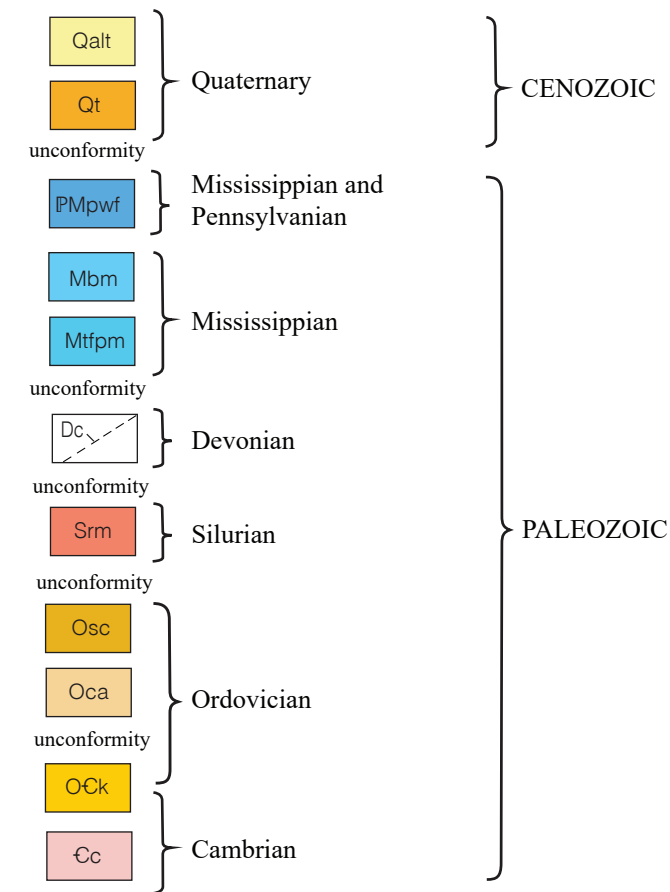


CORRELATION OF MAP UNITS



DESCRIPTION OF MAP UNITS

- Qatl** Alluvial and low terrace deposits (Quaternary)—Fine- to medium-grained sand with interbedded lenses of gravel and clay. Locally an interval containing cobbles and boulders of diverse composition is present near the base.
- Qc** High terrace deposits (Quaternary)—Medium to coarse gravel in a sand or sandy clay matrix.
- PMpuf** Parkwood Formation and Floyd Shale undifferentiated (Upper Mississippian and Lower Pennsylvanian)—Parkwood Formation: Medium- to dark-gray shale and mudstone containing interbedded medium-greenish-gray to dark-gray, very fine-grained, rippled, lithic sandstone, wavy-bedded sandstone and mudstone is common. Floyd Shale: Predominantly dark-gray shale commonly containing siderite nodules.
- Mbm** Bangor and Montagle Limestones undifferentiated (Upper Mississippian)—Bangor Limestone: Light- to medium-gray, crossbedded, bioclastic and lesser oolitic limestone in medium to massive beds; thin intervals of gray shale are present in the lower part of the formation, whereas maroon and olive-green blocky mudstone is common in the upper part. Nodules, stringers, and interbeds of chert locally present. Montagle Limestone: Interbedded medium-bluish-gray to dark-gray oolitic limestone and light-gray bioclastic limestone in medium to massive beds; bioclastic limestone locally contains nodules and stringers of dark-gray chert.
- Mtpm** Tusculmia Limestone, Fort Payne Chert, and Maury Formation undifferentiated (Lower and Upper Mississippian)—Tusculmia Limestone: Light-gray, micritic, bioclastic, and locally oolitic limestone commonly containing white and light-gray elongate chert nodules. Fort Payne Chert: In the subsurface consists of dark- to light-gray, siliceous, micritic limestone containing dark-colored chert in irregular nodules and beds. In outcrops typically thin, irregularly bedded, partly fossiliferous chert weathered grayish orange and containing thin clay partings. Maury Formation: Grayish-yellow-green, moderate-red, and medium-gray, glauconitic, pyritic, and phosphatic claystone.
- Dc** Chattanooga Shale (Upper Devonian)—Dark-gray to black, fissile, carbonaceous shale and mudstone; thin beds of medium- to dark-gray, fine- to medium-grained, partly pebbly sandstone are present at the base.
- Sm** Red Mountain Formation (lower and upper Silurian)—Thinly interbedded gray and brown, fine-grained, partly ferruginous sandstone and tan to brown micaceous and sandy shale; upper part consists of thin- to thick-bedded, light-gray, fine-grained sandstone weathering grayish-orange and containing the brachiopod *Pentamerus oblongus*. Contains thin calcareous and fossiliferous ironstone ore beds in the middle part.
