

# FAITH

and

# THOUGHT

1974

VOLUME 101

NUMBER 3

A Journal devoted to the study of the inter-relation  
of the Christian Revelation and modern research

.....

E. K. VICTOR PEARCE

## The Flood and Archæology

**Victor Pearce, whose book *Who was Adam?* (Paternoster 1970) will be known to many readers turns to consider the Flood. In this interesting article he shows how the biblical Flood offers a ready explanation of a wide range of archæological findings.**

The physical evidence for the biblical Flood in the Near East has been based largely upon the existence, in archæological levels, of strata of clay presumed to be water laid. However, some confusion has been caused by the discovery that there are two such layers in Mesopotamia. Dated by the carbon-14 method, but without correction, these are found at horizons corresponding to 2700 BC and 4000 BC respectively.

It has long been suspected that the C-14 dating needed correction for the older dates and over the past few years this has been done by means of tree rings in the Bristlecone-pine found upon the White Mountains of California. Some of the trees are 4,000 years old and by matching with dead trees, older tree rings go back at least 5300 BC. Professor Suess published his calendar of dates gleaned from them in 1970. This demonstrates that the ratio between C-12 and C-14 differed from its present value in living material before 1000 BC (a point which some of us have maintained for over ten years).

Calibration of radio-carbon dates is matched and corrected in the tree-rings themselves, which can be counted for a date and the C-14 in the same rings measured. This method shows that a radio-carbon date of say 5000 BP (before present) is actually

5800 BP. It has become customary to write a carbon - 14 date as b.c. and to write a date corrected by Bristlecone-pine as BC. \* The dates of the clay strata are, then, c. 2700 b.c. or 3500 BC and c. 4000 b.c. or 4800 BC respectively, but how are we to decide which stratum marks the Flood of Noah ?

The criterion suggested by a reading of Genesis is that the Flood occurred between the copper-stone age and the bronze age. If we follow this guide it will serve to unravel many an archæological puzzle. The new Bristlecone-pine dating also adds clarification.

The two ages we have mentioned are accompanied by two separate city-building eras. One comes before the Flood (Gen. 4 : 17) and starts on the high mountain plateaux of Eastern Turkey and Iran ; the other is in the low alluvial plain of Mesopotamia (Gen. chs. 10 and 11). We know that Neolithic and copper-stone ages apply to the era before the Flood from the note in Genesis 4 : 22. Archæology harmonises by finding a cultural hiatus between these eras. This hiatus between copper-stone age and Bronze Age has been widened significantly by the Bristlecone-pine dating. The correct methodology, therefore, is to correlate the Bible and archæology on the basis of culture. The temptation to correlate on the basis of dating should be avoided because on the one hand archæological dates are open to correction, and on the other the genealogical tables of the Bible do not give unbroken succession. Even the existence or non-existence of a clay stratum is secondary as inundations are not uncommon in Mesopotamia, and in many places rushing flood waters erode rather than deposit.

If we have to choose a clay stratum, however, culture alignment would guide us to choose the flood stratum dated at 4800 BC because it is after this that the Bronze-Age city states of archæology are founded. This new burst of building activity

\* The effect of Bristlecone-pine Calibration upon Near Eastern sites is not so clear, as original dating was by archæological stratigraphy.

using new techniques in the founding of city states is accurately described in the eleventh chapter of Genesis and is placed as coming after the Flood of Noah.

With the passing of years the survivors of the Flood made their way along the Iranian mountain plateau south-eastwards. Some of them descended into the Indus valley towards the East, where their culture has been excavated; others descended westwards into the Mesopotamian valley. Here they are called *Ubaidians*, from their type site at al'Ubaid. In the totally different environment of Mesopotamia they were forced to use new materials for the buildings and crafts. In the mountains they had used stone; now they had to make their own artificial stone — in other words they had to bake bricks. In the mountains they mined copper for nails. Now they had to devise some other artifact to hold down their house roofs, so they baked fat clay nails slightly hooked to hold down the reeds with which they thatched their houses.

