

Base from U. S. Geological Survey  
Healy A-6, 1953

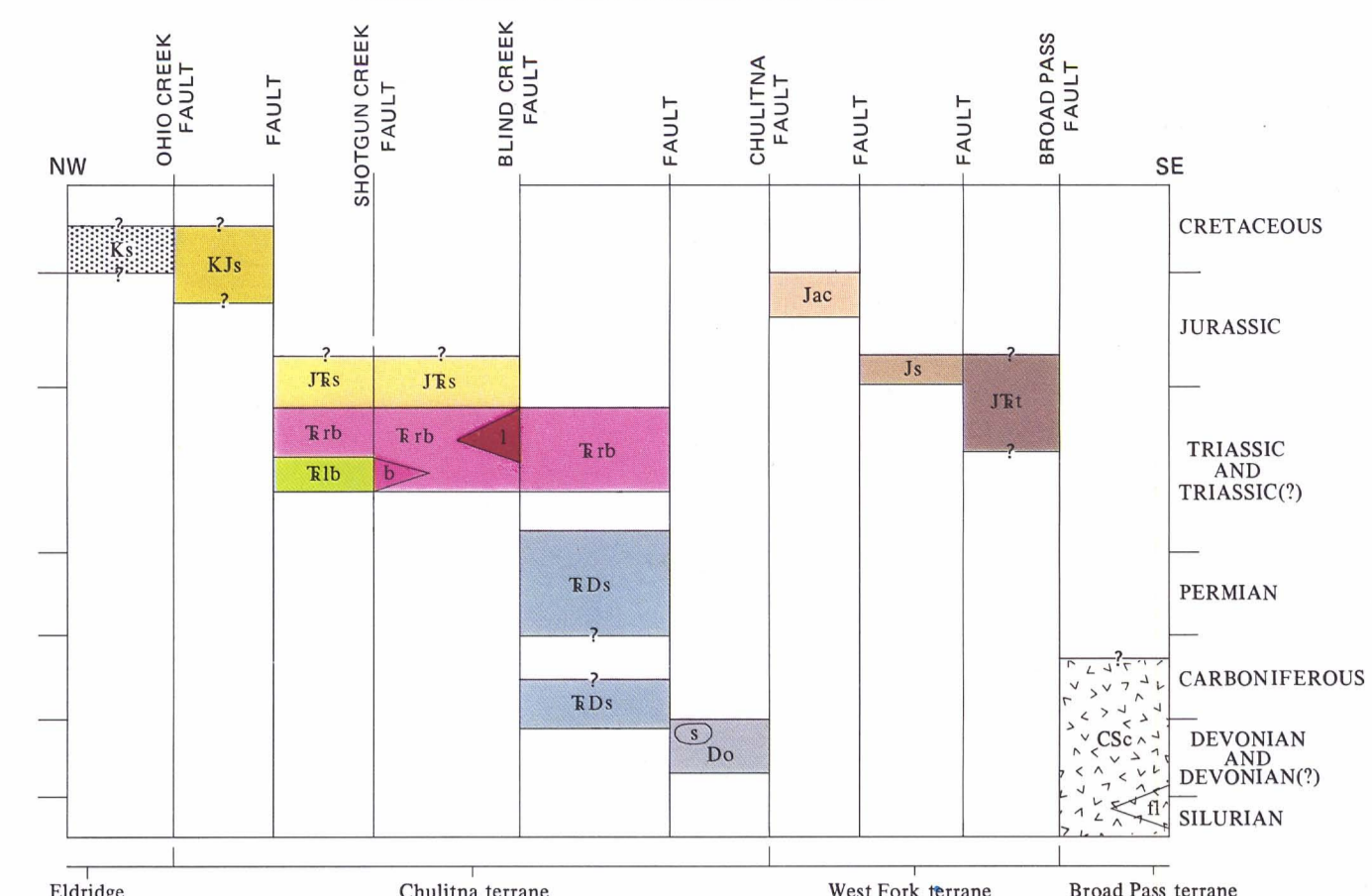
SCALE 1:63 360

CONTOUR INTERVAL 100 FEET  
DOTTED LINES REPRESENT HALF-INTERVAL CONTOURS  
NATIONAL GEODETIC VERTICAL DATUM OF 1929

Geology mapped in 1976-77

MAP LOCATION

CORRELATION OF PRE-TERTIARY MAP UNITS



DESCRIPTION OF MAP UNITS

- DIKE ROCKS (TERTIARY?)**
- ELDRIDGE TERRANE**
- MARINE SEDIMENTARY ROCKS (CRETACEOUS)** - Flyschite dark-gray to black argillite, sandstone, and minor conglomerate. Mostly sheared and broken
- CHULITNA TERRANE**
- KJs** ARGILLITE, SANDSTONE, AND CHERT (LOWER CRETACEOUS AND UPPER JURASSIC) - Dark-gray argillite, gray to black chert, and sandstone, either thick bedded with *Inoceramus* fragments or thin bedded and notably micaceous. Rare limestone beds of comminuted *Buchia* shells
- JFs** BROWN SANDSTONE AND ARGILLITE (LOWER JURASSIC AND UPPER TRIASSIC) - Gray-brown argillite with minor calcareous sandstone and impure limestone. Grading downward into brown-weathering thick-bedded limy sandstone. Abundant marine shelly fossils in some sandstone beds
- Trb** REDBEDS (UPPER TRIASSIC) - Red sandstone, siltstone, and conglomerate with minor interbedded brown sandstone and dense gray nodular limestone. Gradationally underlies brown-weathering sandstone and argillite unit
- J** Interstratified units of bedded gray limestone - Located in exposures between Shotgun Creek fault and Long Creek or Copeland Creek faults
- b** Flows of dense basalt - Located in exposures southeast of Shotgun Creek fault
- Jib** LIMESTONE AND PILLOW BASALT (UPPER TRIASSIC) - Pillow basalt, pillow breccia, and basaltic tuff in units as much as a few hundreds of meters thick interstratified with generally thinner and subordinate units of gray shallow-marine limestone. Depositionally underlies red bed unit northwest of Shotgun Creek fault; may be partially age correlative with red-bed unit on southeast side of this fault. Stippled pattern represents interstratified redbeds, conglomerate, and associated rhyolitic flows and breccias
