CHAPTER FOURTEEN

FLOODS AND TIDES

Paleontology is based largely upon the classification and ordering in sequence of marine fossils. Cuvier, one of its founders, claimed as the best evidence of universal floods, that land animals were always found in association with marine fossils. Terrestrial strata were laid upon marine strata which were superimposed upon terrestrial strata. In 1796, he named three ages and three catastrophes, evidenced by three quite different 'aggregates of species. Man appeared following the last of these, he believed. Today, many fossil deposits consisting solely of land animals can be pointed out, but the presence of marine fossils in all regions of the world and at all altitudes provides an unending source of doubt. The Earth has had to be made mobile, with sliding land masses and sinkings and rising, to explain this fact, and with great stretches of time to accomplish what several very general tides, directed by exoterrestrial bodies, might in theory accomplish in short order.

Strictly speaking, floods are waters 'seeking their own level. ' 'Gravity flow' is implied, whether a high cresting river is over-flowing a town's streets or waters from all Sides are rushing down into a huge basin from which the Moon has been wrenched to form an ocean. Phenomena often called 'floods' might be more carefully denominated deluges, tides, and tsunamis. Remaining as floods would be barrier-bursting avalanching floods, the aforesaid floods from the rising and sinking of land (elsewhere treated), the varieties of rain-fed waterdownslides, the rising of waters below

the ground from higher waters of distant sources and. more obviously, the melting of ice.

Tides, on the other hand, are moving waters led by other moving forces. We are not concerned here with ordinary lunar tides, of whose perplexities I. Michelson writes, "We are to this day unable to decide whether high tides occur when the Moon is in the meridian or whether the exact opposite, low tide, is more nearly correct."[1] The implications in this state of affairs, that electrical fields are operative, etc., are not germane here.

The palaetiology of flooding is no less complex than the lunar tides. Possessed of records of the Nile, Thames, Mississippi and other river flows, one can make predictions of some value concerning their behavior in the near future. Given a case where long-term records are not available, it is easy to make errors both about past and future behavior. For instance, the Pecos River in Texas flooded severely in 1954. older techniques of paleohydrology had assigned a frequency of recurrence probability in the millions of years; newer techniques reduced the recurrence interval to about 2000 years.[2] Such cases should be borne in mind when considering the probable dates of prehistoric floods: are we viewing a 10 million-year effect or a 2000 year one? Are we dealing with a rapid series or very gradual pulses?

More important to geomorphology are the tides of the great tsunamis and the tides of an Earth that is losing its balance by some external intervention. On several occasions, the Earth has had not only its waters diverted up and around, but also its very crust, this too constituting a tidal movement of land.

A comet with a nucleus as large as the Earth would from 50,000 miles' distance pull up ocean waters to a height of several miles at its focus. An exact calculation requires many assumptions; approximations of such encounters have been figured by persons as eminent as the mathematician Laplace. Hoerbiger and Bellamy more recently have calculated the tides engendered by a capture

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[1] *Pensée* (1974), 71.

[2] 2. 215 *Science* (Jan. 22), 4531.

of moon-sized satellites. If one is pondering the escape of a Moon-sized mass from the Pacific Basin, a larger body, closer approach, greater mass, and favorable electrical conditions (greater attraction) must be conjectured. Atmosphere, water, the crustal rocks, and the upper mantle must participate in the tidal action--indeed the tidal force would extend through the whole globe, and the concept of tide becomes as strained as the globe itself under the postulated circumstances.

Should such an event have occurred, and it does seem the most plausible method of providing the Earth with its satellite, the tidal pull would have dragged the surface waters everywhere towards the node of escape. Thereupon, as the intruding body moved on, the tidal force would relax and the tidal waters would rush back in great rings around the globe, reverberating for large but diminishing distances until they should accommodate to the new complex of Earth motions and the tortured terrain.

However, our model here and in *Chaos and Creation* calls for a small portion of the Earth's present waters having been available for the tides caused by lunar evacuation. Less waters would yet have been available for the tides that would otherwise reach miles into the sky. Nor, for that matter, were the mountains elevated to their present heights, but rather were only then forming under catastrophic diastrophism.

The Saturnian or Noachian Flood some thousands of years later than the postulated lunar tide also would have had major traits of a tidal disaster. Patten estimates aquatic tides of 5,000 to 10,000 feet above sea level and extensive tides of magma beneath the crust. This "breaking up of the fountains of the deep," he says, might account for 99.9% of the flood waters of the Great Flood of Noah, leaving only 0.1% as deluge waters from the skies. His schedule of events follows Davidson, Stibbs and Kevan and is useful.[3] During forty days the rains fell. For another 110 days, flood (tidal) waters continued to rise. Next, 74 days were occupied in the "going and decreasing." Not until another 40 days passed

[3] *Op. cit.,* 65, 61.

did Noah send out a raven. Then 21 days were taken to send out three successive doves. A further 86 days occurred before the total experience ended. Thus 371 days passed.

