

COLUMNAR SECTIONS

GENERALIZED SECTION OF THE SEDIMENTARY ROCKS IN THE EXTREME NORTHWEST CORNER OF THE GREENEVILLE QUADRANGLE.
SCALE: 1 INCH=1000 FEET.

SYMBOL	FORMATION NAME	SYMBOL	COLUMNAR SECTION	THICKNESS IN FEET	CHARACTER OF ROCKS	CHARACTER OF SOILS AND SURFACE
CARBONIFEROUS	Newman limestone.	Cn		1000+	Blue and gray shaly limestone. Massive blue limestone with cherty layers.	Broad, rounded knobs and hills. Narrow depressions.
	Grainger shale.	Dg		1150-1200	Bluish-gray sandy shale and thin sandstone.	Straight, even ridges with round tops and many gaps. Thin, sandy and rocky soil.
DEVONIAN	Chattanooga shale.	Dc		400	Fine black carbonaceous shale.	Deep, narrow valleys. Thin, yellow clay soil.
UNCONFORMITY						
SILURIAN	Clinch sandstone.	ScI		300-500	Massive white sandstone.	Sharp, high ridges and mountains. Scanty, sandy soil.

GENERALIZED SECTION OF THE SEDIMENTARY ROCKS IN THE BALD MOUNTAINS, GREENEVILLE QUADRANGLE.
SCALE: 1 INCH=1000 FEET.

SYMBOL	FORMATION NAME	SYMBOL	COLUMNAR SECTION	THICKNESS IN FEET	CHARACTER OF ROCKS	CHARACTER OF SOILS AND SURFACE
CAMBRIAN	Shady limestone.	Csh		1000±	Gray, bluish-gray, mottled gray, and white limestone with nodules and masses of chert.	Valleys and low hills. Deep clay soil, dark red and cherty.
	Hesse quartzite.	Ch		700-800	Massive white quartzite and sandstone.	High, sharp mountains and ridges. Thin, sandy and rocky soil.
MURRAY SLATE	Murray slate.	Emr		300-400	Bluish-gray to gray, argillaceous and sandy shale and slate, with thin sandstone seams.	Depressions and slopes of quartzite mountains. Light, sandy soil.
	Nebo quartzite.	Enb		200-900	Massive white quartzite and sandstone, coarse and fine, with a few layers of sandy shale and reddish sandstone.	High, sharp mountains, with cliffs. Thin, sandy and rocky soil.
Nichols slate.	Cnc		400-700	Bluish-gray to gray, argillaceous and sandy shale and slate, with thin sandstone layers.	Depressions between quartzite crests. Light, sandy soils.	
Cochran conglomerate.	Cch		200-1600	Massive quartz conglomerate and quartzite, light- and dark-gray, with seams of dark slate.	High butts and mountains. Thin, rocky and sandy soil.	
Hiwassee slate.	Chi		1200-1500	Blue, gray, black, and banded slate, with a little fine mica-schist. Includes layers of sandstone and conglomerate and beds of calcareous sandstone.	Slopes of quartzite mountains, or low hilly ground. Thin, clayey or sandy soil.	
Snowbird formation.	Csb		700-2000	Gray and white feldspathic quartzite and sandstone with dark slate beds. Locally becomes conglomerate and dark purplish sandstone.	High, irregular mountains and butts, with round summits. Thin, sandy soil.	
UNCONFORMITY						
ARCHEAN	Granites.				Descriptions given in table below.	Descriptions given in table below.

GENERALIZED SECTION OF THE SEDIMENTARY ROCKS IN THE GREAT VALLEY, GREENEVILLE QUADRANGLE.
SCALE: 1 INCH=1000 FEET.

