

STRUCTURE AND ECONOMIC GEOLOGY

STATE OF PENNSYLVANIA
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 COMMISSIONERS

PENNSYLVANIA
 FOXBURG QUADRANGLE

U.S. GEOLOGICAL SURVEY
 GEORGE OTIS SMITH, DIRECTOR



LEGEND

SEDIMENTARY ROCKS
Areas of subaqueous deposits are shown by patterns of parallel lines, subaerial deposits by patterns of dots and circles

- Recent**
- Qal Alluvium and late glacial gravel (fine sand and silt in flood plains of present streams and terraces on the Allegheny contain much glacial gravel of probably Wisconsin age)
- Pleistocene**
- Oig Intermediate glacial gravel (gravel, sand and silt of local origin, material on terraces)
 - Oit Intermediate terrace deposits (hard silt clay and well rounded pebbles of local derivation on terraces of medium elevation)
- Kangaroo?**
- Oeg Early glacial gravel (deeply dissected high terrace gravel, sand and silt of glacial and local material derived from easterly and north as Canada)
 - Ocm Camichaels formation (high terrace sand, silt, clay and deeply dissected water worn pebbles of local derivation)

- Pennsylvanian**
- Ccm Conemaugh formation (soft shales, sand shales, and locally heavy sandstone near base with thin coals and limestone)
 - Allegheny formation and Vanport limestone member (iron-bearing shales, fine grained to conglomeric sandstone, limestone, and volcanic level of coal and fire clay)

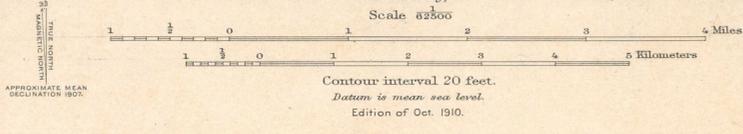
- Carboniferous**
- Cpv Pottsville formation (massive sandstone with large shale lenses and thin seams of coal)
 - UNCONFORMITY
 - Cbg Burgoon sandstone (massive to thin bedded sandstone with many small lenses of soft shale and thin seams of coal)
 - Cmv Meadville shale member of the Cuyahoga formation (hard black to gray sandy shale with pebble layer at top)

- ECONOMIC AND STRUCTURE DATA**
- Coal outcrops and area uncertain by workable coal (Upper Freeport coal, Lower Freeport coal, Upper Kittanning coal, Middle Kittanning coal, Lower Kittanning coal, Clarion coal)
 - Structure contours drawn on the top of the Vanport limestone (contour interval is 10 feet datum to mean sea level)

* Mines and quarries (coal unless otherwise specified)

Note: Most of the workable coals are in the Allegheny; thin coals in Conemaugh and Pottsville; limestone and cement materials in Allegheny and Conemaugh; clay and shale for brick and tile in all Carboniferous formations; building stone in Burgoon, Pottsville, Allegheny, and Conemaugh; iron ore in Pottsville and Allegheny; glass and building sand in Pottsville and Burgoon; gravel and sand in alluvium and terrace deposits. Distribution of oil and gas wells and pools shown on separate map.

Frank Sutton, Geographer in charge.
 Topography by R. D. Cummin, R. H. Reineck, and E. W. McCrary.
 Control by E. L. McNair and C. G. Anderson.
 Surveyed in 1905-1907.
 SURVEYED IN COOPERATION WITH THE STATE OF PENNSYLVANIA.



Geology by E. W. Shaw.
 Surveyed in 1908.
 SURVEYED IN COOPERATION WITH THE STATE OF PENNSYLVANIA.