest mountains do not mean that the sea covered the mountains as they are to-day. The rocks of which the mountains are now made were laid down in the sea but have since then been raised to their present position, as the gorges cut by rivers such as the Indus across the Himalayas definitely prove, because, in order to produce such a physical feature, the river valley must have been made first.

That glaciers existed round about the Lake Van area in the glacial period is highly probable, for the famous cedars of Lebanon, which grow on glacial material, in latitude  $34^{\circ}$  N., are south of the latitude of Lake Van at  $38\frac{1}{2}^{\circ}$  N., and which, being far from the sea, would have a more extreme climate. From Col. Molony's description it would appear that Lake Van had been dammed by ice at one time, but I think that the "waters of the great deep" refer neither to the waters of an ice-dammed lake nor to any having a subterranean source, but to oceanic waters. Subterranean water is not present in huge reservoirs, but is largely held in the pore spaces of rocks, and is not therefore available for producing a sudden great flood. On the other hand, around and within the Arabian block, faulting and volcanic action have been frequent in

geologically recent, and even into historic, times. A submarine earthquake could have sent a large wave up the Persian Gulf to meet the waters of the flooded Mesopotamian rivers, and thus cause a catastrophic flood. Flooding of the rivers must have been inevitable during the Pleistocene pluvial periods which corresponded in this part of the world with the warmer interglacial episodes known to have occurred in Europe. I take it that Col. Molony refers to the last glacial advance before the ice finally retreated. The work of de Geer on "varved" clays has given us a much more accurate measure of the time which has elapsed since the ice finally retreated from northern Europe and Canada, the last oscillation of glaciers having taken place about 5,800 years B.C. This is getting much nearer to Biblical chronology than used to be the case. The speaker's statement that "Rocks like those round the English lakes . . . do not look as if they had been exposed to all weathers for more than 7,000 years" would not be accepted by any scientist as evidence that the Ice Age was "much nearer than they formerly supposed." The age of a rock cannot be estimated by its appearance.

I fail to understand the mechanism by which the rising of water 30 or 40 feet over a large area can cause considerable disturbance in the atmosphere in a mechanical way. The uprising of waters could not have been so sudden as to act like the piston of a pump upon the air above, and this I take it is what Col. Molony means.

I would like in closing to say how much I myself have enjoyed listening to a most interesting paper, and one which must have necessitated much thought and research on the part of the speaker, and I have great pleasure in proposing a cordial vote of thanks to him.

#### DISCUSSION.

Mr. H. W. BRYNING, said: Lieut.-Colonel Molony remarks at the end of the opening paragraph, that, "it seems possible, and even probable, that some record of the Flood was made by a member of Noah's family." He could have gone further, and suggested that the original record of the Deluge may therefore have been written by Noah himself. Because, I suggest, the knowledge of writing

may have been brought down the ages by the antediluvian patriarchs, and may have been taught to his grandchildren by Noah.

The next point that I would comment upon is at the bottom of the next paragraph, where he says, "to prove that Noah's Flood was universal, it would be necessary to prove that this submergence was simultaneous, and this, I believe, has never been done."

I wish to say here that it could be done, if the theory of ice ages was looked into and adapted to the teaching of geology, regarding the relation between glacial and interglacial periods, and their effect upon subsidences and upheavals of the earth's crust in the unknown past. For I feel sure that it may be conceded that all the "high hills under the whole heaven," together with the polar regions of the globe, may have been buried under vast ice-caps, at the time when the great Pleistocene submergence occurred. So that this great cataclysm was not confined to the northern hemisphere.

I therefore suggest, to those who do not believe that a universal deluge was possible, that the expression used in the narrative of the Flood in Genesis, defining the cause of the catastrophe, points to the cataclysm that obviously occurred at the end of the great Ice Age, through which the floor of the oceanic basin may have been shattered, thus accounting for the numerous volcanic islands and submarine vents; which, according to geology, suggests their relation to the most prominent features of the earth; and, I suggest, testify to the period when "*All the fountains of the deep were broken up.*" While such worldwide volcanic action may account for the universal rainfall, which lasted for forty days and nights.

