

### EXPLANATION

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| <b>Ql</b><br>Landslide deposits<br>Debris formed by sliding and slumping of oversteepened canyon walls.   | <b>Qal</b><br>Alluvium<br>Stream-deposited sand and gravel.  | <b>Qbl</b><br>Boulder fields<br>Contains unsorted quartzite fragments as large as 10 feet in diameter. |
| <b>Qgm</b><br>Glacial moraine<br>Present only on north and east sides of Copper Mountains.  | <b>Tiv</b><br>Idavada Volcanics<br>Lower portion mostly pyroclastics, upper portion mostly flows. Pyroclastics consist of ash, lapilli, tuffaceous sediments, and welded and vitric tuffs. Many flows are coarsely vesicular; crude jointing and sheeting common. Obsidian present at base of some flows.  |  |
| <b>Tya</b><br>Young America Gravel<br>Poorly sorted sands, and sub-rounded to rounded pebbles and cobbles of Prospect Mountain (?) quartzite, Jarbidge rhyolite, and granite. Cobble sizes decrease northwestward.  | <b>Tjr</b><br>Jarbidge rhyolite<br>Flows, with minor tuff, tuffaceous sediment, and agglomerate. The flows contain abundant phenocrysts, mostly quartz and minor feldspar, in microcrystalline and felsitic groundmass. Fresh surfaces light gray, weathered surfaces gray and red-orange. Sheeting and flow structure prevalent.                  |  |
| <b>Tba</b><br>Bieroth andesite<br>Glassy to microcrystalline, porphyritic flow rocks with some tuff and welded tuff. Small biotite phenocrysts abundant. Fresh surfaces light gray, weathered surfaces darker gray. | <b>Kqm</b><br>Quartz monzonite<br>Light colored, generally coarse-grained porphyritic rocks. Coffeepot stock consists of adamellite, containing plagioclase (An <sub>10-11</sub> ), microcline, quartz, and some biotite. Deep Creek stock is more nearly granitic; orthoclase is present, microcline absent, plagioclase is An <sub>10-11</sub> . |  |

### SOUTHERN PART OF QUADRANGLE

**Ps**  
Sunflower Formation  
Includes an upper member of fossiliferous, thick-bedded, medium-gray, cherty limestone; and a lower chert and quartz-pebble conglomerate containing interbedded layers of light-colored quartzites.

### NORTHERN PART OF QUADRANGLE

**Cda**  
Diamond "A" Formation  
Light- to dark-gray, mostly crystalline, bedded limestone, with shale and hornfels members. Lenses of quartzite- and chert-pebble conglomerate near base.

**Pza<sub>1</sub> Pza<sub>2</sub> Pza<sub>3</sub>**  
Argillite and phyllite  
Pza<sub>1</sub> Dark-colored argillite, phyllite, and hornfels. Black, medium-grained quartzite member near top, and limestone member near base.  
Pza<sub>2</sub> Black, metamorphosed argillaceous rock similar to Pza<sub>1</sub>, but lacks quartzite member and includes greenstones, altered flow rocks, calc-schists.  
Pza<sub>3</sub> Light- and dark-weathering phyllite with minor dark-colored chert.

**Pzb**  
Schist and limestone  
Light green to gray calc-schist and massive, medium-gray limestone.

**Pzc<sub>1</sub> Pzc<sub>2</sub>**  
Limestone  
Pzc<sub>1</sub> Yellowish, thin-bedded, aphanitic limestone with silty partings.  
Pzc<sub>2</sub> Light-gray, thin-bedded, aphanitic limestone.

**Pzd**  
Limestone and argillite  
Upper part consists of light- to dark-gray, laminated to thin-bedded limestone. Lower part contains dense, slabby argillites and interbedded crystalline limestones; unit has been metamorphosed to hornfels, slates, talcites near southern intrusive body.

**Pz<sub>tm</sub>**  
Tennessee Mountain Formation  
Olive-green phyllite with small lenses of thin-bedded limestone. Grades northward into thin-bedded, aphanitic, light-gray limestones with phyllite partings.

