U. S. GEOLOGICAL SURVEY
CHARLES D. WALCOTT, DIRECTOR

AREAL GEOLOGY

PENNSYLVANIA
KITTANNING QUADRANGLE

79°45' 40' 35' 79°30' 41°00'

LEGEND

SEDIMENTARY ROCKS

(Areas of subaqueous deposits are shown by patterns of parallel lines, subaerial deposits by patterns of dots and circles)

QUATERNARY

Recent

Qal — **Alluvium** *(in flood plains of present streams)*

Pleistocene

Qg — **Glacial gravel** *(outwash gravels and sands of probable Kansan age, contain pebbles of Medina sandstone and crystalline rock)*

Qcm — **Carmichaels formation** *(sand, silt, clay, and waterworn particles of underlying rocks)*

Qos — **Older alluvium** *(gravel and silt of local derivation)*

CARBONIFEROUS

Pennsylvanian

Ccm / Ccb — **Conemaugh formation with Ames limestone and Saltsburg sandstone lentils** *(sandy shale and coarse sandstones, with thin coal seams and impure limestones)*

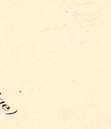
Ca / Cv — **Allegheny formation and Vanport limestone lentil** *(shale and massive sandstones with beds of limestone and several valuable beds of coal and fire clay)*

Cpv — **Pottsville formation** *(massive sandstone, often shaly at the top and at horizon of Mercer coals)*

Mississippian

Cpo — **Pocono formation** *(massive sandstone, with small coal seams and associated shale)*

Section



H. M. Wilson, Geographer in charge.
Control by S. S. Gannett and E. L. Mc Nair.
Topography by W. L. Miller and W. Carvel Hall.

SURVEYED IN 1900, IN COOPERATION WITH THE STATE OF PENNSYLVANIA.

APPROXIMATE MEAN DECLINATION 1902.

Scale 1/62500

1 0 1 2 3 4 Miles

1 0 1 2 3 4 5 Kilometers

Contour interval 20 feet.
Datum is mean sea level.

Edition of Sept. 1904

Geology by Charles Butts, L. H. Woolsey, and Frank Leverett, under the direction of Marius R. Campbell.

SURVEYED IN 1901-02, IN COOPERATION WITH THE STATE OF PENNSYLVANIA.