SYMBOL	FORMATION NAME	SYMBOL	COLUMNAR SECTION	THICKNESS IN FEET	CHARACTER OF ROCKS	CHARACTER OF SOILS AND SURFACE	
SILURIAN	Rockwood formation.	Sr		700+	Green, red, and yellow, sandy and calcareous shale.	Open, rolling valleys. Thin, rather sandy soil.	
	Clinch sandstone.	ScI		300-500	Massive white sandstone.	Sharp, high ridges and mountains. Scanty, sandy soil.	
	Bays sandstone.	Sb		50-400	Massive and shaly red sandstone.	High, rounded ridges and steep slopes. Thin, red, sandy soil.	
ORDOVICIAN	Sevier shale.	Osv		1300-1800	Calcareous sandstones and shales, bluish, gray, and yellow calcareous shale and shaly limestone.	High, rounded knobs and ridges. Irregular knobs and ridges and rolling valleys. Thin, yellow clay soil.	
	Tellico sandstone.	Ot		2-200	Red and gray calcareous sandstone.	Round knobs. Light sandy soil.	
	Athens shale.	Oa		1000±	Black and bluish-black calcareous shale.	Sharp, steep knobs in upper portion; low, narrow valleys in lower portion. Thin, yellow clay soil.	
	Moccasin limestone.	Omc		450-500	Red, blue, gray, and drab, massive and shaly limestone.	Valleys and areas of low knobs. Deep, red and yellow clay soil.	
	Holston marble lentil.	Oh		0-450	Blue and gray limestone, shaly in part, and variegated marble.	Valleys and low ground. Deep, red and brown clay soil.	
	Chickamauga limestone.	Oc		3000-3500	Magnesian limestone; light- and dark-blue, white, and gray, with nodules and layers of chert and a few beds of calcareous sandstone.	Broad ridges and irregular rounded hills. Deep, red clay soil mingled with chert.	
	CAMBRIAN	Nolichucky shale.	En		500-750	Yellow, green, and brown calcareous shale with limestone beds.	Steep slopes or narrow sharp ridges. Thin, yellow clay soil.
		Maryville limestone.	Em		700-950	Massive dark-blue and dark-gray limestone.	Open valleys and slopes of knobs. Deep, red clay soil.
		Rogersville shale.	Erg		180-200	Bright-green clay shales with thin limestone beds.	Lines of low knobs. Thin, red and yellow clay soil.
		Rutledge limestone.	Ert		400-450	Massive dark-blue limestone with shale beds at bottom.	Open valleys. Deep, red clay soil.
Rome formation.		Er		200±	Red, green, and brown shale and sandy shale.	Slopes of sandstone ridges. Light, sandy soil.	
Sandstone lentil.		Ers		400±	Red, white, and brown sandstone and sandy shale.	Sharp ridges with notches and gaps.	

GENERALIZED TABLE OF THE IGNEOUS ROCKS, ARRANGED IN ORDER OF AGE, IN THE GREENEVILLE QUADRANGLE.

SYMBOL	FORMATION NAME	SYMBOL	LITHOLOGIC PATTERN	CHARACTER OF ROCKS	CHARACTER OF SOILS AND SURFACE
ARCHEAN	Max Patch granite.	Armp		Very coarse biotite-granite, usually massive, but in places porphyritic and altered to augen-gneiss. Colors unusually light gray in the eastern areas and reddish in the western.	High, irregular mountains with steep slopes and broad, round summits. Red and brown clayey soils, with many ledges.
ARCHEAN	Cranberry granite.	ArCb		Biotite-granite and granite-gneiss, coarse and fine; colors light gray, dark gray, and white. Includes dikes of schistose and unaltered diabase, fragments of hornblende-gneiss, and dikes of unaltered, fine biotite-granite.	High, irregular mountains, peaks, and spurs, with round summits. Red and brown clayey soils, with many ledges.

NAMES OF FORMATIONS.

SYMBOL	ARTHUR KEITH, KNOXVILLE FOLIO, U. S. GEOLOGICAL SURVEY, 1886.	ARTHUR KEITH, ASHEVILLE FOLIO, U. S. GEOLOGICAL SURVEY, 1905.	NAMES AND SYMBOLS USED IN THIS FOLIO.	M. R. CAMPBELL, ESTILLVILLE FOLIO, U. S. GEOLOGICAL SURVEY, 1894.
CARB.	Newman limestone.		Newman limestone.	Cn Newman limestone.
	Grainger shale.		Grainger shale.	Dg Grainger shale.
	Chattanooga shale.		Chattanooga shale.	Dc Chattanooga shale.
DEVONIAN			Rockwood formation.	Sr Rockwood formation.
			Clinch sandstone.	ScI Clinch sandstone.
			Bays sandstone.	Sb Bays sandstone.
SILURIAN			Sevier shale.	Osv Sevier shale.
			Tellico sandstone.	Ot Sevier shale.
			Athens shale.	Oa
ORDOVICIAN			Moccasin limestone.	Omc Moccasin limestone.
			Holston marble lentil.	Oh
			Chickamauga limestone.	Oc Chickamauga limestone.
			Knox dolomite.	EOk Knox dolomite.
			Nolichucky shale.	En Nolichucky shale.
			Maryville limestone.	Em Maryville limestone.
			Rogersville shale.	Erg Rogersville shale.
			Rutledge limestone.	Ert Rutledge limestone.
			Rome formation.	Er Russell formation.
			Beaver limestone.	Cr
CAMBRIAN			Shady limestone.	Csh
			Hesse sandstone.	Ch
			Murray shale.	Emr
			Nebo sandstone.	Enb
			Nichols shale.	Cnc
			Cochran conglomerate.	Cch
			Hiwassee slate.	Chi
			Snowbird formation.	Csb
			Max Patch granite.	Armp
			Cranberry granite.	ArCb

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