



Cleary Sequence

- ca Light-gray to white, coarse-grained, highly crystalline marble; contains sulfides in Cleary, Bedrock, and Chatham Creeks. Marks top of Cleary Sequence north of Cleary Summit. May grade into dark gray-green, very fine grained, thinly laminated to massive-bedded siliceous dolomite. Siliceous dolomite occurs in Cleary and Chatham Creeks and may represent metamorphosed siliceous schist.
- mqe Light-brown to buff, fine- to coarse-grained, thinly laminated muscovite-quartz schist ± garnet, biotite, and feldspar. Recognized by presence of gray or brown muscovite and gray quartz. Probably represents metamorphosed pelitic sediment.
- mq Light-brown to buff, fine-grained, thin-bedded to massive quartzite and micaceous quartzite.
- mt White to yellow and brown, fine- to medium-grained, thinly laminated muscovite-quartz schist ± feldspar and sulfides. Recognized by presence of yellow white, or clear muscovite, light-colored quartz, and limonite along fracture surfaces. Probably represents metamorphosed siliceous schist or metachert. Hosts most gold and antimony occurrences in district.
- mvf White to yellow, pink, and brown, fine- to medium-grained, porphyroblastic felsic schist with quartz and feldspar porphyroblasts and blastopencrusts. Recognized by presence of pink potassium feldspar and quartz blastopencrusts in nonfoliated massive varieties and of large, pink potassium feldspar blastopencrusts and smaller, white albite porphyroblasts in foliated varieties. Probably represents metamorphosed rhyolitic flow rock.

Goldstream Sequence

- mqe Light-brown to buff, medium- to coarse-grained, thinly laminated to thin-bedded muscovite-quartz schist ± biotite and garnet. Recognized by presence of large, dark-red-brown garnet and coarse, folded muscovite grains. Contains large biotite rosettes parallel to schistosity. Probably represents metamorphosed pelitic sediment.
- gs Dark-gray to black, fine- to medium-grained quartz-graphite schist. Probably represents metamorphosed carbonaceous sediment.
- mvv Dark-green to black, medium- to very coarse grained, thin-bedded to massive amphibolite and calc-amphibolite ± garnet, siderite, and biotite. Recognized by presence of dark-green hornblende, light-red to pink garnet, and light-brown siderite. Massive variety probably represents metamorphosed basalt and thin-bedded variety may represent metamorphosed mafic tuff.

Chatanika Terrane

- mq Light- to dark-brown, gray, and black, fine- to medium-grained quartzite and micaceous quartzite; may contain muscovite, biotite, garnet, and chlorite. Some quartzites rich in carbon, which produces dark-gray to black color. Dark quartzites probably represent metamorphosed siliceous siltstone.
- mqe Light- to dark-brown and gray, fine- to coarse-grained garnet-feldspar-muscovite-quartz schist ± biotite and chlorite. Contains untwinned plagioclase porphyroblasts (An₅₇) in granoblastic fabric. Chlorite occurs as faintly pleochroic, subhedral, lath-like grains that usually indicate retrograded rocks. Kyanite and staurolite recognized at one locality north of Cleary Summit (Brown, 1962).
- in Dark-gray to white and brown, medium- to coarse-grained, thinly laminated to massive, impure marble with clinopyroxene ± garnet ± amphibole ± phlogopite ± epidote.
- ec Dark-green to brown, pink, and gray, medium- to very coarse grained, eclogitic rock of at least three distinct types, including: a) garnet-clinopyroxene rocks; b) garnet-clinopyroxene-amphibole rocks; and c) garnet-amphibole rocks. Garnet-clinopyroxene variety occurs as mylonitic, layered, laminated, and massive types, and is characterized by presence of pale-pink pyrope garnet and pale-green omphacitic pyroxene. Untwinned albite present in the mylonitic variety and usually associated with garnet and chlorite. Quartz generally occurs as granoblastic aggregates with calcite and clinzoisite. Garnet-clinopyroxene-amphibole variety occurs as finely laminated and massive variants characterized by small garnet grains. Calcite more abundant than quartz. Garnet-amphibole rocks occur as massive varieties with incipient foliation. Amphibole varies in composition and garnet occurs as porphyroblasts with subhedral overgrowths on subhedral cores. Eclogitic rocks probably represent metamorphosed, calcium-rich sediments, most likely a shale or marl.

Explanation

- Contact showing dip. Solid where known, dashed where approximate and dotted where concealed or inferred.
- Thrust fault showing direction and dip of thrust plane. Sawtooth on upper plate. Solid where known, dashed where approximate and dotted where concealed or inferred.
- Fault showing dip and displacement and relative movement. Solid where known, dashed where approximate and dotted where concealed or inferred.
- Antiform showing trace and plunge of crestal axis.
- Synform showing trace and plunge of crestal axis.
- Strike and dip of schistosity parallel to bedding.
- Strike and plunge of lineation. Mineral-h = hornblende, t = tremolite, b = biotite. Structural-qb = quartz boudin, F = fold axes, g = crenulation.
- Strike and dip of schistosity and plunge of lineation.
- Strike and dip of jointing.
- Strike of vertical jointing.
- Mine or prospect.
- Limit of rubblotop.
- Limit of outcrop.

Intrusive Rocks

- qm Light-gray to off-white, medium- to coarse-grained, porphyritic quartz monzonite with potassium feldspar phenocrysts to 6 cm in length and quartz phenocrysts to 1 cm in diameter.
- qd Dark-gray to gray, fine- to medium-grained, hypidiomorphic-granular gneiss.
- sp Light-brown to buff, fine- to medium-grained, sericitic apfite pegmatite; may contain pyrite and arsenopyrite concentrations. Recognized by presence of light-brown limonite halos surrounding sulfide concentrations and by sericitic nature.
- a Light-gray to white, fine-grained aplite. Occurs as dikes and small intrusive bodies.

Extrusive Rocks

- b Medium-gray to black and gray-green to yellow-orange, fine-grained, tholeiitic basalt with pillow and columnar structures locally.
- mq Light-brown to brown and gray, fine- to medium-grained, thin-bedded to massive quartzite and micaceous quartzite.

Fairbanks Schist

- mqe Light-brown to buff, medium- to coarse-grained, thinly laminated, muscovite-quartz schist ± garnet, biotite, and feldspar. Recognized by presence of gray or brown muscovite and gray quartz. Contains abundant garnet in northern and western sectors of district; abundance of garnet decreases to southeast, where biotite becomes major mineral phase. When biotite becomes a dominant mineral, rock is biotite-muscovite-quartz schist (mqe). Chlorite is ubiquitous mineral phase throughout district and probably represents retrograded metamorphic event. Unit probably represents metamorphosed pelitic sediment.
- mqe Dark-gray to brown, fine- to medium-grained, thinly laminated, biotite-muscovite-quartz schist. Contains brown to buff, fine- to medium-grained, thinly laminated to massive quartzite and micaceous quartzite. Becomes dominant rock type in southeastern sector of district. Contains garnet and feldspar porphyroblasts locally. Unit probably represents metamorphosed argillaceous and arkosic sediments.

Base from U.S. Geological Survey Livengood A-2(1981), Fairbanks D-2(1975) and Fairbanks D-3(1972) quadrangles.