La Brea Tar Pits: Evidence of a Catastrophic Flood

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Abstract

According to the traditional view, the La Brea Tar Pits were pools of entrapment for unwary animals. This view fails to account for a variety of anomalies, including the disarticulation and intermingling of skeletal parts, the lack of teeth marks on herbivore bones, the absence of soft tissues, the inverse ratio of carnivores to herbivores, the numerical superiority of water beetles among insect species, and water saturation of wood debris. An alternative theory assuming a catastrophic flood is a better explanation of the data. This theory can apply to other late Pleistocene fossil sites, where similar anomalies occur. Fossil deposition by catastrophic flood seems to be global in scope. These considerations provide strong confirmation for the young Earth-Flood model of geologic history.

Introduction

This article is the third in a series featuring the La Brea Tar Pits as a by-product of a catastrophic flood. From the evidences examined here, the apparent hydraulic forces responsible for the features specific to this site are not simply due to localized disturbances. Instead, the evidence points to a worldwide phenomenon, namely, the Earth-covering Genesis Flood.

Disarticulated Insects in a Matrix of Soil and Tar

The following is from an article on insects:

> The turmoil in the tar has resulted in complete separation of the parts of the skeleton of most insects; only rarely are several parts connected. The eye sockets are empty, and mouthparts gone in all La Brea material (Pierce, 1947, p. 137).

Pierce provided no further elucidation. To learn more about what happened to these insects, a first-hand look at the entomological collection stored at the Page Museum of Hancock Park, site of the La Brea Tar Pits, was necessary. Closer examination indicated something other than turbulent tar was involved in the disarticulation process.

The study began with vial number 8819, which, according to the specimen catalog, contains six "cephalic capsules" of unidentified beetles from Pit 4. Each head is dark brown in color and about 4 mm in diameter. The corneas of the eyes are intact, but the antennae and mouthparts are gone. Examination through the foramen magna showed that the interiors are hollow. Gone are subcorneal parts of eyes, brains, esophagi, pharynges—everything. In other vials, some heads (Figures 1 and 2), abdomens, and thoraxes are hollow, while others contain a hard mixture of soil and tar. The infusion of soil and tar is the original condition of all specimens.

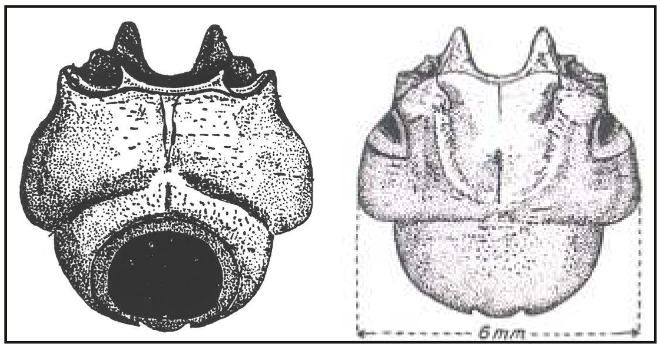

Figure 1. Cephalic capsule of *Nicrophorus,* a carrion beetle, showing the foramen magnum in the underside view on the left and the empty eye sockets in the dorsal view on the right (Pierce, 1949).

Cleaning the specimens can be a time-consuming and laborious process. A museum worker put chunks of asphalt into kerosene-filled jars for a week. Afterwards, the softened contents were placed on a tray containing benzene. Two more weeks of soaking elicited a loose assemblage of disarticulated heads, legs, wings, abdomens, thoraxes, and antennae. To clean out the body cavities, a worker placed specimens in xylene for another prolonged soaking. The next step was to use a fine needle to probe and excavate the inner matrix, cautiously and painstakingly to avoid damaging the specimen. Gentle brushing with a camel's hair brush removed the loosened debris (Pierce, 1946, pp. 116–117).