If the Bible is historically accurate, even only generally so, a tidal catastrophe is depicted in which rains played a minor role. Even granting that all the overrunning of the land and climbing of mountains was accomplished by tides, there remains in mind a question respecting the origin of the oceanic waters. The continental slopes and shelves were permanently inundated at some point in time, and this seems the most reasonable time for the job. The quantity of water required and mode of deluging are difficult to conceive. E.R. Milton and I finally settled upon introducing waters sufficient to cover the slopes and shelves at this time, despite the enormous bulk required to raise ocean levels by thousands of feet. We reasoned that, if all of this water were not introduced here, we could not find legendary substantiation for it elsewhere.

Having the waters descend was more difficult. As Kofahl has clearly shown, so heavy a deluge in the short period of forty days might practically wipe out the surface of the Earth.[4] So, as already indicated, we relied upon a few bits of evidence to consider and adopt the typhoon mechanism, having the waters streaming down in thick columns dispersed around much of the globe. This would have the advantage of letting much of the Earth go relatively unscathed. An average of one typhoon for every 100 square miles on the globe's surface would provide all the new water needed to cover the continental slopes and shelves. Preceding and successive deluges would make less severe the requirement. So would, of course, an increase in the 40 days and nights of rain that the Bible allows for the Deluge. A reason for acknowledging the many days of rising and falling tides is that, subsequent to exploding its waters upon the Earth, a major

[4] R. E. Kofahl, "Could the Flood Waters Have Come from a Canopy or Extraterrestrial Source?" 13 *Creation Res. Soc. Q.* (March, 1977), 202-6.

portion of the fissioned Super-Saturn may have pursued a path paralleling the Earth's for some time before overtaking and passing the Earth. This or another major portion finally receded into a position beyond Jupiter, and probably even retained its identity as the retired god, god of the underworld, the god placed in bonds by the new king of the gods, Zeus-Jupiter-Marduk-Yahweh.

Early students of Siberian geography, working without an ice-age theory, observed from geomorphology and fossil conglomerates that in the far north a gigantic tidal wave had recently been propagated. North-south tides of this size strongly suggest an axial imbalance of the Earth. Water in the bottom of a rowboat splashes towards someone climbing up from the side, and splashes then back and forth, as he gets on or drops off. The enormous fossil aggregations that, with a sand admixture, compose whole offshore islands, testify also to tidal action proceeding northwards and then withdrawing.[5]

A change in the speed of rotation of the globe, for which an exoterrestrial large-body encounter must be presumed, necessarily entails large tides. Some writers, including ourselves, have surmised a shift from 360 to 365 days a year around the eighth century B.C. Putting aside the more plausible cause of orbital recession, and laying the burden of such a shift upon a speed-up of rotation, with shorter and more days, the sea level would be theoretically raised by 118 m at the Equator and dropped by 227 m at the poles. So calculates V. J. Slabinski, assuming a water-covered Earth and implying instant time.[6] The "historical belt" around the world in the Mediterranean, Near East, India, China, and Mesoamerica would have noted "moderate" drops or rises of 35 m or less.

If an axial tilt occurred at the same time, counterrailing and aggravating motions would have occurred. Presumably, too, the "solid crust" would soon warp and flow to erase much of the

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[5] Velikovsky, *Earth in Upheaval,* 7-9, 38-9.

[6] C. L. Ellenberger, ltr., VIII *Kronos* (1982), 94-5.

change. Some orbital change, as stated above, probably would alter the calculations, too. The several factors at work highlight the problems of conceptualizing and calculating the effects of encounters, but heavy tidal movements must be assumed.

The legends of tides number in the hundreds, but they are usually hard to allocate to periods of time, particularly in this incipient phase of the science of quantavolutions. When the Biblical Book of Exodus says, "The waters were a wall unto them on their right hand, and on their left," tidal behavior is suggested at the critical point of the Venusian comet, about 1450 B.C. by Biblical-derived dating. And the Psalms are chanting of the same event when "He made the waters to stand as a heap..." And the Midrashim comment likewise, "The waters were piled up to a height of sixteen hundred miles, and they could be seen by all the nations of the earth." (Though here we are bothered by the height and wonder whether, with the tides, there was a cyclonic tube reaching into the far heavens, the famous column of smoke by day and fire by night, that guided the Hebrews in Exodus). Also, in China, if the time of Emperor Yahou belongs anywhere, it belongs around the time of Exodus; and there the waters "over-topped the great heights, threatening the heavens with their floods."[7]

But when the Lapps recite how the angry god Jubmel raged against the wicked, and, "foaming, dashing, rising sky-high came the sea-wall, crushing all things," we are not sure that this is the time of Exodus or earlier or a combination of later and earlier events. So it goes around the world. The tides are there: immense, overpowering everything, wrecking the surface, launched by the gods, accompanied by fire and wind; still each legend has to be examined carefully before assigning it to a given catastrophe.