I have only one more point to make, which, I suggest, will explain how Noah could have got the precise figure of *fifteen cubits* as the amount by which the flood-water *prevailed* above the *mountains* (not earth).

The Babylonian account of the Flood states,

"In the country of Nisir rested the ship; the mountains of Nisir stopped the ship, and to pass over it, it was not able."

This is surely evidence of a flood that was high enough to top what had remained of the highest hills at the end of the Ice Age. While the confusion of tongues at the Dispersion may suggest

the two names for the same region, where the Ark was arrested on the highest part of a mountain, and thereby marked the beginning of the Abatement of the Flood.

Now fifteen cubits is just half the total depth of the ark, which suggests the depth at which it had floated safely for 110 days before it grounded on the mountains of Ararat; so that the load-line, automatically marked by the water gave Noah the indication he wanted.

Before concluding my remarks, I may quote the highest testimony to a universal Deluge, which is in the book of the prophet Isaiah, chapter liv, verse 9.

In this text God speaks to the House of Israel, who were in captivity at the time, and separate from the House of Judah. These are the Lord's words to his people:—

“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, nor rebuke thee.”

Lieut.-Col. T. C. SKINNER said: Col. Molony has given us an interesting paper which if viewed mainly as tracing the cause of a local inundation of the Mesopotamian plain, must command appreciation and detailed careful study. He has been at considerable pains to work out a probable connection with Lake Van, and his thesis is well supported by recent experience of serious flooding of the Indus valley by the bursting of the Shyok ice dam.

We may even go with him so far as to credit Lake Van with the eight-foot band of clay lying like a damp-proof course between two civilisations at Ur, though in this connection it should not be overlooked that at Kish, about 120 miles north of Ur, there is the same evidence of a flood in a ten-foot band of clay between two quite distinct civilisations, and if the band be co-extensive with the Tigris valley, upwards of 700 miles long, as seems probable, the call on Lake Van must have been beyond its capacity to supply or even to distribute.

But when the author seeks to interpret the Biblical account of the universal deluge in terms of a local inundation, it is really to explain it away, and many must part company with him at

once on grounds not only scriptural but also scientific, even though he be admittedly in good company to-day.

It is not possible in a five-minute discussion to cite the mass of evidence for a gigantic flood far exceeding anything adumbrated in the paper before us. In another paper read before this Society by Col. L. M. Davies, M.A., F.G.S., on January 20th, 1930, very strong substantial evidence was adduced for submergence of the entire continents of Europe and Asia as well as others, within the life history of the human race.\* It is true that the doctrinaires of uniformity, to whom cataclysm is anathema, have never recognised the evidence; their attitude closely resembles that of the preacher who said: "And now, brethren, having faced the difficulty, let us pass on to the next point."

This evidence our author seeks to discount on the assumption that submergences may not have been simultaneous; but I submit that it is for those who would dissociate the evidence of universal flood from universal tradition themselves to prove the disconnections.

Then on Biblical grounds the local inundation theory must also be rejected. It is true that by the appeal to figurative language and limited horizons, so beloved of the critics, a plausible case can be made out for restricting the narrative to the Mesopotamian plain; but there is open to any one who will apply it a very plain test of that method. Let him take a *Cruden's Concordance*, and, turning up all the passages dealing with the Flood, let him read them through conscientiously *ad hoc*. That done, I venture to say he will abandon the argument for a partial flood as totally inadequate to the plain sense of the inspired word. Let one illustration suffice:—Genesis ix, 14 and 15, "The bow shall be seen in the cloud: and I will remember my covenant which is between me and you and every living creature; and the waters shall no more become a flood to destroy all flesh." Floods in the Tigris valley, serious floods, are, I believe, a common occurrence. The paper moreover challenges, albeit indirectly, the entire question of the re-peopling of the earth after the Flood, which the Bible unequivocally attributes to Noah and his descendants

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\* Trans. V.I., vol. lxii, 1930.

with the subsequent confusion of tongues and dispersion at Babel. This question has been raised recently in another connection, and though it would not be in order for us to discuss it to-day, nor is there time to do so, it is clearly one that calls for full and frank investigation at no distant date. Either the Bible history of mankind is true or it is misleading, and we cannot let the challenge go by default.

