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"Sand-Making Processes—Normal and Abnormal"

The shoreline sands occurring along the coastlines of the northern Gulf of Mexico offer excellent samples of the varying processes that have created them and that determine their distribution. Sands of such varying origin as eolian sands of the south Texas sand sheet, the barrier islands and lagoonal sands of Padre Island-Laguna Madre, the barrier island sands of the Central Texas Bay-Barrier Island Province, the chenier sands of southwestern Louisiana, the channel sands of the active and inactive passes of the Mississippi River delta complex, the reworked sands of the old distributary channels of the Mississippi delta, and the Mississippi-Alabama barrier island chain, are well documented in this almost unique basin of deposition. The point is strongly made that these sands are *made* by nearshore processes from other sand-containing sediments and are not deposited as such from their source. They, in essence, are all multicycle sands.

The *normal* shoreline and nearshore processes maintain these sand deposits in their present environments. Major storms, however, completely disrupt these *normal* processes and cause unusual sand distributions. Many of the storm-caused distributions are repaired by the *normal* processes shortly after they are formed. Some, however, remain as a permanent distribution and probably are included in the geological record as such.

Many examples of sand bodies in the subsurface Tertiary of the Gulf Coast geosyncline are directly analogous to the *normal* and *abnormal* sand bodies available for study in the northern Gulf of Mexico.

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"Geological Expedition to the Antarctic"

The Ellsworth Mountains, which contain some of the highest and most rugged peaks in the Antarctic, were discovered by Lincoln Ellsworth during his pioneering cross-continent airplane flight made in 1935. The mountians were not explored on the ground until three successive University of Minnesota expeditions, under the direction of Professor Campbell Craddock of the university, made a geological reconnaissance of them during the years 1961-1964.

These expeditions found approximately 40.000 feet of slightly metamorphosed sedimentary rocks, most of which are of marine origin. Only two good fossil sites were found, but these demonstrated that the youngest rock in the section is of Permian age (containing *Glossopteris* flora) and that a trilobite-bearing limestone unit in the middle of the section is of late Cambrian age. Consequently, there are at least 20.000 feet of Paleozoic sediments and 20.000 feet of Cambrian and probably older sediments which comprise nearly all of the outcrop area of the Ellsworth Mountains.

All rock units in the Ellsworth Mountains have suffered extreme structural deformation. The overall structural appearance is that of a northwestward plunging anticlinorium.

Low-grade regional metamorphism has altered nearly all of the rocks, with pronounced rock cleavage being common, as are authigenic sericite and chlorite minerals in the rock matrix material. The only igneous rocks observed in these mountains occur in the extreme southern and southeastern portions of the area and consist of a few basic dikes and sills, and one small intrusive gabbro body.

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