





DESCRIPTION OF MAP UNITS

Kq QUARTZ CONGLOMERATE --- Quartz-pebble conglomerate with a quartzose matrix; some clasts of chert, schist and greenstone; some inter-

(Albian) age (Patton and Miller, 1966, Patton, Miller and

bedded quartzose sandstone and mudstone. Kc IGNEOUS PERBLE CONGLOMERATE --- Massive, poorly sorted, poorly stratified pebble to cobble conglowerate. Clasts of extrusive and intrusive igneous rocks in a graywacke and mudstone matrix. Some clasts of chert and mudstone. Probably Early Cretaceous

FOSSILIFEROUS ROCKS, PARTLY METAMORPHOSED

- Rocks of greenschist facies of metamorphism in most of the area, and in hornblende hornfels facies near the granitic rocks. Upper Devonian rocks in the northwestern part of quadrangle probably are not metamorphosed.
- Mk KAYAK SHALE --- Dark gray slate and shaley limestone; orangeweathering crinoidal limestone. Mississippian corals and foramenifera at localities 13, 14 and 15. About 300 m thick.
- Mke KEKIKTUK CONGLOMERATE --- Light gray to gray-green, massive to sheared quartz- and chert-pebble conglomerate, quartzite and sandstone; minor amounts of dark gray and red and green shale and slate. About 200 ${\tt m}$ thick.
- Me ENDICOTT GROUP --- Undifferentiated black shale and calcareous shale of the Kayak Shale, and schistose, phloritoid-bearing, partly calcareous quartzite and conglomerate of the Kekiktuk
- Dk KANAYUT CONGLOMERATE --- Gray-green, massive quartz- and chert-pebble conglomerate, quartzite, sandstone and shale. Over 600 m thick.
- SANDSTONE --- Gray-green, thin-bedded, limonitic sandstone, partly calcareous. Gradational with the Kanayut Conglomerate (Dk). About 500 m thick. Dkh SANDSTONE, CONGLOMERATE AND SHALE --- Undifferentiated Kanayut
- Conglomerate (Dk), Sandstone (Dss), and minor amounts of Hunt Fork Shale (Dhf). Contains Devonian brachiopods at localities 1, 7 and 8. Dhf HUNT FORK SHALE --- Black shale, slate and phyllite with some interbedded sandstone and quartzite; lenses of brown limonito limestone. Contains Devonian brachiopods at locality 6. Over
- Dh1 LIMESTONE MEMBER OF HUNT FORK SHALE --- Dark gray limestone and
- Dhq QUARTZITE MEMBER OF HUNT FORK SHALE --- Gray to brown gritty quartzite and sheared conglomerate.
- Dc CHLORITIC PHYLLITE --- Gray, green, yellow and purple shale and chloritic phyllite and sandstone. Contains Devonian? brachiopods at locality 4. Where identification is queried in southeastern part of quadrangle, unit is chloritic schist and phyllite.
- Dcb BLACK SILTSTONE --- interbedded with, or unconformable on Chloritic Phyllite (Dc).
- Dcq CHLORITIC QUARTZITE AND CONGLOMERATE --- Gray and green, schistose, feldspathic chloritic quartzite, grit and quartz- and chert-pebble conglomerate. Unit is schist and contains kyanite locally, where identification is queried in southeastern part of quadrangle.
- Dfc FERRUGINOUS CALCAREOUS CLASTIC ROCKS --- Light brown and orange weathering, gray calcareous micaceous siltstone and phyllite. Minor amounts of sandstone, conglomerate and dark gray phyllite. Contains Devonian brachiopods at localities 2, 3, 10 and 11. Unit is brown calcareous schist where identification is queried in southeastern
- LIMESTONE --- Dark gray shaley limestone. BLACK LIMESTONE AND PHYLLITE --- Interbedded black, partly calcareous phyllite, blck siliceous siltstone, and black argillaceous
- limestone; weathers pink, orange, black. About 400 m thick. MLACK SILTSTONE --- Differentiated locally in Black Limestone and
- MDbs BLACK SHALE AND SILTSTONE --- Undifferentiated Kayak Shale (Mk) and Black Limestone and Phyllite (Db).
- Dcw CALCAREOUS WACKE --- Light gray-green, calcareous, fine-grained quartz-plagioclase wacke. Dcc CHLORITIC AND CARBONATE ROCKS --- Green, chloritic, partly calcareous phyllite, siltstone, grit and schist, and orange-weathering
- Probably includes some metamorphosed mafic igneous rocks. DSsk SKAJIT LIMESTONE --- Mostly light gray, massive marble; highly sheared and folded in part. Contains Middle Devonian corals at locality 16. As much as 1,000 m thick.

impure carbonate rocks; local carbonate-pebble conglomerate.

- DSso ORANGE MARBLE --- Orange-weathering, medium- to coarse-grained chloritic marble, highly sheared in part; orange, fine-grained dolomite, locally conglomeratic; boudins and sills of chloritic greenstone. Dcs CHLORITIC ROCKS AND ORANGE MARBLE --- Undifferentiated units Dcc
- TACTITE --- Thermally metamorphosed carbonate rocks mapped locally.

This map is preliminary and has not been reviewed for conformity with U.S. Geological Survey standards and nomenclature.