When in the mountains they had flint or obsidian for sickles. Now even their reaping sickles were made of baked clay. The cutting edge of these Ubaidian sickles is surprisingly sharp: one is easily tempted to doubt it and run one's finger along the edge and get a cut!

For mortar they used bitumen which was plentiful, and to enable them to walk over marshy areas they wove thick reed mats. The challenge of this inhospitable, though fertile, environment was answered by a response of technology by which they surpassed all previous development. These later phases are called *Sumerian* (from Sumer, in Genesis 11: 2 it is spelt Shinar).

Their building projects became larger and more ambitious until in each city the Sumerians built huge towers or artificial mountains called *ziggurats*. These great works of solid brickwork jointed with bitumen had facades of rebated buttresses and were terraced with trees and plants, while the summits were crowned with temples. The whole conception reflected the former mountain environment of the builders. Thus, in the archæological strata

above the early Ubaidian period there is a remarkable development of architecture on most sites. We have the well-known ziggurat at Ur excavated by Woolley,<sup>1</sup> and the sensational religious acropolis at level XIII at Tepe Gawra described by Spicer — which corresponds to Genesis 11: 3-4. Its plans commenced the formal architecture which later spread to Egypt, for in Egypt similar styles of buttressing were repeated in the Temple of Saqqara, and the step pyramids. The latter are the earliest type of pyramid in Egypt and owe their inspiration to the terraced ziggurats. The most remarkable erection was at Babel, or Babylon: its mysterious destruction is thus described by Seton Lloyd<sup>2</sup>:

The heat had been so great that in many cases the brickwork had actually melted and survived in the form of huge vitrified lumps. This, in fact, is a phenomenon which one has seen before, in Iraq, on the summit of the ziggurat at Birs Nimrod (Borsippa) which is traditionally considered to be the ruins of the Biblical Tower of Babel. But there, one is compelled to assume that the 'tower' must have been repeatedly struck by lightning in some tremendous electric storm. For the solid brickwork has vitrified like glass, and great masses as big as ice-bergs are split off and tumbled at all angles.

Cities and population explosion usually indicate a flourishing economy. At Arpachiya we get an insight into the advanced agriculture which had developed into field cultivation to feed the swelling numbers.

Below the ziggurat at Uruk (Erech of Gen. 10: 10) we have a stratified record of earlier and smaller temples (before it), including the famous White Temple, bringing us to the first days of the migrant Ubaidian settlers after the Flood. Filby is thus quite right in identifying the Flood stratum as being almost on the alluvial valley floor. In Woolley's excavations at Ur, the supposed virgin soil which he struck at the bottom of his shaft must be the Flood stratum, as the Ubaidian pisé huts were above it. The bank of clay higher up is now thought to be of æolian origin. The stratum of mud upon which the Ubaidians had settled, was formed of decayed vegetable matter which appears to be water-laid. In it, potsherds were all lying horizontally as if

swept there by a flood from some neighbouring site. The pottery at this level (known as *Hassuna-Halaf* or *Chalcolithic*) is mostly cream-coloured on which red geometric patterns with stylised bulls' horns are painted (*bucrania motif*). Below this, "three feet below modern sea level, there was stiff green clay pierced by sinuous brown stains which had been the roots of reeds; here all traces of human activity ceased and we were at the bottom of Mesopotamia", wrote Woolley.

This, then, was the deposit of the earlier flood which had swept pots and sherds from a neighbouring site. The flood had withdrawn, and an adjustment of sea level taken place perhaps due to a rise in the level of the land. Then after enough time had elapsed for the new dispersion to make its way along the mountains of Iran from Ararat, the mud had hardened but the area was still marshy according to Sumerian testimony, so that reed mattresses had to be woven and stamped down to make a building raft upon which the reed and clay pisé huts could be erected. Even the Ubaidian boats had to be made of reeds. They were bound together into elegant shapes to set the new style of boat, which was eventually to reach Egypt, with the commencement of the new post-Flood *Gerzian* culture. The making of reed boats was to continue for many centuries. Even the baby Moses was later laid in a small reed boat to be hidden from the assassins.

