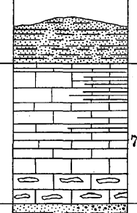
U.S. GEOLOGICAL SURVEY
CHARLES D. WALCOTT, DIRECTOR

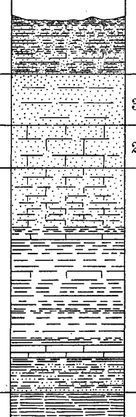
COLUMNAR SECTIONS

TENNESSEE
MORRISTOWN SHEET

GENERALIZED SECTION NORTHWEST OF HOLSTON RIVER.

Period.	Formation Name.	Symbol.	Columnar Section.	Thickness in Feet.	Character of Rocks.	Character of Topography.
Carboniferous	Pennington shale.	Cpn		250+	Gray and white sandstone and sandy shale.	High ground and ridges with rounded crests.
	Newman limestone.	Cn		700–1500	Bluish-gray and blue shale and shaly limestone.	Large rounded knobs and ridges.
					Massive, blue cherty limestone.	Low, open valleys.
Devonian	Grainger shale.	Dg		400–1200	Greenish- and bluish-gray sandy shale and sandstone.	High ridges and lines of knobs with many water gaps.
	Chattanooga shale.	Dc		400–450	Black, carbonaceous shale.	Deep, narrow valleys.
Silurian	Hancock limestone.	Sh		0–450	Massive, blue limestone and bluish-gray shaly limestone.	Low, rolling valleys.
	Rockwood formation.	Sr		400–500	Red, yellow, and brown, calcareous and sandy shales and thin sandstone.	Low knobs, and slopes of Clinch sandstone mountains.
	Clinch sandstone.	Scl		200–500	Massive, white sandstone.	Steep, sharp mountains.
	Bays sandstone.	Sb		200–500	Red, calcareous and argillaceous sandstone.	Steep slopes on Clinch sandstone mountains.
	Sevier shale.	Ssv		900–1500	Light-blue, sandy and calcareous shales with beds of shaly limestone.	Irregular ridges and steep, sharp knobs.
	Moccasin limestone.	Smc		300–500	Red and gray flaggy limestone and calcareous shale.	Low ground with irregular ridges and conical knobs.
	Chickamauga limestone.	Sc		900–2400	Blue and gray limestone, shaly limestone, and marble.	Open, rolling valleys.
	Holston marble.	Shl		0–300	Variegated marble, red, brown, gray, and white.	Valleys and slopes of Knox dolomite ridges.
	Knox dolomite.	Sk		3000–3800	Magnesian limestone, light- and dark blue, and white, with nodules of chert.	Broad ridges and irregular, rounded hills.
Cambrian	Nolichucky shale.	€n		650–750	Yellow, red, and brown, calcareous shale with a few limestone beds.	Narrow valleys and steep slopes of Knox dolomite ridges.
	Maryville limestone.	€m		550–650	Massive, blue limestone.	Lines of knobs and open valleys.
	Rogersville shale.	€rg		70–250	Bright-green clay-shale with a limestone bed.	Lines of low knolls.
	Rutledge limestone.	€rt		200–500	Massive, blue limestone with a few shale beds at the base.	Open valleys.
	Rome formation.	€r		250–300	Red, green, yellow, and brown shale and sandy shale.	Slopes of Rome sandstone ridges.
	Rome sandstone-lentil.	€rs		600–1000+	Red, yellow, and brown sandstone and sandy shale with a bed of sandy limestone.	Sharp ridges with notches and water gaps.

GENERALIZED SECTION SOUTHEAST OF HOLSTON RIVER.

