

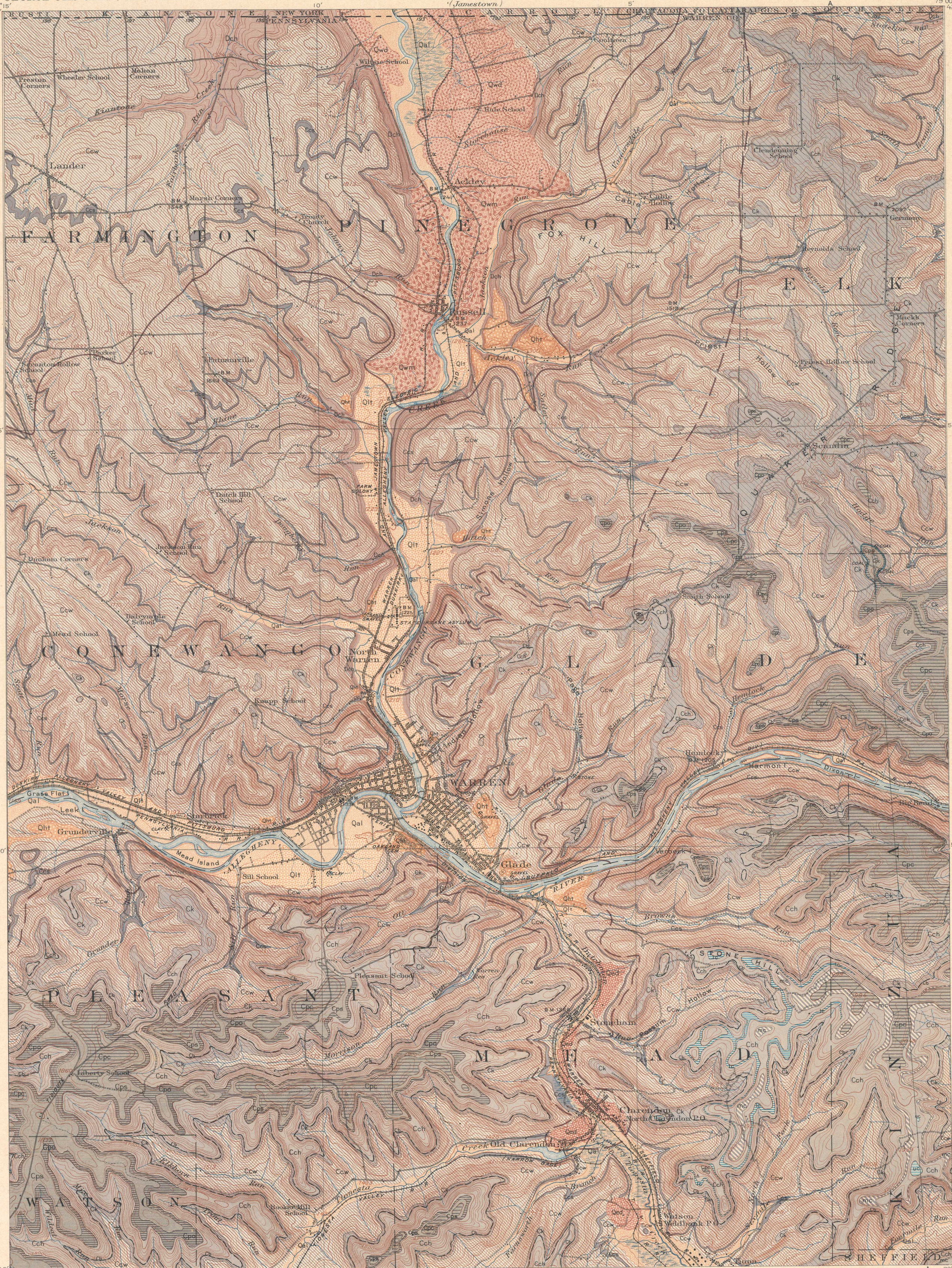
AREAL GEOLOGY

STATE OF PENNSYLVANIA

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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
(flood-plain deposits of present streams)
 - Qlr**
Lower terrace deposits
(partly stratified sand and gravel, outwash from Wisconsin terminal moraine)
 - Qwm**
Wisconsin terminal moraine
(mainly unstratified sand and gravel)
 - Qwd**
Unclassified drift of Wisconsin age
- Pleistocene**
- Qht**
High terrace deposits
(sand and gravel, in places stratified and cross-bedded, outwash from terminal moraine of supposed Kansan age)
 - Qed**
Earlier glacial deposits
(rudely stratified sand and gravel, often terminal moraine of supposed Kansan age or outwash therefrom)
- Approximate limit of Wisconsin ice sheet**
- Approximate limit of earlier ice sheet of supposed Kansan age**

QUATERNARY

- Pennsylvanian**
- Cpc**
Connoquenessing sandstone member
(very coarse white, quartz sand rock, containing some small quartz pebbles)
 - Cps**
Sharon shale member
(black and gray clay and sandy shale with thin coal streaks and limonite nodules)
 - Cpo**
Olean conglomerate member
(coarse round quartz pebbles embedded in fine quartz sand, underlain locally by thin coal)
- UNCONFORMITY**
- Mississippian**
- Cch**
Cuyahoga formation
(greenish shale and thin-bedded fine grained green and gray sandstone with lenses of conglomerate of small flat quartz pebbles, etc., etc.)
 - Cb**
Berea sandstone
(thin sandstone, commonly yellow, highly fossiliferous at top probably bearing fine oil sand)

CARBONIFEROUS

- Ck**
Knapp formation
(mainly flat pebble conglomerate with shale parting in portion of area; upper part of Venango oil sand group)
- Cow**
Conewango formation and Salamanca conglomerate lentil
(green, gray, and red shales, thin bedded fine grained sandstone, and thin conglomerate lentils; Salamanca flat pebble conglomerate probably Venango third oil sand in middle)
- Dch**
Chemung formation
(gray, green, and purple shale and thin bedded sandstone includes pink rock of well drillers)

DEVONO-CARBONIFEROUS

- C**
Coal outcrop

DEVONIAN

* Quarries and mines
x Coal prospects

H.M. Wilson, Geographer.
Robt. D. Cummin and J.H. Jennings, in charge of section.
Topography by Hoyt L. Johnston, Assistant, B.D. Stewart.
Control by E.L. McNair and Robt. D. Cummin.
Surveyed in 1905 and 1906.

SURVEYED IN COOPERATION WITH THE STATE OF PENNSYLVANIA.

APPROXIMATE MEAN
DECLINATION 1906.

Scale 1:2500
Miles
Kilometers

Contour interval 20 feet.
Datum is mean sea level.
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Geology by Charles Butts.
Surveyed in 1907.

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