

A fossil bonanza in the Baja

A tourist highway extending the length of the Baja California peninsula was completed this year by the Mexican government. The highway and the desolate landscape, noticeably lacking in tourist amenities, have proven inhospitable to the weekend traveler and greenhorn camper. But the highway has opened up to a team of Mexican and American paleontologists a bonanza of fossils that may prove to be one of the largest finds in recent years.

Shelton Applegate and William Morris of the Natural History Museum of Los Angeles County reported to a meeting of the Vertebrate Paleontological Society of America in Flagstaff, Ariz., last week the discovery of more than 18 fossil sites on the peninsula. The sites dot a 350-mile stretch of rugged coastal and inland terrain from Santa Rosalia to Cabo San Lucas. Applegate told *SCIENCE NEWS* that fossils literally cover the ground for square miles in some locations where torrential rains have washed away the soil. At other sites, the team found fossil beds thousands of feet thick.

Applegate and Morris, co-investigator Ismael Ferrusquia, a paleontologist at the University of Mexico, and several of Ferrusquia's geology students found the fossil remains of animals from a variety of geologic periods and artifacts left by humans several thousand years ago. The two most important findings, Applegate says, are the discoveries of the skeletal remains of marine species in what were once ancient seabeds. Beds near the cape on the eastern side of the peninsula date back seven or eight million years to the Pliocene era, and contain fossil diatoms and fish found only in deep water. This discovery is important, Applegate says, because it supports the theory that the peninsula split off from the Mexican mainland, and a deep sea existed between them for at least seven or eight million years, and not just four million as some have suggested. The team also found ancient shark and whale remains in now-dry Oligocene seabeds. This period extended from about 37 million to about 26 million years ago, and marine fossils from this period have been rare in the past. The fossil teeth of tiger sharks found in the beds match teeth found in Oligocene beds in the state of Mississippi, and add support to the theory that at one time, North and South America were separated by a seaway, perhaps where the Isthmus of Panama now lies. Tiger sharks were thus able to swim through the seaway and inhabit both locations.



Photos: Los Angeles Natural History Museum

Applegate and ancient lava seabed: Marine fossils reveal earlier seaway.



Viewing 10-million-year-old whale jaw.

The team also found the remains of several land animals in a dry Pleistocene lake bed. They found the bones of camels, horses and mammoths and the shells of giant tortoises five feet long and four feet high. These may prove to be members of an unrecorded extinct species, Applegate says. "The findings thus far are only preliminary, and we will not know the species and ages of the animals until experts examine and radiocarbon-date the bones."

This caveat applies particularly to the human artifacts, Applegate says. The team found pieces of stone tools and weapons near the dry lake bed, but not actually in it. Thus the humans did not necessarily live during the same geologic period as the Pleistocene land animals. Their coexistence cannot be determined until the artifacts are dated, he says, but if they do turn out to be from the same period, two other theories may be supported. It may be con-

firmed that man existed in North America as much as 50,000 years ago, and new evidence may add support to the theory that early man hunted some land animals to extinction.

Applegate is enthusiastic about the new sites, which he calls "The last great frontier" in paleontology. "The fossils are literally lying where they were left, and have been undisturbed ever since." Vast fossil fields about the highway. Applegate says that while building a campfire one evening, he reached down for a stone and came up with a prehistoric hand axe. He is apprehensive, though, that the new highway will bring tourists who may carry off the fossils. The team is working with the Mexican government to establish protective regulations.

"The important thing about this discovery is that we now have a place to look where we know fossils exist," he says, "and we plan to go back and study them before they are carried off." □

An operation you can forget

Physicians often prefer patients to stay awake during surgery. Patients usually prefer to be oblivious of their ordeal. (One patient, who underwent a straightening of her deviated septum in a reasonably alert state, can still hear the cartilage being chipped from her nose.) Now a drug has been developed that should suit both physicians and patients: It keeps the patients awake during surgery, but blocks his or her ability to remember the operation later.

The drug is called lorazepam. Its value as an anesthetic and temporary-amnesia inducer was reported this week at the annual meeting of the American Society of Anesthesiologists by David Heisterkamp and Peter Cohen of the University of Colorado Medical School. □