

Sea Level Studied

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The highest mountains on earth, the Himalayas, aren't as tall as they used to be, according to research being conducted at the University of California's Scripps Institution of Oceanography.

If the naked tribes that roamed the earth 20,000 years ago had had modern surveying instruments, they would have found the Himalayas and all other earth features, about 400 feet taller than they are now.

The reason is, of course, that features of the earth's surface are measured by using sea level as a base. And sea level has gone up and down remarkably over the years, scientists find.

Joseph R. Curray, Assistant Research Geologist, at Scripps with David G. Moore of the U. S. Navy Electronics Laboratory, says that new evidence from the west coast of Mexico is drawing a picture of the rise and fall of sea level from about 70,000 years ago to the present.

Thirty thousand years ago, he says, sea level stood about where it does today. The period was one of warming between successive glacial stages, when much of the earth's surface was blanketed with ice.

Since that time, as the glaciers advanced and retreated sea level went up and down several times, reaching its lower limit of about 400 feet some 20,000 years ago. Such a drop would expose large amounts of land now under water, he says.

Curray and Moore are conducting their research where one of Mexico's great rivers, the Rio Grande de Santiago, empties into the Pacific between Mazatlan and Tepic. Evidence indicates this area has remained geologically stable-- the earth is not sinking or rising-- throughout the period they have studied. This makes the region an unusually good indicator of the height of ancient seas.

The sea nibbles at the shore, so that for every prolonged stand of sea level there is evidence, plain to geologists, as to where the ancient shoreline used to be. Methods have been worked out to date these shorelines. For example, small creatures that thrive only in shallow waters die and their shells can be used to determine dates by carbon-14 methods. On the coast of Mexico, peat gives good carbon-14 dates.

Used in Curray's and Moore's studies was a new device that for the first time pictures the various layers in the upper few hundred feet of the sediments. Called an "Archer," the instrument can trace the hardened surfaces of old deltas to 800 feet below the surface. It reveals buried structures such as rocks, faults, and delta surfaces.

This remote and little-known area of Mexico, the coast of the state of Nayarit, is flat, moist land where deer and jaguar are found and where boa constrictors can occasionally make jungle travel exciting. Its largest town is the drowsy and romantic old port of San Blas, where the Manila galleons, laden with the silks and Porcelains of the Orient, used to call.