The Jubmel legend ends up as sophisticated language, as good a poetry as ever written perhaps, but it is not the language of the time of the event. Even the Biblical language is not the Exodus language. All the accounts are much later than the events. So the quality of the language does not date the legend. I think

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[7] Velikovsky, *Worlds in Collision,* 70-6.

one may accept, however, that the tides were overwhelming at Exodus-time.

They were also present at other catastrophic intervals, and particularly in the Lunarian Age. The Noachian-Saturnian Flood was a deluge and tidal flood. The *Popul Vuh* of the Meso-Americans speaks of the god Hurracan as the driver of disastrous winds and tides, but sounds as if it were reminiscing about events of the early primordial period, our Lunarian episode.

The peculiar image of the walls of water parting gives pause, too. It is not only Biblical but, for example, Inca; near Yucatan, twelve roads of escape were opened through the sea to let pass certain peoples from the East. Can tides behave to create passages? The answer must be "yes." Not only is there a typical shore withdrawal before a tsunami; the tsunami can occur in a series. Further, the immense expressions of energy in tides, as in winds and earthquake, sometimes act to spare the most incongruous as well as precious things. Cows have been picked up by cyclones and set down miles away without injury.

When Krakatoa exploded, the people of Batavia a few miles away braced for a gigantic tidal wave that never came. Yet the wave wiped out other villages not far away and raced across the oceans to frighten Indians and Africans. There are parts of the Aegean islands that were scarcely mounted by the towering wall of water that set out with hurricane speed from Thera-Santorini around 1000 B.C. Tides rip, cross, translate, and in other ways convey their force. During the flood of Manu (Saturnian flood, probably about 4000 B.C.) hurricanes and turbulence surrounded the boat of the Indian Noah.

The skies are full of motion and the mover's body is itself moving. The atmospheric is raging with currents of wind and electricity. The Earth itself is moving. The celestial actors in the scene are imposing or withdrawing forces. Hence, exoterrestrially induced tides will not behave so simply as tides operate with the regular passage of the Moon or of a single earthquake. They will draw startling geometric figures. No one would have been more amazed than the Jews themselves, to have survived the double-

walled water passage into Sinai. They lost, according to legend, the vast majority of their people to the waves that swallowed the Pharaoh's warriors. It is logical that few might reach the "Promised Land."

The "great spark" that Velikovsky says struck the walls of water and caused them to collapse upon the hapless pursued and pursuers is attributed by him to a discharge of cosmic lightning between Earth and Cometary Venus, releasing the attraction between the two bodies. It is well to note in this connection that an American Pima Indian myth paints a similar scene.[8]

> There were three warnings from an eagle of great flood.
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> Suddenly a terrible roar paralyzed men with fear. A green water-mountain rose over the plain. For a very short time it seemed to stand upright like a wall -then it was split by a vivid flash of lightning, and plunged forward like a ravenous beast. Only one man escaped, keeping afloat by clinging to a large lump of rubber or pitch.

The flood of Noah is an example of both deluge and tide. If it were purely a deluge, how would the Ark end up on a tall mountain of Anatolia? (How would the boat of Manu, the Hindu Noah, end up in the high Himalayas, for that matter?) Even the heaviest deluge could not over-fill the ocean basins and cause the waters to ascend the highest mountains. The waters would run off, carrying any barges downstream, or else the world would be permanently drowned.

Alternatively, the mountains would have appeared in the course of the deluge (because the continents were on the move) and afford anchorage and survival. Or else the deluge was accompanied by tidal rises of the waters of the Earth owing to the electro-gravitational attraction of close-in celestial bodies. Or else all three events happened more or less simultaneously: the deluge fell; the lands moved and rose; and a tidal force (the same that was

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[8] Bellamy, *M. M. M., op. cit.,* 257.

causing the deluge to fall and the lands to move and rise) drew the waters up to the heights of whatever mountains pre-existed or were appearing.

The Bible contains many specifics, almost as if it were, as Patten says, an eye-witness account. His is probably the best all-around analysis relating to the Flood. He establishes it securely as a tidal flood, "a universal, global Flood, and that it was caused by the interacting gravities of two astronomical bodies of planetary dimensions - the Earth and the astral visitor. Since the Earth possesses two fields, one gravitational and the other magnetic, there were two kinds of celestial conflicts with the intruder."[9]

The question of "how few" were the survivors need not detain whether scores or thousands -but they certainly were widely scattered about the world. The following quotation from the ancient Nicolaus of Damascus seems reasonable:[10]

> There is a great mountain in Armenia, called Baris, upon which it is reported that many who fled at the time of the Deluge were saved; and that one who was carried in an ark came on shore upon the top of it; and that the remains of the timber were for a great while observed: this might be the man about whom Moses the legislator of the Jews wrote...