- TDs** SEDIMENTARY ROCKS (LOWER TRIASSIC TO DEVONIAN?) - Cherty tuff (Carboniferous), volcanic breccia, bedded chert (Upper Devonian in part), argillite, marine limestone (Lower Triassic and Permian), and flyschite sandstone and argillite in structurally intertongued units to more than 100 m thick. Lower Triassic limestone unconformably underlies Upper Triassic redbeds
- Do** OPHIOLITIC AND ULTRAMAFIC ROCKS (UPPER DEVONIAN) - Tectonic mixture of serpentinite, pillow basalt, basaltic breccia, red radiolarian chert (Upper Devonian), and minor gabbro
- s** Serpentinite and silica-carbonate rocks
- WEST FORK TERRANE**
- Jac** ARGILLITE, CHERT, AND SANDSTONE (UPPER JURASSIC) - Argillite, cherty argillite, and thin-bedded sandstone. Gray to black rhythmically bedded chert predominates locally. Graded sandstone and siltstone interbedded with argillite form important thicknesses on Long Creek. In places highly sheared and pyritic. Very minor fine-grained conglomerate
- Js** SANDY LIMESTONE AND CALCAREOUS SANDSTONE (LOWER JURASSIC) - Evenly bedded brown-weathering fossiliferous phosphatic marine sandy limestone and calcareous sandstone in fault-bounded silvers
- Jkt** MASSIVE TUFF (LOWER JURASSIC AND TRIASSIC?) - Obscurely stratified dark grayish-green crystal tuff and cherty tuff. Minor fossiliferous marine sandstone and conglomerate
- BROAD PASS TERRANE**
- CSc** CHERT AND ARGILLITE (CARBONIFEROUS TO SILURIAN) - Rhythmically bedded chert, cherty tuff, and black argillite (Upper Devonian or younger Paleozoic); dark-gray phyllite; and minor volcanic graywacke
- S** Gray fossiliferous, marine limestone (Middle Devonian and Upper Silurian) - Found in tectonic or redeposited side blocks, in part associated with serpentinite