METAMORPHIC ROCKS OF UNCERTAIN AGE AND STRATIGRAPHIC POSITION

Rocks of greenschist facies in most of the area, and in hornblende hornfels facies near the granitic rocks. In an irregular linear zone 5 to 10 miles wide across the southern part of the quadrangle the rocks (mostly of units Pzsu and Pzcq) contain chloritoid, biotite and garnet typical of the highest grade of greenschist facies, but also locally contain partly chloritized

- Prs SCHIST AND PHYLLITE --- In part thermally metamorphosed. May be equivalent to Hunt Fork Shale (Dhf)
- Pros QUARTZOSE SCHIST AND QUARTZITE --- May be equivalent to Quartzite Member of Hunt Fork Shale (Dhq).
- Pzqp QUARTZ-PHYLLITE --- Light gray, fine- to medium-grained quartzite interbedded with brown and gray phyllite.
- QUARTZITE --- Rusty weathering. May be equivalent to Quartzite Member of Hunt Fork Shale (Dhq) or to Chloritic Quartzite and Conglowerate
- Pri LIMESTONE AND MARBLE === Mostly light gray; medium-grained marble: Probably includes beds of many different ages. Pzpp PURPLE PHYLLITE --- Purple and green phyllite and metamorphosed
- Pzcq CHLORITIC QUARTZITE --- Mostly quartz-albite-chlorite + magnetite schist and schistose quartzite. May include some metamorphosed aplite. Contains boudins of mafic schist. Locally contains garnet and partly chloritized glaucophane in Sec. 30, T. 21 N,
- Pzlq LIMESTONE-QUARTZITE --- Interbedded quartz-albite-muscovite schist, quartzite, and light gray marble. Schist commonly weathers orange.

R. 26 E., and Sec. 13, T. 20 N., R. 22 E.

- Marble is differentiated as Pzl where possible. Pzcs CALC-SCHIST --- Mostly brown-weathering quartz-albite-muscovitecalcite schist, commonly with epidote and actinolite; thin beds
- of resistant blck very fine-grained quartzite. Pzsu UNDIFFERENTIATED QUARTZ-MICA SCHIST --- Mostly quartz-mica schist with minor amounts of chlorite schist, greenstone, marble and felsic schist. Includes units of Pzl, Pzsl, Pzsm and Pzsf. The unit may be a structural mixture of units of several ages, from as young as Devonian to Ordovician and older. Locally contains
- glaucophane and garnet in Sec. 17, T. 20 N., R. 20 E. Pzsm MASSIVE QUARTZ-MICA SCHIST --- Massive weathering, resistant quartz-mica schist, generally more intensely folded than the surrounding schist and phyllite.
- Pref FERRUGINOUS SCHIST --- Brown and orange weathering soft highly pyritic quartz-mica schist and phyllite.
- Pzsl SANDSTONE AND LIMESTONE --- Calcareous sandstone; black and white quartzite and marble containing poorly preserved fossils at locality 17. Pzlc CHERTY LIMESTONE --- Dark gray recrystallized limestone, silicious

limestone and chert. May be equivalent to Mississippian Lisburne

Group of other areas. Pap PHYLLITE --- Brown to dark gray phyllite and slate; commonly sericitic; gradational into quartz-mica schist (Prsu).

- Kgr GRANITIC ROCKS --- Mostly granite and quartz-monsonite, porphyritic to gneissic and schistose. Probably Cretaceous in age (Fritts and
- dated 86 to 92 m.y. by K/Ar method (Brosge and Reiser, 1971) in T 23 N, R 21 and 22 E. bs BIOTITE SCHIST --- Plagioclase-quartz-biotite schist; possibly a metamorphosed granodiorite; probably related to the intrusion of the granitic rocks (Kgr). K/Ar age of 96 m.y. reported for biotite at locality 3 by D.L. Turner (Div. Geol. and Geophys.
- Surveys , 1973) in T 22 N, R 13 E. Jpv MAFIC IGNEOUS ROCKS --- Mafic hypabyssal and volcanic rocks, slightly metamorphosed to zeolite facies. Possibly Jurassic in age (Patton, Miller and Tailleur, 1968), but may be as old as Devonian (Fritts, 1970).

METAMORPHOSED IGNEOUS ROCKS OF UNCERTAIN AGE

- GREENSTONE --- Metamorphosed basalt, dacite and other volcanic rocks. Age is very uncertain, but probably equivalent to unit Jpv in part. Contain garnet and glaucophane locally in Sec. 31, T. 20 N., R. 18 E.
- Pzps PORPHYROBLASTIC SCHIST --- Quartz-albite-K feldspar-muscovite-biotite schist with porphyroblasts of K-feldspar. Interpreted to be meta-rhyolites by most mining geologists (Wiltse, 1975). Pzf FELSIC SCHIST --- Mostly quartz-albite-K-feldspar schist; generally
- rocks, including rhyolites and aplites. Minor gray and black fine-Mineral deposits, stream sediment anomalies and large groups of claims made in the last 10 years (Alaska Div. Geol. and Geophys. Surveys, 1973,

fine-grained and massive. Probably metamorphosed acidic igneous

p.8) occur in a zone along the strike of units Pzf and Pzps.