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

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

SURFICIAL GEOLOGY

PENNSYLVANIA
(TIOGA COUNTY)
TIOGA QUADRANGLE

77°15′ 42°00′ — 10′ — 5′ — 77°00′ 42°00′

PENNSYLVANIA - NEW YORK
BOUNDARY LINE
(Elmira)
(Elkland)

Lawrenceville
Pritchard
Rumpletons
Somers Lane
Lega Junction
Risingthrop
Jackson Summit
Mitchell Creek
Tioga
Hammond
Mill Creek
Painters Run
Bald Hill
Crooked Creek
Holliday
Lambs Creek
Pickle Hill
Mansfield
Canoe Camp
Mardin
East Charleston
Charleston
Bluff Point
Farmington Hill

L A W R E N C E
F A R M I N G T O N
T I O G A
R U T L A N D
M I D D L E B U R Y
R I C H M O N D
C H A R L E
C O V I N G T O N

Tioga River
Crooked Creek
Hammond Creek
Mill Creek
Mutton Hill Creek
North Elk Run
Elk Run
Canoe Camp Creek
Pumpkin Hollow Creek
Bills Creek
Stephentown Creek
Fanner Run
Smith Creek
Hoyts Creek
Cowanesque River
Tioga River
Pennsylvania Division Canal
Tioga Division
Erie Railroad
Central New York Railroad
New York Central & Hudson River Railroad

LEGEND

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

Post-Glacial
- Pal — Alluvium *(flood plain silts underlain by stratified drift)*
- Pmd — Marsh deposits *(peat and muck)*
- Pd — Gravel fans or deltas *(including torrential stream deposits)*

Wisconsin Glacial Invasion — PLEISTOCENE
- Pt — Morainal and frontal terraces
- Pk — Eskers and kames
- Prm — Retreatal moraines
- Ptd — Till deposits with drumloidal topography
- Pts — Till sheet

Glacial spillways *(direction of current indicated by arrow)*

Glacial striae

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 April 1903.

Geology by Myron L. Fuller.
Surveyed in 1901.