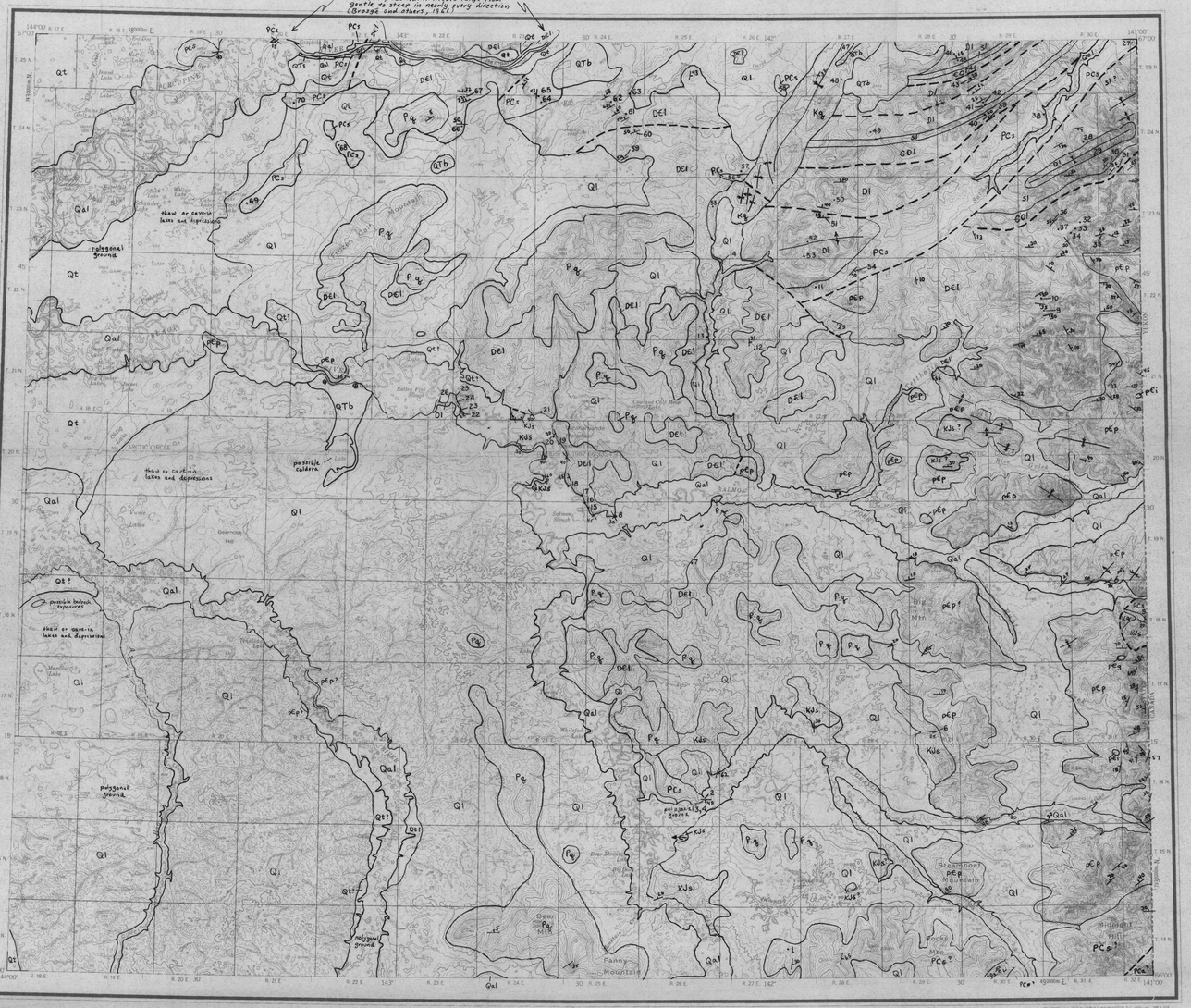
Alaska Open File 234

U.S. GEOLOGICAL SURVEY
OPEN FILE MAP



THIS MAP IS PRELIMINARY AND HAS NOT BEEN EDITED OR REVIEWED FOR CONFORMITY WITH U.S. GEOLOGICAL SURVEY STANDARDS AND NOMENCLATURE

PRELIMINARY GEOLOGIC MAP OF THE BLACK RIVER QUADRANGLE, EAST-CENTRAL ALASKA

COMPILED BY EARL E. BRABB, 1969

EXPLANATION

QUATERNARY

Qal, Qt, Ql — Surficial deposits
Qal, alluvial sand and gravel
Qt, river terrace deposits
Ql, loess

UNCONFORMITY

TERTIARY OR QUATERNARY

QTb — Basalt
Subhorizontal olivine basalt. Few tens to few hundred feet thick

QTs — Sand
Poorly consolidated sand and mud. Few tens of feet thick. Subhorizontal