One word of criticism of detail in the paper and I close. Our author says, p. 2: "Hence it is probable that Noah and his sons never saw a mountain in their lives." This of the most outstanding man of his time, and with Persian mountains less than 150 miles away! Contrast this with the statement on p. 7 (in explanation of the grounding of the Ark among the foothills 50 miles south of Lake Van or, alternatively, on Mount Nisir), that "Noah would naturally wish to avoid the Ark being carried out to sea. He may have rigged jury masts and sails, and anchored when the wind was northerly." Whence this sea-consciousness in a man who had never seen a mountain 150 miles away from his home? and how should he know when the wind was northerly, with neither compass, stars nor landmarks to guide him?

In conclusion, though unable to endorse our author's thesis, I feel our good comradeship is of too long-standing, and our soldier faculty for giving and receiving knocks too well established, for the encounter to end otherwise than in a handshake.

Lieut.-Col. W. B. LANE, said: I think that we are too apt to read into the simple Bible stories more than the plain narrative says and we do not sufficiently take into account the context and the changed geographical conditions of those far-off times. There is everything in lower Mesopotamia to account for a great flood, without calling in glacial epochs, earthquakes or a submergence of the whole world as we now know it. Up to the time of Abraham's trek from Ur of the Chaldees, there is no mention of any country outside Chaldea, apart from Cain going eastward to the land of Nod and the sources of the Gihon and Pison. The early history is solely of the Mesopotamian plain. That was the then known world.

The records of Egypt are thought to go back as far as, and by some farther than the Chaldean records. The late Dr. Hall of the British Museum told me that there is no mention of a great flood in these records, which he thought a significant fact. The universal story of a great flood is fully accounted for by the Dispersion after the building of the Tower of Babel.

In the British Museum is a baked clay tablet of the record of Sargon of Agade's campaigns, with a rough map to illustrate the country. There is also a reference to Utu-napishtim, the Babylonian Noah. The map consists of two circles and the space between them is the circular river surrounding the then known world. A double line running from the top to the bottom is the Euphrates, with Babylon at just above the centre of the circle. Sargon's date is c. 2650 B.C., but the writing is that of the Babylonian cuneiform of c. 2000 B.C.

Every year there is a fear of floods in the spring, and the banks of the rivers have to be built up and strengthened beforehand. The simple story of Cain the agriculturist and Abel the shepherd is repeated every year. The shepherd would like the water to extend over the land to produce a plentiful crop of grass, but it would spoil the crops of the former, hence the warfare between the two.

Colonel Molony's very interesting paper adds a possible cause of a very great catastrophe which must have engulfed the whole of an early civilisation, the memory of which has been carried round the world and passed on ever since.

I consider that there is no reason for going away from the Mesopotamian plain for the locality of the simple Bible stories down to the trek of Abraham.

G. WILSON HEATH: It is said that doctors differ with dire results to patients. Many indeed have been the attempts to explain the great "Deluge," and the subject has been before this Society more than once. From the conflict of tongues I return to Genesis vii, 19, and find that the Flood covered the ground under "*the whole heavens*," which I read to mean that it was *universal*. In the paper we have just heard this same flood is indicated as to have been limited in extent. I cannot believe that Lake Van ever contained

enough water to flood, to the death of everything, the great plain of Mesopotamia and adjacent lands; and then to be of sufficient volume to bear up the "Ark," the draught of which is stated to be 15 cubits, and the water to remain on the earth (the sandy soil of the desert) for 150 days (Genesis vii, 24).