The steady increasing and decreasing of waters is a tidal as well as a deluge phenomenon. The ten-month duration assigned the flood seems more to indicate a long-range tidal attraction of a celestial body; a flood, even if universal, would not take so long to recede as the 74 explicit and 90 additional implicit days before the full grounding of the Ark.

The archaeological history of the deluge has been controversial. It has been reviewed by M.E.L. Mallowan and H.J. Lenzen, among others, and Robert Raikes has supplied a critique

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[9] *Op. cit.*

[10] Book 96 (lost) quoted by Josephus, *Antiquities of the Jews,* by Whiston, and by Patten, *op. cit.,* 61.

of the theories.[11] What is generally discoverable in the Middle East is a seeming succession of water-destroyed levels in many excavations dated in the period 2600 to 3500 B.C. Raikes accepts these datings. I cannot, for I am compelled by many other considerations in this book and others to assign the Biblical Flood to a time 500 to 1400 years earlier. That humans were civilized before the Flood is undoubted. Whether there exist excavations from this period among the Middle East excavations has to be determined by examining one site after another.

Judging by the way the tide advanced and retreated, there would not have been a total dredging and destruction of already buried antediluvian sites but probably a complete extirpation of diluvian settlements. There should therefore be a rupture and hiatus between ante-diluvian and post-diluvian cultures. Probably the distinction ordinarily made between Paleolithic and Neolithic ages directs itself unwittingly at this catastrophic break.

Hence the Great Archaeological Debate over the Deluge of Noah has probably not been treating of the Deluge at all, but has been trying to force lesser floods of later eras upon the legendary accounts of the great Saturnian floodtime. Nor was Velikovsky of a precise opinion in these matters. It is in the hiatuses between Paleolithic and Neolithic that one must search for evidence of the Noachian-Saturnian-Gilgamesh-Manu world flood.

Tides may be aquatic, but readily transport denser bodies. The velocity of water is as significant as its volume for carriage. Moving currents carry to the sixth power of their velocity. If a stream of volume "X" were to move at 2 km/h it would carry 64 times the load it could carry if it moved at 1 km/h. Tidal transport is scarcely less powerful.

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[11] R. L. Raikes, Unpubl. paper, "Ecological Role of Extreme but Predictable Climate Events on Prehistory with some examples, for comparison, of Unpredictable Events and Their Consequences;" "The Physical Evidence of Noah's Flood," 28 I *Rag* part I, 52-63.

Tides can stretch for great lengths and in all directions. Those who like to imagine that the Exodus tide was limited ignore the evidence that the Red Sea was in motion. Moreover, they overlook the fact that unidimensional tides are practically restricted to hurricanes. A splash, a large-body pass-by, an explosion or a deluge summons a 360-degree tidal effect.

The speed of tides is swift unless remote bodies are their cause, as with the daily tides of the Moon. The appearance of the tidal effect during the Exodus, long after the first plague signaled the approaching comet, indicates a remote and approaching body. The Navajo say that on the occasion of the world flood (which cannot be precisely named) the animals had been running from east to west for days before they saw a semi-circle of water moving, like a mountain range, towards them from the east. By the next day the waters were upon them and only those who had reached the nearby mountain-tops survived. The tidal flood was preceded by a bright light in the east, an indication that an incandescent body was in the sky. Again the speed was relatively slow compared with the tidal waves from hurricanes, explosions, earthquakes, and falling bodies.

The amplitude of tidal waves will vary greatly. Historical explosions have raised waves of 85 meters, as in the Krakatoan case. Earthquakes, as in Alaska, have done as much too. The Thera volcanic tsunami of circa 1000 B.C., is thought to have raised higher tidal waves than Krakatoa. As we have said, an exoterrestrial body may raise tides kilometers high. Adding to the rain-flood from a deluge would be the flash-flood, the destruction wrought by fast-draining rain waters. Ancient times witnessed flash floods of great scope and intensity under deluge conditions. Heavy deluge waters filled the rivers and ocean canyons of the world; they poured off the mountains in the Deluge of Noah, and legendary heroes from Columbia, China and elsewhere earned their glory from engineering the escape of the floods.

A non-tidal moving flood is caused by the bursting of barriers: a natural dam blocks and collects water and then collapses. Some of the behavior and landscaping to be expected

of great tides and floods are exemplified in the Channeled Scablands (Wash., U. S. A). They are 15,000 square miles of effects of a barrier burst flood; they were not made by a tide, not directly at least. Some 100,000 miles of this section of North America are thickly covered with lava, in places more than 10,000 feet thick, which can be ascribed to the immense volcanism incurred when the American continent traveled westwards over the global fracture of the East Pacific area. This might have been around 11,500 years ago, not the 10 to 30 million years conventionally given to the set of events. The whole area was then covered with silt and loess.

