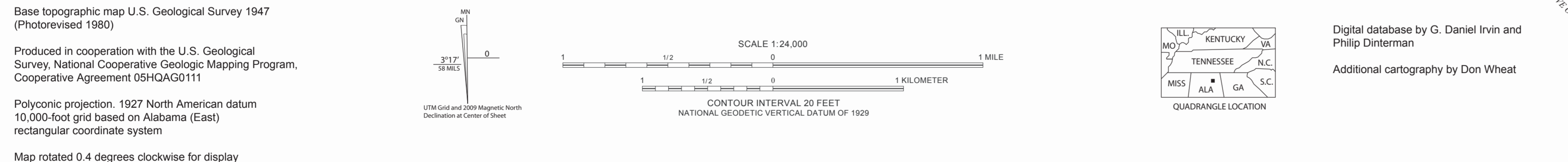
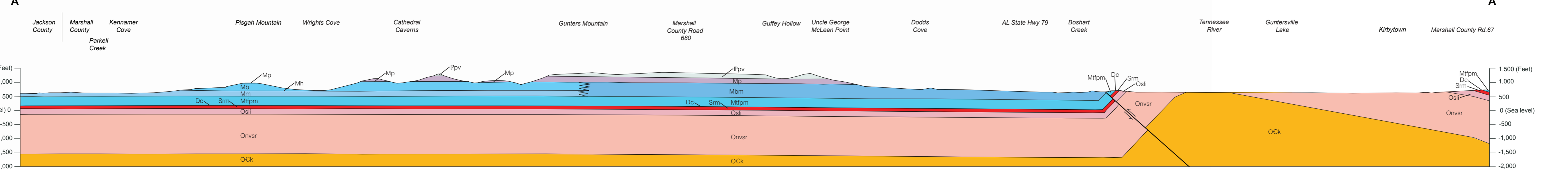