Previous papers read before this Society indicated as proof of the universality of the "Deluge" that vast massed pockets of the bones of many animals have been found in Mongolia, North China, Siberia, Norway, America, North Africa, etc., all of them in and under such similar conditions and in such a widespread area that they suggested the death of this immense numbers of animals at *one and the same time*. In fact, a proof of a universal flood.

Does the Deluge explain the great gap in Egyptian history at about this time?

I cannot conceive how the "Ark," a three-storied structure, with such a serious depth below the water-line, could be navigated up from the south-east of the Euphrates to the foot-hills of Ararat and this against the suggested rushing torrent from Lake Van.

I believe the "Ark" needed no jury-mast. Jehovah was to it power, pilot, captain, and steersman.

Forgive me, but the latest measurement of the cubit is 17.5 ins., and of the sacred cubit 25 ins.

The paper is interesting but to me not convincing.

DR. J. BARCROFT ANDERSON asked Col. Molony whether he interpreted II Peter iii, 5, as implying that the land surface of the earth at the time of the Flood constituted one single continent, which was altered in the days of Peleg, as mentioned in Genesis x, 25.

Col. A. H. VAN STRAUBENZEE said: I submit it is not in accordance with the inspired Word of God to say that Noah's flood may be dated about 4500 B.C.

The records of dates and periods stated in the Bible are as much inspired as any other portion of it. Taking the number of years given as the lifetime of Adam, namely 930, it can be shown that from the creation of Adam to the Birth of Christ was 4,000 years—eighty jubilees—and that Noah's flood year was 2348-7 B.C.

Again we know that Genesis i, 1, indicates there was a long period of time between the creation of the World and its re-creation—in six days of 24 hours each. There are two words translated foundation—one of these “katabole” is always connected with “kosmos,” and without either of them having the definite article—and mean the upsetting, casting down, or ruin of that which had already been founded, as stated in Heb. i, 10. This event is clearly a great dividing line from *before* which and *from* which all time reckonings are ordered. The other word translated foundation, “themelios,” is never associated with “kosmos,” but occurs seventeen times in such expressions as when, Paul says: “I have laid a foundation.”

It is therefore submitted that Col. Molony’s date of 4500 B.C. may have seen a great flood which may also have been comparatively local—but it was not Noah’s flood which was nearly 2,000 years later.

Mr. W. E. LESLIE writes: The paper raises three points. (1) The purely Biblical statements. (2) The question whether it is proper to introduce extra Biblical factors. (3) If it is proper to do so, what is their effect upon Genesis vi, 7?

The Biblical language is very strong. May not the 15 cubits mean the height of the water above the hills rather than the mean depth as Col. Molony suggests? If we confine ourselves to the Biblical narrative there can be little doubt that we must conclude that the Flood was universal.

But there are extra-Biblical data which might lead to another conclusion. Are we at liberty to consider them? There may be a few isolated individuals who would confine themselves strictly to Biblical matter. There are, unfortunately, more than a few who seek to “run with the hare and hunt with the hounds.” On the testimony of geography they hold that there are not literally four corners of the earth, and on that of astronomy they agree that the earth goes round the sun. Similarly they welcome light from topography and archæology on a multitude of points. But in other cases they insist that the expositor must confine himself strictly to Scripture. Instead of seeking to show why this must be done in the particular case under discussion, they lay down the general

maxim that science must never influence the interpretation of Scripture. Such inconsistency borders on dishonesty.

If we are not prepared to rule out all extra-Biblical material we must be prepared to admit all that is relevant.

