GEOLOGIC MAP OF THE CENTRAL AND NORTHERN MINERAL MOUNTAINS, UTAH

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from the work of
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Funding for this research provided under
N.S.F. grant number GI-43741 and
E.R.D.A. contract number EY-76-S-07-1601.

Date of Publication: July 1977

MASTER

- DESCRIPTION OF MAP UNITS
- Quaternary
- Qal

Quaternary alluvium except for Tertiary gravels exposed under Coral Canyon mylonite.
- Qvt

Volcanic tuffs.
- Qcal

Caliche alluvium. Dominantly granitic alluvium cemented by caliche, coarse sinter and chert, and altered by acid sulfate waters.
- Qos

Quartz and opaline sinter.
- Qb

Basaltic cinder and flows on northeast flank of Mineral Mountains and westernmost margin of Oso-Fort volcanic field.
- Qbrb

Black flow basalt. Porphyritic black, frequently vesicular basalt with up to 40 percent phenocrysts ranging in size from 0.5 mm to slightly over 1 mm. Phenocrysts consist of plagioclase, quartz and microcline.
- Qrd

Rhyolite domes. Pile of flattened lava domes and small flows of porphyritic rhyolite. Domes contain several percent phenocrysts of quartz, oligoclase, alkali feldspar, biotite and hornblende, and have traces of apatite and allanite in some domes. Ages of domes range from 0.73 to 0.10 to 0.49 to 0.07 m.y. (Lipman, et al., 1977).
- Qra

Ash flow and ash-fall tuffs. Ashes are weakly consolidated and poorly exposed. All exposed areas are light gray to white and are light tan. Low-mountain alluvium and alluvium with thin, scattered sandstone and siltstone. Surface of flow consists of purplish red. Age of Bailey Ridge flow by K-Ar is 0.73 to 0.08 m.y. (Lipman, et al., 1977).
- Qrt

Flow layered rhyolite. Non-porphyratic, columnar containing less than 0.5 percent total phenocrysts. The matrix of which is alkali feldspar with trace amounts of oligoclase, biotite and hornblende. Flows typically are described in their and portions with thin, scattered sandstone and siltstone. Surface of flow consists of purplish red. Age of Bailey Ridge flow by K-Ar is 0.73 to 0.08 m.y. (Lipman, et al., 1977).
- TQts

Tertiary or Quaternary lake limestone. Limestone, cream colored, finely crystalline. Contains a few isolated quartz grains. No fossils observed and thickness is unknown.
- Tertiary
- Trc

Rhyolite of Coral Canyon. Highly dissected porphyritic rhyolite and vitrophyre which contain several percent phenocrysts of quartz, oligoclase, alkali feldspar, biotite, hornblende, hypersthene, iron-titanium oxides and have amounts of allanite. Biotite from this unit yielded a K-Ar date of 0.52 to 0.3 m.y.
- Trp

Rhyolite Porphyry. Rounded phenocrysts of pink alkali feldspar and quartz set in a white to gray microcrystalline to fine grained groundmass. Traces of muscovite, magnetite, pyroxene and biotite. Chlorite and sericite are secondary alteration products of biotite and feldspar, respectively. The unit occurs as northwesterly trending dikes which form angular, weather resistant ridges.
- Tap

Albite Dikes. Light colored, fine grained, alkali-rich dikes. Composed chiefly of quartz, alkali feldspar and plagioclase with minor microcline, biotite and magnetite, and traces of apatite and allanite. Minor alteration of biotite to chlorite and feldspar to sericite is present. The unit occurs as dikes generally striking north-south, and is characterized by angular features and smooth, brown weathering surfaces.
- Tmd

Mafic Dikes. Phenocrysts of biotite, hornblende and plagioclase set in a dark, fine grained groundmass. Also present are phenocrysts of apatite, allanite and magnetite. The groundmass is composed of alkali feldspar, apatite and plagioclase. There is minor alteration of feldspar to sericite.
- Tg1

Granite. Light colored, medium to very coarse, rich in alkali feldspar and low in hornblende and magnetite. It is composed predominantly of quartz, microcline, alkali feldspar, plagioclase and biotite. Traces of magnetite, apatite and allanite. Biotite is altered to chlorite and feldspar to sericite. Outcrops are rounded, and are extremely weathered.
- Tg2

