

The Pygmy Mammoth's Tale

Tuning in the Channel Islands, where ancient bones speak.

Larry Agenbroad brushes the dust off a porcelain-white chunk of bone, then asks me to touch it with the tip of my tongue. Our group waits for the punchline. Agenbroad, a paleontologist with mischievous eyes and a faint Idaho

drawl, looks to be straight from Central Casting: wire-rim glasses, straw hat, bushy mustache, denim shirt, dusty boots. We've clustered around this world-famous bone hunter like a pack of eager schoolkids. I give the bone a reluctant lick, and it grabs my tongue like an icy popsicle. Agenbroad's eyes light up, and a grin spreads across his face. "Mammoth," he says.

We pass around what Agenbroad has confirmed, with the aid of my tongue, to be very old bone. Eons have sucked the moisture out, baking this fragment of pelvis so dry it clings as no youthful bone could. Few of us have ever witnessed the dusty beginnings of an archaeological discovery, let alone held in our hands a fragment of pygmy mammoth, a long-extinct creature that last roamed Santa Rosa Island some 13,000 years ago. It feels more precious than gold.

Rocked by cold winds and ocean waves, 13 of us have endured a three-and-a-half-hour boat ride to cross the Santa Barbara Channel from Ventura, California. The island is one of five that make up Channel Islands National Park, an island chain that borders the Southern California coast like stepping stones. We've come as participants in one of several field trips offered each year by the park and the Santa Barbara Museum of Natural History. We're spending four days in the company of anthropologists, archaeologists, and paleontologists as they explore this 15-mile-long, 10-mile-wide time warp.



A window on the Ice Age: the land holds secrets on California's Santa Rosa Island.

BY GUY HAND

There is much to see: remnants of Chumash villages dot the coastal bluffs, and fossils evidence giant mice, flightless geese, and some of the oldest human remains in North America. And, of course, there are mammoths. This oxymoronic variety, the pygmy mammoth, has been found in only three places in the world. The most complete specimen was unearthed on this island.

Agenbroad believes that large mainland mammoths, attracted by the sweet smell of island grasses, swam across the Santa Barbara Channel during the Pleistocene, their trunks held high like periscopes. With much of the world's water caught up in Ice Age glaciers, and sea levels correspondingly low, the northern Channel Islands—which then formed one large island—



STRICTLY VEGETARIAN, MAMMOTHS SPENT MOST OF THEIR WAKING HOURS EATING. THEY PICKED DELICATE FLOWERS, STEMS, AND BUDS WITH TWO FINGERLIKE PROTRUSIONS AT THE TIPS OF THEIR TRUNKS.

stood a mere five miles off the California coast, an easy swim for a proboscidean. As glaciers melted and sea levels rose, island mammoths were marooned on a shrinking world. Their response was to shrink themselves, eventually to less than half their ancestral size.

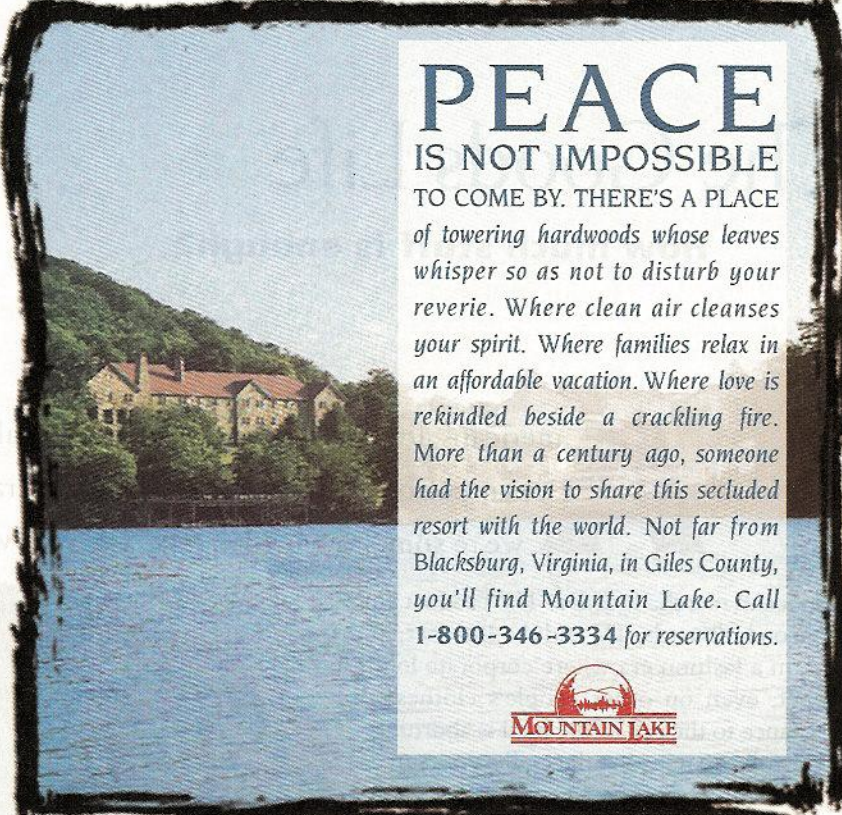
The coastline is riven with small canyons and their accompanying streams. Sediments are soft, the soils laid bare, erosion biting away six inches of shoreline a year, reworking the island's contours as evolution did the mammoth's. As it cracks and crumbles, the coastline frees the hidden bones of generations.

We find fossils everywhere: pelvis, scapula, and bits of rib lying on open ground. We discover a femur inlaid in the wall of one ravine. Suddenly we spot something like the joint end of a country ham protruding from the cliff face. Park archaeologist Don Morris recognizes it as a mandibular condyle, the ball joint of a mammoth's lower jaw. He works deliberately, using a trowel and brush, and soon the entire jaw, teeth intact, emerges from the canyon wall. In these thick layers of sediment, we begin to see lives recorded in bone. Eventually we find six tusks.


Agenbroad tells us you can discover an animal's past by running fingers along the tip of its tusk. Through this paleontological braille you can read a mammoth's personality—its tendency to dig in hard or soft soil, its aggressiveness, its preference for right or left tusk. Growth patterns in tusks reveal the animal's sex, when puberty hit, and, in the case of a female, how many calves she had. They reveal the mammoth's age at death, even the season it died. These bones have not forgotten.

In some ways, Santa Rosa mirrors the mainland hills I see hovering on the horizon. But we are far removed from the hot millennial hum of Los Angeles and a culture famous for face-lifts and false fronts, struggling to defy the passage of time. There, "historical" often measures the shallow reach of decades, not eons. Here, the past is held tight by the land, and remembered. ■

GUY HAND is a writer and photographer who lives in Santa Barbara, California.



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