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UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

Geologic Map of the Choteau 1°x2° Quadrangle
Lewis and Clark, Teton, Powell, Missoula,
Lake, Flathead, and Cascade Counties, Montana

By

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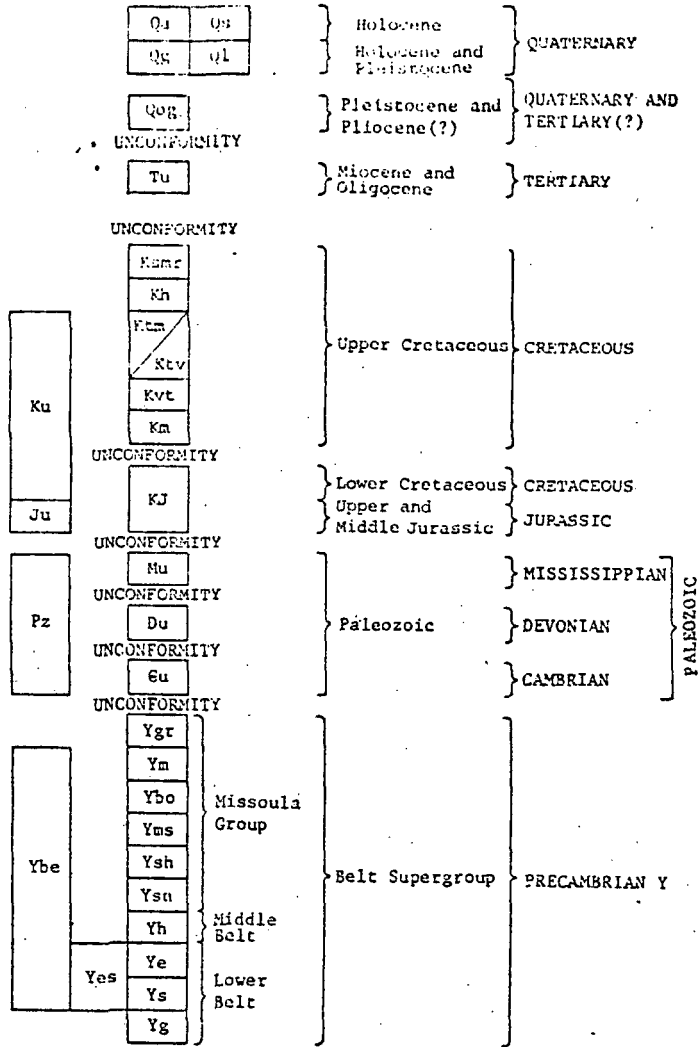
**UNIVERSITY OF UTAH
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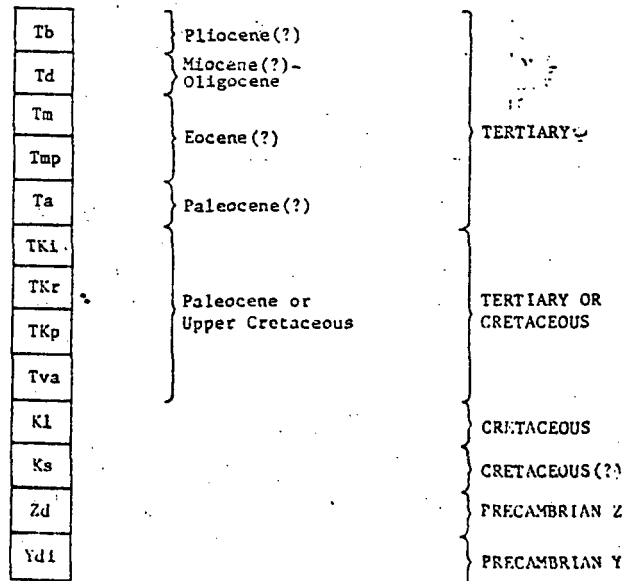
This report is preliminary and has not been
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Geological Survey standards.

