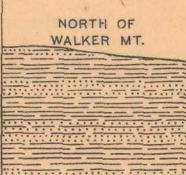
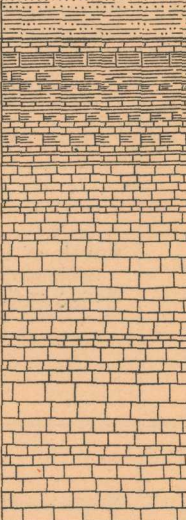
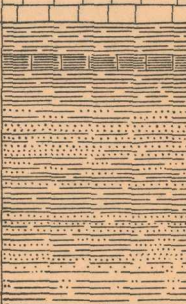
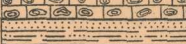
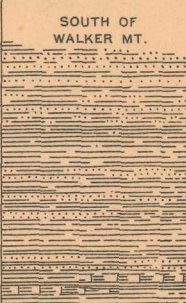
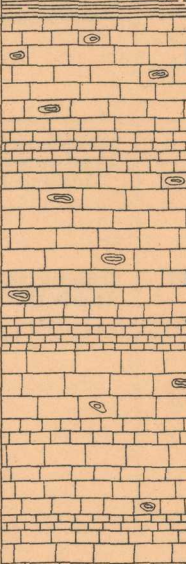
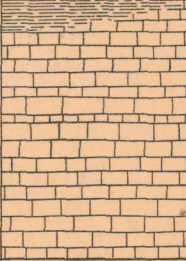
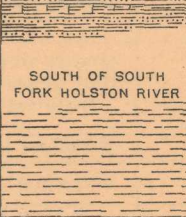
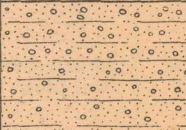


COLUMNAR-SECTION SHEET

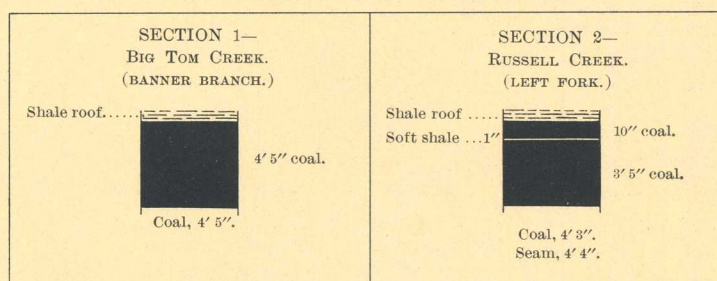
GENERALIZED SECTION FOR THE PORTION OF THE QUADRANGLE SOUTH OF CLINCH MOUNTAIN. SCALE: 1000 FEET = 1 INCH.						
PERIOD.	FORMATION NAME.	SYMBOL.	COLUMNAR SECTION.	THICKNESS IN FEET.	CHARACTER OF ROCKS.	CHARACTER OF TOPOGRAPHY AND SOIL.
CARBONIFEROUS	Pennington shale.	Cpn		800+	Green sandy shale and thin-bedded sandstone.	Forms the rugged region between Walker Mountain and the North Fork of Holston River. Soil very thin and poor.
	Newman limestone.	Cn		2000-2600	Blue calcareous shale, grading downward into impure limestone. Heavy-bedded blue limestone.	Rough, rolling lands with fairly productive soil.
	Grainger formation.	DCg		1400-1600	Dark argillaceous shale with interbedded calcareous shale and impure limestone. Sandy shale. Sandstone containing locally beds of quartz conglomerate. Green shale.	The valley of the North Fork of Holston River. Sharp, serrate ridge separating the Holston River Valley from the Poor Valley at the foot of Clinch Mountain.
DEVONIAN	Chattanooga shale.	Dc		500-800	Black carbonaceous shale which merges with the green shale above.	The Poor Valley. Soil unproductive.
	Hancock limestone.	SDh		30-175	Cherty limestone.	The base of the southern slope of Clinch Mountain.
SILURIAN	Rockwood formation.	Sr		200-300	Sandy shale and ferruginous sandstone.	Southern slope of Clinch Mountain.
	Clinch sandstone.	Sci		250-450	Coarse grained white sandstone.	Sharp mountainous ridges.
	Bays sandstone.	Sb		350-450	Red sandstone and sandy shale.	Steep slopes.
	Sevier shale.	Ssv		200+	Sandy shale.	Gentle slopes.
	Tellico sandstone.	St		300+	Sandstone and sandy shale.	Caps the highest ridges in the southeastern corner of the quadrangle.
	Athens shale.	Sa		1000-1200	Sandy shale and thin sandstones with occasional beds of impure limestone and limestone conglomerate. Dark argillaceous shale at the base.	Groups of barren hills in the vicinity of Bristol. The soil is extremely poor and the hills are generally uncultivated.
	Knox dolomite.	CSk		2800-3500	Blue and gray limestone. Very cherty along Walker Mountain, but farther toward the southeast the chert disappears and the formation merges with and becomes indistinguishable from the Honaker limestone beneath, and the whole is called the Shenandoah limestone.	Forms low ridges where it is cherty, but under other conditions it produces a gently rolling country well adapted to agricultural pursuits. Soil generally fertile, unless covered with chert.
	Nolichucky shale.	Cn		0-300	Blue calcareous and sandy shale. Toward the east this changes to limestone.	Gently rolling country and the northern slope of Walker Mountain.
	Honaker limestone.	Chk		1200-1400	Blue and gray limestone. Toward the east this formation merges with the Knox dolomite, and the whole is known as the Shenandoah limestone.	Gently rolling country in the southeastern quarter of the quadrangle and Rich Valley along the northern side of Walker Mountain.
	Russell formation.	Crl		400+	Red and green shales and thin-bedded sandstones.	Sharp hills along the north side of Rich Valley.
CAMBRIAN	Hampton shale.	Cht		600+	Sandy shale.	The northern slope of Holston Mountain, which passes through the southeast corner of the quadrangle.
	Unicoi sandstone.	Cu		1000	Quartzite or fine, bluish, feldspathic conglomerate.	Forms a subordinate ridge on the northern face of Holston Mountain.