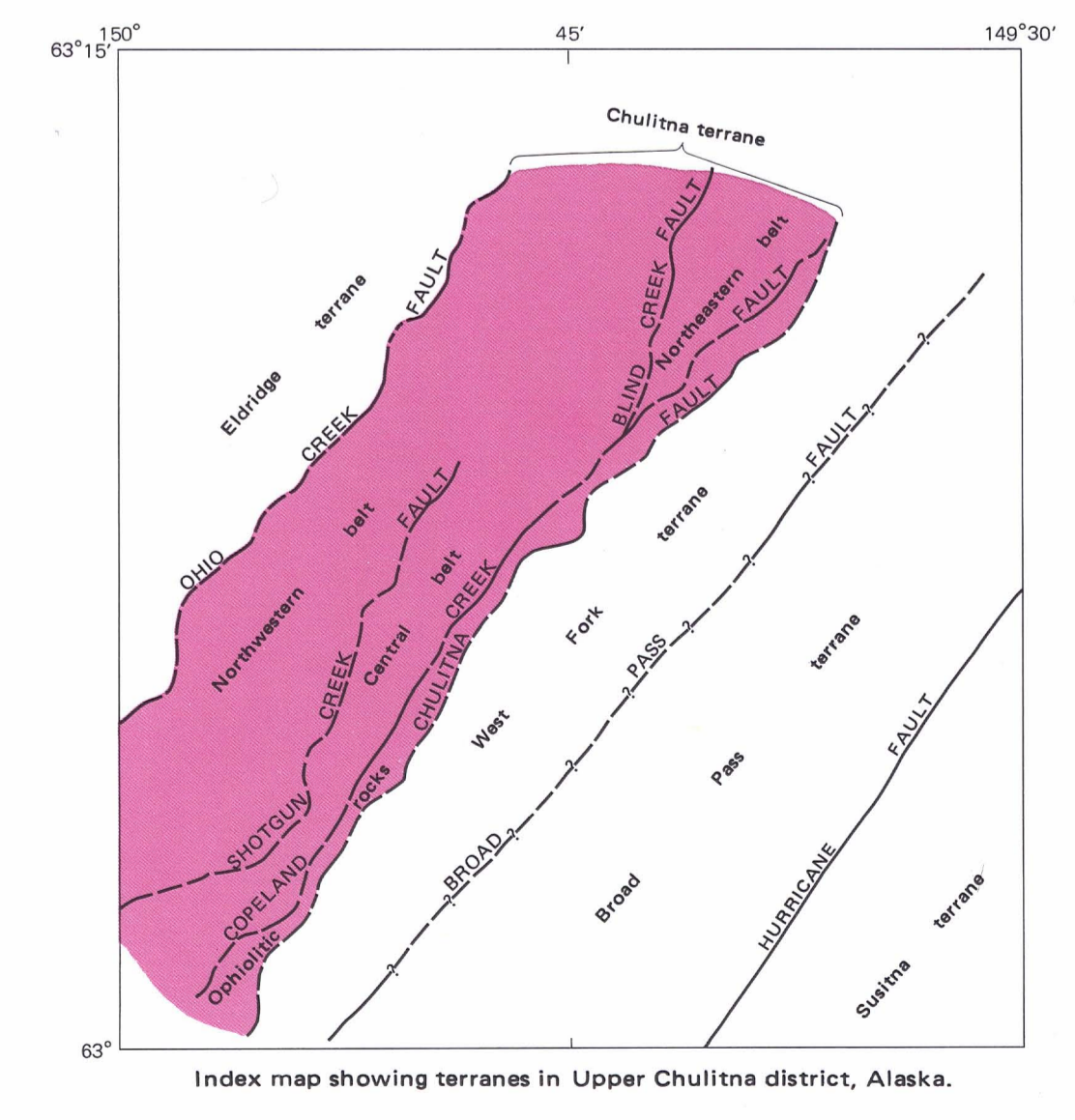
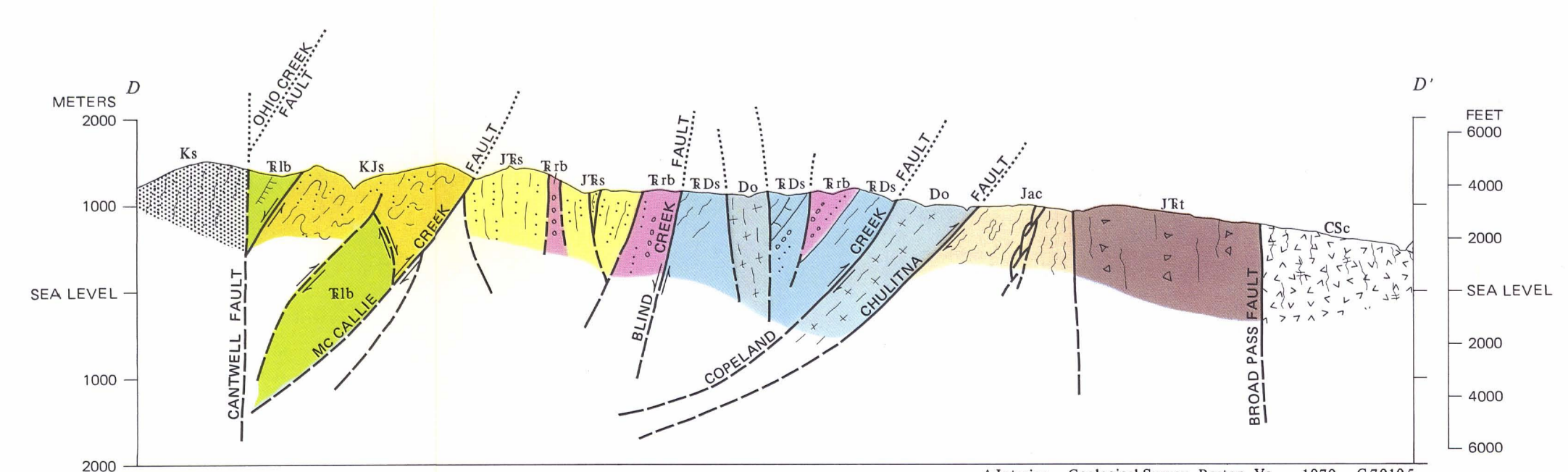