CORRELATION OF MAP UNITS

SEDIMENTARY ROCKS



IGNEOUS ROCKS



EXPLANATION

SEDIMENTARY ROCKS

QUATERNARY

- Qa Alluvial deposits (Holocene)
 Qs Landslide deposits (Holocene)
 Qg Glacial deposits (Holocene and Pleistocene)
 Ql Lake deposits of glacial origin (Holocene and Pleistocene)
 QTog Older gravels. Mostly of glacial origin; probably includes gravel of Tertiary age

TERTIARY

- Tu Lacustrine deposits (Miocene and Oligocene)--Includes gravel, tuffs

CRETACEOUS

- Ksmr St. Mary River Formation (Upper Cretaceous)
 Kh Horsethief Sandstone (Upper Cretaceous)
 Ku Cretaceous rocks below the Horsethief Sandstone (Upper Cretaceous) through the Kootenai and unnamed formations (Lower Cretaceous) undivided
 Ktm/Ktv Two Medicine Formation (Upper Cretaceous). Ktv mapped where volcanic debris and flows are in formation
 Kvt Virgelle Sandstone and Telegraph Creek Formation (Upper Cretaceous)
 Km Marias River Shale (Upper Cretaceous)

CRETACEOUS AND JURASSIC

- KJ Lower Cretaceous Blackleaf, Kootenai, unnamed formations, includes all or parts of Jurassic Morrison, Swift, Rierdon, and Sawtooth Formations

JURASSIC

- Ju Morrison (Upper Jurassic), Swift (Upper and Middle Jurassic), Rierdon and Sawtooth (Middle Jurassic) Formations

Pz PALEOZOIC

- Mu Mississippian rocks, undivided
 Du Devonian rocks, undivided
 Cu Cambrian rocks, undivided

PRECAMBRIAN Y

- Belt Supergroup
 Ygr Garnet Range Formation
 Ybc All formations from the McNamara Formation down and including Spokane Formation, undivided
 Ym McNamara Formation
 Ybo Bonner Quartzite
 Yms Mount Shields Formation
 Ysh Shepard Formation
 Ysn Snowslip Formation
 Yh Helena Formation
 Ye Empire Formation
 Ys Spokane Formation
 Yes Empire and Spokane Formations
 Yg Greyson Formation

IGNEOUS ROCKS

TERTIARY

- Tb Basalt flows (Pliocene)
 Td Dacite volcanic neck or plug and dikes (Miocene?-Oligocene)
 Tm Hornblende monzonite dikes and sills (Eocene?)--Post-thrust faulting
 Tmp Monzonite porphyry stocks, dikes, and sills (Eocene?)
 Ta Biotite trachyandesite and andesite dikes, sills, and irregular-shaped intrusive bodies (Paleocene?)

TERTIARY OR CRETACEOUS (Pre-thrust faulting)

- TKI Trachyandesite sills
 TKr Rhyolite sills and dikes
 TKp Quartz monzonite porphyry
 Tva Adel Mountain Volcanics of Lyons, 1944 (Paleocene or Upper Cretaceous)

CRETACEOUS


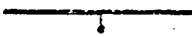









- Kl Latite sill

CRETACEOUS(?)

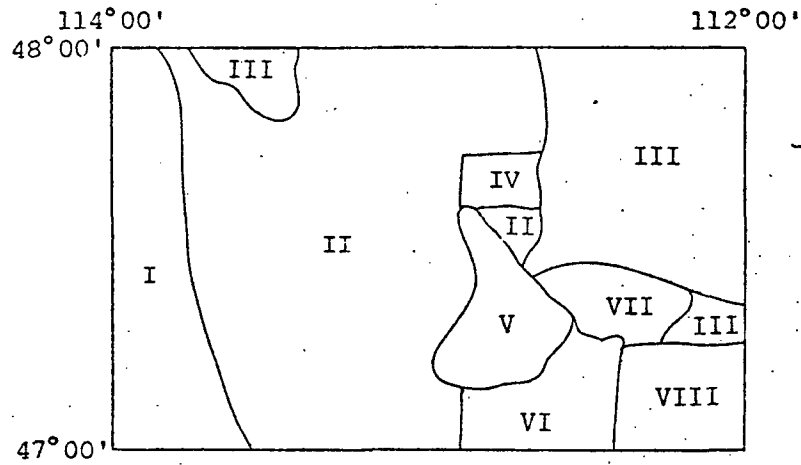
- Ks Diorite sills

PRECAMBRIAN

- Zd Diorite sills, some dikes--Age 750 m.y.
 Ydi Andesite sills--Probably equivalents in age to the Purcell Lava in Glacier National Park--age 1,075 m.y.

	CONTACT
	FAULT--Bar and ball on downthrown side
	THRUST FAULT--Sawteeth on upper plate
	ANTICLINE--Showing direction of plunge
	SYNCLINE--Showing direction of plunge
	OVERTURNED ANTICLINE--Showing dip of limbs
	OVERTURNED SYNCLINE--Showing dip of limbs
STRIKE AND DIP OF BEDS	
	Inclined
	Vertical
	Overturned
	Horizontal

MAP CREDIT



(Numbers refer to references listed on next page)

Data modified, from the following sources:

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