Recent Excavations in California

Part II—Product of the Tar Seeps of McKittrick

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In the belt of oil fields on the southwestern border of the Great Valley of California occur tar seeps which in times past have trapped creatures in somewhat the same way that the tar pools mired animals in the famous Rancho La Brea deposits of the Los Angeles basin. As in the instance of the latter well-known locality the seeps along the margin of the San Joaquin Plain have preserved their organic record from the Ice Age.

Early Discoveries

Back in the sixties and seventies and actually before the first published account of the presence of prehistoric animals at Rancho La Brea, remains of an extinct species of horse from an asphalt deposit near Buena Vista Lake, Kern County, California, were described by the distinguished paleontologist Joseph Leidy. Sometime later John C. Merriam, who was destined to play a large part in the exploration of Rancho La Brea and in the study of its wealth of animal life, described a jaw of the extinct dire or grim wolf from a locality near Asphalt. This site was situated not far from the present location of McKittrick, west of Bakersfield.

Immediately southwest of McKittrick and cut by the highway which connects this village with the oil centers of Taft and Maricopa are outcrops of tar or brea representing terrace accumulations formed in part by oil seepages. These outpours have continued into recent times, for many places may be seen where the sticky material exudes from cracks and fissures on the surface of the ground. Seventeen years ago when workmen were grading for the highway, numerous remains of extinct animals were uncovered, thus marking another locality in the McKittrick region where such finds have been made.

Subsequent excavations in these tar beds by the University of California and by the California Institute of Technology in cooperation with the Carnegie Institution of Washington brought to light the presence of many Ice Age animals...
Part Il—Product of the Tar Seeps of McKittrick

Map showing location of asphalt deposits, containing fossil bones, teeth and skulls of animals dating from the Ice Age, near McKittrick, California.

showing definite relationship to those found at Rancho La Brea. Thousands of specimens representing bones, teeth and skulls, were collected and these show the characteristic brown or black color—the result of long contact with and penetration by bituminous substances.

A survey of the occurrence and of the various types of animals and plants found in the McKittrick brea show that the accumulation and the entombment of the organic remains took place under topographic conditions similar to those that prevail now in that region. A foot-hill belt, situated between the San Joaquin Plain to the east and the upland country of the Temblor Range to the west, furnished a favorable environment during the Glacial Period for a highly diversified assemblage of animals, even though the climatic evidence suggests that at times the region was more arid than it is today.

Various Animal Types

Among the forty-three different kinds of mammals known from this locality the larger forms include the western horse (Equus occidentalis), bison (Bison antiquus), large camel (Camelops hesternus), pecary (Platypumus), small antelope (Capromeryx), pronghorn, deer and elk. The peculiar ground sloths of South American origin are apparently represented by two forms. Also in the group and of special interest because they are not found in the brea deposit of the Los Angeles region, is a tall slender-limbed camel (Tanupolama) and a musk-ox like animal (Preptoevers). The latter is known to occur in certain cave deposits of northern California, but thus far has not been uncovered in strata of the Ice Age in the southern part of the state.

Associated with the plant-eating mammals are a number of the large flesh-eating forms like the sabre-tooth cat, great lion-like cat, grim wolves and short-faced bears. With these occur the black bear, puma, wild cat, fox, coyotes, skunks, weasels, and badgers.

One of the noteworthy features of the mammalian assemblage is a more normal numerical representation of individuals in contrast to that at Rancho La Brea. As is well known, at the latter locality the predatory animals, particularly the grim wolves and the sabre-tooth cats, are decidedly in the majority in comparison to the plant-feeders.

At McKittrick, however, the carnivores are relatively not so abundant and the dog family which is present in largest numbers is represented principally by coyotes. Another significant fact is the closer resemblance the McKittrick mammals make to the living assemblage of the California area than is the case with Rancho La Brea and which may be interpreted as an indication that the former are nearer in geologic time to the Recent.

The Bird Life

The birds of the McKittrick asphalt, of which there are no less than fifty-eight species, show striking resemblances to those from Rancho La Brea, but there are likewise some noticeable differences. As at the latter locality the predatory birds like vultures, eagles, hawks, falcons are well represented. The great extinct condor-like vulture, Teratornis, is present, but the California condor is absent.

In one excavation of the McKittrick asphalt remains of water and shore birds were found in considerable number. These belonged to grebes, herons, storks, swans, ducks and geese, including an extinct pigmy goose. Presence of
these forms points to the occurrence of standing bodies of water or perhaps a lake in the region where the tar seepages took place. However, not far away the conditions were apparently so arid as to permit but little ground cover by plants and this may be the principal reason why the wild turkey, so abundant at Rancho La Brea, is totally absent at McKittrick.

**Past Conditions**

An attempt to visualize the scene at a particular stage in geologic history, as based upon the sedimentary and fossil evidence, offers one of the fascinating problems with which the student of the past life of the earth is often concerned. In the instance of the McKittrick asphalt deposits and their entombed record of the Ice Age it is not entirely clear as to whether we are dealing with a single climatic stage, of necessity varied because of topography, or whether two or more climatic stages are in reality superimposed and in such a way that the differences due to time cannot be readily recognized.

One may envisage a region not unlike the foot-hill belt along the eastern flank of the Coast Ranges as it exists there today. During the period of accumulation, however, the vegetation in the immediate vicinity included the salty sage which at present grows in more arid parts of the San Joaquin Valley. Not far away at higher elevations in the mountains to the west grew pines and junipers.

Doubtless then as now the range served as a barrier to the easterly movement of moisture-laden air from the Pacific Ocean. With essentially a dry and cool climate there existed in the immediate region of the tar seepages pools of water or perhaps a lake fed by streams from the western watershed of the Sierra Nevada and possibly from the Coast Ranges as well. Outpours of tar in the near vicinity, extending doubtless across the lake-border zone and into the water itself, furnished the agent by which various mammals, birds and other creatures were mired and subsequently entombed.

Authorities seem agreed that these events occurred during the last cold stage near the close of the Ice Age which would place this portion of early California history within the last 50,000 years.