

COLUMNAR SECTIONS

GENERALIZED SECTION OF THE SEDIMENTARY ROCKS OF THE NANTAHALA QUADRANGLE.						
SCALE: 1 INCH = 1000 FEET.						
SYSTEM	FORMATION NAME.	SYMBOL.	COLUMNAR SECTION.	THICKNESS IN FEET.	CHARACTER OF ROCKS.	CHARACTER OF TOPOGRAPHY AND SOIL.
C A M B R I A N	Nottely quartzite.	€ny		150+	Fine, white quartzite.	Sharp, narrow ridges. Rocky soil.
	Andrews schist.	€ad		200-350	Light-colored calcareous schist with otrellite and iron ore.	Low terraces and slopes. Yellow clay soil.
	Murphy marble.	€mp		150-500	Thick bedded, white, blue, and blue and white banded marble.	Valley floors washed over with gravel and clay.
	Valleytown formation.	€vt		900-1200	Graywacke and fine grained gneiss, interbedded with dark garnet- and otrellite-schists.	Irregular ridges and high knobs. Thin sandy and micaceous soil.
	Brasstown schist.	€bt		1200-1500	Blue and black banded otrellite-schist, garnet-schist, and slates, with a few layers of fine graywacke. Black slate usually at the base.	Irregular ridges and knobs. Thin sandy and clayey soil.
	Tusquitee quartzite.	€tq		20-500	Coarse and fine white quartzite with some quartz conglomerate.	High, sharp ridges and knobs. Sandy and rocky soil.
	Nantahala slate.	€nt		1400-1800	Black, bluish-black, and gray slate; in places altered to fine black schist with some fine otrellite and garnet. Contains a few beds of gray sandstone and graywacke. Thick bed of staurolite-garnet-schist usually at the base.	Steep slopes, irregular knobs, and low hilly ground. Clay soils with slate and schist fragments.
	Great Smoky conglomerate.	€gs		5500-6000	Blue-quartz and feldspar conglomerate. Massive beds of quartz and feldspar conglomerate and coarse gray sandstone with beds and seams of black slate. Altered toward the southeast into coarse and fine graywacke and quartzite with beds of black schist, mica-schist, and otrellite-schist.	High mountains and ridges with irregular trend. Deep clayey soils mixed with bits of rock and sand.
	Hiwassee slate.	€hi		500	Blue and gray banded slate.	Low country and slopes of ridges
	UNCONFORMITY					
ARCHEAN	Gneisses and granite.				Light-gray granite, fine granite, and gneissoid granite.	Mountainous country.

GENERALIZED TABLE OF IGNEOUS AND METAMORPHIC ROCKS OF THE NANTAHALA QUADRANGLE, ARRANGED ACCORDING TO AGE.					
SYSTEM	FORMATION NAME.	SYMBOL.	LITHOLOGIC SYMBOL.	CHARACTER OF ROCKS.	CHARACTER OF TOPOGRAPHY AND SOIL.
ARCHEAN	Granite.	Ag		Biotite-granite and granite-gneiss, coarse and fine; colors, light gray, dark gray, and white. Includes dikes of schistose and unaltered diabase and fragments of hornblende-gneiss and mica-gneiss.	Irregular hills and ridges. Yellow and brown clay soils.
	Soapstone, dunite, and serpentine.	As		Dunite in part serpentinized. Soapstone contains talc and tremolite.	Yellow clay soil with many ledges and fragments of rocks.
	Roan gneiss.	Ar		Hornblende-gneiss and -schist, with some massive and schistose diorite. Includes many beds of mica-gneiss, mica-schist, and hornblende-mica-gneiss, and dikes of altered and unaltered biotite-granite.	Mountainous country or depressions between Carolina gneiss areas. Dark-red and brown clay soils.
	Carolina gneiss.	Ac		Interbedded mica-gneiss and mica-schist, coarse and fine, bluish gray and gray. Contains many small beds of hornblende-gneiss, large bodies of garnet-schist and cyanite-schist, and dikes of biotite-granite, both altered and unaltered.	Ridges, peaks, spurs, and high mountains with irregular crests. Red and brown micaceous and clayey soils.



FIG. 1.—GORGE OF NANTAHALA RIVER AT CLIFF RIDGE; LOOKING NORTHEAST FROM 2 MILES SOUTHWEST OF NANTAHALA STATION.
The gorge is excavated along a narrow band of Murphy marble, and the rugged slopes on the left are upheld by Valleytown formation. Cliff Ridge, on the right, the edge of the plateau of Nantahala River, is formed by the hard topmost bed of Great Smoky conglomerate, Nantahala slate forming the steep slope.



FIG. 2.—SURFACE OF MURPHY MARBLE, STRIPPED FOR QUARRYING; 2 MILES SOUTHWEST OF TOMOTLA, LOOKING NORTHEAST ALONG THE STRIKE.
Beyond the quarry is seen a thin layer of auriferous gravel, which has elsewhere been successfully washed for gold. On the right is a ridge of Nottely quartzite; on the left a ridge of Valleytown formation.



FIG. 3.—VALLEY RIVER BOTTOM AND FLANKING RIDGES; LOOKING WEST FROM 2 MILES SOUTHWEST OF ANDREWS.
The floor of the valley is underlain by Murphy marble and the terrace hill on the left by Andrews schist, while the farther wall of the valley is formed by Valleytown schists and gneisses. Snowbird Mountains in the distance are composed chiefly of Great Smoky conglomerate.