- Oca** Sequatchie Formation and Chickamauga Limestone undifferentiated (Middle and Upper Ordovician)—Sequatchie Formation: Variegated greenish-gray and maroon calcareous shale and thin-bedded, light-gray to locally maroon, argillaceous and fossiliferous limestone. Coarse-grained, crossbedded, ferruginous sandstone is locally present in the upper part of the formation. Chickamauga Limestone: Thin- to massive-bedded, light- to medium-gray, partly fossiliferous and partly stylonitic limestone; partly fenestral in the lower part.
- Ock** Attala Chert Conglomerate Member of the Chickamauga Limestone (Middle Ordovician)—Variably colored chert-pebble conglomerate and breccia and pebbly, coarse-grained sandstone locally stained bright red. Pebbly sandstone and conglomerate locally contains interbedded red clay and is overlain by maroon dolomite.
- Ock** Knox Group undifferentiated (upper Cambrian and Lower Ordovician)—Light- to dark-gray, fine- to medium-crystalline, predominantly massive-bedded dolomite locally containing irregular nodules and stringers of dark-gray, dense chert. Coarsely laminated to ribbon-bedded limestone and dolomite locally present. Weathers to dominantly light-colored residual chert in an orange-brown to dark-redish-brown clay matrix. Residual chert commonly preserves the texture of the original carbonate rocks.
- Cc** Conasauga Formation (middle and upper Cambrian)—Peavine anticline: Light- to predominantly medium- to dark-gray, medium- to massive-bedded, stylonitic, and locally ribbon-banded limestone locally containing small, irregular, dark-gray chert nodules. Rarely thin- to lenticular-bedded limestone is interbedded with dark-olive-gray shale. Rome thrust sheet: Olive-green and medium- to dark-gray fissile shale containing lenticular and nodular to thin beds of medium- to dark-gray limestone. Thin, platy interbeds of limestone are particularly diagnostic. Thicker limestone beds are partly stylonitic, stylonitic, bioturbated, or bioclastic.

SYMBOLS FOR GEOLOGIC MAP

- Contact, dashed where located very approximately, showing location of control point (contact exposed or closely located)
- Contact, concealed beneath mapped units
- Thrust fault, located very approximately, sawteeth on upper plate
- Thrust fault, concealed beneath mapped units
- Trace of overturned syncline axis, located approximately, arrow showing direction of plunge
- Water boundary
- Strike and dip of bedding
- Strike and dip of overturned bedding
- Strike of vertical bedding

SYMBOLS FOR CROSS SECTIONS A-A' AND B-B'

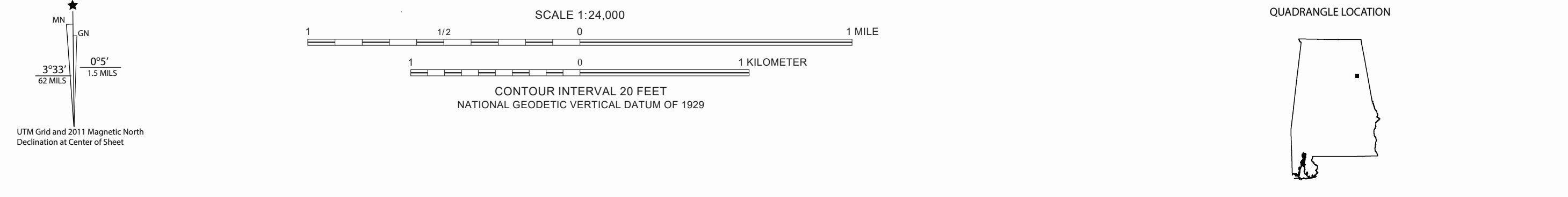
- Stratigraphic contact
- Fault, showing relative movement

Base topographic map USGS 1967, photorevised 1986. This topographic map (and an updated version) is available on the USGS webpage "topview" (<https://www.ngmdb.usgs.gov/topview/>).