The Scablands are a water sculpture of this lava surface. Expert opinion asserts that a barrier of ice corked a mountain pass and caused a Glacial Lake Missoula to form. The Lake was half the volume of present-day Lake Michigan, but pitched high above sea level. The lake, it is thought, was of short duration and finally overflowed. The water cut through the ice cork. (The immediate cause may have been Earth movements.) "Within a very short time - perhaps no more than a day or two - the ice dam was destroyed and the contents of the lake were released."[12] So reads a tourist bulletin on the area. A maximum speed of 45 miles per hour has been assigned to the resulting flood, and a maximum rate of flow ten times the combined flow of all the rivers of the world today. A luxuriant biosphere was wiped out, including large mammals, camels, bison, antelope, and, to my thinking, humans. I add "humans" partly because a doll was found in clay below 150 feet of lava, not far east of the same lava field, at Nampa, Idaho.

The flood plucked and transported huge blocks of basalt. It flayed the basalt of its skin of loess. It dug channels in the basalt more than 200 feet in depth, and one of 8 miles in width. It made instant falls and plunge pools and eroded them backwards quickly. When the waters slowed they began to dump debris, some 500

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[12] The *Channelled Scablands of Eastern Washington* (U. S. Govt. Printing Office, Wash. D. C., 1974).

square miles of it, to a depth of over 125 feet. The flood crest lasted a day or so, the main flood 2 to 3 weeks. Today, a satellite photo taken from 569 miles up shows the ramified and interlacing channelways of the flood cutting through the loess into the basalt, and then generally the unvegetated region around them.

The barrier-burst flood theory originated with Professor J. H. Bretz of the University of Chicago and was not accepted for many years because it was catastrophic.[13] In fact, the theory can be pressed further in the direction of radical catastrophism.

First there are the reaffirmations of certain catastrophic doctrines. Energy kills time. Buttes, ravines, and river channels can be carved from dense rock in days. A biosphere can be destroyed down to bedrock in a single rush. Broad river channels are sculpted immediately through deep soil and loose rock. Giant gravel ripples are laid down; hills are fashioned; long steep slopes are fashioned *à la minute.* Heavy stones are sown far and wide, the famous "eccentrics." Basalt is stripped to form monumental columns.

A catastrophist still may not rest content with the analysis. Why, he can ask, is the volcanic base of the region timed so long ago and why is the volcanism supposed to have required intervals of thousands or millions of years to be laid down deeply? What water did in a month could be equaled and surpassed by lava in a few years.

It is thought that glacial Lake Missoula formed 18 to 20 thousand years ago. Also it is said that several smaller lakes had formed in the same way and been discharged in the same manner. That is, the glacial ice lobe plugged the escape gap and pulled the plug several times. The previous logic holds here too: ice can form slowly or fast; climates change slowly or fast; plugs must be pulled in tempo with these fluctuations.

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[13] J. H. Bretz, "The Lake Missoula Floods and the Channelled Scabland," 77 J. Geol.. (1969), 503-43. The original work was published in 1923

Moreover, plugs can be placed or pulled tectonically, perhaps without the use of ice; the Earth shakes and gaps are blocked; another shake and the blockage bursts. More generally, suppose that the lava-paving occurred in the first phase of "Lunaria" (11,500 to 10,500 B.P.), after the Moon explosion, global fracture and the mountain-building thrusts and folds from the north. The high canopies are still descending and drenching the northern areas. The waters drain down the old raised glacial valleys and new ravines. The tectonic scenario of Lake Missoula goes into effect.

The area through which the flood raged is tipped to the southwest and the waters of the flood drained that way. The land is supposed to have tilted after the lava beds were laid. The tilting actually might have been responsible for the uncorking of Lake Missoula. Such extraordinary seismism would have been heavily felt in the Lake area.

Nor may the heavy loess coverings of the basalt give more than brief pause. Credited to wind-blown erosion material, it is not clear where such heavy dust would have originated or what climate brought such strong winds to transport it. Wherever it came from should contain the "mother lode"; where is it? This deep frosting was laid down by exoterrestrial sources, a cometary train, some would say. Others may claim that the loess or silt is a deposit from the unutterably greater thrust and fold phase of the ice cap avalanche and crustal movement, with contributions of ashes from biospheric and volcanic fire. By the time the scablands were etched upon the surface, the fires had been banked and the Earth was settling down.

The Scablands, we recall, are supposed to have registered several floods in succession from the same general source, glacial waters. I collapsed these somewhat and placed the Uranian-Lunarian deluge-avalanche-uplift period earlier. The Saturnian deluge and tidal flood would have come later, and contributed to a huge rise of waters drawn by a passing comet, which moved from place to place, drawn upwards and penetrating barriers and then withdrew as the attractive force was withdrawn. I have not

attempted to say whether the Venusian episodes drowned and scoured the Scablands; when one thinks of the shrinking times allotted to ice ages, Lake Lakontan, Niagara Falls, and a great many "post-glacial" lakes, one should not be surprised if the Scablands Flood was a much later event and that my guess is too old.