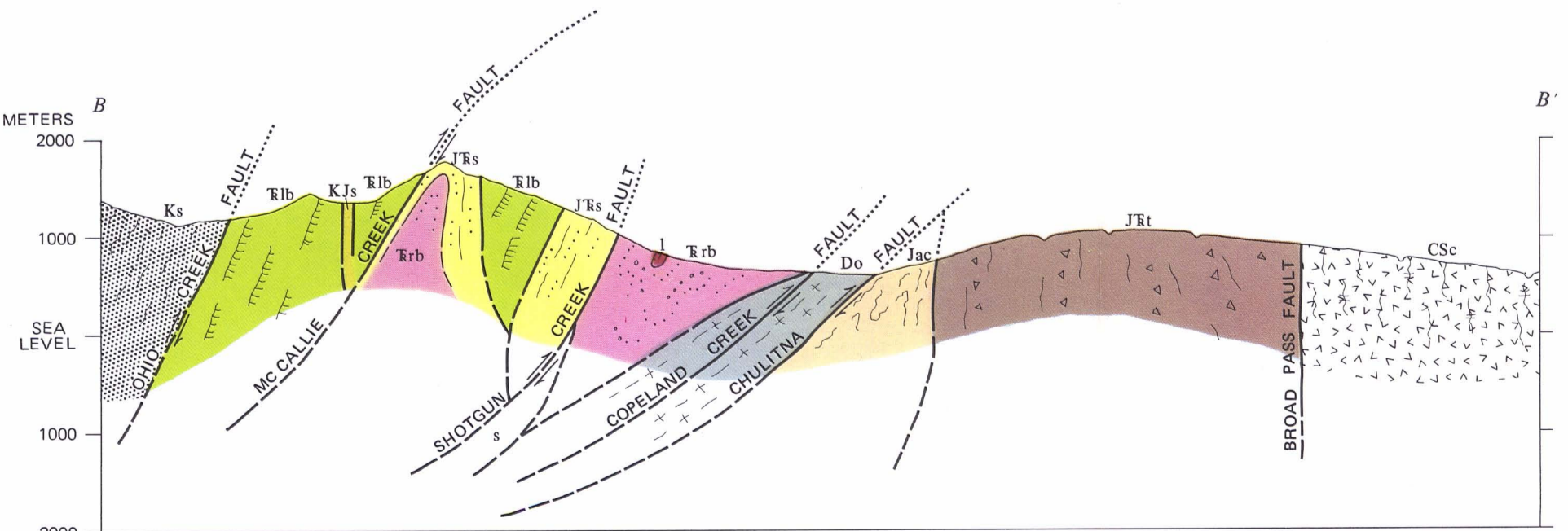
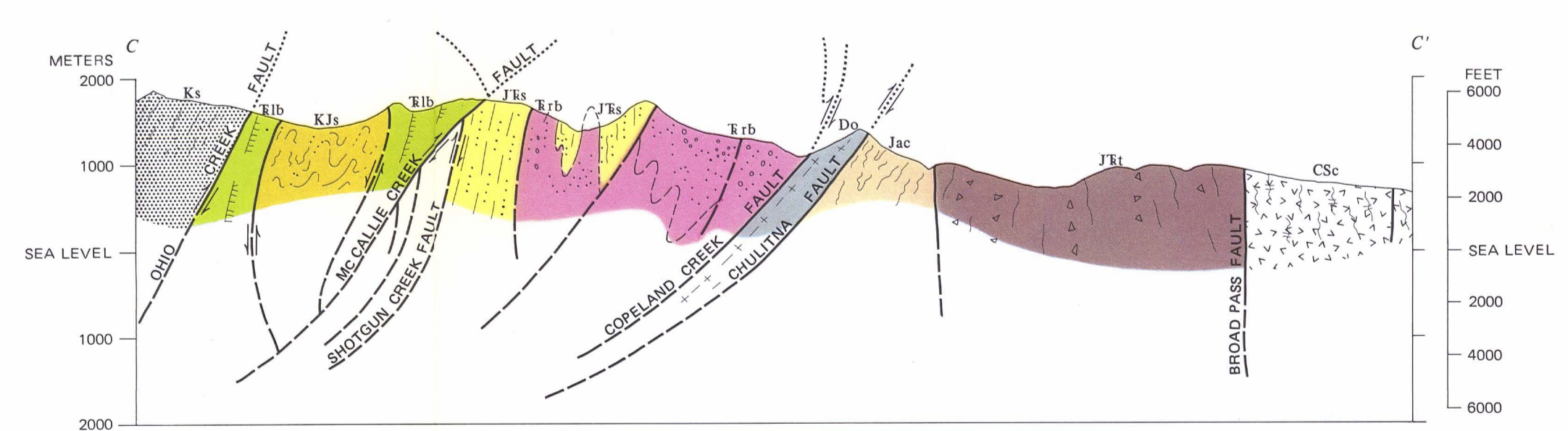