UNCONFORMITY

CRETACEOUS

Kq — Quartzite
Massive quartzite. Few hundred feet thick

UNCONFORMITY

JURASSIC

Kzs — Shale
Greyish-black shale and argillite. Minor siltstone and quartzite. At least 1,000 feet thick

UNCONFORMITY

PERMIAN

PCs — Shale
Greyish-black shale and argillite and dark-grey limestone. Quartzite and conglomerate occur locally in lower part. Few thousand feet thick

Pq — Quartzite
Massive quartzite and chert-pebble conglomerate. Age uncertain. May include quartzites of early Paleozoic and Mesozoic age. Several hundred feet thick

CARBONIFEROUS

UNCONFORMITY

DEVONIAN

Dl — Limestone
Medium-gray to greyish-black fine- to coarse-grained crinoidal limestone. Locally dolomitic

SILURIAN

Sl — Limestone
Medium-gray to greyish-black fine-grained limestone. Locally dolomitic

ORDOVICIAN

Ocl — Limestone
Light grey to greyish-black porcellaneous to coarse-grained limestone. Locally dolomitic

UNCONFORMITY

ORDOVICIAN TO SILURIAN

Pcl — Basic intrusive rocks

PALEOZOIC

Pzv — Volcanic rocks
Lithology, thickness and age uncertain

Dcl — Limestone and dolomite
Mainly massive limestone and dolomite several thousand feet thick. Minor red and green argillite and black chert. Included a few hundred feet of quartzite along Lower Ramparts of Porcupine River

Pzp — Phyllite
Red, green, and black phyllite; black and white banded slate and siltstone; white, brown and red quartzite; orange weathering dolomite and limestone. Several thousands of feet thick. May include rocks of Paleozoic and Mesozoic age

Pzi — Granitic rocks
Possibly younger than Precambrian

PRECAMBRIAN

Contact
Inferred and approximately located

Fault
Approximately located.

FOLDS

Anticline showing trace of axial plane and plunge of axis

Syncline showing trace of axial plane and plunge of axis

Plunge of minor anticline

Plunge of minor syncline

45 Strike and dip of beds

90 Strike of vertical beds

70 Strike and dip of overturned beds

Horizontal beds

• 60 Field sample locality number

NOTE

1. Geologic mapping at 1:63,360 scale along the Porcupine River by Brosgé and others (1966) indicates that the Paleozoic rocks, at least, are complexly folded and faulted. Facies changes, repetition of lithology in different systems, and absence of fossils in many formations make the geology even more difficult to interpret. Consequently, the generalized geology shown on this map will undoubtedly have to be revised extensively when the area is mapped in detail.

2. Approximately 75 collections of Paleozoic fossils were obtained along the Porcupine River between Rock Slough and the upper part of the Lower Ramparts in 1964 by J. Thomas Dutro, Jr., and William P. Brosgé. The localities are too numerous to plot on this map. See Brosgé and others (1966) for the location of fossils in several measured sections within the area. Additional fossil collections were obtained earlier by J. B. Mertie, Jr., in 1941, and by E. M. Kindle (1908).

