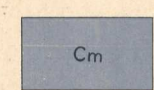
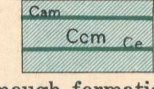
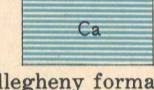
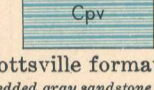
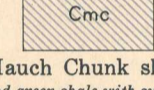
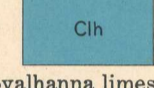
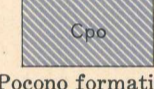


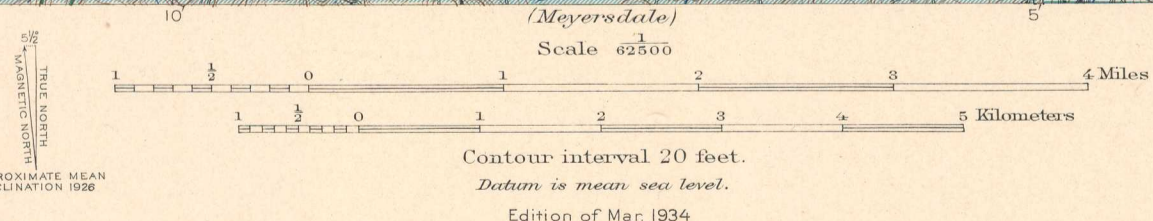


EXPLANATION  
SEDIMENTARY ROCKS  
(subaqueous deposits shown by parallel lines)

-  **Monongahela formation**  
(sandy and clay shale with Pittsburgh coal at base; only the lower few feet of formation present)
-  **Conemaugh formation with Ames and Ewing (?) limestone members**  
(gray shale, sandstone, and clay, including some red shale and thin beds of limestone and coal; the Ames limestone member, Ccm, is mapped in the Lisbon Basin, and the Ewing (?) limestone member, Ca, is mapped in part of the Johnstown Basin)
-  **Allegheny formation**  
(chiefly gray and dark shale with local beds of clay and sandstone and several workable beds of coal; Upper Freeport coal at top; Johnstown limestone member directly underlies the Upper Kittanning coal)
-  **Pottsville formation**  
(heavy-bedded gray sandstone with interbedded shale, clay, and thin beds of coal)
- UNCONFORMITY**
-  **Mauch Chunk shale**  
(red and green shale with subordinate sandstone and thin lenses of limestone)
-  **Loyalhanna limestone**  
(siliceous limestone)
-  **Pocono formation**  
(gray sandstone and sandy shale)

CARBONIFEROUS

R.B. Marshall, Chief Geographer,  
Frank Sutton, Geographer in charge.  
Topography by Robert Muldrow, T.F. Slaughter, and F.W. Farnsworth.  
Control by Geo. T. Hawkins, L.F. Biggs, and T.A. Green.  
Surveyed in 1912-1913.



Geology by G. B. Richardson,  
Surveyed in 1913.

SURVEYED IN COOPERATION WITH THE STATE OF PENNSYLVANIA.

APPROXIMATE MEAN  
DECLINATION 1926

Contour interval 20 feet.  
Datum is mean sea level.  
Edition of Mar. 1934