The Flood stratum of 4000 b.c. was discovered by Professor Mallowan at Ninevah who dug a shaft 100 feet deep.<sup>3</sup> Mallowan numbered his stratigraphy from the bottom upwards as geologists and anthropologists do. This has the advantage of numbering the oldest and first to be laid, as "I". The same method was followed by Seton Lloyd at Hassuna. Other archæologists have numbered from the top down which is a little confusing.

Ninevah I then, commences at the Neolithic of 6000 b.c. (which classes as Pre-Pottery Neolithic B. in its lower reaches). There are saddle querns for grinding flour, and flint sickles, and — a feature of this area — the shallow pottery husking trays containing multiple divisions to be shaken rather like a sieve to free the husks from the grain. The pottery is plain and

unburnished. This gives place to Ninevah II with red or black monochrome pots. Flinting becomes poorer as the culture is shading off to chalcolithic or copper-stone, which is the culture before the Flood.

At a depth of 60 feet come the Flood strata of thirteen bands, alternating mud and riverine sand, in which a copper pin was found, and then at 51 feet a layer of black mud and pebbles. The excavators describe this as, "the accumulation of a well-defined pluvial period indicating an important climatic change".

Above this occurs Ninevah III and a late arrival of Ubaidian culture, followed by Jemdet Nasr proto-literate at 27 feet. The pottery styles are now entirely different in form. The teapot shapes and spouts are much more elaborate but the colours are dull, and unconnected with the Hassuna-Halaf type. We are in the early Bronze Age. This position in cultural succession is more important than the evidence of the Flood strata for it marks a cultural hiatus. The early Bronze Age is above the "pluvial interval" and the copper-stone artifacts are below it. This copper-stone age is also represented at Sialk in Iran, Hacilar and Catal Huyuk in Turkey, and Fayum and Merinde in Egypt.

After the Flood, Mesopotamia would be hardly above river and sea level, and for many centuries was liable to flooding, sometimes on a large scale.

This disappearance of the Chalcolithic red on cream pottery is a common feature of the other North-Mesopotamian sites — Arpachiya, Gawra, Samarra, and Hassuna. The dull Ubaidian pottery above this cultural hiatus is unconnected with the Chalcolithic pottery below. In archæologists' notes the phrase keeps appearing; "Pottery entirely different"; "Break in pottery succession and culture". New elements appear such as painted egg-shell ware and the peculiar lentoid tortoise-shaped vase which is diagnostic on all these sites of the early bronze Ubaidian period with its baked clay sickles and milking vessels.

To account for the disappearance of the Chalcolithic culture

the theory of some archæologists is that it was wiped out by the Ubaidians. In view of the collective evidence, it would seem more likely that it was the Flood which obliterated it, so that the Ubaidians occupied a vacant land. Such evidence correlates with sites in Turkey, the Balkans, the Aegean and in Europe, where archæology confirms a hiatus of over a millenium between copper-stone and bronze. This harmonises with Genesis which places the Flood between these two eras.

In South Mesopotamia where the migrants first descended to the mud flats of Sumer, most of the cities were post-Flood in date, except Eridu which is mentioned in the Babylonian epic as existing before the Flood. It is significant, then, that at Eridu there is again a break in culture below the Ubaidian. The Ubaidian phase at Eridu displays the same diagnostic artifacts as in North Mesopotamia such as painted egg-shell pottery, lentoid tortoise vases, etc. Below it was a Chalcolithic culture unconnected with that above. It was featured by what Seton Lloyd calls Eridu ware which is quite unlike any other.

After the Flood, according to Genesis 11, it was here in South Mesopotamia that the Ubaidian settlements of pisé huts were first followed by the founding of post-Flood cities and their temples. This is confirmed by the succession at the various sites of the early Bronze-Age city states. These include Al Ubaid, Ur, Uruk, Uqair, and Eridu. The first four are founded upon what has been regarded as virgin soil but which is more likely to mark the Flood, because above it is the typical Ubaidian Bronze Age culture with its painted egg-shell pottery, lentoid tortoise vases, and clay sickles. It will be remembered that at Eridu, the site with strata older than the Ubaidians, there is a different culture beneath this break, (levels VIII to XVIII), that immediately before the break (VIII) being chalcolithic.