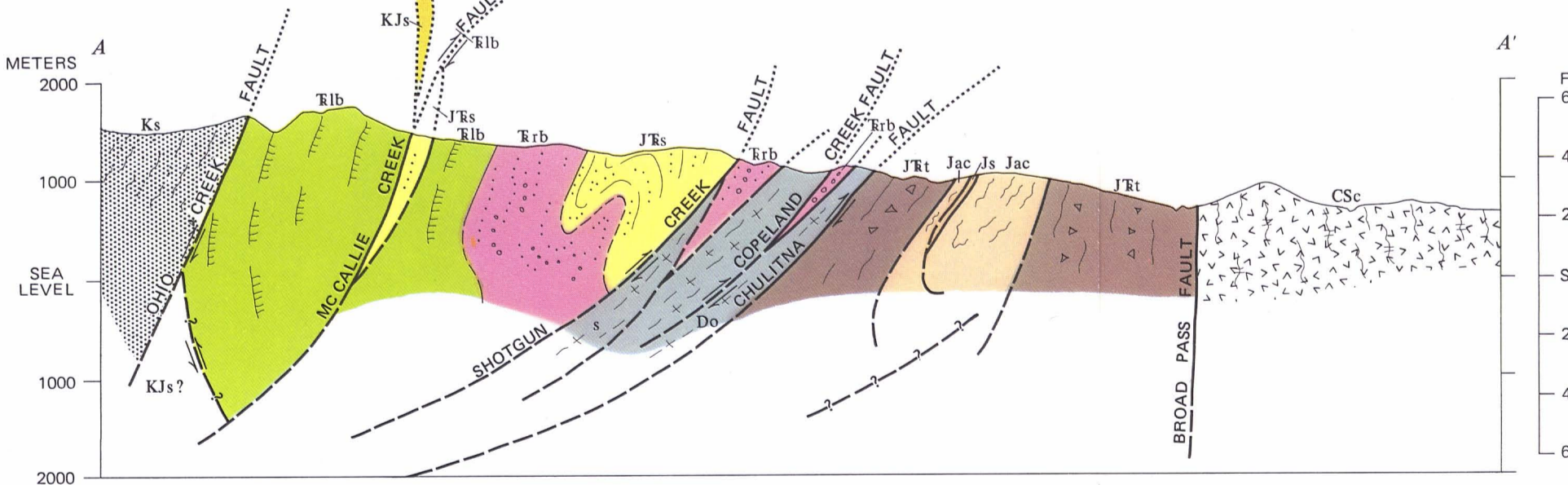
DESCRIPTION OF FOSSIL LOCALITIES

