along these preexisting fracture planes in response to extensional forces imposed by the Rundle thrust stepping up-section.

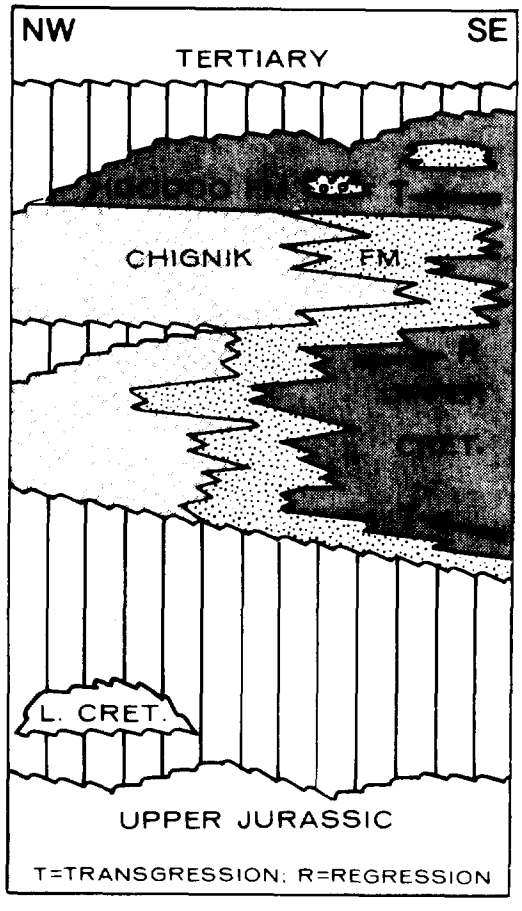
MOLENAAR, C. M., U.S. Geol. Survey, Denver, CO

Cretaceous Stratigraphy, Chignik Area, Alaska Peninsula, Alaska

Lower and Upper Cretaceous strata in the Chignik area were deposited in a fore-arc basin along an intermittently active continental-plate margin. The Lower Cretaceous part is preserved in a limited area and consists of 98 m of shallow-marine sandstone, rich in *Inoceramus* prisms, and shale of Valanginian to Hauterivian(?) age. These rocks are correlated with the Herendeen Limestone, which crops out 160 km to the southwest.

Upper Cretaceous strata in the Chignik area comprise the Chignik Formation of Campanian age and the Hoodoo Formation of Campanian to Maestrichtian age. In the Chignik Bay area, the Chignik is composed of 550 m of predominantly deltaic shoreface sandstone overlain by about 300 m of predominantly nonmarine coastal-plain facies; at least 15 transgressive-regressive cycles are recognized. Oil staining is common in more permeable, coarser grained sandstones in the Chignik Bay area. About 14 km to the northwest, the Chignik Formation is dominantly nonmarine and is less than 400 m thick. Thick conglomerate units and at least one intraformational unconformity indicate continuing tectonic activity in the source area located to the northwest.

The Hoodoo Formation conformably overlies, and in part intertongues with, the Chignik Formation. The Hoodoo consists of 600 m of deep-water silty shale with local turbidites and slope-channel conglomerates. Lower Tertiary strata unconformably overlie the Hoodoo.



MOLENAAR, C. M., U.S. Geol. Survey, Denver, CO, and K. J. BIRD, U.S. Geol. Survey, Menlo Park, CA

Stratigraphic Relations of Nanushuk Group (Middle Cretaceous) and Associated Strata, North Slope of Alaska

The Nanushuk Group of Albian to Cenomanian age is a passive-margin deltaic deposit 3,500 m thick that underlies much of the western and central North Slope. Correlation of about 30 test wells, integrated with seismic control, indicates that the Nanushuk delta prograded from west-southwest to east-northeast across the subsiding Colville basin. The primary source area was in the distant southwest, probably in the area of the present Chukchi Sea or beyond. The ancestral Brooks Range, which bounds the south side of the basin, was a secondary but important source area.

Seismic data indicate the Nanushuk to be part of a sequence of topset beds that are laterally equivalent to and underlain by outer shelf topsets, slope foresets, and basinal bottomsets of the Torok Formation. Distal bottomset beds, which consist of shales and minor sandstones, were deposited in water depths of 450 to 900 m. The original continental slope angle generally steepened