- DESCRIPTION OF MAP UNITS**
- af** Artificial fill—Construction material.
 - Qal** Alluvium (Quaternary)—Unconsolidated sand, silt, clay, and gravel derived from local bedrock.
 - Qt** Terrace deposits (Quaternary)—Reddish-brown sandy clay and gravel. Includes angular to subrounded quartz, and chert pebbles/cobbles.
 - Ppv** Pottsville Formation (Lower Pennsylvanian)—Pinkish-gray to yellowish-gray, fine- to coarse-grained, thin- to massive-bedded, quartzose sandstone locally containing scattered to abundant, well-rounded quartz pebbles; very light gray to pale-orange quartz pebble conglomerate locally present (quartz pebbles up to 0.5 inch in diameter). Locally, a shaly interval composed of grayish-orange mudstone and silty shale is present. Thin coal seams and shaly coals are locally present near the base.
 - Mp** Pennington Formation (Upper Mississippian)—Lower part contains light-gray to medium-light-gray, thin- to medium-bedded, conchoidally fractured dolomite. Above the basal dolomite are thin- to medium-bedded limestone, dolomite, and shale beds. Locally, some limestone contain thin beds, stringers, and nodules of black, glassy, dense, locally fossiliferous chert. Middle part is dominantly medium-gray, thin- to medium-bedded, skeletal wackestone/packstone and limey dolomite containing intervals of maroon and olive-green mudstone. Upper part is dominantly maroon and olive-green shale.
 - Mb** Bangor Limestone (Upper Mississippian)—Predominantly light- to dark-gray, bioclastic and oolitic limestone. Lower part contains medium-gray to medium-dark-gray, thin- to medium-bedded, skeletal wackestone containing shaly intervals that are medium gray and weather grayish orange. Light-gray to tan, finely crystalline dolomite is locally present. Uppermost part contains medium- to medium-dark-gray, thin- to massive-bedded, oolitic-peleoidal-crinoidal packstone and grainstone.
 - Mlx** Hartselle Sandstone (Upper Mississippian)—Locally present between the Bangor and Montagle Limestones and includes medium-gray, very fine to fine-grained, calcareous, fossiliferous siltstone and calcareous dark-gray shale, only mapped in the northwestern part of the quadrangle.
 - Mm** Montagle Limestone (Upper Mississippian)—Predominantly very light to medium-light-gray, thin- to medium-bedded, oolitic-peleoidal and fossiliferous limestone. Upper part contains an interval of dark-greenish-gray shale.
 - Mbm** Bangor Limestone and Montagle Limestone undifferentiated (Mississippian)—Bangor Limestone: Predominantly light- to dark-gray, bioclastic and oolitic limestone. Lower part contains medium-gray to medium-dark-gray, thin- to medium-bedded, skeletal wackestone with shaly intervals that are medium gray and weather grayish orange. Light-gray to tan, finely crystalline dolomite is locally present. Uppermost part contains medium- to medium-dark-gray, thin- to massive-bedded, oolitic-peleoidal-crinoidal packstone and grainstone. Montagle Limestone: Predominantly very light to medium-light-gray, thin- to medium-bedded, oolitic-peleoidal and fossiliferous limestone. Upper part contains an interval of dark-greenish-gray shale.
 - Mfsm** Tusculum Limestone, Fort Payne Chert, and Maury Formation undifferentiated (Lower and Upper Mississippian)—Tusculum Limestone: Medium- to bluish-gray, thin- to medium-bedded, locally cross-bedded, skeletal grainstone containing light-gray to bluish-black nodules, stringers, and thin beds of chert. Fort Payne Chert: Light-gray to white limestone and medium-gray to white to grayish-orange, thin-bedded to locally medium-bedded, irregularly bedded, locally fossiliferous chert. Maury Formation: Grayish-yellow-green fissile shale and blocky mudstone.
 - Dc** Chattanooga Shale (Upper Devonian)—Brownish-gray to black, laminated, fissile, carbonaceous shale containing interbeds of pale-brown, fine-grained sandstone. Locally, with grayish-orange, poorly sorted quartzose sandstone at the base.
 - Sm** Red Mountain Formation (Lower and Upper Silurian)—Lower part is medium-gray shale containing thin interbeds of limestone and dusky-yellow, very fine grained sandstone. Upper part dominantly light- to medium-gray, fissile shale with thin interbedded dark-gray to dark-yellowish-brown fossiliferous limestone.
 - Orl** Sequatchie Formation, Leipers Limestone, and Inman Formation undifferentiated (Upper Ordovician)—Sequatchie Formation: Lower part is reddish-gray to yellowish-gray, mottled, fossiliferous limestone that contains scattered coarse sand grains and interbedded olive-green to reddish-brown blocky mudstone. Upper part is dominantly medium-gray to greenish-gray shale and mudstone. Leipers Limestone: Medium-bluish-gray, thin- to medium-bedded lime mudstone and skeletal wackestone. Inman Formation: Planar-laminated, pale-yellowish-orange, blocky, silty mudstone with alternating beds of grayish-red to moderate-red mudstone and silty claystone.
 - Orvr** Nashville and Stones River Groups undifferentiated (Middle Ordovician)—Nashville Group: Light-bluish-gray, thin- to flaggy-bedded, partly argillaceous lime mudstone and skeletal wackestone grainstone with interbedded dusky-yellow-green to grayish-green, limey siltstone/mudstone. Stones River Group: Moderate-greenish-yellow to pale-yellowish-brown, thin- to medium-bedded, lime mudstone and skeletal wackestone that is locally finely laminated. Upper part generally contains light-greenish-gray, laminated bentonitic shale. At the base, locally, is grayish-orange to light-tan sandy chert conglomerate (Pond Spring Formation).
 - Ock** Knox Group undifferentiated (Upper Cambrian and Lower Ordovician)—Very light gray to light-gray, finely crystalline, siliceous dolomite and minor light-gray to light-bluish-gray limestone. Locally, fine- to medium-grained, friable, quartzose sandstone is present near the top of the unit. At the surface, the Knox weathers to residuum with abundant white to light-gray, predominantly dense chert that generally preserves primary sedimentary features.

- SYMBOLS FOR GEOLOGIC MAP**
- X --- 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, sawtooth on upper plate
 - +--- Trace of anticline axis, located approximately
 - Water boundary
 - Strike and dip of bedding
 - ⊕ Location of horizontal bedding
 - Strike and dip of overturned bedding
 - Strike of vertical bedding
- SYMBOLS FOR CROSS SECTION A-A'**
- Stratigraphic contact
 - Fault, showing relative movement



Base topographic map U.S. Geological Survey 1947 (Photorevised 1980)
 Produced in cooperation with the U.S. Geological Survey National Cooperative Geologic Mapping Program, Cooperative Agreement 05HQAG0111
 Polyconic projection, 1927 North American datum 10,000-foot grid based on Alabama (East) rectangular coordinate system
 Map rotated 0.4 degrees clockwise for display



GEOLOGIC MAP OF THE SWEARENGIN 7.5-MINUTE QUADRANGLE, MARSHALL AND JACKSON COUNTIES, ALABAMA

by G. Daniel Irvin and Marty Gerald Gates 2010



Berry H. (Nick) Tew, Jr.
 State Geologist