Arrangement of locality numbers on geologic map is by map unit from northwest to southeast across map

Map No.	Sample No.	Description
<b>CHULITNA TERRANE</b>		
Limestone and pillow basalt		
1.	77-8-111	<i>Spondyliopsis?</i> and scleractinian corals; Triassic, probably Norian.
2.	76-8-324	Scleractinian corals and megalodontid brachiopods; Upper Triassic.
3.	76-8-306	Scleractinian corals and megalodontid brachiopods; Upper Triassic.
Argillite, sandstone, and chert		
4.	77-J-12	<i>Buchia sublaevis</i> ; Lower Cretaceous, Valanginian.
5.	77-J-13	<i>Parvicrinus stius</i> and other Valanginian radiolarians.
5.	76-Cy-133	<i>Præconocorymba mamillaria</i> and other radiolarians; Upper Jurassic, upper Kimmeridgian and lower Tithonian (E. A. Passagno, Jr., written commun., 1976).
6.	76-J-45	<i>Inoceramus</i> ; Hasterian to Barremian. Stratigraphically 2 m lower is chert containing upper Valanginian radiolarians (E. A. Passagno, Jr., written commun., 1976). Another 2 m lower, <i>Buchia sublaevis</i> ; Valanginian. All collections Lower Cretaceous.
7.	—	<i>Buchia sublaevis</i> ; Lower Cretaceous, Valanginian (not collected).
Brown sandstone and argillite		
8.	USGS Mesozoic loc. 31266	Ammonites including <i>Piloceras?</i> <i>canadense</i> ; Lower Jurassic, lowest Sinemurian (R. W. Imay, written commun., 1976).
9.	76-8-342	<i>Septoceras?</i> ; Upper Triassic.
10.	76-8-343	<i>Cassianella</i> and <i>Septoceras?</i> ; Upper Triassic.
11.	76-8-297	<i>Cassianella</i> ; Upper Triassic.
12.	77-8-131	<i>Heterostrophia</i> ; Upper Triassic, upper Norian.
13.	76-8-303	<i>Heterostrophia</i> ; Upper Triassic, upper Norian.
Redbeds		
14.	USGS Mesozoic loc. M6505	<i>Pseudolites</i> , <i>Indolites</i> and other ammonites; Upper Triassic, lower middle Norian.
15.	USGS Mesozoic loc. M6504	Juvavtid ammonite; Upper Triassic, uppermost Karmanian to middle Norian.
16.	76-N-138	<i>Juvavites cf. J. magna</i> ; Upper Triassic, lower middle Norian.
17.	76-N-135	<i>Juvavites cf. J. magna</i> ; Upper Triassic, lower middle Norian.
18.	76-8-304	<i>Heterostrophia</i> ; Upper Triassic, upper Norian.
Sedimentary rocks		
19.	77-8-101	Ammonites of <i>Meekoceras gracilitis</i> Zone; Lower Triassic, lower Smithian (K. M. Nichol, written commun., 1977).
20.	USGS Mesozoic loc. M5027	Ammonites of <i>Meekoceras gracilitis</i> Zone; Lower Triassic, lower Smithian (K. M. Nichol, written commun., 1977).
21.	76-J-1	Radiolarians; upper Paleozoic, probably Carboniferous.
22.	USGS loc. 26672-PC	Brachiopods; Lower Permian, Wolfcampian to lower Leonardian (J. T. Datto, Jr., written commun., 1976).
23.	USGS loc. 9799-8D	Conodonts; Upper Devonian, Famennian (A. G. Harris, written commun., 1977) and well-preserved radiolarians from clasts of radiolarian chert in conglomerate.
23A.	78-J-13	Radiolarians; Mississippian (identified by Brian Holdworth, 1978).
23B.	78-J-12	Radiolarians; upper Paleozoic, probably Permian (identified by Brian Holdworth, 1978).
24.	78-J-15	Radiolarians; upper Paleozoic, probably Permian (identified by Brian Holdworth, 1977).
25.	USGS loc. 23402-PC	Conodonts (from red radiolarian chert; Upper Devonian, Famennian identified by A. G. Harris and B. R. Wardlaw, 1977).