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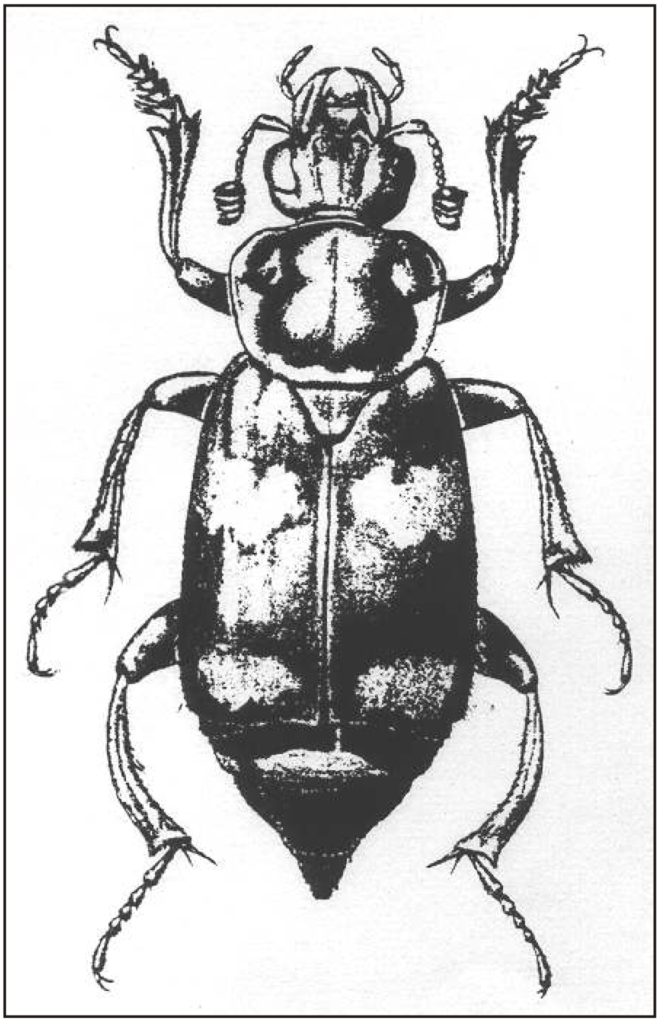

Figure 2. *Nicrophorus* (Borror, de Long, and Triplehorn, 1981).

At first, there was no way of determining whether any particular specimen was prehistoric or modern. To obtain datable samples, Pierce soaked a saber-toothed cat skull in benzene, which after several weeks liquefied the inner matrix. He then inserted a syringe into the foramen magnum and extracted the contents. Pierce was satisfied that this method yielded specimens from the Pleistocene age (Pierce, 1947, p.136).

Skull A-313 from Pit 13 is one of the 27 saber-toothed cat skulls selected for the retrieval of insect remains (Figure 3). A considerable amount of matrix material is still inside. Christopher Shaw, manager of the La Brea fossil collection at the Page Museum, demonstrated this fact to the present author by shaking the skull vigorously. This action produced the sound of particles buffeting the cranial walls. Like the beetle heads, skull A-313 was originally full of soil and tar. In view of these facts, some matters to consider are the dissolution of soft organic matter, the entrance of soil and tar into the empty cavities, and the relative duration of these processes.

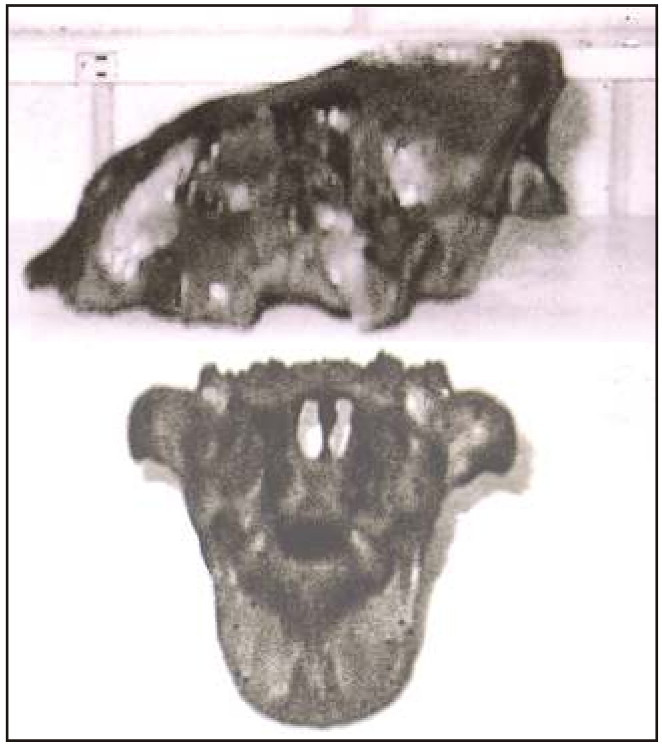

Figure 3. Lateral and underside views of saber-toothed cat skull A-313 found in Pit 13. The photograph of the underside view shows the round hole of the foramen magnum into which a syringe had been inserted. The missing large canines broke off sometime after the death of the animal.

The Disappearance of Soft Tissues

Non-skeletal components such as hair, skin, feathers, claw sheaths, scales, tendons, muscles, and internal organs have never been found at the La Brea site. The disappearance of this material has prompted some discussion regarding the causal factors.

