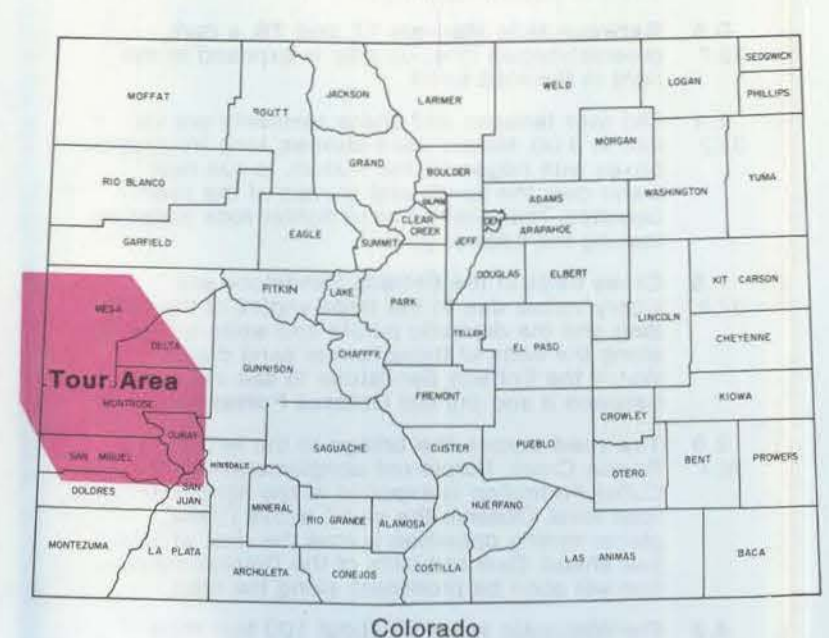


LOCATION MAP



MAP EXPLANATION

- Quaternary sediments—includes river deposits, landslide deposits, rock glaciers.
- Tertiary extrusives (volcanics) and intrusives—includes Grand Mesa, San Juan volcanic field, and others.
- Tertiary and Upper Cretaceous sediments—includes Tertiary Wasatch Formation; Upper Cretaceous Mesaverde Group and Mancos Shale.
- Lower Cretaceous sediments—includes Dakota Sandstone and Burro Canyon Formation.
- Jurassic, Triassic and Permian sediments—includes Jurassic Morrison and Wanakah Formations, Entrada Sandstone; Jurassic/Triassic Navajo Sandstone; Triassic Kayenta Formation, Wingate Sandstone, Chinle, Dolores, Moenkopi Formations; Permian Cutler Formation.
- Precambrian crystalline rocks—granites, gneiss, schist, pegmatite.
- Contact between formations.
- Fault—dashed where approximately located, dotted where concealed; bar and ball on downthrown side.
- Anticline. Approximate trace of axis and direction of plunge, dashed where concealed.
- Syncline.
- Fault as shown on cross section.
- A—A' Line of cross section

FURTHER READING

For those of you who have become intrigued with Colorado geology and would like more details we suggest beginning with the following list of books, available at local bookstores.

Canyon County Geology for the Layman and Rockhound, F. A. Barnes, 1978, Wasatch Publishers, Inc., Salt Lake City, Utah.

Colorado West, Land of Geology and Wildflowers, R. G. Young and J. W. Young, 1977, Wheelwright Press, Ltd., Grand Junction, Colorado.

The Geologic Story of Colorado National Monument, S. W. Lohman, 1981, U.S. Geological Survey Bulletin 1508.

Prairie, Peak and Plateau—A Guide to the Geology of Colorado, John and Halka Chronis, 1972, Colorado Geological Survey Bulletin 32.

Red Rock Country, D. L. Baars, 1972, Doubleday/Natural History Press, Garden City, New York.

Roadside Geology of Colorado, Halka Chronis, 1980, Mountain Press Publishing Company, Missoula, Montana (also available from Colorado Geological Survey).

REFERENCES

Cashion, W. B., 1973, Geologic and structure map of the Grand Junction quadrangle, Colorado and Utah: U.S. Geological Survey Map I-736.

Haynes, D. D., and others, 1972, Geology, structure, and uranium deposits of the Cortez quadrangle, Colorado and Utah: U.S. Geological Survey Map I-629.

Steven, T. A., and others, 1974, Geologic map of the Durango quadrangle, southwestern Colorado: U.S. Geological Survey Map I-764.

Tweto, Ogden, 1983, Geologic sections across Colorado: U.S. Geological Survey Map I-1416.

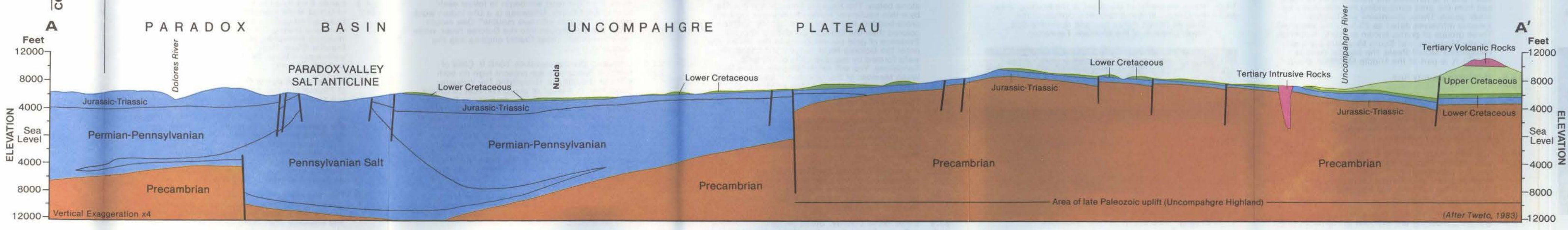
Tweto, Ogden, and others, 1976, Preliminary geologic map of the Montrose 1 x 2 quadrangle, southwestern Colorado: U.S. Geological Survey Map MF-761.

