

velop or where. The now swampy coast of Louisiana and Mississippi, and of the adjacent Gulf of Mexico, however, seems a likely place. This region is somewhat similar to the area that later became folded into the Appalachian Mountains.

The great Mississippi and other rivers have deposited so much sediment in the Gulf of Mexico that the upper layers of our earth's crust are much thicker here than in most other regions. Such an area, because of the tremendous load on the earth's crust, is a likely spot for the localization of the terrific forces that build mountains.

Clue to Formation

If you look at a freshly cut roadbed, or the bank of a stream that has cut its way through rocks, you will get a hint as to how some mountains are formed.

Often the rocks, instead of lying parallel to the stream, are quite deformed. When banded with layers of different materials laid down thousands of years apart, you can easily see how they have been changed. Those that arch upward like the back of a mad cat suggest how the earth's crust was folded to form a mountain. Other rocks end abruptly, some obviously having been pushed or slid on top of neighboring rocks. These tell of another manner of mountain-making.

Mountains usually betray their age, but they are coy about it. It is fossils, often found in the rocks that make up the mountains, that give a clue as to how long ago they were formed. If the age of the youngest fossil-bearing rocks involved in the mountain range can be learned, geologists know that the mountains are younger than these fossils. And if other rocks, still younger, lie around the edges of the mountain range and were not folded with the mountains, they know that the mountains are older than the undeformed rocks. Thus some hint as to the time of formation can often be obtained.

Varying Theories on Creation

Experts disagree as to just how the mountains that we admire today were created millions of years ago. But a number of interesting theories have been advanced which suggest how these masses of rock and stone may have been pushed so high above the sea.

Contraction of the earth as it cools has long been believed to cause mountains. In shrinking, the more rigid rocks of the earth's crust have to wrinkle to fit a smaller inner core, just as the skin of an apple wrinkles when it dries. Thus some believe mountain ranges and the low places were created.

But recent radioactive studies show that the earth as a whole is probably not becoming appreciably cooler. Until this and other objections are overcome, this once popular theory seems discredited.

The convection theory concerns irregularities in the heating of the inner material of the earth. Convection currents thus

created set up rising currents in some places, descending currents in others. Where there are down-sinking currents, the crust of the earth overlying this core is dragged downward too; where there are rising currents it is pushed upward.

Thick Earth Crust

Seismographic studies, however, indicate that the earth's crust is at least a few hundred miles thick. Its great thickness and the strength of the rocks make it difficult for us to imagine currents, similar to those in hot water heaters, strong enough to break and move the earth's crust.

Almost every schoolboy has noticed how the coasts of North and South America seem to fit into those of Europe and Asia. It is as though they were once part of the same body of land, then drifted apart. Those who believe that the continents actually did slide apart explain that the mountains on the Pacific Coast were raised at that time along the front of the moving continent like waves by the prow of a ship.

Some of the loveliest of the country's mountains have been set aside as national parks, forests and preserves. Open to the public, they are favorite vacation resorts. Other mountains lie nearer at hand if you will only take the time to look at them and speculate as to how they came into being.

Science News Letter, November 8, 1952

ENGINEERING

Indicator Tells How Good Landing Was

➤ IN CASE carrier-based pilots can not tell from the bump how good their landing was, a "two-eyed observer" on the landing deck can. It has the verdict ready by the time the pilot steps from his cockpit.

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Called the Touchdown Rate of Descent Indicator, the device is being built by North American Aviation, Inc., and has been tested successfully by the Navy aboard the aircraft carrier Midway.

Science News Letter, November 8, 1952

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