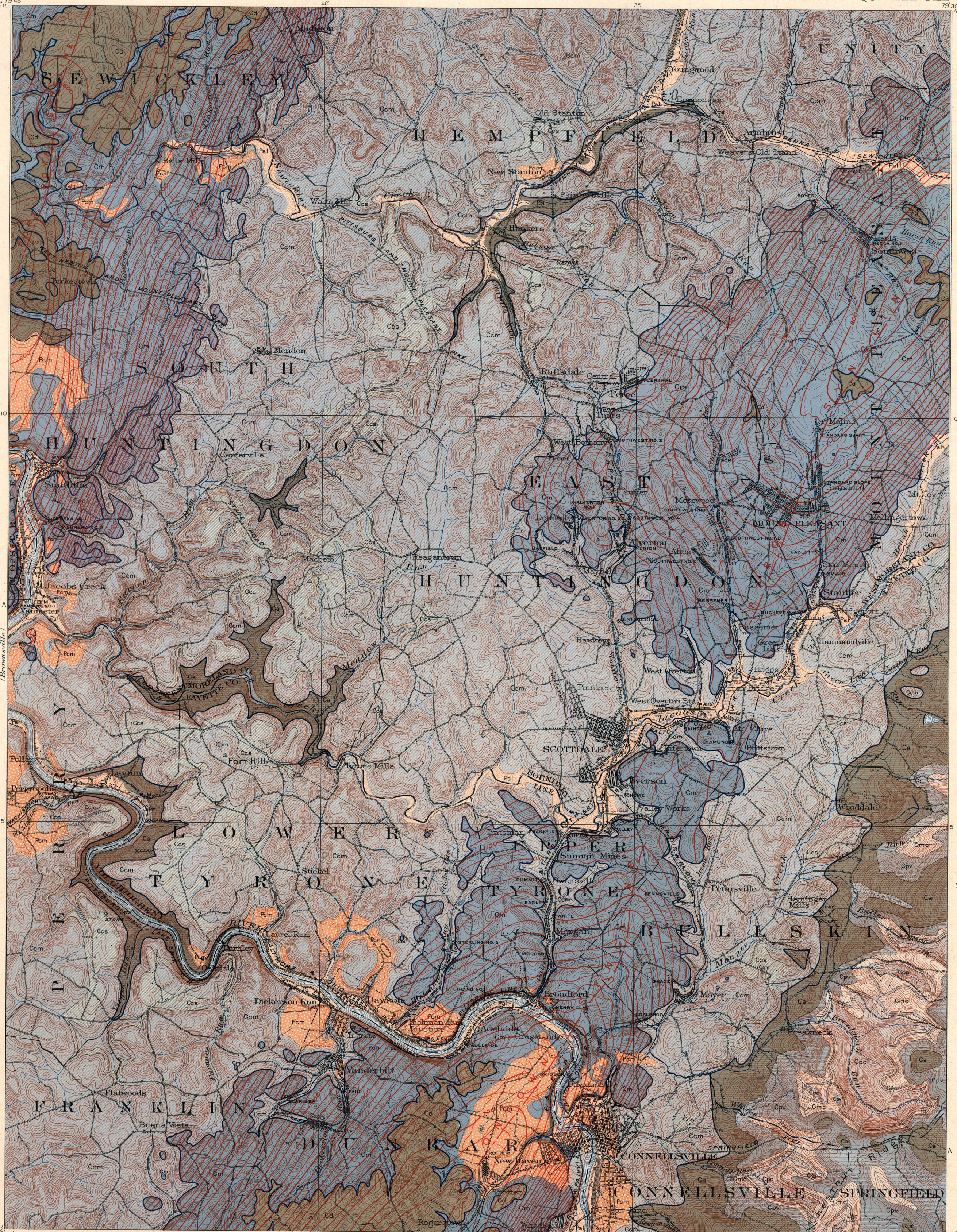


ECONOMIC GEOLOGY

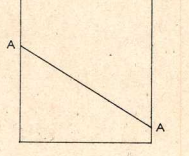
LEGEND



- SURFICIAL ROCKS**
(Areas of Surficial rocks are shown by patterns of dots and curves.)
- Pal Alluvium
(in flood plains of present streams)
 - Pcm Carmichael clay
(clay sand and low-lying on terraces and in abandoned channels of the larger streams)
- SEDIMENTARY ROCKS**
(Areas of Sedimentary rocks are shown by patterns of parallel lines.)
- Permian series*
- Cd Dunkard formation
(sand shale, coarse sandstone, some thin laminae, many open beds of coal)
 - Cm Monongahela formation
(shale, limestone, and occasionally coarse sandstone, thin coal at the bottom, irregularly coal at the top, and coal beds of local importance between)
 - Ccm Conemaugh formation exclusive of the Saltsburg sandstone
(sandstone shale, small amount of limestone, and a few small coal beds)
 - Ccs Saltsburg sandstone lenticular in the Conemaugh formation
(coarse thick-bedded or massive sandstone in the Conemaugh formation)
 - Ca Allegheny formation
(shale sandstone and clay with several workable coal beds, typical Froop coal at the top)
 - Cpv Pottsville sandstone
(coarse massive sandstone with some shale and thin coal at the middle)
 - Cmc Mauch Chunk formation exclusive of the Greenbrier limestone
(red and green shale and thin bedded green sandstone)
 - Cgr Greenbrier limestone lenticular in the Mauch Chunk formation
(thin blue fossiliferous limestone in the Mauch Chunk shale)
 - Cpo Pocono sandstone
(coarse sandstone grading into very sandy limestone at the top and usually containing sandy shale)
- Mississippian series*
- Carboniferous*

✕ Coal mines, quarries, clay and sand pits

Section

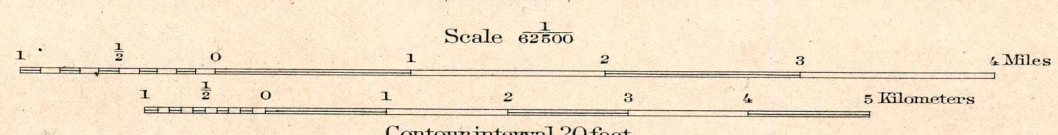


- Known productive formations**
- Cm *(Monongahela formation contains the Pittsburg, Waynesburg and other coal beds)*
 - Cd-Ca *(Dunkard formation includes the Washington and other coal beds of local importance; Allegheny formation contains the Froop and Kitzmeyer coal beds)*
 - Ccm-Cpv *(Conemaugh formation and Pottsville sandstone contain thin coal)*

Contour lines showing lay of Pittsburg coal bed
(elevation above sea level shown by figures on contour lines, contour interval is 20 feet)

Coal outcrops
(continuous lines represent coal beds of probable workable thickness, long dashes thin beds of doubtful value, short dashes outcrops covered by vertical deposits)

H.M. Wilson, Geographer in charge.
 Control by Walter R. Harper and A.C. Roberts.
 Topography by Frank Suttton, J.H. Wheat, T.G. Basinger, and H.C. Frick Coke Co.
 Surveyed in 1900 in cooperation with the State of Pennsylvania.



Geology by Marius R. Campbell,
 Assisted by L.C. Glenn,
 Charles Butts, and L.H. Woolsey.
 Surveyed in 1901.

45° 15' 45" N
 79° 45' 45" W

APPROXIMATE MEAN DECLINATION 1902.