A list of cities is given on the Sumerian tablet accounts of the happenings before and after the Flood. Genesis 10: 11 tells us that it was from these newly established cities in the south, that migrants went north to re-establish ancient Ninevah and other cities.



A similar picture is seen in Egyptian archæology, except that the early Bronze Age Gerzian culture has a time lag of about 200 years relative to the post-Flood eras in Mesopotamia. This is a reasonable time to allow for migration to reach Egypt.

In the stone-copper age before the Flood, we see that the first cities must have been Neolithic according to Gen. 4: 17 and 22, because the use of copper came in later through the ingenuity of Tubal-cain. Iron also first began to be used in the sixth millenium BC. This has been confirmed, but until the discovery of reducing techniques, hæmatite and meteoric iron proved too tough to work easily and so fell out of use to await the Iron Age of the Hittites, 1500 BC.

We have seen that the culture which followed the copper-stone age was the Ubaidian. But what is the evidence that this culture was of early-bronze character? As it had descended into a topography so devoid of minerals that even the sickles had to be of clay, this might not be immediately apparent, yet surprisingly the evidence appears. Evidence comes from the unearthing of nozzles and leather bellows for inducing draught, crucibles, open moulds and then closed moulds. The clay nozzles made for bellows introduce a new feature into pottery, for teapot-shaped spouts like the nozzles appear on pots from the Ubaidian onwards.

Analysis of tools by Tylecote<sup>4</sup> and by Coghlan<sup>5</sup> shows that tools were first hardened by arsenic and antimony, but the temperature required for melting copper containing these elements was 1083°C. Even malachite copper ore which was often used, requires 800°C. Induced draught by leather bellows with baked clay nozzles helped to raise fire temperatures. The Ubaidians discovered that by alloying copper with lead the melting-point occurred at a lower temperature. This, however, softened the metal and later the alloy tin was found not only to reduce the temperature required but also produced bronze which was harder.

Another line of analysis which reveals the chronology of Mesopotamian metallurgy is that at first copper oxide ore was

mined as this was near the earth's surface. Later azurite, malachite, and chalcopyrite were used. Dr. Pickard says, "Absence of sulphur in pre-historic copper proves that it was smelted from native metal or from ores thoroughly oxidised and therefore free from sulphides". Prof. Desch says, "Early Mesopotamian objects are usually free from sulphur . . . in favour of oxidised outcrop ores, such as malachite — but early dynastic and Akkadian contain 1·0% sulphur". By protoliterate and early dynastic times, soon after the early Ubaidians, sulphur ores were being used. This reveals that mines were penetrating deeper into the hills where the copper was present as sulphide.

Sulphur ores are more difficult to reduce, and need preliminary firing and hammering to separate the slag. Consequently hammer stones found in association with smelting adds to the evidence.

Thus the development of metallurgy from the Ubaidian onwards has the following succession: Arsenic copper, lead alloyed copper, oxide bronze, sulphur bronze with 6% to 10% tin by the end of the early dynastic period when the techniques of riveting and soldering had also been mastered.

This succession of alloys and techniques was diffused from Mesopotamia to Europe with a time lag of many hundreds of years between each isochrone of development; it proves a useful addition to the identification of tools by their shape.

Early Ubaidian pictograms also bring evidence. They show played blades which must therefore have been cast, and indeed these tools and weapons have been unearthed — hoes, pickaxes, bident flesh-hooks, spearheads, daggers with convex hilts. The extraordinary thing is that from the first the pickaxes, etc., are cast with holes for handles. Two leaved moulds soon developed into three leaved moulds.

The clever method of casting works of art by the *cire perdue* or lost wax method was quickly invented. First the figure is carved in beeswax, then clay is pressed around it, then when the clay is baked the wax melts and runs away to leave a mould ready

to fill with molten metal.

