

## PROTEROZOIC GEOLOGY OF THE WET MOUNTAINS, COLORADO

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The metamorphosed core of the Wet Mountains (about 1700 Ma) comprises 50% biotite paragneisses (both cratonic and island arc sources), 20% amphibolites (tholeiitic basalts with island arc and back-arc basin affinities), 30% granitic gneisses (syn-tectonic, two-mica intrusives with within-plate to marginal arc affinities), and minor charnockite. Cross-cut foliation and refolding of isoclinal folds indicate three periods of nearly coaxial, continuous deformation. Abundant sedimentary protoliths and lack of bimodal volcanism characterize the terrane.

Late to post-tectonic plutons of the Boulder Creek episode include the granites of Crampton Mountain-Twin Mountain (1705 Ma), Garell Peak (1665 Ma) and smaller bodies (1621 Ma, 1610 Ma). They are flow-foliated, felsic-cored, xenolith-rich augen gneissose granites. The oldest pluton is subalkalic and barely calc-alkaline. Younger ones are more potassic and Fe-rich.

The Silver Plume intrusive episode is characterized by high potassium, high Fe/Mg, marginally metaluminous to peraluminous granites, several of which show an unexpected foliation. Leucogranites (granites of William Creek [1486 Ma], Bear Creek, Cliff Creek) formed by in situ melting of metasedimentary country rocks. The granites of West McCoy Gulch (1450, 1474 Ma), Oak Creek (1434 Ma), South Hardscrabble Creek sills (1441 Ma), along with associated mafic dikes, belong to the mid-Proterozoic anorogenic belt of intrusions in North America.

The Wet Mountains are a fault-bounded, south-plunging anticline uplifted in late Tertiary, Laramide, and Pennsylvania times along lines of weakness possibly inherited from the Precambrian.