Fossil Collections

Map No.	Field No.	Collector	Year	Dominant fossils	Age	Identified by
1	61ABa2551	Brabb	1962	brachiopods	U. Paleozoic	Brabb
2	61ABa1344	Brabb	1961	brachiopods	Permian	Grant
3	61ABa1561	Mellk & Brabb	1961	brachiopods	Permian	Grant
4	61ABa1553	Brabb	1961	brachiopods	Permian	Grant
5	KPO 160	BP	1962	pelecypods	L. Jurassic	Stelck
6	KPO 160	BP	1962	foraminifers	not diag.	Dilley
7	KPO 177	BP	1962	stromatoporoids	Sil.-Dev.	Stelck
8	61ABa1463	Brabb	1961	coral	Dev.	Oliver
9	KPO 641	BP	1962	coral	Dev.	Stelck
10	KPO 642	BP	1962	brachiopods	Dev.	Stelck
11	KPO 2130	BP	1962	corals	U. Miss.	Stelck
12	KPO 2111	BP	1962	brachiopods	L. Dev.	Stelck
13	KPO 2093	BP	1962	gastropods	Ord.	Stelck
14	KPO 651	BP	1962	brachiopod	Dev.	Stelck
15	61ABa1472	Brabb	1961	brachiopods	Ord.	Ross
16	KPO 619	BP	1962	corals	U. Ord.	Stelck
17	61ABa1473	Mellk & Brabb	1961	ostracods	Sil.-Dev.	Berdan
18	KPO 618	BP	1962	brachiopods	M. Dev.	Stelck
19	61ABa1493	Brabb	1961	corals	U. Ord.	Oliver
20	KPO 634	BP	1962	brachiopod	U. Ord.	Stelck
21	KPO 635	BP	1962	brachiopods	M. Dev.	Stelck
22	61ABa1533	Brabb	1961	corals	Dev.	Oliver
23	KPO 2133	BP	1962	corals	Dev.	Stelck
24	KPO 2121	BP	1962	coral	M. Dev.	Stelck
25	KPO2124	BP	1962	coral	M. Dev.	Stelck
26	KPO 2125	BP	1962	corals	Dev. ?	Stelck
27	X111 25	Cairnes	1911	brachiopod	Carbonif.	Girty
28	KPO 659	BP	1962	corals	Sil.	Stelck
29	KPO 658	BP	1962	coral	Dev.	Stelck
30	KPO 654	BP	1962	coral	Sil.	Stelck
31	KPO 652	BP	1962	corals	U. Ord.	Stelck
32	KPO 643	BP	1962	stromatoporoid	M. Dev.	Stelck
33	KPO 644	BP	1962	corals	M. Sil.	Stelck
34	KPO 643	BP	1962	corals	U. Ord.	Stelck
35	KPO 194	BP	1962	gastropods	L. Ord. ?	Stelck
36	KPO 649	BP	1962	brachiopods	Sil.-Dev.	Stelck
37	KPO 647	BP	1962	coral	M. Dev. ?	Stelck
38	KPO 681	BP	1962	brachiopods	L. Permian	Stelck
39	KPO 2131	BP	1962	gastropod	M. Ord.	Stelck
40	KPO 2132	BP	1962	corals	U. Ord.	Stelck
41	KPO 2135	BP	1962	corals	M. Dev.	Stelck
42	KPO 2138	BP	1962	corals	M. Dev.	Stelck
43	KPO 2140	BP	1962	gastropod	M. Dev.	Stelck
44	KPO 2142	BP	1962	gastropod	M. Ord.	Stelck
45	KPO 2143	BP	1962	corals	M. Dev.	Stelck
46	KPO 2146	BP	1962	coral	M. Dev.	Stelck
47	KPO 2149	BP	1962	pelecypod	not diag.	Jones
48	KPO 2147	BP	1962	Ditrupa	L. Cret.	Stelck
49	KPO 684	BP	1962	brachiopods	M. Dev.	Stelck
50	KPO 682	BP	1962	ostracod	L. Dev.	Stelck
51	KPO 682	BP	1962	trilobite	M. Dev.	Stelck
52	KPO 683	BP	1962	tentaculitids	Sil.-Dev.	Stelck
53	KPO 684	BP	1962	corals	M. Dev.	Stelck
54	KPO 2129	BP	1962	corals	U. Miss.	Stelck
55	KPO 2136	BP	1962	pelecypods	Cret. ?	Jones
56	KPO 2134	BP	1962	gastropod	U. Paleoz.	Stelck
57	KPO 2133	BP	1962	stromatoporoid	Sil. ?	Stelck
58	KPO 200	BP	1962	pelecypods	not diag.	Stelck
59	KPO 233	BP	1962	corals	M. Dev.	Stelck
60	KPO 215	BP	1962	corals	M. Dev.	Stelck
61	KPO 217	BP	1962	corals	M. Sil.	Stelck
62	KPO 221	BP	1962	brachiopods	M. Dev.	Stelck
63	RR 538	Reiser	1964	corals	M. Dev.	Oliver
64	KPO 231	BP	1962	brachiopods	Carb.	Stelck
65	KPO 2-33	BP	1962	brachiopod	Carb.	Stelck
66	KPO 200	BP	1962	coral	not diag.	Stelck
67	KPO 207	BP	1962	corals	Ord.-Sil.	Stelck
68	KPO 198	BP	1962	brachiopods	U. Miss.	Stelck
69	anon.			brachiopods	U. Paleoz.	
70	anon.			brachiopods	U. Paleoz.	

Identification of fossils

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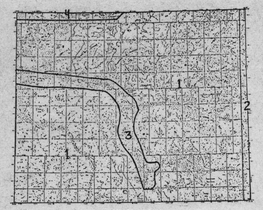

SOURCES OF DATA

1. Unpublished geologic mapping by R. Stoneley, Party Chief, B. R. Brown, and K. F. Thompson, Geologists, and R. B. Helles, J. E. Dagenais, and P. E. R. Fuchs, Assistant Geologists, British Petroleum Exploration Co., Alaska, 1962. Basic data reinterpreted and revised. Geology of surficial deposits mainly from interpretation of aerial photographs.

2. Source (1) above; Cairnes (1914b); and unpublished notes by Cairnes and his field assistants

3. Boat traverse by E. E. Brabb assisted by J. C. Mellk and R. L. Taylor, 1961

4. Brosgé and others (1966)

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Brosgé, W. P., Reiser, H. N., Dutro, J. T. Jr., and Churkin, Michael, Jr., 1966, Geologic map and stratigraphic sections, Porcupine River Canyon, Alaska: U.S. Geol. Survey open-file report

Cairnes, D. D., 1914, The Yukon-Alaska International Boundary between Porcupine and Yukon Rivers: Canada Geol. Survey Mem. 67

Kindle, E. M., 1908, Geologic reconnaissance of the Porcupine Valley, Alaska: Geol. Soc. America Bull., v. 19, p. 315-338