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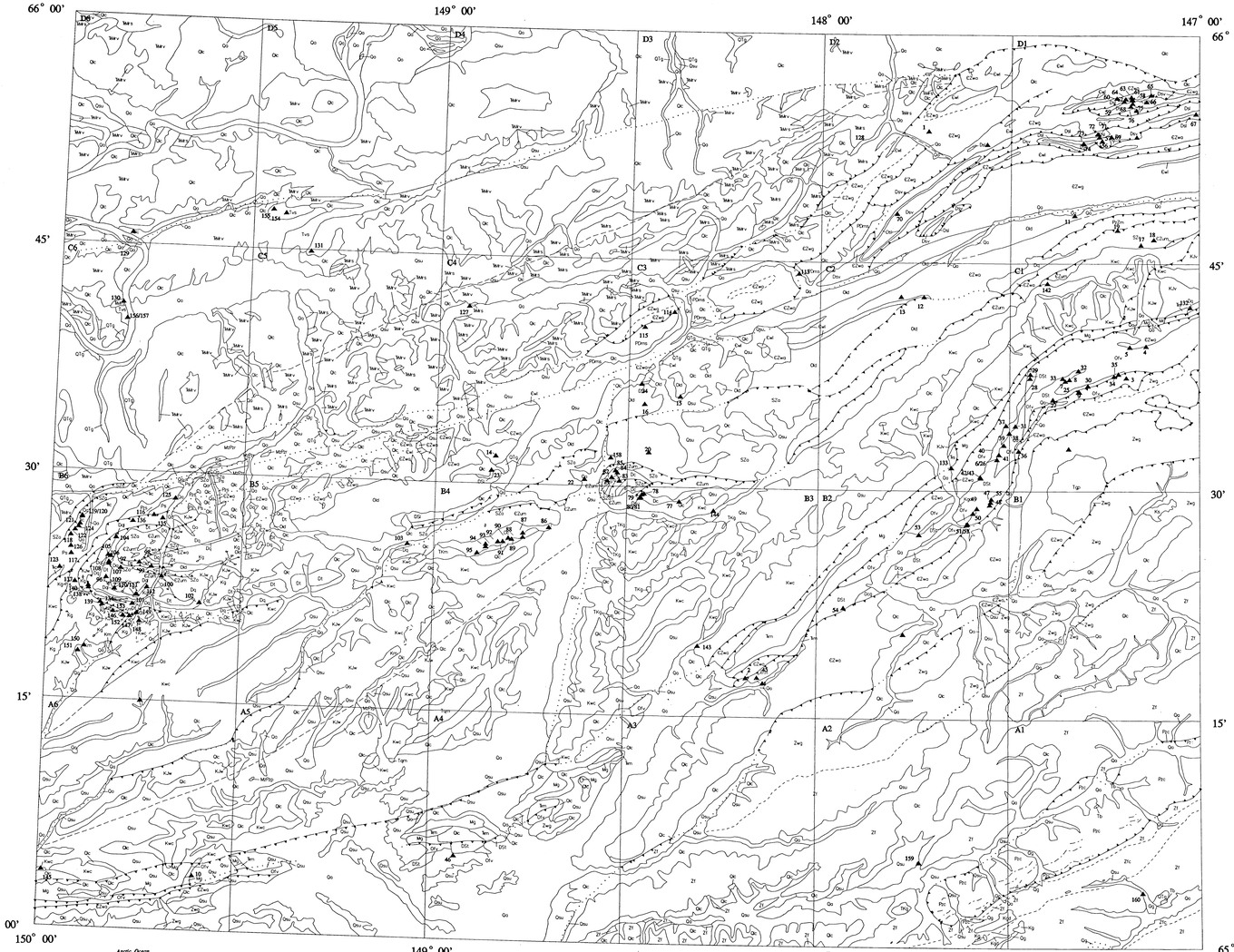