Predators may be one explanation. A roving carnivore may have found a victim trapped in tar and proceeded to devour its flesh, leaving the skeletal parts to sink below the surface. As more such episodes occurred, bones accumulated as a growing mass at the bottom of the tar pools (Stock, 1929, p. 1, 4). While superficially persuasive, this explanation lacks conclusive evidence. Of the thousands of herbivore bones recovered, not one exhibits teeth marks. Signs of carnivore feeding, such as ragged edges on scapulas and mandibles or dentition patterns on the ends of limb bones and ribs, are absent. A single carnivore bone does, however, exhibit teeth marks (Figure 4). Etched on the surface of the tibia of a large lion are abrasion marks several centimeters in length, where teeth scraped against bone. The bone also has small abrasion grooves, about a millimeter in width and sometimes parallel. A hungry rodent with chisel-like teeth might have inflicted these

Figure 4. Two views of the tibia of a large lion, *Panthera atrox,* showing teeth marks. (Stock, 1929).

grooves (Stock, 1929, p. 4). Another possibility is that the lion suffered bone scratches during a desperate struggle with larger animals. In any case, there is little, if any, proof of predacious activity around the tar pits.

The effects of weather may be another cause. Under a hot sun, soft tissues liquefy and seep into the ground. Bones become rough, cracked, and scaly. During rainstorms, shallow floods move the bare skeletal parts to lower elevations, depositing some in tar pools (Stock, 1929, pp. 4–5). However, this is only a partial solution. Most of the bones recovered from the pits have a smooth, non-weathered appearance.

Shaw (1992, p. 43) suggested bacterial fermentation as an additional mechanism for tissue removal. Situated in an environmental niche that is normally toxic to other forms of life, microbes living in tar may have the capacity to consume dead organisms. However, studies of human cadavers and domestic animal carcasses show that many kinds of bacteria are involved in the decomposition process and interact in highly specific and complex ways. For example, *Proteus vulgaris* breaks down lysine into cadaverine, a foul-smelling substance. *Bacillus mycoides* and *Bacillus megatherium* transform proteins into ammonia. *Thiobacillus* oxidizes sulfur to produce sulfuric acid. Working in tandem with the bacteria are various kinds of insects. The cadaverine produced by *Proteus vulgaris* attracts flesh flies, which deposit larvae into the decaying carcass. These larvae secrete enzymes that further liquefy tissue and facilitate digestion for still more kinds of bacteria. Starting with a fresh body and ending with the desiccation of the skeleton, there are six stages of decay that extend over a period lasting six to twelve months (Pierce, 1949, pp. 55–58, citing Megnin). Although a complete description of the decay process is beyond the scope of this article, the details provided here show the participation of many types of organisms.

Petroleum-based solvents such as benzene, toluene, and xylene can also break down organic matter (Shaw, 1992, p. 43). In a purified state, these liquids dissolve rubber, gum, fat, resin, and other substances. However, as mentioned earlier, repeated immersions in solvent baths cause no discernible harm to insect remains. Oil and its specific ingredients may have no effect on dead tissue. Indeed, oil may act as a preservative. According to Greek historian Diodorus Siculus (circa 50 AD), solidified petroleum, or asphalt, was a necessary ingredient in embalming fluids:

> The largest portion of the asphalt derived from the Dead Sea is exported to Egypt, where among other uses, it is employed to mummify dead bodies; for without the mixture of this substance with other aromatics, it would be difficult for them to preserve these for a long time from the corruption to which they are liable (quoted in Abraham, 1960, p. 34).

Nissenbaum (1992, pp. 2, 5) confirmed the testimony of Diodorus and other ancient authorities. Additional evidence that oil is a preservative comes from the fossil deposits of Starunia, now located in the southwestern part of Ukraine. In 1907, when Starunia was under the control of Poland, pieces of woolly mammoth and woolly rhinoceros were found with intact skin, hair, and other soft tissues. One article mentioned the finding of a complete rhinoceros.

> Skin, hair, muscles and all other tissues were well preserved, owing to the sealing up of the monster in a kind of oily earth, which kept out the microorganisms of decay for many thousands of years (anonymous, 1930, p. 319).

Scientists studying the carcass concluded that the rhinoceros had died from drowning.

> It was observed that only the skin of the left side was damaged during the influx of sediment into the interior of the animal. It would thus appear that the animal had fallen victim to some type of catastrophe, such as the overflowing of a river, and the dead body was swept away by the surge of water.... On the dry areas of the rhino carcass was a crust of salt, even though, it must be concluded, the skin was soaked with an oily fluid.... This may incline us to assume

> that—along with fresh water—salt water was also present (Lengersdorf, 1934, p. 1).