Now there are many extra-Biblical considerations which tell against the universality of the Flood. We see round us to-day an enormous number of living forms from the Arctic to the Tropics. If there has not been a second creation, and evolution be ruled out, then every one of these species must have been in the Ark from the largest down to those which are only to be seen under a magnifying glass. Collectors are still at work all over the world, and they are constantly finding new types. It does not seem probable that Noah made a better collection in the short time at his disposal. It will be noticed that there is no suggestion of miraculous intervention in this matter.

The details of Col. Molony's thesis may present difficulties, but he is to be congratulated upon a very ingenious attempt to throw light upon this great crisis in the early history of the human race.

The CHAIRMAN, in conclusion, commented on certain aspects of the discussion. He said: Mr. Bryning has mentioned certain effects of the Pleistocene glaciation outside the glaciated areas. The only effect of the general lowering of the temperature was to lower the snow line about 4,000 feet. I agree with Col. Lane that we are apt to read into Scripture all our modern science, and this may lead to mistaken interpretations. The account of the Flood is evidently that of an eyewitness, the whole heaven being the dome of the sky as far as eye could see. It is remarkable that the word translated "earth" in the account of the Flood, and interpreted by many to-day as meaning "world" is the same word which is translated "country" in Genesis xii, 1, "get thee out of thy country." (Cf. II Pet. iii, 6, "kosmos" went under the Flood, not the "geos.") Mr. Heath has said that the world-wide evidence of animal bones in caves proves that a universal flood took place. Before this could be accepted as evidence of such a thing, it would have to be demonstrated that the animals had been either driven there by a rising flood or that the bones had been washed in. This

has not yet been done. Animals go into caves to die, and this would account for the bones of animals which are naturally enemies lying together.

Lt.-Col. Skinner has had a tilt against the uniformitarians. Contrary to popular belief, uniformitarians believe in catastrophies.

All that is claimed is that the present is sufficient to explain the past. But the present has its catastrophies, such as the devastating floods of the Yangtse River in China, or the Mississippi in the U.S.A., violent volcanic eruptions such as that of Krakatoa, when a whole island was blown to fragments, a submarine deep being left where a mountain had been, and terrific earthquakes such as have occurred in historic times.

The Bible has become a much more wonderful and accurate book to me since I have looked at it in the light of modern geology, and I would make a plea for a place to be accorded to well-established scientific fact in the interpretation of Scripture, for after all the scientist is out to get at the truth in his science, usually has no axe to grind, and works in the knowledge that his followers will test his work. Finality has certainly not been reached in scientific knowledge, and I would suggest that some of our traditional interpretations, made to fit the science of a previous generation, are not yet final also.

#### AUTHOR'S REPLY.

Our Chairman has answered most of the objections to my contentions. Like him, I hold that the Biblical account of the Flood is that of an eyewitness who faithfully recorded what he saw. I *was* referring to the time before the ice finally retreated.

If, as I have shown possible on page 4, a 300-cubic-mile flood was sent down by Lake Van, it would have sufficed to simultaneously submerge every part of the great Mesopotamian plain to a depth of 44 feet, thus causing the Ark to float clear of mounds.

This flood would do 41 milliion million foot tons of work in raising the atmosphere. I submit that this would cause a wind to blow back to Lake Van ; that is, from a warm to a very cold region. This would result in condensation and rain, probably beginning the same day as the flood, which is what the Bible implies.

But if the flood was caused by an earthquake under the Persian gulf, then the wind would have blown to the gulf, that is, from a hot to an equally hot region and there would not have been so much rain.

I think that Noah was not sea-conscious, but sail-conscious ; for there were probably large lakes near where he lived, as there are now. I picture him as getting sail on the Ark whenever the wind got warm or blew against the current.

My reply to Dr. Anderson is, that I take "divided" in Genesis x, 25, to refer to division among tribes or races.

I beg to thank Col. Lane, Mr. G. W. Heath, and others for interesting information.

I doubt if the Flood was a physical miracle, and if lions and tigers were taken into the Ark, but am convinced that God spake to Noah.