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

STATE OF PENNSYLVANIA
GEORGE W. MC NEES, SIMON HARROLD
FRED D. BARKER, COMMISSIONERS

AREAL GEOLOGY

PENNSYLVANIA
(TIOGA COUNTY)
TIOGA QUADRANGLE

(Elmira)

PENNSYLVANIA — NEW YORK

BOUNDARY LINE

Lawrenceville
Pritchard
Nelson
Tompkins
Somers Lane
Tioga Junction
Rising
Lathrop
Jackson Summit
Mitchell Creek
Tioga
Hammond
Bald Hill
Crooked Creek
Holliday
Bambs Creek
Pickle Hill
Mansfield
Canoe Camp
Painter Run
Farmington Hill
East Charleston
Charleston
Bluff Point
Mardin

TIOGA
LAWRENCE
FARMINGTON
MIDDLEBURY
CHARLESTON
RICHMOND
RUTLAND
COVINGTON

LEGEND

SURFICIAL ROCKS
(Areas of Surficial rocks are shown by patterns of dots and circles.)

Pal — Valley alluvium *(gravels, sands, and silts in the larger valleys)*

Pd — Deposits other than alluvium *(shown only where deeply covering the boundaries between underlying formations)*

PLEISTOCENE

SEDIMENTARY ROCKS
(Areas of Sedimentary rocks are shown by patterns of parallel lines.)

CARBONIFEROUS

Pennsylvanian series

Cps — Sharon conglomerate member of Pottsville formation *(white quartz conglomerate at the base of the formation.)*

UNCONFORMITY

Mississippian series

Catskill-Pocono group

Cmc — Mauch Chunk formation *(red shale, green and buff shale and sandstone, and fire clay)*

CDo — Oswayo formation *(green sandstone and shale)*

Dcr — Cattarangus formation *(red shale and sandstone)*

Dch — Chemung formation *(buff and gray shale, sandstone, and impure limestone)*

DEVONIAN

⚒ *Abandoned iron mines*
× *Iron prospects and outcrops*

Sections

H. M. Wilson, Geographer in charge.
Control by S. S. Gannett, Oscar Jones, and J. H. Wheat.
Topography A. M. Walker.
Surveyed in 1899 and 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 May 1903.

M. R. Campbell, Geologist in charge.
Geology by Myron L. Fuller.
Surveyed in 1901.