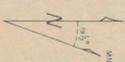


GEOLOGY OF THE GREENHORN MOUNTAINS, NORTHEASTERN OREGON

CENOZOIC

MESOZOIC

PALEOZOIC



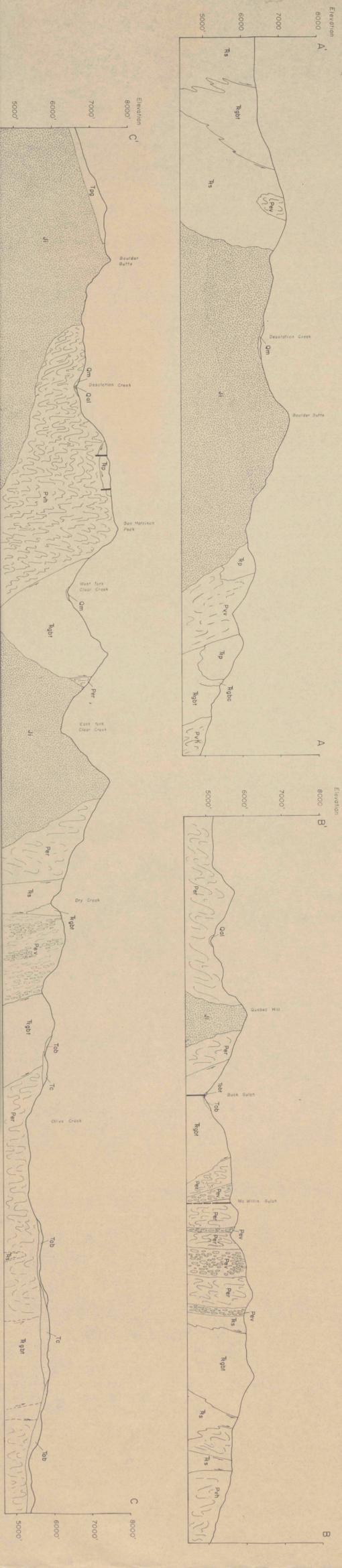
SCALE 1:124,000



GEOMORPHIC PROVINCES (Wentz, 1971)

- | | |
|---|---|
| QUATERNARY | CRET. |
| Qd Quaternary alluvium. Includes some stream reworked glacial deposits | Kg Cretaceous gravels. Consolidated outflow stream deposits. Includes Cretaceous tree fern <i>Tampryoa</i> . |
| Qll Landslide deposits. Rotational slumps and debris predominantly in Tem | Jl Granitic intrusives. Upland butte, mesa, Jls. Granite butte, granodiorite, all-Tem spring waters, Jls-Olive Creek granodiorite; Jls-Cable Hill intrusives |
| Qz, Δ Unconsolidated volcanic ash. Eady to Mazama ash. Accumulations of 6 feet in depth along some streams | Jld Desolation north. Coarse gravel, occasionally layered intrusives |
| Qm Glacial moraine, drift, and debris. Qm _r Recessional moraine | |
| Tm Figure 6a: baffle, Columbia River group. Dark gray to black on fresh surface. Large olive phenocrysts in lower Tem. Miocene | |
| Tob Olive Butte volcanics. Olive brown and gray debris to andesite. Oligocene | |
| Tob₁ Includes minor opamitic pink rhyolite | |
| Tob₂ Olive Butte tuffs. Poorly consolidated white and pink tuffs. | |
| Tc Clarno-equivalent alkali olivine basalt. Dark olive gray to olive brown on fresh surface. Altered olivine phenocrysts. Upper Eocene. | |
| Tem Clarno-equivalent volcanic mudflows and lahar deposits. Rounded andesitic clasts in semi-consolidated infusuous matrix. Eocene | |
| Tsl Clarno-equivalent alkali olivine basalt dikes. | |
| Tt Greenhorn conglomerate. Angular to subround fragments of sediments and tectonic metabasite (Ttgb) | |
| Ts Shered serpentine | |
| Ts₁ Tectonic metabasite. Original igneous textures obliterated by deformation. Includes fine-grained, tectonized gneissosomes | |
| Ts₂ Amphibolite metabasite. Amphibolite gneiss | |
| Ts₃ Canulate metabasite. Original igneous texture discernible. Frequently layered in 1-3 inch thick bands | |
| Ts₄ Layered serpentinized peridotite | |
| Ts₅ Serpentinized peridotite. Dunitz, harzburgite, and minor websterite | |
| Ts₆ Lenticular metabasite | |

GEOLOGIC CROSS SECTIONS



Base Topographic index

Maps & geology by Ellen D. Mullen

Oregon State University, 1976-1977

Scripts and of Geoenvironment 1977-1978