Across the world from the Scablands are Mesopotamia and India, whose peoples claim great floods as part of their historical experiences. These floods -were they originally from deluges or tides? Comparisons with the Scablands may be useful. In all cases, the tradition claims several great floods. Just as the Greeks had at least three floods, the Indians seem to have had their flood of Manu and the flood of the Gariga region, both described in the Puranas.

Both were disastrous, and we need not doubt that, as with the Scablands, other floods occurred from time to time. A similar series seems to have happened in Mesopotamia, where for centuries controversy over the number and extent of floods has raged.

However, a hydraulic engineer and scholar, Robert Raikes, has given close attention to the literature of archaeology and to the topography of the reported events; Raikes favors a non-catastrophic approach which, to his annoyance, has been deemed by many others to be a catastrophic approach. So he is in somewhat the same seesawing position as Bretz of Scablands fame.

Let us take up the Indian case first. Here, on the one side, are the true catastrophists, religious or scientific, who say that the Indus civilization was wrecked by the mid-second millennium Venusian events -mostly earth movements and tidal floods. In full opposition, the uniformitarian extremist would be one scholar (Fairservis) who deems the Indus culture to have declined because of economic extravagance and poor ecological practices, until

finally the Aryans of the northern plateau could swoop down upon the remains.[14]

The area under discussion is of great size. The influence and interconnections of the Indus and probably pre-Indus culture were most extensive -at least from today's Iran on the north to China on the east, to Arabia and Africa in the west and south to the islands of the South Seas.

Raikes finds in the Indus River Valley evidence of repeated flooding and of attempts to build against the flooding, until finally about 1500 the Valley was abandoned. He finds reprehensible "a general tendency to ascribe the abandonment of prehistoric sites to climate changes" without quantification of the degree of change beyond normal variations; also quite wrong is "the over-simplification which is to ascribe abandonments of sites to regional, or even world-wide periods of tectonic catastrophes."[15]

"Many archaeologists believe that at Mohenjodaro an extreme flood event or a series of them account for the great depth of silt/clay which has buried 11 or 12 meters depth of occupation levels under the present flood plain." Raikes traces the cause of flooding to "a combination of tectonically caused damming of a part of the Indus south of Mohenjodaro coupled with the division of Indus flows between the Nara channel and that of the Indus proper." Behind the tectonism may have been a rising seacoast, together with "extensive mud extrusions (including mud volcanoes) still active..."

"Both the flood deposits and the evidence of rebuilding occur at a great many different levels." Thought Raikes, perhaps the people built, were flooded, rebuilt, and so on, always keeping just above the new water levels. But why did the act not go on indefinitely, so that when the river finally settled itself the people

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[14] See Gil. Possehl, "The Mohenjo-daro Flood," 69 Am. Anthrop. I (1967), 32-40, opposing views such as Raikes, 66 Amer. Anthrop. (1964), 284-9 and see below, fn 16.

[15] Op. cit., fn 10 (unpubl. paper).

might be still around and flourishing? They either abandoned the culture or they were destroyed. One can imagine that silt (loess, clay) can be laid down by comet trains. Also from far off multiple volcanism and cyclones. Or the tectonism, that Raikes tries to contain, was far more extensive. The seacoast and mountains were rising rapidly. Dams were tectonically built and burst as at the Scablands. The elapsed time from damming to filling to flood "would have been very short," in Raikes own words.

Raikes suggests similar events at Chanhu-daro. He refers to "other uplift episodes," in the same article. And in another to "a general, if less marked," raising of the Indus flood-plain to the south, at Sehwan. He believes that "there has been no climatic trend toward either wetter or dryer conditions since Harappan times," so again turns to a stress upon tectonism.

Many sites, particularly in the Baluchistan region, north of Mohenjodaro, show signs of a destruction by burning. Harappen centers were not flooded. Abandonment was sudden in these and other places after which they stood empty for centuries. Yet "one fails to see any evidence of the hill raiders who supposedly brought Harappa to its knees."

B.B. Lal turned his attention to the phenomenon of a wide scattering of copper pieces and Ocher Color Ware in the present Delhi area of India. They are found over a huge area of 60,000 km 2 .[16] At Bahabrabad, for example, the pottery and copper objects had been strewn in a level six meters below ground, and had been covered by sand, pebbles and earth. The hypothesis was a veritable "deluge." Tectonism is blamed, with or without a deluge, possibly through the mud dam mechanism or river diversion.

The Indian flood area, whether once devastated or several times over, includes the famous fossil beds of the Siwalik hills. These are foothills of the Himalayas, north of Delhi. They are crammed with hordes of specimens of a great many species. Many

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16 " The Mohenjo-Daro Floods," 39 *Antiquity* (1965), 196-203, 203.

of them appear for the first time in these beds and are extinguished in them, so far as paleontologists know.