Also in the Starunia deposit are various species of plants indigenous to arctic regions. This type of vegetation may indicate how the rhinoceros remained intact. Observations of animal carcasses in cold water show that the decomposition rate reaches a minimum. Additionally, decay gases do not accumulate. The waters of Lake Superior are very cold, and an old saying maintains that, "Lake Superior never gives up its dead" (Hapgood, 1958, p. 258). If the Starunia rhinoceros died in cold water, it might have sunk to the bottom, where sedimentation and oil seepages covered and preserved it.

Associated with the rhinoceros are insects. Unlike the fragmented remains found at Rancho La Brea, many Starunia insects are intact and so well preserved that scientists can study them "almost like Recent specimens" (Zeuner, 1958, p. 381). Some specimens are missing only an antenna or a few leg parts. The extracted genitalia of a number of male specimens of the *Helophorus* (a water beetle) have been useful in taxonomic studies. The quality of preservation even extends to colorations. Prolonged soakings in benzene release copious quantities of oil, and natural colors emerge (Angus, 1973, p. 301). In conclusion, oil does not degrade fleshly components but rather preserves them, even for thousands of years.

Auldaney's Post-Flood Catastrophism Theory

Auldaney (1994, pp. 25–35) proposed a catastrophic theory for Rancho La Brea's fossils. Using a variety of sources, he showed that some tar pit animals died at a another location. Floodwater transportation brought the carcasses to collection zones at lower elevations. Carnivores seeking easy meals scavenged among the remains. Auldaney suggested that earthquake tremors might have produced a massive upwelling of tar that surprised and trapped these scavengers. Unable to escape, the carnivores were drowned by new waves of floods. Supporting this view is a 300-square-meter slab of asphalt only 0.4 meters thick, full of bones, mostly of carnivores. Discovered in 1975 during the excavation of the foundation for the Page Museum, the base of the slab was in contact with silty clay.

According to Auldaney, the animals of Rancho La Brea died during the Tower of Babel period, when catastrophes such as huge volcanoes, torrential rains, and liquefaction of the landscape ravaged the world. While this theory fails to account for the disappearance of soft organic matter, Auldaney's insight regarding flood activity is worthy to consider. Water has the capacity to move debris, suspend huge quantities of sediment, and thus become a possible source for the soil found in skeletal cavities of insects and animals. Damage observed on insect remains may also be due to the effects of water.

> ...much of the material from the La Brea deposits appears badly abraded, probably by water transport from adjacent hills. Prominences such as the elytral humeri, the epipleural ridges and prosternal process are rounded or sometimes obliterated in such specimens, and cuticular sculpting and appearance are drastically altered (Doyen and Miller, 1980, p. 2).

Scratch marks on animal bones also indicate water transport over rough terrain. The motion of water may therefore produce a multitude of effects on fossil material.

The Effects of Water on an Insect Carcass

To test the effects of water on an insect, the present author put a live cockroach inside a 5-quart plastic bucket half-filled with water and placed it outdoors. The bucket had a lid punctured with air holes. The insect swam on the surface of the water but was dead the next day and continued to float. There were no changes until the third week, when the rear portion of the abdomen broke off and sank to the bottom. Later the rear portion returned to the surface. Gradually, over the next two months, antennae and leg segments detached and floated, along with the rest of the body. Bubbles formed around the openings of the main body and rear portion. Fluids seeped out and produced a pinkish film that clung to the bottom and sides of the bucket. By the fourth month another eruption occurred, leaving a gaping hole in the main portion. From this hole, more fluids and organs emerged. Later the head detached and floated. By the sixth month, the parts sunk to the bottom of the bucket.

Probably the buildup of gases associated with decomposition caused the ruptures and disintegration. The results of this exercise show that a prolonged period in water can dismember an insect, remove its inner organs, and scatter its remains. These effects are comparable to what appears in the insect material of Rancho La Brea.

The Prevalence of Aquatic Fauna at Pleistocene Fossil Sites

Nearly fifty families of the Insecta class appear in the La Brea collection with approximately 6300 identified remains. The most numerous family is Dytiscidae, a predacious diving beetle still found in ponds today (Figure 5). It has 2057 entries in the specimen catalogs, mainly of right and left elytra. Hydrophilidae, a family of scavenging water beetles, has 440 listings, mainly of elytra. Unlike the diving beetle, which is an active swimmer, the scavenging beetle