Ophiolitic and ultramafic rocks		
26A.	78-J-3C	Radiolarians from red radiolarian chert; Upper Devonian, Famennian (identified by Brian Holdworth, 1978).
26.	76-J-9	Radiolarians from red radiolarian chert; Upper Devonian, Famennian (identified by Brian Holdworth, 1977).
27.	76-Nw-162	Radiolarians from red radiolarian chert; Upper Devonian, Famennian (identified by Brian Holdworth, 1977).
28.	77-J-19	Radiolarians from red radiolarian chert; Upper Devonian, Famennian (identified by Brian Holdworth, 1977).
29.	77-J-20	Radiolarians from red radiolarian chert; Upper Devonian, Famennian (identified by Brian Holdworth, 1977).
30.	77-J-21	Radiolarians from red radiolarian chert; Upper Devonian, Famennian (identified by Brian Holdworth, 1977).
31.	76-Nw-164	Radiolarians from red radiolarian chert; Upper Devonian, Famennian (identified by Brian Holdworth, 1977).
32.	76-Nw-165	Radiolarians from red radiolarian chert; Upper Devonian, Famennian (identified by Brian Holdworth, 1977).
33.	75-J-3B	Conodonts (from red radiolarian chert; Upper Devonian, Famennian identified by A. G. Harris and B. R. Wardlaw, 1977).
<b>WEST FORK TERRANE</b>		
Argillite, chert, and sandstone		
34.	76-J-35	Radiolarians; Upper Jurassic.
35.	76-J-22	Radiolarians; Upper Jurassic.
36.	76-J-41	Radiolarians; Upper Jurassic.
Sandy limestone and calcareous sandstone		
37.	USGS Mesozoic loc. 31260	Ammonites including <i>Amioceras cf. A. densicosta</i> ; Lower Jurassic, lower Sinemurian (R. W. Imay, written commun., 1976).
38.	USGS Mesozoic loc. 31263	Ammonites including <i>Amioceras cf. A. densicosta</i> ; Lower Jurassic, lower Sinemurian (R. W. Imay, written commun., 1976).
39.	USGS Mesozoic loc. 31264	Ammonites including <i>Piloceras?</i> <i>canadense</i> ; Lower Jurassic, lower Sinemurian (R. W. Imay, written commun., 1976).
40.	USGS Mesozoic loc. 31265	Ammonites including <i>Amioceras cf. A. densicosta</i> ; Lower Jurassic, lower Sinemurian (R. W. Imay, written commun., 1976).
41.	USGS Mesozoic loc. 31262	Ammonites including <i>Amioceras cf. A. densicosta</i> ; Lower Jurassic, lower Sinemurian (R. W. Imay, written commun., 1976).
Massive tuff		
42.	USGS Mesozoic loc. 31261	Ammonites including <i>Arctostrophia jelskii</i> ; Lower Jurassic, upper Sinemurian (R. W. Imay, written commun., 1976).
<b>BROAD PASS TERRANE</b>		
Chert and argillite		
43.	77-J-7	Radiolarians; upper Paleozoic, Upper Devonian or younger Paleozoic.
44.	77-J-18	Radiolarians; upper Paleozoic, Upper Devonian or younger Paleozoic.
45.	USGS loc. 9744-SD	Corals; Silurian and Devonian, probably Middle Devonian (W. A. Oliver, Jr., written commun., 1977).
46.	USGS loc. 9744-SD	Corals; Silurian or Devonian (W. A. Oliver, Jr., written commun., 1977).
47.	USGS loc. 9824-SD	Conodonts; Upper Silurian (uppermost Pridolian) or Lower Devonian (Gedinnian) (A. G. Harris, written commun., 1978); from isolated exposure of limestone associated with serpentinite.

REFERENCES CITED

Hawley, C. C., and Clark, A. L., 1974. Geology and mineral deposits of the Upper Chulitna district, Alaska. U.S. Geological Survey Professional Paper 758-B, p. B1-B47.



INTERPRETIVE BEDROCK GEOLOGIC MAP OF THE UPPER CHULITNA DISTRICT, ALASKA RANGE, ALASKA