In the *Geology of India,* D.N. Wadia writes,[17] "This sudden bursting on the stage of such a varied population of herbivores, carnivores, rodents and of primates, the highest order of mammals, must be regarded as a most remarkable instance of rapid evolution of species." Tortoises of over six meters, two dozen species of elephant, pigs, oxen, and apes are scattered about. There are signs of earthquake, folding of the land, perhaps folding and deep burial of animals.

Similar deposits are found 1300 miles away in Burma, cut away to view in the valley of the Irrawaddy River. Two great zones of fossils are separated by 4000 feet of sand. Petrified trees pervade the fossils in the thousands. Writes Velikovsky: "Animals met death and extinction by the elementary forces of nature, which also uprooted forests and from Kashmir to Indo-China threw sand over species and genera in mountains thousands of feet high."[18]

Other instances may be added to extend the area involved in disaster much further, probably to the limits of proto-Indian civilization, and indeed throughout the world. The dates are hinging upon 1500 B.C. in many instances. Therefore, it would seem reasonable to place Raikes' work on the revolutionary shelf; try as he may to limit it, his evidence and own conjectures press in the direction of general catastrophe.

What emerges from Raikes' complex analysis is that in the Old and Middle Bronze Age -and particularly at the age-break between Middle and Late Bronze -there is proof of various terrific floods to which all known settlements succumbed. Raikes inclines, after considering six possibilities, towards a land subsidence on a large scale complementing a land rise to the east.

He does not mention the backup of river waters that would occur from Thira-type tsunamis driving north through the

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[17] " A Deluge? Which Deluge?" 70 *Amer. Anthrop.* 5(1968), 857-63.

[18] Velikovsky, *Earth in Upheaval,* 79.

Persian Gulf, although the evidence allows it. Such tides could come from a Typhonic impact explosion, a poseidonian earthquake, or a large-body encounter producing an axial tilt or interrupted rotation of the globe. (One notes the level of ashes and char beneath the flood level of Shurrupak. It does not appear to have been an incendiary blaze.)

He does not consider canopy water-drops, but insists upon retrojecting uniformly precipitation rates from modern times. Although the evidence of the period which he is examining is disordered and prejudiced already, yet the evidence that he must confront shows a flooding that is utterly devastating, and unexampled in recent times. But still, he draws back from catastrophic conclusions, loath to abandon the dogma that catastrophe could not have happened, and certainly not an exoterrestrial one.

Since large upthrusts of the Himalayan mountains are now being dated to post-glacial times,[19] since even mountains much higher than the Siwalik foothills contain "old" marine fossil beds, since the Siwalik-type beds are so young even when conventionally dated, since evidences occur of huge waves of translation moving from south to north in India and leaving great moraines (including the Siwalik-type hills), since Neolithic stones are found in the loess of the Himalayas and since great human cultures were flooded over and probably deluged as well, one is entitled to the quantavolutionary hypothesis: a series of abrupt, intensive, wide-scale changes overwhelmed the Indian subcontinent.

Frantic proliferation and extinction of species occurred, while India broke from Africa and crashed into Asia, while tides moved over the land, ramming, ripping, rising, and drowning, while the land raised up in a great arc into Asia, while hominids, then humans, entered and built cultures that were then destroyed and recreated. It may be that from this part of the world will come the easiest and fullest proofs of revolutionary

[19] *Ibid.,* 21.

primevalogy, of a succession of geological and cultural ages coinciding with the successive disruptions of what had been *Solaria Binaria.*

Dwarfing the Scablands and Indus barrier floods was the Gobi Sea flood, which may have been connected with the complex Noachian Flood. Thomas Huxley wrote the first scenario of the event. Bellamy refurbished the story in this century.[20] The Gobi Desert, which the Chinese call "the Sea of Sand," was once a great body of water. Numerous settlements lined its shores. Then suddenly it was emptied in a huge barrier-type flood. Its cultures disappeared along with a great many other settlements along the line of the flood. The western barrier of the Gobi Sea broke between Tian Shan and Altai mountains, and rushed through where today remain the waters of Telli-nor, Ebi-nor, Ala-kul, Sasyk-kul and Lake Balkhash, much of it now saline and disappearing. The great flood spread out into a "Sea of Turkestan" and then drained down into the depression of the Aral and Caspian Seas.

It then poured out between the Ural Mountains and the mountains of northern Iran, descended west through the Manych Depression into the Valley of the Don, the Sea of Azov, and the Black Sea. The areas of today's Romania and Bulgaria were temporarily part of a greater Black Sea. Soon it overflowed at the straits of the Bosphorus and pushed through the Dardanelles into the Mediterranean region. The Aegean and Eastern Mediterranean lands were flooded.