Period.	Formation Name.	Symbol.	Columnar Section.	Thickness in Feet.	Character of Rocks.	Character of Topography.
Silurian	Rockwood formation.	Sr		400+	Red, yellow, and green, calcareous and sandy shales.	Low, rolling valleys.
	Clinch sandstone.	Scl		300–350	Massive, white sandstone.	Steep, sharp mountains.
	Bays sandstone.	Sb		200–500	Red, argillaceous and calcareous sandstone.	Steep slopes of Clinch sandstone mountains.
	Sevier shale.	Ssv		1300–1800	Brown and gray calcareous sandstone and shale.	High knobs and steep slopes.
					Light-blue calcareous and sandy shales with beds of gray limestone.	Irregular, low knobs and rolling valleys.
	Athens shale.	Sa		1000–1100	Light-blue calcareous shale.	Belts of low knobs.
					Black, carbonaceous shale.	Open valleys.
	Chickamauga limestone.	Sc		0–900	Massive, blue limestone, gray argillaceous limestone, and shale.	Open valleys.
	Knox dolomite.	Sk		3000–3500	Magnesian limestone, light- and dark-blue, and white, with nodules of chert and a few thin, white sandstone beds.	Broad ridges and irregular, rounded hills.
Cambrian	Nolichucky shale.	€n		400–600	Yellow, red, and brown calcareous shale with a few limestone beds.	Narrow valleys and steep slopes of Knox dolomite ridges.
	Maryville limestone.	€m		500–750	Massive, blue limestone.	Lines of knobs and open valleys.
	Rogersville shale.	€rg		200–230	Bright-green clay-shale with a limestone bed.	Lines of low knolls.
	Rutledge limestone.	€rt		350–500	Massive, blue limestone with a few shale beds at the base.	Open valleys.
	Rome formation.	€r		250	Red, green, yellow, and brown shale and sandy shale.	Slopes of Rome sandstone ridges.
	Rome sandstone-lentil.	€rs		500+	Red, yellow, and brown sandstone and sandy shale with a bed of sandy limestone.	Sharp ridges with notches and water-gaps.

NAMES OF FORMATIONS.

Period.	Names and Symbols used in this Folio.		Arthur Keith: Knoxville Folio, U. S. Geological Survey. 1895.	M. R. Campbell: Estillville Folio, U. S. Geological Survey. 1894.	Safford: Geology of Tennessee, 1869.
Carb	Pennington shale.	Cpn		Pennington shale.	Mountain limestone.
	Newman limestone.	Cn	Newman limestone.	Newman limestone.	Siliceous group.
Dev.	Grainger shale.	Dg	Grainger shale.	Grainger shale.	
	Chattanooga shale.	Dc	Chattanooga black shale.	Chattanooga black shale.	Black shale.
Silurian	Hancock limestone.	Sh		Hancock limestone.	Meniscus limestone.
	Rockwood formation.	Sr		Rockwood formation.	Dyestone group.
	Clinch sandstone.	Scl		Clinch sandstone.	Clinch Mountain sandstone.
	Bays sandstone.	Sb	Bays sandstone.	Bays sandstone.	
	Sevier shale.	Ssv	Sevier shale.	Sevier shale.	Trenton and Nashville series.
	Athens shale.	Sa	Athens shale.		
	Moccasin limestone.	Smc		Moccasin limestone.	
	Chickamauga limestone.	Sc	Chickamauga limestone.	Chickamauga limestone.	Trenton, Lebanon, or Maclurea limestone.
	Holston marble.	Shl	Holston marble.		
	Knox dolomite.	Sk	Knox dolomite.	Knox dolomite.	Knox dolomite.
Cambrian	Nolichucky shale.	€n	Nolichucky shale.	Nolichucky shale.	Knox shale.
	Maryville limestone.	€m	Maryville limestone.	Maryville limestone.	
	Rogersville shale.	€rg	Rogersville shale.	Rogersville shale.	
	Rutledge limestone.	€rt	Rutledge limestone.	Rutledge limestone.	
	Rome formation.	€r	Rome formation.	Russell formation.	Knox sandstone.
	Rome sandstone-lentil.	€rs	Rome sandstone-lentil.		

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