GEOLOGY OF THE SOUTHERN MOSQUITO RANGE, COLORADO

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ABSTRACT: The southern part of the Mosquito Range is a structurally complex, high area consisting of two greatly different components; a southward plunging, doubly folded and faulted, eastwardly dipping monocline, the eastern edge of the Sawatch Precambrian dome, and, on the south, the intrusive and extrusive mass of Buffalo Peaks.

Precambrian rocks consist of the typical granites, gneisses, and schists of central Colorado, intruded by pegmatite, white quartz, and aplite dikes. Paleozoic sedimentary rocks consist of the Upper Cambrian Sawatch Quartzite and Peerless Formation, and the Lower Ordovician Manitou Limestone, which make up what remains of the first major marine Paleozoic cycle, overlain by the Upper Devonian Parting Quartzite and Dyer Dolomite, and the Lower Mississippian Leadville Limestone, together forming a second cycle. Between the two cycles, which have a total thickness of about 600 feet, there is no sedimentary record of the long time interval that separated the periods of deposition.

The Pennsylvanian Belden and Minturn Formations record a story of rapid subsidence, with concurrent rapid uplift nearby. Probably at least 3,000 feet of clastic Pennsylvania strata are present here, with more to the east. Locally, a very great hiatus is present in this area, from the time of Pennsylvanian sedimentation until uplift occurred in the Laramide orogeny, when the present faults and folds were formed, and sills and other intrusives were emplaced. Probably the ore deposits at the north end of the area, as well as much of the silicification and metamorphism of the sedimentary rocks, date from this time.

Erosion subsequently removed great volumes of rock from the area, and at an intermediate stage the volcanic Buffalo Peaks were formed, probably during Oligocene time, after which they, too, became subject to erosion.

Continued regional uplift and possible local exaggeration of structures by reactivation of the Laramide or older faults, set the stage for Pleistocene glaciation, which finally shaped most of the present valleys. Little more than gulley-forming and local talus and landslide development has taken place in the last few thousand years.

INTRODUCTION

One of the prominent north-south-trending ranges of Colorado, the Mosquito Range lies west of South Park and east of the Sawatch Range, between Leadville and Fairplay. Its eastern surfaces are largely formed of pre-Pennsylvanian Paleozoic sandstones or quartzites and carbonates, with a moderate dip eastward into South Park, and its western slopes are Precambrian on the south, and completely faulted and intruded Paleozoic rocks on the north.

The southern half of this range, from Mt. Sherman to Buffalo Peaks, generally represents the east side of the great structural dome of the Sawatch Range, whose crest lies only about 15 miles to the west. The Arkansas River has deeply dissected the east side of the core of this dome and makes the sharp topographic break between the two ranges. From Mt. Sherman on the north (14,037 feet), the southern Mosquito Range, and the area discussed here (fig. 1), gradually descends in altitude to about 11,600 feet, at the divide west of Rough and Tumbling Creek, then rises abruptly to...