Granodiorite. Light colored, medium to coarse grained, composed chiefly of quartz, microcline and plagioclase with minor biotite and hornblende. Traces of magnetite, apatite and allanite are present. There is alteration of biotite to chlorite and feldspar to sericite. Subparallel alignment of hornblende phenocrysts is often apparent in hand specimen. The unit is a dike-former and similar to unit Tg1 in appearance. Gradational to unit Tg1.
- Tg3

Dark Granite Phase. Dark colored, fine to medium grained, migmatitic texture. Composed chiefly of quartz, microcline, alkali feldspar, apatite, biotite and hornblende, with minor sphene, apatite, magnetite and traces of allanite. Biotite is altered to chlorite and feldspar to sericite. Outcrops are dark and rounded. This unit is not apparent in hand specimen. Outcrops are dark and rounded. This unit is gradational to Tg1 and Tg2.
- Cretaceous
- Kl

Indiana Formation (?). Conglomerate consisting of subangular to subrounded gravels to cobbles of gray to blue limestone and gray quartzite with minor chert and sandstone in a matrix of limestone. The matrix is generally gray to blue, but is locally sandstone. A ledge former with a unit thickness up to 34 meters. It lies unconformably on Cambrian limestone.
- Triassic
- Tm

Manitou Formation. Brown to red sandy siltstone, non fossiliferous.
- Permian
- Pka

Kabab Limestone. Unit is composed of undifferentiated limestone, marble and horstite. The limestone is light gray to white, fine grained, and is highly crystalline. The marble is light gray to white, fine grained, and is highly crystalline. Outcrops are low, angular in appearance and are highly fractured. Very weakly cemented and are seen but are uncommon. Rarely, stylolite and corals are found. Where marlized this unit is white, gray, or white, gray to reddish gray, and is color and weathering white to mud gray. Occasionally, for example, yellow, outcrops are low, rounded and commonly highly fractured. Small, poorly preserved corals of corals are common. A horstite facies is also developed which is dark gray to greenish gray to black in color and weathers to medium brown. This facies is fine grained and is highly crystalline. It is occasionally phyllic. Outcrops are low to moderate in relief and are angular in appearance and highly fractured. Quartzite lenses within the horstite give rise to a distinct banded appearance in outcrops.
- Pco

Coombs Sandstone. A quartzose sandstone, white to brownish yellow to medium brown in color, heavily sandstone is common. Texture is fine grained and well sorted. Shale and medium scale cross bedding is rare. Outcrops are low to moderate in relief and are angular in appearance. Sandstone is common and generally weak.
- Cambrian
- Cp

Piche Formation. Olive drab to green micaceous shale. Contains numerous worm tracks and trails. Contains heavy, large and fine chert of Glossochasma products. 8-10 meters thick.
- Cpm

Prospect Mountain Quartzite. A medium grained gray to pink, massive thick bedded quartzite. Cross bedded, containing local lenses of quartz pebbles conglomerate. Maximum thickness 30 meters.
- Cud

Cambrian undivided. Dark gray, unfossiliferous limestone which weathers light to dark gray, giving the rock a banded appearance. Ledge former where thick bedded. Locals the limestone is coarse grained. This limestone is highly crystalline, except where locally cemented by contact metamorphism. Abundant chert lenses up to a foot in length and several inches wide, generally concentrated in the lighter gray units. Chert lenses increase in number and size upward in the section. Chert lenses are abundant locally. Numerous calcareous nodules and small boulders are also found. Irregular dolomite distribution locally develops marble and marbles. Thickness of unit exposed is 30 meters.
- Precambrian
- pE

Precambrian (?). Gneiss. Dark colored, medium grained gneiss often exhibiting compositional layering and banding. Rock is composed of quartz, alkali feldspar, plagioclase, biotite and microcline. Traces of microcline, sphene, apatite, magnetite and allanite are observed. Alteration of biotite to chlorite and feldspar to sericite is common. Sillimanite may comprise up to 25% and microcline up to 10% of the gneiss. Outcrops are massive and slope former.

- Explanation of Symbols
- Contact

Fault, dashed where uncertain

60° Strike and dip of flow layering

60° Strike and dip of jointing

Strike of vertical joints

60° Dip and strike of stratified rocks

- References
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