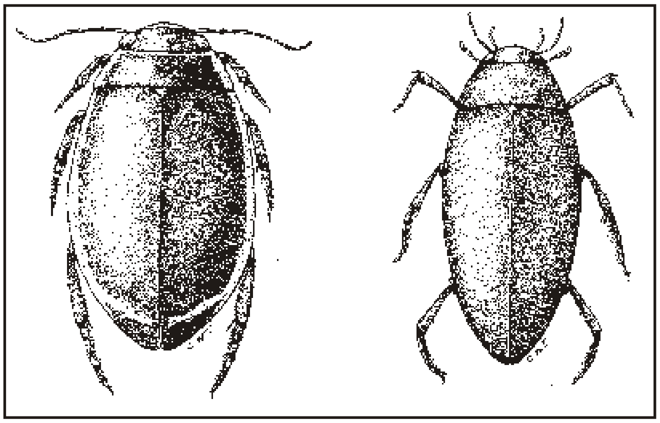

Figure 5. A diving beetle (family: Dytiscidae) is on the left. On the right is a scavenging beetle from the family Hydrophilidae. Both types are numerous at the La Brea Tar Pits (Borror, de Long, and Triplehorn, 1981).

prefers clinging to underwater plants or crawling along the bottoms of ponds.

The large numbers of water beetles at Rancho La Brea compares to that of fossil sites in Ukraine. Approximately 90% of the insects in Starunia and nearby Borislav are water beetles. Other species include montane varieties of the Orthoptera order. Angus (1973, p. 322) mentioned the "striking" fact that water beetles, typically inhabiting lowland areas, mix with insects living in mountainous habitats.

From a uniformitarian standpoint, it is unclear why non-aquatic species exist in much smaller numbers in the Pleistocene deposits of Ukraine and Southern California. Modern insects such as carrion eaters and those that are attracted to the tar itself often become entrapped (Miller, 1983, p. 94; Saylor, 1933, p. 182). Compounding the problem even more is the numerical superiority of water beetles at two other Pleistocene sites: the oil sands of Trinidad and the tar seeps of Talara, Peru (Blair, 1927, p. 138; Churcher, 1966, p. 989).

The predominance of water beetles has a counterpart among avian fossils. Waterbirds form a minority (about 8%) of the Rancholabrean avifauna, yet they exist in large numbers at other sites. At the tar seeps of Talara, Peru, there are about 9000 specimens of birds representing 89 non-passerine species and an indefinite number of passerine. The most numerous species is *Anas bahamenis*, a type of duck, which represents about 30% of the total number of bones (Campbell, 1979, p. 7). In a deposit of sand and pitch, 273 km north of Talara, at La Carolina, Ecuador, the *Anas bahamenis* is the second most abundant species of bird, behind *Aratinga roosevelti*, a type of parrot (Campbell, 1976, p. 157).

In the sedimentary deposits of San Miguel Island off the coast of Southern California are the remains of a small mammoth, as well as 41 species of birds. Over 75% of the avian fossils are waterbirds. At one locality, puffin bones literally form a pavement (Guthrie, 1992, p. 324).

On the island of Malta are various kinds of birds, but the most common are three species of swans and two species of cranes. These large birds associate with the bones of an extinct pygmy elephant (Northcote, 1992, p. 285).

In the silty accumulations of Fossil Lake in Oregon, bones of mammals admixed with bird bones. The largest numbers of avian specimens come from waterbirds, such as swans, ducks, and geese (Miller, 1912, p. 79).

At the tar seeps of McKittrick near Bakersfield, California, waterbirds comprise about 18% of the avifauna. Over half of these are ducks and geese (Miller, 1935, pp. 73–75).

The high concentration of water beetles and waterfowl at Pleistocene fossil sites may be an effect of the Genesis Flood. As creatures moved toward higher ground in their efforts to survive, the ones that can swim or float would have had an advantage over the strictly terrestrial types. The species living in the mountains would have had an advantage over the ones living on the plain. These considerations may explain why in Starunia lowland-dwelling water beetles mix with insects inhabiting the highlands. Eventually the Flood overwhelmed them all, but those that survived longer into the Flood period would be buried in the upper, or Pleistocene, levels of sedimentation while the ones that died earlier would be scattered in the lower strata.

The Predominance of Carnivores over Herbivores

Almost 90% of the mammal bones found in the La Brea Tar Pits are carnivores, wolves being the predominant type. Equivalent ratios occur with avian species. About 70% are flesh eaters, eagles being the most numerous. These unnatural ratios also occur at the tar seeps of McKittrick. Predatory land birds comprise 65% of the avifauna, eagles being the most common (Miller, 1935, pp. 74–75). Mammal carnivores, such as coyotes, wolves, lynxes, and saber-toothed cats, total about 55%. According to Schultz (1938, p. 129), the animals of McKittrick are probably not victims of entrapment:

