DEPARTMENT OF THE INTERIOR
UNITED STATES GEOLOGICAL SURVEY

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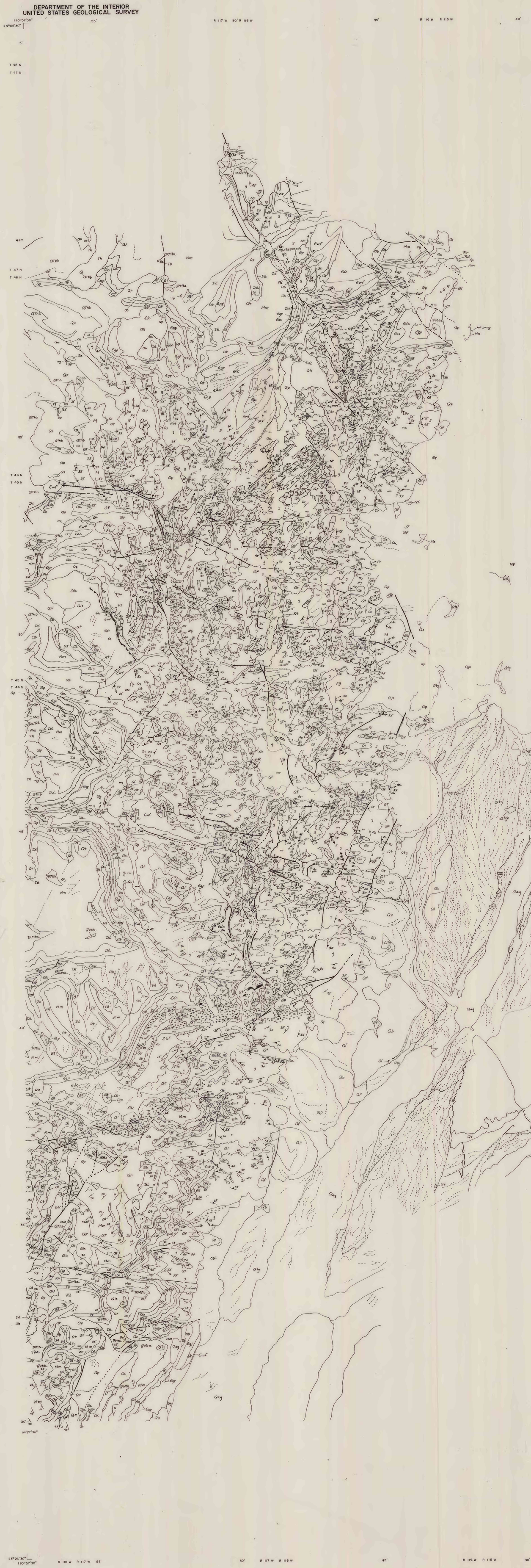

CORRELATION OF MAP UNITS

Qa, Qag, Qs, Qt, Qf, Qls	Holocene	QUATERNARY
Qp, Qtg, Qtpg, Ql, Qb, Qo	Pleistocene	QUATERNARY
UNCONFORMITY		
QThb	Pleistocene and Pliocene	QUATERNARY
Tpa, Th	Eocene	TERTIARY
UNCONFORMITY		
TKp	Paleocene and Upper Cretaceous	CRETACEOUS
UNCONFORMITY		
Trc		TRIASSIC
Trd		TRIASSIC
Pp		PERMIAN
PMta		PENNSYLVANIAN
Mm		MISSISSIPPIAN
Dd		DEVONIAN
UNCONFORMITY		
Ob		ORDOVICIAN
€gp		CAMBRIAN
€dc		CAMBRIAN
€wf		CAMBRIAN
UNCONFORMITY		
q	Precambrian Z, Y, or X	PRECAMBRIAN
Emplaced between 2,495 and 1,320 million years ago!		
dike	Precambrian Y or X	PRECAMBRIAN
Emplaced about 2,495 million years ago!		
mo	Precambrian X or W	PRECAMBRIAN
Metamorphosed about 2,875 million years ago!		
r, u, a, g, wc, pg, OR, OR, wc, pg	Precambrian W	PRECAMBRIAN

DESCRIPTION OF MAP UNITS

(Phanerozoic units outside outcrop area of Precambrian rocks are identified but not described fully)

SURFICIAL DEPOSITS

Qa ALLUVIAL DEPOSITS (HOLOCENE)--Silt, sand, and gravel on existing flood plains

Qag ALLUVIAL GRAVEL (HOLOCENE)--Gravel and sand in flood plains of the Snake and Gros Ventre Rivers

Qs SWAMP DEPOSITS (HOLOCENE)

Qt TALUS AND RELATED DEPOSITS (HOLOCENE AND PLEISTOCENE)--Angular and poorly sorted rock debris in talus slopes, talus fans, rock glaciers and moraines of Holocene glaciers

Qf ALLUVIAL FAN DEPOSITS (HOLOCENE AND PLEISTOCENE)--Rudely stratified gravel, sand, and boulders, locally gradational into talus deposits in mountain areas. Includes silt and clay in distal parts of larger fans in Jackson Hole

Qls LANDSLIDE DEPOSITS (HOLOCENE AND PLEISTOCENE)

Qp PINEDALE TILL (PLEISTOCENE)

Qtg TERRACE GRAVEL (PLEISTOCENE)--Stratified sand and gravel underlying terraces along major streams. Includes outwash material of Pinedale age in Jackson Hole.