The contribution to civilization is seen in that all these types and patterns make their way through to Europe, Egypt, and the East.

The early experiments of the bronze age were made before the Ubaidians descended from the Iranian heights. At Al Ubaid in the Mesopotamian valley they made baked clay copies of copper tools which included the shaft holes and expanded blades, thus showing their earlier contacts in Iran. In Mesopotamia, and up into the plateau heights of Armenia and the Caucasus, the hiatus between Chalcolithic and bronze age is shorter in terms of time because they were nearer the new point of dispersion. The gap widens as one goes through Europe.

Thus we have a perfect correlation with archæology: the Stone-copper age, followed by the stalemate in metallurgical techniques which has mystified archæologists, but which the Bible explains by the Flood, and after it the bronze age and city states of Mesopotamia. The bronze age with its invention of writing and literacy is usually regarded as the beginning of civilisation, and it spread within 200 years to Egypt and the Indus valley of West Pakistan and beyond. This correlates with Genesis 10: 13, 14, and 26 – 30.

One of the exciting facts laid bare by the new Bristlecone-pine dating is that the hiatus between the two ages is made perfectly obvious. It has widened the gap, especially throughout the Mediterranean, and has revealed that it took some time after the Flood to re-populate Europe from the post-Flood refuge centre in Near Eastern Europe.

It has been a puzzle to European archæologists why there should have been so long a hiatus between the copper and bronze ages. Having discovered copper, it seemed strange that the techniques were not developed. Upon this mystery Renfrew comments: -

Although copper was first used in the Near East, before 6,000 BC it was almost 3,000 years before it was put to any really useful service, and only with alloy bronze did really effective tools and weapons come into general use. (p. 169).

There is an early appearance of small copper objects in the Near East well before 6,000 BC. There is some evidence from Catal Huyuk that smelting was already practised at this time, and one might well have expected a fairly rapid development in metallurgy in the succeeding centuries . . . but there is no apparent development for nearly two millenia. The precise reasons for this are not yet clear.<sup>6</sup>

Renfrew speaks of the " yawning millenium " which separates copper age Vinca from the Aegean early bronze age. " Vinca was going out of use fully a millenium before the Aegean early bronze era began. A yawning millenium separates the two ".

In addition to this culture gap which we correlate with the Flood, there is actually a sterile layer throughout Europe marking the absence of life. This shows that the hiatus is not due to our lack of knowledge of intervening strata, but absence of human occupation.

The existence of this sterile layer is apt to be missed if archæologists are not looking for it. In Ghar-Dalam Cave in Malta I blandly asked the archæological department to show me the sterile layer. They immediately did so, yet it had not been mentioned in their commentary. They had, however, wisely left a column of strata in the cave for future examination.

On the Isle of Chios the very full stratigraphical record gives a similar picture. Likewise the Castillo cave in Spain which has a full record of strata reveals an absence of life at this point and so does the famous Shanidar cave in North Iraq.

On the European mainland this same hiatus appears at Professor Caskey's site at Lerna. In England at Peacock Hill, Cambridgeshire, the Flood is recorded by water laid clay after a

very short occupation by mesolithic hunter-farmers. England was cut off from the continent after the Flood. One can sometimes dredge up stone tools from the floor of the North Sea which shows that England was linked to Europe before 4,000 b.c. The usual charts given for England and Atlantic Europe show a break between the warm and wet at about 4,000 or 5,000 b.c. and the boreal at 6,000 b.c.<sup>7</sup>

At Knossos on the Isle of Crete, the hiatus is revealed in another way. On the top of the mound between the large copper-stone occupation and the early Minoan I bronze age palaces, the strata have been exposed to the elements during a long period of time when the mound remained unoccupied and was eroded. Thus there is "a gap of about eight centuries between the late neolithic and Early Minoan I bronze age". Actually, Professor Mathioulaki's revised dating shows a much longer hiatus.