MARIUS R. CAMPBELL,
Geologist.

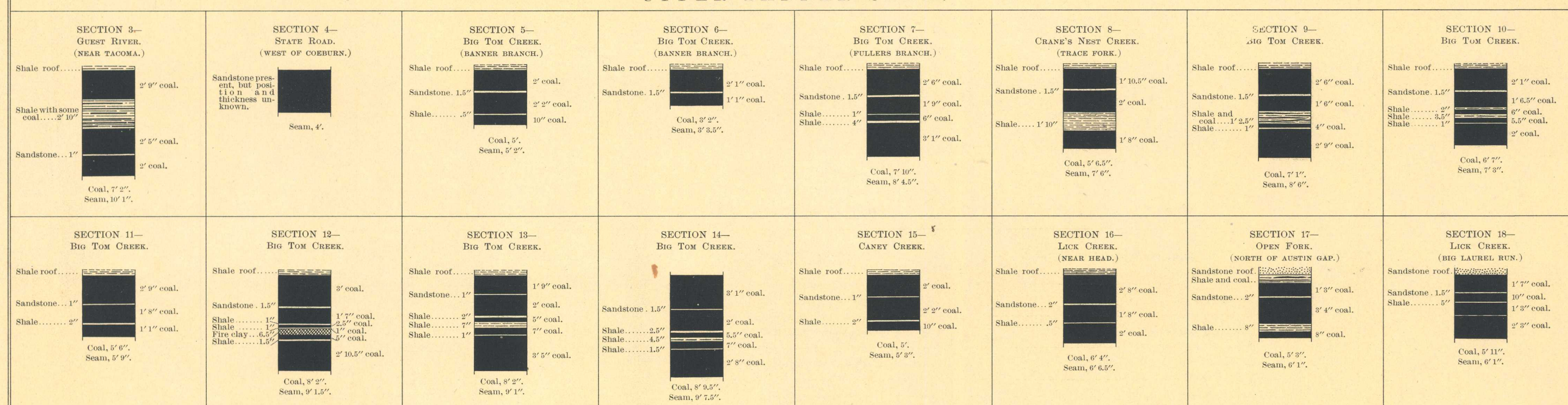
SECTIONS OF COAL SEAMS EXPOSED IN THE QUADRANGLE.

SCALE: 10 FEET=1 INCH.

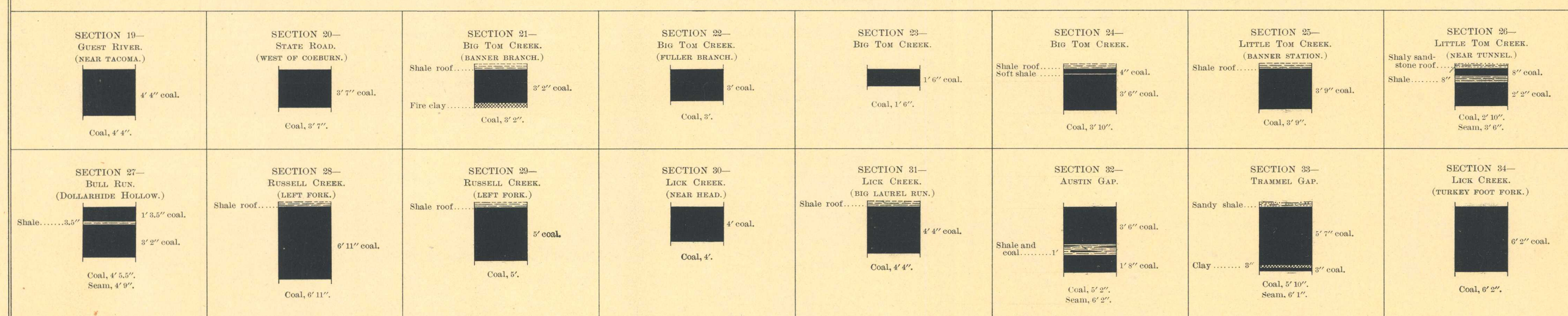
EDWARDS SEAM.