AREA OF MAP

SCALE 1:250,000

5 0 5 10 15 20 25 30 KILOMETERS

5 0 5 10 15 20 STATUTE MILES

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MAP SHOWING FOSSIL SAMPLE LOCALITIES, LIVENGOOD QUADRANGLE, ALASKA

By
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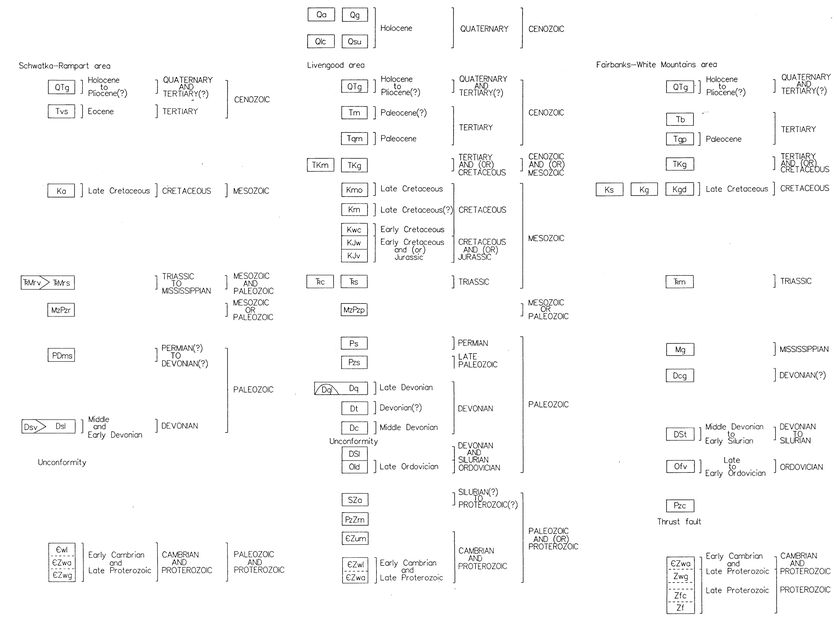
1994

CORRELATION OF MAP UNITS



DEFINITION OF MAP UNITS

UNCONSOLIDATED DEPOSITS

Qa Alluvium
Qg Reworked creek gravels in placer mining areas
Qlc Loess and colluvium--Including minor upland alluvium
Qsu Silt, undifferentiated, contains reworked loess, swamp and organic-rich deposits

BEDROCK

Schwatka-Rampart area

QTg Gravel, sand, and silt
Tvs Volcanic and sedimentary rocks--Conglomerate, graywacke, siltstone, shale, coal, greenstone, basalt and tuff
Ka Alaskite--Raven Creek Hill
TMrv Rampart Group--Intrusive and associated extrusive mafic igneous rocks, a few interlayered sedimentary rocks
TMrs Rampart Group--Sedimentary rocks--Argillite, chert, graywacke, shale, limestone, and minor amount of mafic igneous rocks
MzPzr Raven Creek Hill unit--Garnetiferous quartz-biotite-muscovite +/- chlorite schist
PDms Metamorphic and sedimentary rocks--Several indeterminate or poorly identified units combined, black and greenish-gray siliceous slate, chert, siltstone, debris flows, and greenstone
Dsv Schwatka unit--Mafic metavolcanic rocks and minor clastic sedimentary rocks
Dsl Schwatka unit--Lime mudstone or wackestone
Ꞓwl Wickersham unit--Arenaceous, micaceous limestone
Ꞓzwa Wickersham unit--Maroon and green argillite, grit (bimodal quartzite), quartzite, siltite, graywacke, and phyllite
Ꞓzwg Wickersham unit--Grit, quartzite, graywacke grit, phyllite, slate, limestone, and chert