> During late Pleistocene time sedimentation was active in the area, and as the oil reached the surface and spread out in sheets of *a fraction of an inch or so in thickness* it became intercalated with clay, sand, gravel, and wind-blown material.... At the McKittrick locality it seems improbable that the seeps could have had much effectiveness as traps; the principal function of oil seems to have been as a preservative. [emphasis added]

At the tar seeps of Talara, Peru, where "the main bone-bearing deposits occur as irregular lenses up to 6 feet thick and 20 to 30 feet in width" (Lemon and Churcher, 1961. p. 418), the bones of a variety of mammals appear, but the most common are carnivores. From a total number of

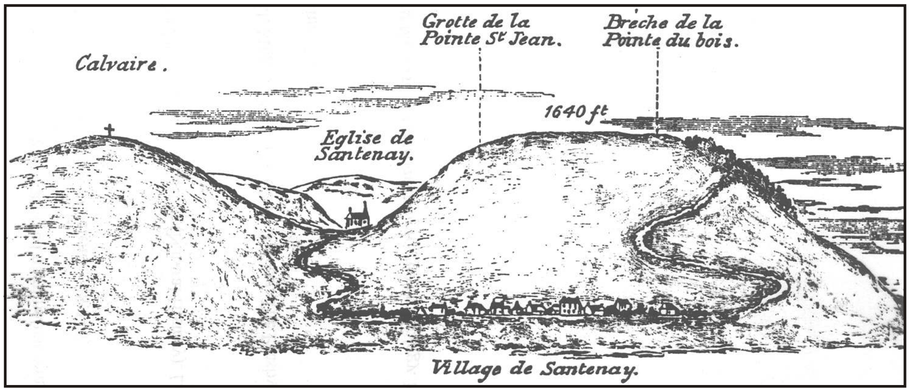

Figure 6. Montagne de Santenay (Prestwich, 1894).

16,851 specimens, about 78% come from three kinds of carnivores: 7317 specimens of fox, 4032 of wolf, and 1866 of saber-toothed cat (Seymour, 2002).

A fossil site in France also has a large number of carnivores. Montagne de Santenay, an isolated hill rising 1030 feet above the surrounding plain, has steep sides and a nearly level platform on top (Figure 6). Close to the summit are limestone fissures filled with a hard breccia composed of broken bones, sharp-angled rock fragments, and yellowish-brown soil. The bones come from a variety of animals, including lion, fox, bear, horse, deer, ox, elephant, rhinoceros, but the most numerous come from wolves. In 1876, scientists belonging to the Geological Society of France saw the mixture of carnivores and herbivores but found no chew marks on the herbivore bones. They also observed that the breccia on top of the hill was a water deposit. The scientists concluded that a flood over a thousand feet high had arisen in the valley of the Saone River. Their discussion included various causes of the flood, such as excessive rainfall, the melting of snowfields, or the breaking of glacial dams, but each idea had significant drawbacks, and the group failed to reach a consensus (Prestwich, 1894, pp. 935–939).

One scientist of the group, Albert Gaudry, wrote a report on this hill. Joseph Prestwich (1812–1896), a prominent geologist in England (Figure 7), read this report and saw confirmation for a theory he was developing. From his own investigations of raised beaches, rubble drift, and bones in caves, Prestwich believed a gigantic flood of short duration submerged Western Europe near the end of the glacial, or Pleistocene, period.

> For a submergence of the character I have described would naturally drive the animals in the plains to seek refuge on the higher hills. Flying in terror and cowed by the common danger, the Carnivora and Herbivora alike sought refuge on the same spot, and alike suffered the same fate wherever the hill was isolated and not of a height sufficient to them to escape the advancing flood (Prestwich, 1894, p. 938).

According to Prestwich, dead animals formed a mat on the surface of the water. Eventually, body parts detached and fell irregularly on the submerged surfaces below, which accounts for the scattered condition of the bones.

The large number of wolf bones may indicate a struggle for the high ground. Wolves are generally stronger, more resourceful, and more socially organized than other animals, and they would have used these advantages aggressively to survive. The circumstances in France may have had an equivalent in California. Wolves fought with saber-toothed cats on the last remaining hills, while large predatory birds, such as eagles, hawks, and condors, fought in the last remaining trees. Although wolves and eagles were the winners in this struggle, in the end they lost, for the level of water rose above the hills.

