

Lower Pennsylvanian Stratigraphy of the Colorado Trough

By

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The Colorado Trough is an elongate, north-south trending depositional basin that resulted from the uplift of the Uncompahgre Highland to the west and the multiple blocks of the Front Range Highland to the east. Lower Pennsylvanian strata within the Colorado Trough are directly related to the tectonic activity of the region at the time of deposition, and their study will provide insight into the interplay between tectonics and sedimentation. A sharp facies change divides the sediments of the northern and southern portions of the trough. Fan-delta deposits interfingered with the deep water carbonates and shales of the Belden Formation characterize the northern portion of the trough. Shallow carbonates and coastal to flood plain clastic rocks of the Kerber and Sharpsdale Formations characterize the southern portion.

Older published literature shows only questions marks about the facies transitions of the trough. Correlation and analysis of the stratigraphy of the region will provide a more precise characterization of the facies transitions. The marine carbonates of the upper Kerber, lower Sharpsdale, and Belden Formations contain age-diagnostic conodont faunas. Based on these faunas, the time-equivalence of these units will be determined. The conodont fauna will also serve as a basis for biostratigraphic and chronostratigraphic correlation, which will be supplemented by measured sections taken throughout the region. The conodont fauna will provide a first ever control on the timing of tectonic activity associated with the formation of the Colorado Trough by establishing age controls for the clastic sedimentary strata associated with uplift.