Next the Adriatic River, possibly the legendary River of Eridanus, and nowadays the truncated Po River, was turned into an Adriatic Sea. The Ionian Sea overflowed and the land bridges between Italy and Africa were covered with water. The shelves of the region of Tyrrhenia were submerged, the survivors driven to the high places of the Italian peninsula and islands, and contact was ultimately made with Gibraltar.

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[20] Bellamy, *M. M. M., op. cit.,* 308-16.

The Sahara basin may have been filled with water upon this occasion, to have become the ancient sea of Triton. It was this Tritonian Sea that figured in the mythical birth of Goddess Pallas Athena (the planet Venus) and I think that it was around 3500 B.P., therefore, when the Tritonian Sea broke out and threw itself into the Atlantic Basin. Ancient Saharan ruins and the art of the Ahaggar mountain caves amply testify to the ancient cultures there between 4000-1500 B.C.

The elapsed time for the 4000-mile journey from China may have been months or years. The drainage of the several temporary basins established *en route* from East Asia to the Atlantic Ocean occupied centuries.

Barrier-burst floods and tides must have been numerous, we conclude, because of the mountain-building, severe faulting, deluging, and other movements and outbursts that were occurring. Both actions would have been quite unexpected and erratic. They would have devastated the biosphere. Evidence of both effects comes sometimes from jumbled deposits of animal bones and wood. These locations consist of different species, that were killed suddenly (not by men), by the hundreds or thousands, and were transported to the location, by tides of water but in some cases also by hurricane and cyclonic action. In the Yukon Valley of Alaska, bulldozers scraping for gold have removed bones by the ton and drills have picked up bones hundreds of meters below ground. Such evidence exists around the world, and much more will be said on the subject in Chapter 26.

The number of fossil deposits will probably be extended to many hundreds of cases in the future. Still, most deposits would have been destroyed at the moment of catastrophe. Fires would have burned others. Impenetrable ice covers many bone piles. A succession of revolutionary actions would have blown to bits, dissipated, ground up, converted to fuels, washed into the sea, and deeply buried many others. The scenes at bone deposits are impressive: they are worldwide; they are found at low and high altitudes. Strange bedmates are discovered: ostriches and foxes; mammoths and lions; peacocks and horses; elephants and sharks.

Anthropologist Frank Hibben surveyed the bone mucks of Alaska and heard of similar deposits in nearby Siberia. The Arctic Ocean is in fact rimmed by the bones of many millions of animals. Hibben weighed the possibilities: hunters' overkill, ice flows, natural death, volcanic ash burials (ashes are abundant in the muck), volcanic gases? The mystery seemed to him unsolvable. He wrote of it in 1947; he revised his work in 1967.[21] There is no indication that he had heard meanwhile about Velikovsky, Hapgood, Patten, or Cook who were offering solutions to the mystery in terms of Cuvier's century-old expression -"revolutions of the globe."

Derek Ager, with a mind and eye for the catastrophic occurrence, remarks that "tsunami, ' or 'tidal waves' as they were for long misnamed, have an immense effect on shorelines, both in erosion and in the shifting of great quantities of sediment."[22] But what parcel of land in the world has never experienced a tsunami?

"It is generally accepted that tsunamis are usually triggered by earthquakes or violent volcanic explosions. It is also possible that they can be produced by the slumping of large masses of sediment in water..." Or by meteoroid splashes, we might add, or hurricanes and cyclones. "Though infrequent, there are certainly enough of them for geological purposes. From historical records it can be deduced that there have been more than two hundred notable tsunamis in the last two thousand years; this would allow us more than 100,000 in a million years."

Then move the continents a little here and there, raise and lower shorelines, change climates a few times, and add ten, fifty, a hundred million years. We have millions of great tsunamis to work with. Obviously the whole surface of the Earth will have been worked over a number of times by ordinary, uniformitarian waves. Thereupon add all the other high-energy forms: deluges,

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21 The *Lost Americans* (NY: Crowell, 1968).

22 Op. *cit.,* 45.

exoterrestrial impacts, volcanism, and so on: it is a wonder that the crust of the Earth is not a homogenous finely ground mixture of all past life and surfacing rocks. Now add great catastrophes elaborated in this book and the homogenous mixture should be guaranteed.

That is, stratigraphy is hardly understandable by following uniformitarian principles, if we acknowledge what scientists have all along been discovering, but more recently have become acutely aware of. Even if, as Ager writes, "the changes do not take place gradually but as sporadic bursts, as a series of minor catastrophes," the strata of the Earth do not make sense.

Those who believe in major catastrophes interrupting huge serene tracts of time may be wrong, because they must add to the effects of the great disasters the effects of a multitude of minor ones called for during great stretches of "peaceful" time. The result would be a homogenized crust. The effects of the forces that have operated are such as to suggest for the Earth a short and recently catastrophic history. The Earth's surface still retains its forms and fossils because its tortures have been clustered and have occurred following a short total Earth history.