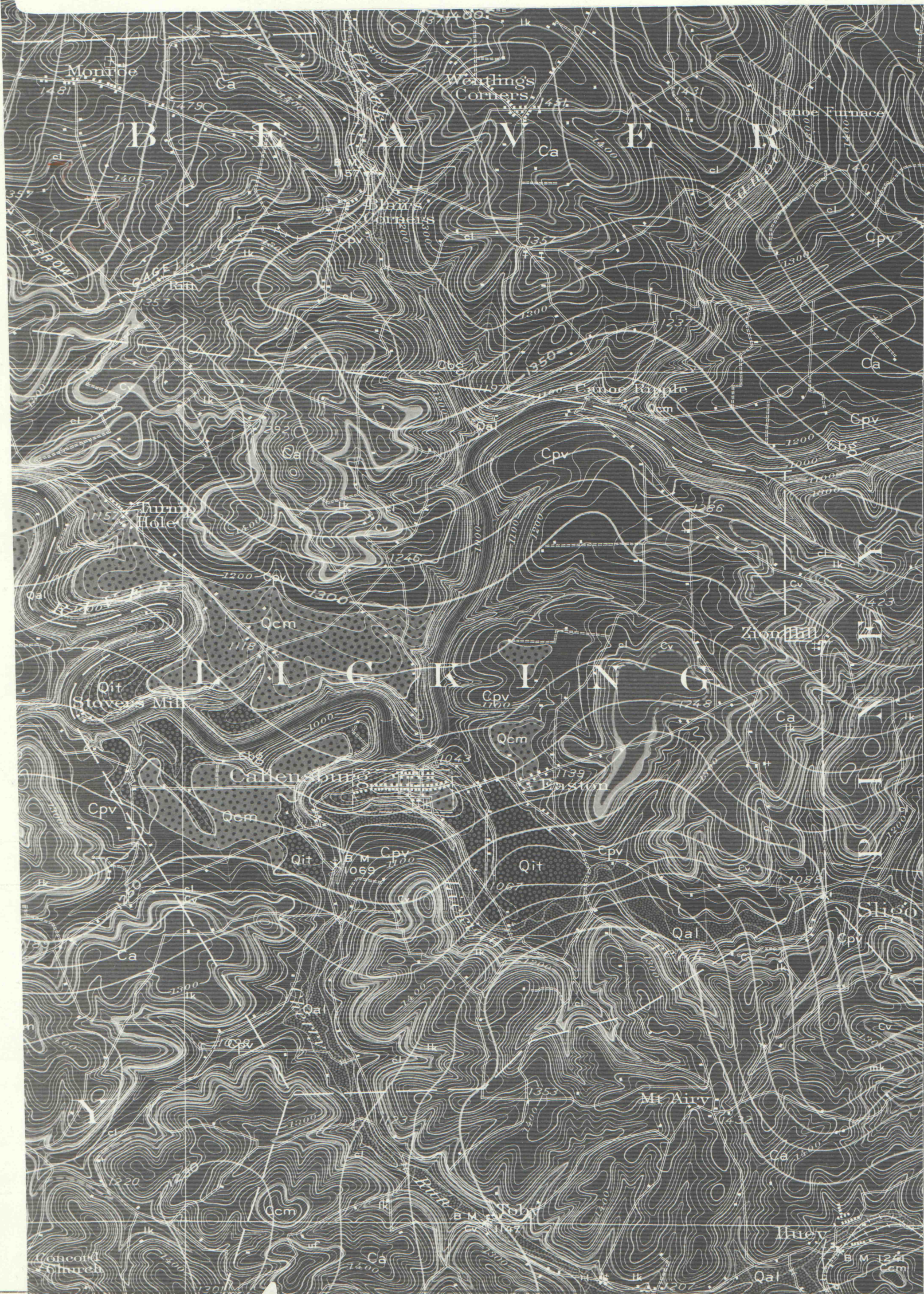




Pleistocene

Intermediate glacial gravel
(gravel, sand, and silt of local and foreign material on terraces of medium elevation)



Early glacial gravel
(deeply decayed high terrace gravel, sand, and silt of glacial and local material derived from sedimentary and igneous rocks as far north as Canada)

Intermediate terrace deposits
(sand, silt, clay, and well-rounded pebbles of local derivation, on terraces of medium elevation)



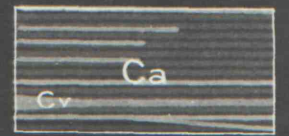
Carmichaels formation
(high terrace sand, silt, clay, and deeply decayed water worn pebbles of local derivation)

Kansan?

Pennsylvanian



Conemaugh formation
(soft olive shale, sandy shale, and locally heavy sandstone near base, with thin coals and limestones)

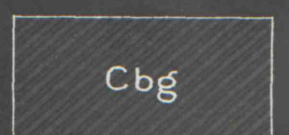


Allegheny formation and Vanport limestone member
(iron-bearing shale, fine-grained to conglomeratic sandstone, limestone, and valuable beds of coal and fire clay)



Pottsville formation
(massive sandstone with large shale lenses and thin seams of coal)

UNCONFORMITY



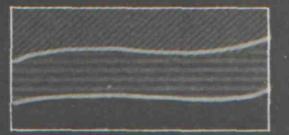
Burgoon sandstone
(massive to thin-bedded sandstone with many small lenses of soft shale and thin seams of coal)



Meadville shale member of the Cuyahoga formation
(hard black to gray sandy shale with pebble layer at top)

Mississippian (Pocono group)

ECONOMIC AND STRUCTURE DATA



Coal outcrops and area underlain by workable coal

uf, Upper Freeport coal
lf, Lower Freeport coal
uk, Upper Kittanning coal
mk, Middle Kittanning coal
lk, Lower Kittanning coal
cl, Clarion coal

CARBONIFEROUS

IMAPS # 10297