This geologic map was funded in part by the USGS National Cooperative Geologic Mapping Program under STATEMAP award number G17AS00006, 2017.

Spatial Reference: Universal Transverse Mercator Projection (UTM), Zone 16N, North American Datum of 1927 (NAD27), Clarke spheroid of 1866.

Map rotated -0.664 degrees for display.

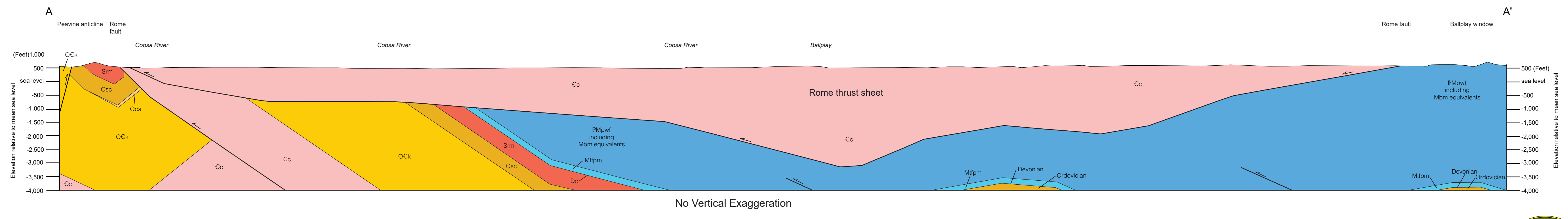
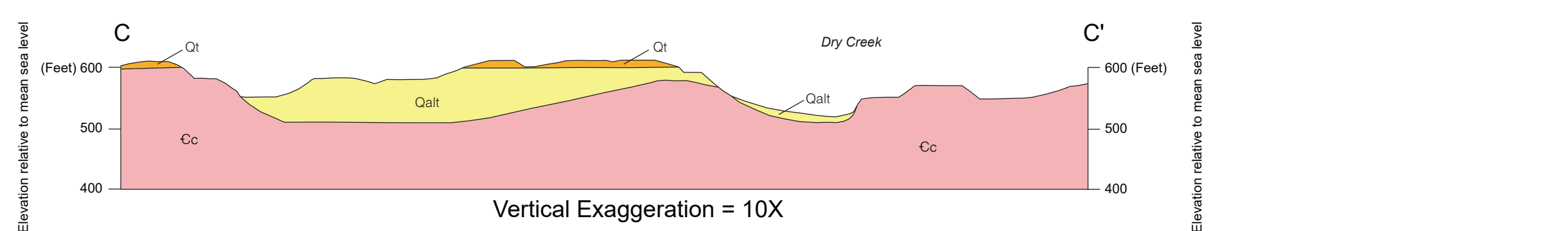
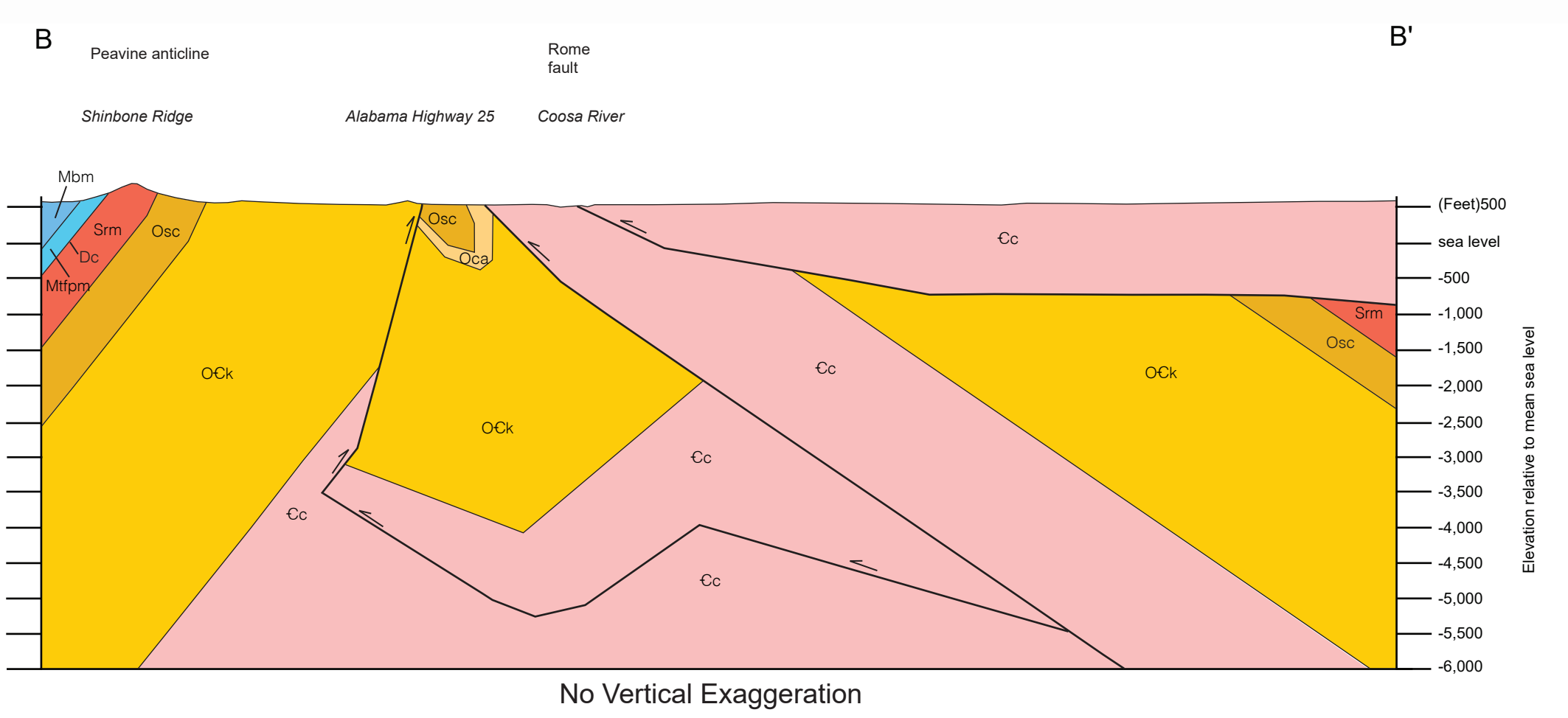


For additional geologic information (including detailed rock descriptions and outcrop photos, etc.), please refer to the accompanying report: Osborne, W. E., Irvin, G. D., and Cook, B. S., 2024, *Geology of the Ballplay 7.5-minute quadrangle, Etowah and Cherokee Counties, Alabama*. Alabama Geological Survey Quadrangle Series 75, 37 p.

A copy of this map and report is available from the GSA Publications office (<https://www.gsa.state.al.us/ogb/publications/>).

This map was compiled for a scale of 1:24,000 and any digital enlargement of the map to scales greater than 1:24,000 will not increase accuracy and can cause misrepresentation. Map and associated digital data files may be updated in future years.

Map files are version dated, and users are responsible for obtaining the latest version of the map and associated data. Geologic map information was collected and recorded in the field by the Geological Survey of Alabama mapping staff and this map reflects an interpretation of the geology based on that data collected at the time of field mapping. Year field mapping was completed: 2018.



GEOLOGIC MAP AND CROSS SECTIONS OF THE BALLPLAY 7.5-MINUTE QUADRANGLE, ETOWAH AND CHEROKEE COUNTIES, ALABAMA

by
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2018



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