Qtgp PITTED TERRACE GRAVEL (PLEISTOCENE--PINEDALE)--Outwash gravel displaying prominent kettle holes

Ql LOESS (PLEISTOCENE)

Qb GLACIAL DEPOSITS (PLEISTOCENE--BULL LAKE)

Qo OLDER GLACIAL DEPOSITS (PLEISTOCENE)--Locally may include deposits of Bull Lake age

SEDIMENTARY AND VOLCANIC ROCKS

QThb HUCKLEBERRY RIDGE TUFF (PLEISTOCENE) AND TUFF OF BOONE CREEK (PLIOCENE)--Chiefly rhyolitic ash-flow tuff and vitrophyre. Locally may include other units

Tpa ANDESITE AND ASSOCIATED ROCKS (TERTIARY)--From Schroeder (1972)

Th CONGLOMERATE AND ASSOCIATED ROCKS OF HOMINY PEAK (EOCENE)

TKp PINYON CONGLOMERATE (PALEOCENE AND UPPER CRETACEOUS)

Trc CHUGWATER FORMATION (TRIASSIC)

Trd DINWOODY FORMATION (TRIASSIC)

Pp PHOSPHORIA FORMATION (PERMIAN)

PMta TENSLEEP SANDSTONE (PENNSYLVANIAN) AND AMSDEN FORMATION (PENNSYLVANIAN AND MISSISSIPPIAN)

Mm MADISON GROUP (MISSISSIPPIAN)

Dd DARBY FORMATION (DEVONIAN)

Ob BIGHORN DOLOMITE (ORDOVICIAN)

€gp GALLATIN LIMESTONE AND PARK SHALE MEMBER OF THE GROS VENTRE FORMATION (CAMBRIAN)

€dc DEATH CANYON LIMESTONE MEMBER OF THE GROS VENTRE FORMATION (CAMBRIAN)

€wf WOLSEY SHALE MEMBER OF THE GROS VENTRE FORMATION AND FLATHEAD SANDSTONE (CAMBRIAN)

PRECAMBRIAN ROCKS

q QUARTZ VEINS (PRECAMBRIAN Z, Y, OR X)--White to light-pink quartz, massive to strongly foliated and lineated

16 DIABASE (PRECAMBRIAN Y OR X)--Medium- to dark-gray or gray-green fine- to medium-grained diabase, commonly containing tabular phenocrysts of plagioclase 1-5 mm long. Forms undeformed but slightly metamorphosed dikes displaying chilled margins. Numbers indicate approximate width of dike in meters

mo PEGMATITE AND MOUNT OWEN QUARTZ MONZONITE (PRECAMBRIAN X OR W)--Medium- to fine-grained light-colored massive to weakly flow-foliated biotite quartz monzonite containing dikes, pods, and irregular masses of muscovite- and biotite-bearing pegmatite. Quartz monzonite is relatively uniform in central parts of larger plutons, but near the margins and in the smaller bodies pegmatite is very abundant and tabular inclusions of wall rocks a few centimeters to tens of meters across comprise nearly 50 percent of the volume of the rock. In many areas near large plutons of Mount Owen Quartz Monzonite pegmatite and aplite comprise nearly 50 percent of the volume of the wall rocks. In these areas contacts between Mount Owen Quartz Monzonite containing abundant inclusions of country rock and country rocks containing abundant dikes of pegmatite and aplite are largely arbitrary

r RENDEZVOUS METAGABBRO (PRECAMBRIAN W)--Coarse-grained nonlayered weakly foliated metagabbro, typically with blotchy appearance produced by irregular clots of dark-green hornblende 2 to 5 cm in diameter set in a matrix of light-gray plagioclase. Locally contains layers and inclusions of wallrocks. Pods and lenses of similar metagabbro, probably boudinaged dikes and sills, are abundant in nearby country rocks

u ULTRAMAFIC ROCKS (PRECAMBRIAN W)--Pods and small tabular bodies of serpentinized dunite or peridote and associated uralitized gabbro, a few meters to a few hundred meters in diameter. Locally contain veins of talc (soapstone) as much as 2 m wide and veins of asbestos with fibers as much as 30 cm long