In the Near East the copper-stone villages of North Mesopotamia and Turkey of the Hassuma and Halaf type end their record at the same hiatus caused by the Flood. The first civilisation of bronze age culture is re-established in Southern Mesopotamia in the Ubaidian colonisation of the marshes 3,900 BC.

R. E. D. Clark observes that the biblical statement that in the last days men will be willingly ignorant of Noah's Flood (2 Peter 3: 5) is challenging. In our own day the subject is almost totally ignored outside limited Christian circles. He draws attention to Professor R. Whitelaw's analysis of the percentage of archæological material around the time of the Flood.<sup>8</sup> This shows a sharp drop which points to a possibly sudden world-wide scarcity of living — plant and animal — material at the time.

Clark also draws attention to recent examination of cores obtained from the Black Sea.<sup>9</sup> The cores suddenly become black at c. 5,000 BC when decomposed vegetable matter first makes its appearance in great abundance. He suggests that the significance of this is that a vast amount of organic matter recently killed was then washed into the Black Sea.

Geology correlates with archæology. J. Prestwich, who — according to *Hastings Dictionary* — is an authority worthy of the highest esteem declares that evidence of Flood erosion is to be seen throughout North Africa and Southern Russia. The rubble drift is different from that left by the ice age erosion. We know, too, that before about 4,000 BC the Sahara Desert was fertile and filled with game, lush vegetation, and forests. Not only is there archæological record of this, we have the cave paintings in the middle of the Sahara similar to those in Southern France, depicting the hunting of a full range of animals.

In Egypt at this time the water table suddenly dropped. The Merinde chalcolithic farmers had settlements on spurs of land which are now left high and dry. With it the Amratian contemporary culture disappears and is replaced by a completely new bronze age culture known as the Gerzian, whose tools, pottery, art, buildings and boats, show that it migrated from Mesopotamia.

Unable to understand why there should be such a hiatus in Europe in the fourth millenium BC, Renfrew hopes to find strata in Europe and the Mediterranean which will show a local development of technology between copper-stone and bronze ages. On the basis of cultural evolution he thinks that such a metallurgical development could take the same course, in as many as four or five unrelated areas, and end with identical bronze age techniques.

Theodore Wertime's statement could well be a comment upon this conception. He is the acknowledged expert on the origins of metallurgy. He wrote:

One must doubt that the tangled web of discovery comprehending the art of reducing oxide and sulphide ores, the recognition of silver, lead, tin and possibly arsenic and antimony as distinctive new metallic substances, and the technique of alloying copper with tin, could have been spun even twice in human history.<sup>10</sup>

The acceptance of a Flood which was worldwide in effect, not only explains certain worldwide phenomena, it also solves

certain enigmas in European and Near Eastern archæology. It would therefore be more in accord with the general picture to believe that the link in European cultural succession looked for by Renfrew is not to be found in a local descent vertically, so to speak, but horizontally from the new dispersal point in the Near East. Such an interpretation gives sense to the explosion of techniques after the Flood.

### REFERENCES

1. André Parrot, *The Flood and Noah's Ark*, 1955.
2. Seton Lloyd, *Mounds of the Near East*, Edinburgh UP, 1958.
3. Thompson, R. C. and M. E. L. Mallowan, *Annals of Archæology and Anthropology*, 1929, 20, 134 and Pl. LXXIII; *Illus. London News*, July 1932, p. 98.
4. Tylecote, R. F., *Metallurgy in Archæology*, 1962.
5. Coghlan, H. H., *Notes on Prehistoric Archæology of Copper and Bronze in the Old World*, (Pitt-Rivers Museum, Oxford, Occasional Papers on Technology, No. 4), 1951.
6. Colin Renfrew, *Before Civilization*, 1973, p. 187.
7. Stamp, L. Dudley, *Man and Law*, 1960.
8. Whitelaw, R., *Quart. Jour. Creation Research Soc.*, 1970, 7, 50.
9. Clark, R. E. D., This JOURNAL, 100, 174; see also 99, 16.
10. Theodore Wertime, "Man's First Encounter with Metallurgy", *Science*, 1964, 146, 1257.