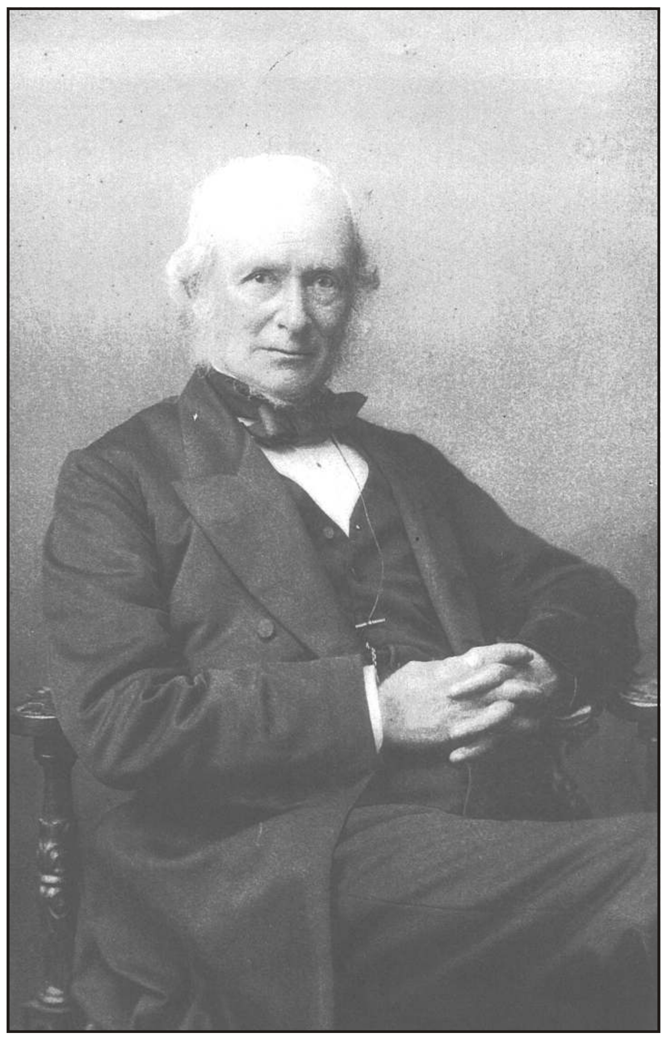

Figure 7. Joseph Prestwich (Prestwich, 1899).

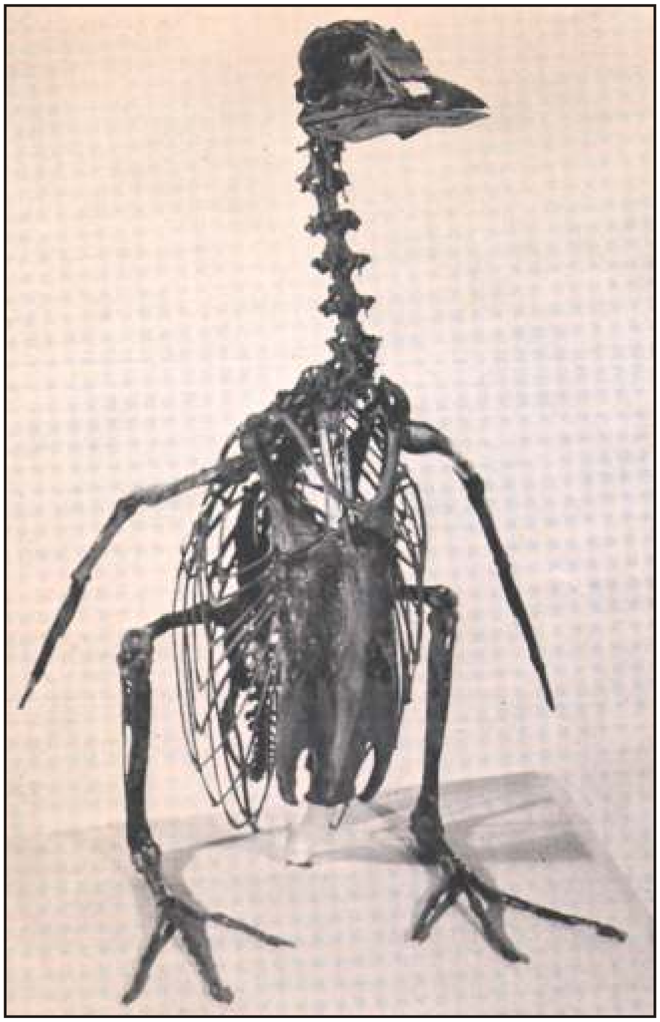

Figure 8. The *Mancalla,* a flightless auk from the Pliocene period of California (Howard, 1955).

Notwithstanding, hills which may have served as platforms of refuge in the vicinity of the La Brea Tar Pits do not seem to exist today. About three miles to the north of the pits are the Santa Monica Mountains, composed of volcanic rock that thrusted upward through deep sedimentary strata. These mountains probably formed as a late-Flood or post-Flood uplift and thus could not have been a converging area for frightened animals. Probably, the animals died elsewhere, and the tidal power of the Flood transported their remains over long distances. The victims buried in the tar pits may not even be native to California.

