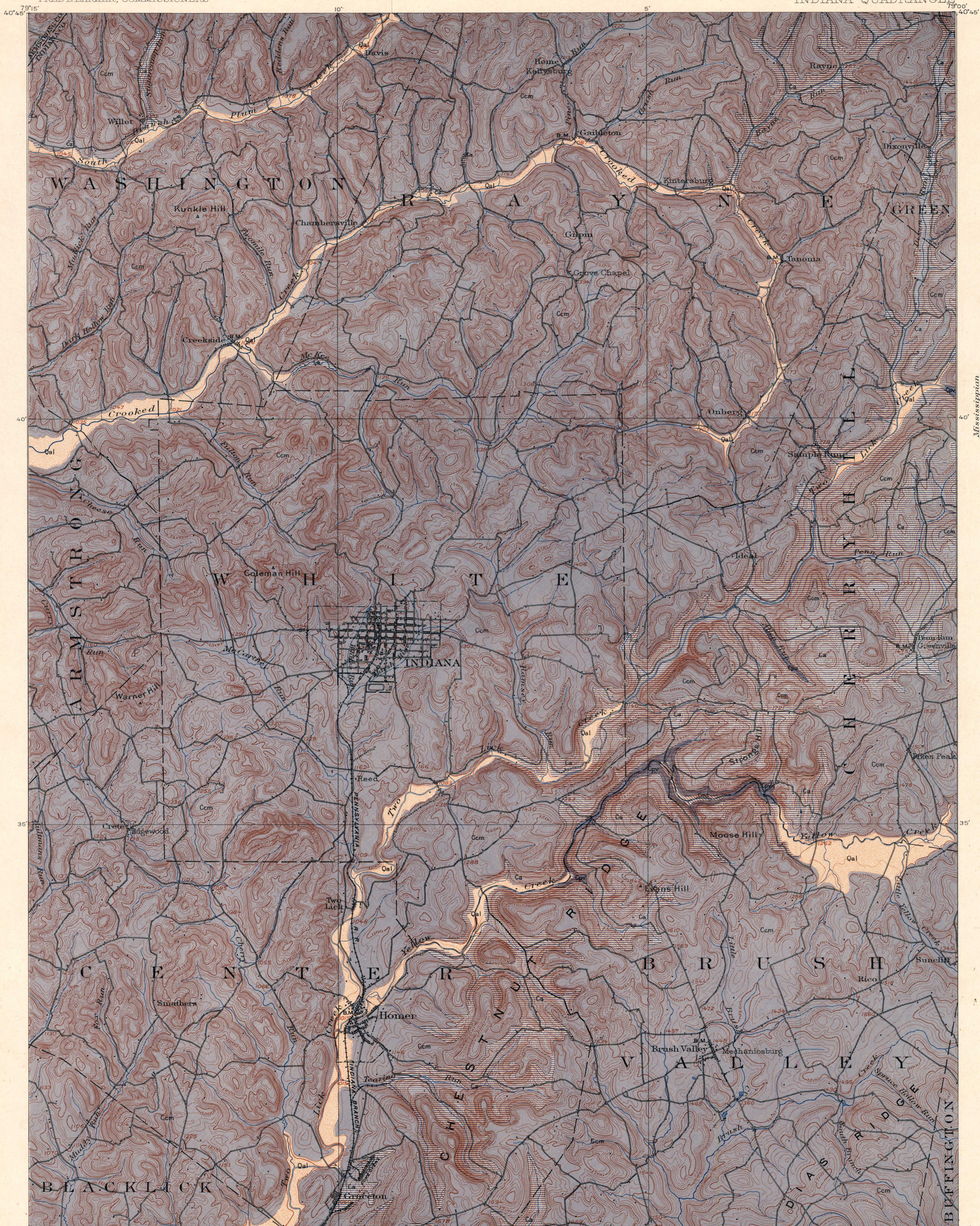


U.S. GEOLOGICAL SURVEY
 CHARLES D. WALCOTT, DIRECTOR
 STATE OF PENNSYLVANIA
 GEORGE W.M.C. NEES, SIMON HARROLD,
 FRED D. BARKER, COMMISSIONERS

AREAL GEOLOGY

PENNSYLVANIA
 INDIANA QUADRANGLE



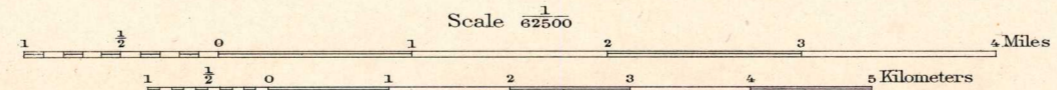
LEGEND

- SEDIMENTARY ROCKS**
(Areas of subsequent deposits are shown by patterns of parallel lines, subaerial deposits by patterns of dots and circles.)
- Recent**
 - Qal Alluvium
(in flood plains of present streams)
 - Pennington series**
 - Ccm Conemaugh formation
(sandstone, shale and limestone with a few small coal beds)
 - Ca Allegheny formation
(shale, sandstone, thin limestone, fire clay and several workable beds of coal; Upper Freeport coal at the top)
 - Cpv Pottsville formation
(massive sandstone and shale)
 - Mississippian series**
 - Cms Mauch Chunk shale
(red and green shale)

QUATERNARY

CARBONIFEROUS

H.M. Wilson, Geographer in charge.
 Control by A.H. Thompson, Frank Sutton and J.D. Forster.
 Topography by Frank Sutton and T.G. Baesinger.
 Surveyed in 1900 in cooperation with the State of Pennsylvania.



Scale 62500
 Contour interval 20 feet.
 Datum is mean sea level.
 Edition of July 1903.

Marius R. Campbell, Geologist in charge.
 Geology by George B. Richardson.
 Surveyed in 1901 in cooperation with the State of Pennsylvania.

APPROXIMATE MEAN DECLINATION 1902.