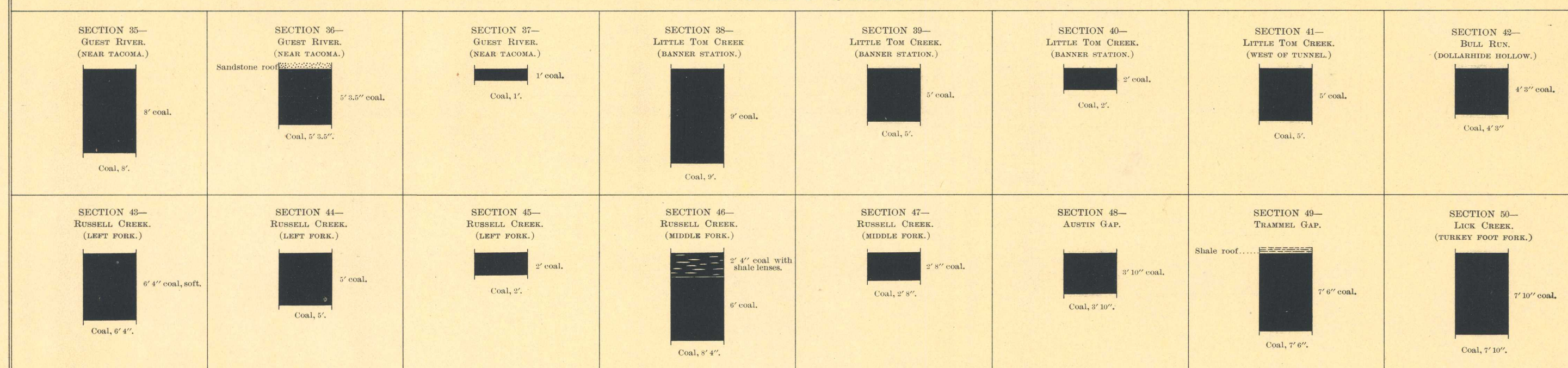
UPPER BANNER SEAM.



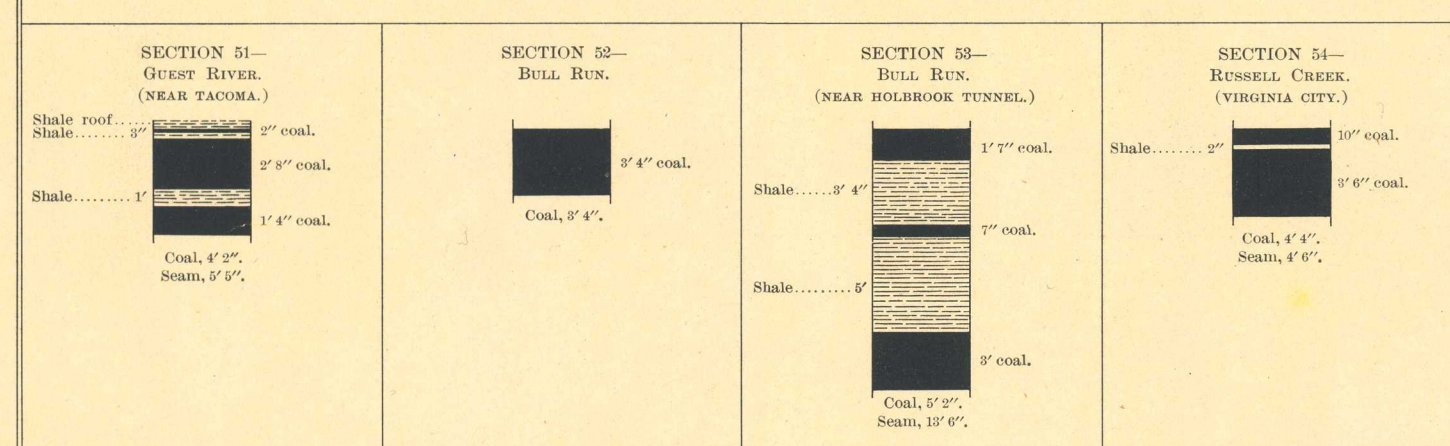
LOWER BANNER SEAM.