Diluvial Sorting and the Geologic Periods

The geologic strata found around the world have a false appearance of supporting the evolution of life-forms because invertebrates sometimes appear in lower strata designated as "older," while "younger" strata higher in the geologic column may contain vertebrate fossils. Creationists Whitcomb and Morris (1961, p. 275) said that vertebrates are in the higher levels of strata because they "possess much greater mobility." Typically, mammals and birds are in the top layers. Semimobile creatures, such as amphibians and reptiles, occur in middle layers, and the least mobile creatures, such as trilobites and brachiopods, occur in the deeper layers. Thus the geologic column can be reinterpreted along the following lines:

> (1) of increasing mobility and therefore increasing ability to postpone inundation; (2) of decreasing density and other hydrodynamic factors tending to promote earlier and deeper sedimentation, and (3) of increasing elevation of habitat and therefore time required for the Flood to attain stages sufficient to overtake them (Whitcomb and Morris, 1961, pp. 276).

Greater mobility is evident with wolves, which typically travel 30 miles a day, and occasionally go as far as 60 or more miles per day (Mech, pp. 50–53). This ability to run long distances may have favored them in the race from impending disaster. The same line of reasoning can also apply to birds. The variety and large numbers of birds at Pleistocene sites may be due to their ability to fly. Substantial numbers of waterbirds may be due to an additional ability to swim. Correspondingly, birds not favored with either or both of these abilities lie in the lower layers of geologic strata. Over 90% of the pre-Pleistocene avian fossils of California are those of the *Mancalla,* a flightless auk of the Pliocene (Figure 8). By 1970, close to 500 *Mancalla* bones had been found (Howard, 1955, pp. 13–19; Howard, 1970, p. 1).

Sparse numbers of birds in the lower layers of California strata are comparable to those of other parts of North America. Fragmentary remains from eight species are in Eocene layers, including owl, woodpecker, goose, flamingo, and two species of pheasant. The best-preserved is *Diatryma steini*, a large ostrichlike bird, and *Neocathartes grallator*, or Stilt Vulture. The latter had the capability of flight, yet its long legs made it more suited for ground travel (Howard, 1955, pp. 8–10; Swinton, 1965, pp. 41, 44–45, 48–49).

The general tendency toward limited volantation among birds buried in lower strata compares with the limited perambulation of lower-strata mammals and reptiles. Eocene river formations of Wyoming and Utah include such low-mobility types as turtles, crocodiles, rodents, rhinoceroses, and the giant titanotheres. So birds and animals least able to flee the onslaught of a flood are in lower sedimentation levels.

Speculations on the Order of Events at Rancho La Brea

When the Rancholabrean animals died in the Flood, internal gases of decay buoyed up their carcasses. With the onset of further decay, body parts detached and sank. Animals dying in the earlier stages of the Flood fell apart first, and their remains scattered in the lower levels of the building sedimentation below. Remains of animals dying in the latter stages of the Flood scattered in the upper layers.

After the continents upheaved, the surface landscape comprising Southern California was littered with bones. Strong currents of water retreating off the land in the late Flood period and during the fluvial activity of the post-Flood period transported and redistributed the bones to lower elevations. Some bones and soggy wood debris entered a small number of funnel-shaped pits, newly formed by natural gas blowouts caused by earthquake tremors. Oil from ruptured underground reservoirs seeped into these pits and flowed over the surrounding bone-strewn plain. This lake of oil thickened into tar, and its surface developed a hard crust, which sealed the pits and kept the matrix in a semiliquefied state. The slab of boniferous asphalt found in 1975 was part of this lake. Bones beyond the reach of the lake dissolved from decay and weathering.

Concluding Remarks

Part 1 of this series of articles presented features of the tar pits that challenge the entrapment theory: (1) broken, fragmented bones, chaotically disarranged; (2) carnivore predominance; (3) tight dimensions of some pits (five feet or less in diameter); (4) transient nature of tar pools, which form a surface crust after a short time; and (5) water-drenched logs and vegetation admixed with the bones. Part 2 showed how new data from Pit 91 led paleontologists to discard the idea of open pools of tar as animal traps and develop two alternatives: the tar puddle entrapment theory and a water transport theory, which incorporates a limited role for entrapments.

A water transport theory that does not include the entrapment concept may provide the most credible interpretation of the complex data of the asphalt fossil beds. Evidences presented in this article demonstrate how a catastrophic flood might have caused the results seen today at the La Brea Tar Pits. These evidences fit best within the context of the young Earth-Flood model of Earth history. Further creationist research at this site should show promise.

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