Livengood area

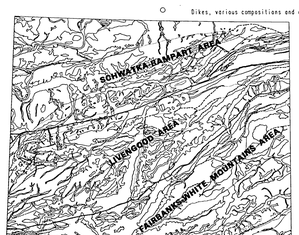
QTg Gravel, sand, and silt
Tm Monzonite(?) or monzodiorite(?)--Small bodies, about 4.8 km northeast of Tolovana Hot Springs Dome pluton
Tgm Quartz monzonite--Tolovana Hot Springs Dome pluton
TKm Monzonite--Cascaden Ridge pluton
TKg Felsic granitic rocks--Dikes, sills and small bodies of irregular shape, scattered throughout central part of quadrangle, mainly in upper Wilber Creek area
Kmo Quartz monzonite, monzonite, and syenite--Six plutons at and near Sawtooth, Elephant, and Wolverine Mountains
Km Minto Flows--Conglomerate, siltstone, graywacke, quartzofeldspathic sandstone, shale, and clay shale
Kwc Wilber Creek unit--Polymictic conglomerate, conglomeratic graywacke, graywacke, siltstone, and shale
KJw Wolverine quartzite unit--Quartzite, shale, siltstone, and local coquina
KJv Vrain unit--Slate or shale, and minor siltstone
Ꞓc Shale or slate, chert, and tuff--About 10 km northwest of Wolverine Mountain
Ks Calcareous phosphatic shale, limestone, minor calcareous sandstone, and granule conglomerate--Along northern edge of Beaver Creek Fault in eastern of quadrangle
Pp Phyllite, schistose phyllite, quartzite, siltite, amphibolite, diorite, and greenstone--In southwestern part of quadrangle
Ps Sedimentary rocks--Argillite, chert, siltstone, sandstone, and minor conglomerate--Mostly in Sawtooth Mountains area
Pzs Sedimentary rocks--Siliceous slate, chert and cherty argillite, greenstone, lime mudstone, and minor conglomerate--West side of Troublesome Creek and south of Willow Creek
Dq Quail unit--Phyllite, siltstone, quartzose sandstone, graywacke, and conglomerate--West-central part of quadrangle
Dql Quail unit--Lime mudstone or wackestone, buildups at base of Quail unit
Dt Troublesome unit--Cherty argillite, chert, siliceous slate, associated with intrusive and extrusive mafic rocks--West-central part of quadrangle
Dc Cascaden Ridge unit--Shale, siltstone, graywacke, polymictic conglomerate, limestone and minor clastic limestone--South side of Cascaden Ridge and on the flanks of Amy Dome
DSl Lost Creek unit--Lime mudstone and wackestone, graywacke, chert pebble to cobble conglomerate, and minor clastic limestone--About 3 km north and east 10 km northeast of Cascaden Ridge pluton
Old Livengood Dome Chert--Chert, siliceous slate, rare greenstone, tuff, and limestone
SZa Amy Creek unit--Dolomite, lime mudstone, wackestone and packstone, chert, argillite, basaltic greenstone, tuff, tuffaceous siltstone, shale, and minor volcaniclastic graywacke
PzZm Mafic igneous rocks and minor interlayered sedimentary rocks--Gabbro, diabase, diorite, greenstone basalt, slate, siliceous shale, chert argillite, claystone, siltite, quartzite, and graywacke--South of Victoria Creek in northeastern part of quadrangle
EZum Ultramafic and mafic rocks--Serpentinite, clinopyroxene peridotite, dunite clinopyroxenite, clinopyroxene-plagioclase metabasalt, diabase, metabasalt, and clinopyroxene gabbro, microgabbro diorite
Ꞓzwl Wickersham unit--Dark gray to grayish-orange arenaceous limestone
Ꞓwa Wickersham unit--Maroon and green argillite, phyllite, quartzite, graywacke, siltite, and minor grit

Fairbanks-White Mountains area

QTg Gravel, sand, silt, minor sandstone, conglomerate, and coal
Tb Olivine basalt--Fourth of July Hill and vicinity
Tgp Peraluminous granite--Cache Mountain pluton
TKg Leucocratic quartz monzonite--Vault Creek pluton
Ks Syenite--Roy Creek stock
Kg Granite--Rocks in the vicinity of Pedro Dome--Intrudes granodiorite (Kgd)
Kgd Granodiorite--Pluton mapped at Pedro Dome
Trm Mafic igneous rocks--Gabbro, and diabase or diorite sills and dikes--Intrudes Globe unit (Mg)
Mg Globe unit--Quartzite, slate, phyllite, and minor claystone
Dcg Beaver Creek unit--Conglomerate, graywacke, siltstone, and slate--Near big bend of Beaver Creek
DSt Tolovana Limestone--Lime mudstone, wackestone, packstone and grainstone, and rare dolomite
Ofv Fossil Creek Volcanics--Alkali basalt, agglomerate, volcaniclastic conglomerate--also includes slate, phyllite, shale, siltstone, limestone, and chert--sedimentary rocks in lower part of section intruded by gabbro
Pzc Chatanika unit--Quartz-biotite-muscovite schist, quartzite, includes eclogitic rocks, allochthonous
EZwa Wickersham unit--Maroon and green argillite, grit, quartzite, siltite, graywacke, phyllite, and limestone, rare dolomite--Intruded by gabbro
Zwg Wickersham unit--Grit, quartzite, graywacke, conglomerate, limestone, phyllite, slate and argillite
Zf Fairbanks schist unit--Micaceous quartzite and quartz-mica schist, pelitic schist, and rare feldspathic quartz-mica schist
Zfc Fairbanks schist unit--Cleary subunit--White felsic schist, micaceous quartzite, chloritic or actinolitic greenschist, greenstone, and marble

EXPLANATION

Contact.
Contact, approximate location.
Contact, concealed.
Fault.
Fault, inferred.
Fault, concealed.
Thrust fault, teeth on upper plate.
Thrust fault, inferred.
Eclogitic horizons in the Chatanika allochthon.
Fossil-bearing sample localities. Date listed in Table 1.
Barren conodont sample localities
Dikes, various compositions and ages



MAP SHOWING THREE-FOLD DIVISION OF LIVENGOOD QUADRANGLE USED IN THIS REPORT