Ancient Sea Lizards of California

By CHESTER STOCK

Some of the striking fossil remains dating from the Age of Mammals that have come to light in the rock formations of California have been described from time to time in the pages of Westways. They show that western North America is singularly rich in those fossil remains which tell the story of the strange mammals that roamed the country during the past 50 or 60 million years.

But still earlier geological formations occur in California whence come fossil remains of more lowly vertebrated creatures than the warm-blooded mammals.

Immediately before the Age of Mammals in geologic history comes the Mesozoic or the great Age of Reptiles, a time when the dominant forms of animal life were the different kinds of reptiles including the dinosaurs. In the sea of this era there likewise lived a variety of reptiles adjusted in their several ways to an existence in salt water. During the later stages of the Age of Reptiles the sea several times transgressed the land along the Pacific Coast much farther to the east than it does today. The record of these submergences is left in the thousands of feet of accumulated sediments—shales, sandstones and conglomerates—which, since that time, were uplifted to form the rocks now exposed in the Coast Ranges, the mountains of southern California, and along the western flank of the Sierra Nevada.

Chance discovery of fossil reptilian remains in the Cretaceous (late Mesozoic) rocks, dating perhaps 100 million years back in time, focused attention upon formations of this geologic age in the middle Coast Ranges. A typical area can be seen along the eastern slopes of the Panoche Hills, northeast of Panoche Pass in western Fresno County. Search for fossils in this region revealed quite unexpectedly the presence of marine reptiles of a type distinctly different from those found in northern California.

Several of the better preserved specimens represent sea lizards with skulls nearly a yard long, whose bodies must have been 20 feet or more in length. In the structure of their skulls and skeletons these creatures show definite kinship to the lizards and snakes, but have adjusted themselves secondarily to life in the sea. They have been known from other parts of the world for a long time. A skull of the same animals, now quite famous because of its eventful history, was collected near Maestricht, Belgium, and was described by the French naturalist Cuvier in 1808. Later this specimen was named mosasaurs, from the Latin, meaning lizard-bearing.

The fossil remains four Hills include not only those of these creatures, but a considerable portion of the pelvis. An interest latter specimen came to skeleton was exposed. To and definitely associated were fragments of the head of a large fish along with lanceous bone fragments representing the structural character teeth receive an interest.

In the light of the mosasaurs in California, we is the mosasaurs lived in moderate depth toge

Left, a remarkable paleontological find, the head, vertebrae and other parts of a mosasaur or marine lizard. Note the series of small bones lying to the right of the lower end of the vertebrae. These represent remains of fish which had been devoured but not fully digested. Below, restoration by D. F. Willoughby, slightly modified after Williston.
New Roads of the Month

For Safety's Sake

As you read this, the finishing touches will have been put on a highly important piece of highway reconstruction. Just beyond the Los Angeles-Ventura county line, Ventura Boulevard begins to wind preparatory to the climb over Conejo Grade. The country there is beautiful, and familiar to motorists: typical California farm land, rolling hills with here and there a nest or group of farm buildings.

The beauty of the country hides the dangers of the old road. Two particularly dangerous curves, one near the Conejo Ranch house, the other just south of Newbury Park, have been the scenes of many accidents.

To do away with these danger-spots and save lives and limbs, these two curves have been eliminated by realignment and straightening of the route. The total length of the project is three miles, the total cost about $1,600.

On the Old Stage Road

The road between Temescal and Warner's Hot Springs (State Highway 79) is interesting not only scenically but historically. It was down this route that the old Butterfield Stages rattled during the short but eventful life of that longest stage route in the world.

Oak Grove was the site of a Butterfield station, and to-day is still the site of a public camp. Just north of Oak Grove, a new bridge is to be built over Temescal Creek, and one mile of road is to be graded and oiled.

Headache Cure

Perhaps the biggest highway news in Southern California motorists this month is the completion of six miles of magnificent four-lane divided highway on the Palm Springs route between Rancho and the junction of U S Highway 70-99 (the Redlands route) with U S 60 (the Riverside fork).

The splendid new highway is the result of adding two new lanes to the existing two-lane road, the two pavement strips separated by a strip of earth from two to 30 feet wide. It would be hard to name a highway route that means more to motorists, particularly winter tourists, than this sector of the Imperial Valley route. It carries thousands of sun-loving Southern Californians to and from the world's most famous desert playgrounds, and brings thousands of truckloads of Imperial Valley produce to the Los Angeles area. It carries in share of transcontinental travel via Blythe or Yuma. And for years the section west of Banning has been a headache to motorists returning from desert week-ends, crawling along bumper to bumper over a road taxed far beyond capacity.

The headaches are now to be cured with four doses of highway medicine: (1) the new improvement already described; (2) a similar improvement to be completed next June between Banning and Palm Springs Junction; (3) modernization between the Jacquot Trail Junction and Redlands; and (4) more of the same between Palm Springs Junction and Whitewater Creek.

Here and There

Among other highway projects to be completed during the month, these are of particular interest:

- About two and a half miles north of Cloverdale, a short section of the Redwood Highway will be improved by grading andsurfacing.
- At Bune City, a bridge over the Sacramento River is to be removed, traffic being detoured across the river on ferries at Princeton or Ord Bend.
- From Red Bluff six miles north on the Island Route (US 99 west) six miles of highway are being graded and resurfaced.
- On various sections of the Feather River Highway in Plumas and Butte counties, some damages are to be repaired on four miles of the highway.