**Pzph**  
Phyllite  
Medium-gray phyllite; grayish red or olive gray to dark red on weathered surfaces.

**Cpm**  
Prospect Mountain (?) Quartzite  
Upper part is massive, yellowish-gray, coarse-grained quartzite with minor interbedded schist or phyllite. Lower part consists of thin- to thick-bedded interbedded light-colored quartzites and greenish-gray schists.

**Contact**  
Dashed where approximately located or inferred

**Fault**  
Dashed where approximately located or inferred; dotted where concealed. U, upthrown side; D, downthrown side

**Thrust fault**  
Dashed where approximately located. Saw-teeth on side of upper plate

**Generalized strike and dip of contorted beds**

**Mine or prospect**

**Strike and dip of beds**

**Strike and dip of overturned beds**

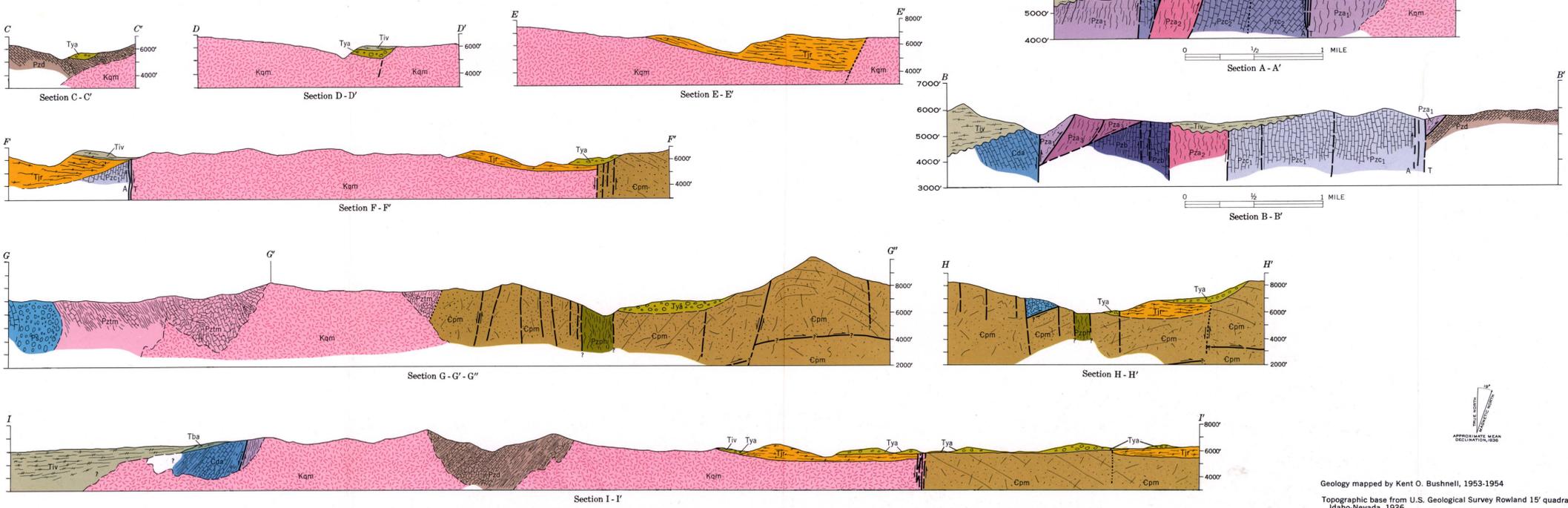
**Strike of vertical beds**

**Horizontal beds**

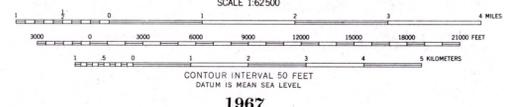
**Strike and dip of foliation**

**Strike of vertical foliation**

**Plunge of lineation**



**GEOLOGIC MAP AND SECTIONS OF THE ROWLAND QUADRANGLE**  
**ELKO COUNTY, NEVADA**  
 By Kent O. Bushnell



Geology mapped by Kent O. Bushnell, 1953-1954  
 Topographic base from U.S. Geological Survey Rowland 15' quadrangle, Idaho-Nevada, 1936.