Williams, P. L., 1964, Geology, structure, and uranium deposits of the Moab quadrangle, Colorado and Utah: U.S. Geological Survey Map I-360.

COMPOSITE STRATIGRAPHIC COLUMN AND EXPLANATION FOR TOUR AREA

Period	Age	Formation	Thickness (ft)	Lithology	Description	
QUATERNARY	0-1.6	Alluvium and colluvium	0-50	Unconsolidated sand, gravel, silt, slope debris, landslide deposits, rock glaciers.		
TERTIARY	1.6-66	Extrusives and related intrusives	0-200	Flows, dikes, sills and intrusions of igneous rocks. Usually volcanic extrusions or near-surface intrusives.		
		Wasatch Formation	0-1500	Variegated clay, shale, sandstone with some limestone and conglomerate, usually forming slope. Only found in northern portion of tour area. Small amounts of shales of Green River Formation included.		
UPPER CRETACEOUS	66-98	Mesaverde Formation	0-2600	Tan and brown sandstone, siltstone, mudstone, coaly shale, coal. Often forms alternating cliffs and slopes.		
		Mancos Shale	0-4000	Gray and black marine shale, with thin limestone beds near base, forms easily eroded valleys and slopes. Especially thick in Grand and Uncompahgre Valleys; forms slopes and sides of Book Cliffs and Grand Mesa.	Break indicates formation is too thick to show entirely in this diagram.	
		Dakota Sandstone	100-210	Tan, yellow, light-red, and light-brown sandstone with conglomerate lenses, and coarse white conglomerate at base. Contains local beds of coaly shale and coal. Forms rims and caps mesa; sandstones form prominent ledges.		
LOWER CRETACEOUS	98-144	Burro Canyon Formation	0-210	White, gray, and red sandstone and conglomerate with thin beds of siltstone, and purple and green shale. Sandstones form steep cliffs.		
JURASSIC	144-208	Morrison Formation	Brushy Basin Member	300-500	Interbedded red, purple, blue, green, and gray mudstone and siltstone, with a few thin, fine-grained sandstone and conglomeratic sandstone beds; local thin limestone units. Forms steep slopes.	
			Salt Wash Member	200-360	Light-brown, gray, and rusty-red, cross-bedded sandstone and reddish-brown, green, and greenish-gray mudstone. Some thin limestone beds near base. Forms alternating sandstone cliffs or ledges ("rims") and shale slopes.	
		Wanakah Formation	60-130	Greenish-gray and reddish-brown sandstone forms steep, covered slopes, with light-colored, fine-grained sandstone forming rounded or ledgy cliffs below. Locally, thin, dense, dark-gray Pony Express Limestone marks the base. Formerly called the Summerville Formation in western part of tour area, name is now restricted to an area in Utah.		
		Entrada Sandstone	80-250	Massive, white-, tan-, pink-, or salmon-colored, generally cross-bedded sandstone forms distinctive rounded cliff ("slick rock" or "slick rim").		
TRIASSIC	208-245	Navajo Sandstone	0-120	Buff and gray, cross-bedded, fine-grained sandstone forms cliff. Only found in far western portion of tour area.		
		Kayenta Formation	90-300	Red buff, gray, and purple, irregularly bedded, fine- to coarse-grained sandstone, siltstone, and shale, with lenses of conglomerate and limestone, form benches. Only found in western portion of tour area.		
		Wingate Sandstone	275-400	Cross-hatching indicates that in parts of tour area certain formations were never deposited or were later eroded away. Reddish-brown, fine-grained, thick-bedded, massive and cross-bedded sandstone forms steep cliffs.		
		Chinle Formation	120-450	Dolores Formation: Similar to, and generally considered to be equivalent of lower part of Wingate Sandstone and upper part of Chinle Formation. Found only in southeastern portion of tour area. Red, orange-red, and reddish-brown siltstone, with interbedded lenses of red sandstone, shale and limestone-pebble and clay-pebble conglomerate, generally forms steep slopes and ledges. Lenses of light-colored, quartz-pebble conglomerate, conglomeratic sandstone, and grit at base often form thick, rounded cliffs and ledges.		
PERMIAN	245-286	Moenkopi Formation	0-580	Chocolate-brown shale, sandstone, and arkosic conglomerate, with local gypsum beds near base. Upper and lower parts form slope; middle portion forms ledges and slopes. Only found in far western portions of tour area.		
			Cutler Formation	0-7800	Interbedded red, maroon, and purple arkosic siltstone, mudstone, sandstone, and conglomerate, generally form steep slopes with some sheer cliffs and narrow benches. Found on western side of tour area.	
PRE-CAMBRIAN	>570	Precambrian Complex	Base not Exposed	Gray and tan, igneous and metamorphic rocks intruded by coarse, pink, granite pegmatite and fine-grained dikes. Generally massive, forming cliffs or steep canyon walls.		

GEOLOGIC CROSS SECTION



**LIBRARY**

Special Publication 27

**Scenic Trips into Colorado Geology: Uncompahgre Plateau**

Montrose  
Ridgway  
Norwood  
Naturita  
Uravan  
Gateway  
Delta

by Donna Bishop Collins

Colorado Geological Survey  
Department of Natural Resources  
1985

COLORADO GEOLOGICAL SURVEY

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