a LAYERED GNEISS AND MIGMATITE (PRECAMBRIAN W)--Complexly interlayered fine- to medium-grained biotite gneiss and schist, quartz-plagioclase gneiss, amphibole gneiss and schist, and amphibolite. Layers range from 1 cm to several meters in thickness; some extend only a few meters while some are continuous for hundreds of meters. Locally sequence contains layers of anthophyllite schist, cordierite gneiss, impure marble, and magnetite iron-formation (i). Adjacent to larger masses of Mount Owen Quartz Monzonite the gneisses grade into light-colored and less conspicuously layered migmatites that contain abundant microcline porphyroblasts and quartzo-feldspathic folia. Open circles indicate presence of medium-gray biotite gneiss containing magnetite aggregates 0.5 to 1 cm in diameter surrounded by bleached haloes lacking biotite (bright-eyed gneiss of Bradley, 1956). Crosses indicate presence of numerous pods and lenses of metagabbro, probably boudinaged sills or dikes of Rendezvous Metagabbro

a AMPHIBOLITE (PRECAMBRIAN W)--Fine- to medium-grained massive to well-foliated and well-lineated dark-green to greenish-gray amphibolite, locally containing porphyroblasts of plagioclase or garnet

wc WEBB CANYON GNEISS (PRECAMBRIAN W)--Medium- to coarse-grained strongly foliated nonlayered biotite- and hornblende-bearing quartz monzonite gneiss, commonly cut by small discordant dikes of hornblende-bearing pegmatite

pg PORPHYROBLASTIC BIOTITE GNEISS (PRECAMBRIAN W)--Medium-grained strongly foliated and lineated rudely layered to nonlayered medium- to dark-gray biotite gneiss containing conspicuous augen of white microcline 1 to 4 cm in diameter. Locally contains thin layers of amphibolite and biotite gneiss lacking feldspar augen

Contact

D, U Normal or high-angle reverse fault and shear zone--Dashed where approximately located; dotted where concealed. U, upthrown side; D, downthrown side. Line pattern indicates broad zone of sheared and discolored rocks

Low-angle reverse fault--Dashed where approximately located. Sawteeth on upper plate

Linear feature conspicuous on aerial photographs--In bedrock units generally indicates trace of bedding, layering, joint, vein, or fracture zone. In Pinedale Till (Qp) and talus and related deposits (Qt) indicates crest of moraine ridge, protalus rampart, ridge on rock glacier, or outlines of talus lobe. In terrace gravel (Qtg) and pitted terrace gravel (Qtgp) indicates channel scars of meltwater streams

Terrace scarp--Hachures point downslope

Sink hole

Strike and dip of bedding
- Inclined
- Vertical

Strike and dip of compositional layering[2]
- Inclined
- Vertical

Strike and dip of foliation[2]
- Inclined
- Vertical

Strike and dip of axial plane of nonisoclinal fold in compositional layering
- Inclined
- Vertical

Strike and dip of axial plane of isoclinal fold in compositional layering
- Inclined
- Vertical

Direction and plunge of mineral lineation[2,3]
- Inclined
- Horizontal

Direction and plunge of fold or crenulation axis[4]
- Inclined
- Horizontal

Mine or prospect

Adit

FOOTNOTES

1/ Isotopic ages by Reed and Zartman (1973).

2/ Where symbol appears in Mount Owen Quartz Monzonite, measurement was made in an inclusion of country rock too small to depict on map. Where symbol appears in area of surficial deposits, measurement was made in outcrop too small to depict on map.

3/ May be combined with symbols for foliation or compositional layering.

4/ May be combined with symbols for axial planes of folds.

REFERENCES CITED

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SCALE 1:62 500

0 1 2 3 4 5 MILES

0 1 2 3 4 5 KILOMETERS

CONTOUR INTERVAL 80 FEET

GEOLOGIC MAP OF THE PRECAMBRIAN ROCKS OF THE TETON RANGE, WYOMING

By

John C. Reed, Jr.

1973

U.S. Geological Survey
OPEN FILE REPORT
This map is preliminary and has not been edited or reviewed for conformity with Geological Survey standards or nomenclature.

Base by U.S. Geological Survey, 1968

Geology of Precambrian rocks mapped by J. C. Reed, Jr., 1962-1965 and 1970, assisted by J. H. Dieterick (1962), D. D. Steller (1963), D. A. Coates (1964), and R. W. Blair, Jr. (1970). Geology of younger rocks and surficial deposits compiled from Schroeder (1972), Reed and Love (1971, 1972) and Reed, Love, and Love (1973)

The author will loan a hand-colored copy on request. Also available from the author is an overlay to this map showing distribution, frequency and orientation of granite and pegmatite dikes in the Precambrian rocks

Contact: Jack Reed
U.S. Geological Survey
MS 908, National Center
Reston, VA 22092