KENNEDY SEAM.



SO-CALLED IMBODEN SEAM.



JAWBONE SEAM.

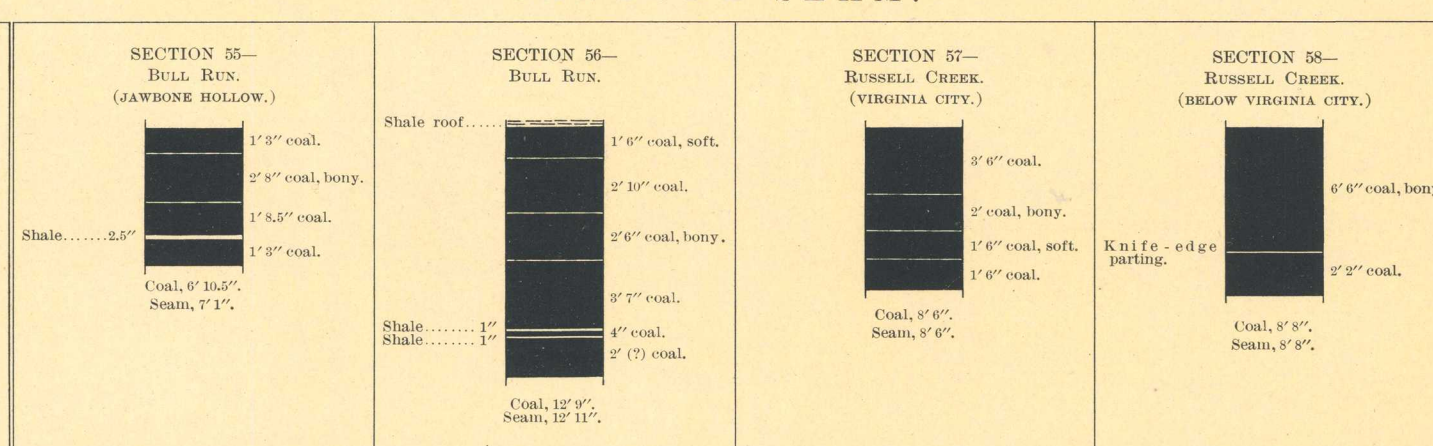


TABLE OF FORMATION NAMES.

PERIOD.	NAMES AND SYMBOLS USED IN THIS FOLIO.		CAMPBELL: ESTILLVILLE FOLIO, U. S. GEOLOGICAL SURVEY, 1894.	SAFFORD: GEOLOGY OF TENNESSEE, 1899.	STEVENSON: A GEOLOGICAL RECONNAISSANCE IN PART OF LEE, WISE, SCOTT, AND WASHINGTON COUNTIES, VA., 1931.
CARBONIFEROUS	Wise formation.	Cws	Wise formation.	Coal Measures	Coal Measures.
	Gladeville sandstone.	Cg	Gladeville sandstone.		
	Norton formation.	Cnr	Norton formation.		
	Lee formation.	Cle	Lee conglomerate.		
	Pennington shale.	Cpn	Pennington shale.	Mountain limestone.	Mountain limestone.
	Newman limestone.	Cn	Newman limestone.	Siliceous group.	Siliceous group.
	Grainger formation.	DCg	Grainger shale.		
DEV.	Chattanooga shale.	Dc	Chattanooga black shale.	Black shale.	Chemung and Hamilton.
	Hancock limestone.	SDh	Hancock limestone.	Meniscus limestone.	Oriskany and Lower Helderberg.
	Rockwood formation.	Sr	Rockwood formation.	Dyestone group.	Clinton group.
	Clinch sandstone.	Scl	Clinch sandstone.	Clinch Mountain sandstone.	Medina sandstone.
Bays sandstone.	Sb	Bays sandstone.			
SILURIAN	Sevier shale.	Ssv	Sevier shale.	Trenton and Nashville series.	Trenton and Nashville group.
	Moccasin limestone.	Smc			
	Tellico sandstone.	St	Moccasin limestone.		
	Athens shale.	Sa			
	Chickamauga limestone.	Sc	Chickamauga limestone.		
	Knox dolomite.	ESk	Knox dolomite.	Knox dolomite.	Knox dolomite.
	Nolichucky shale.	En	Nolichucky shale.	Knox shale.	Knox shale.
	Maryville limestone.	Em	Maryville limestone.		
	Rogersville shale.	Eig	Rogersville shale.		
	Rutledge limestone.	Ert	Rutledge limestone.		
Russell formation.	ErI	Russell formation.	Knox sandstone.	Knox sandstone.	
Hampton shale.	Eht		Chilhowee sandstone.		
Unicoi sandstone.	Eu				