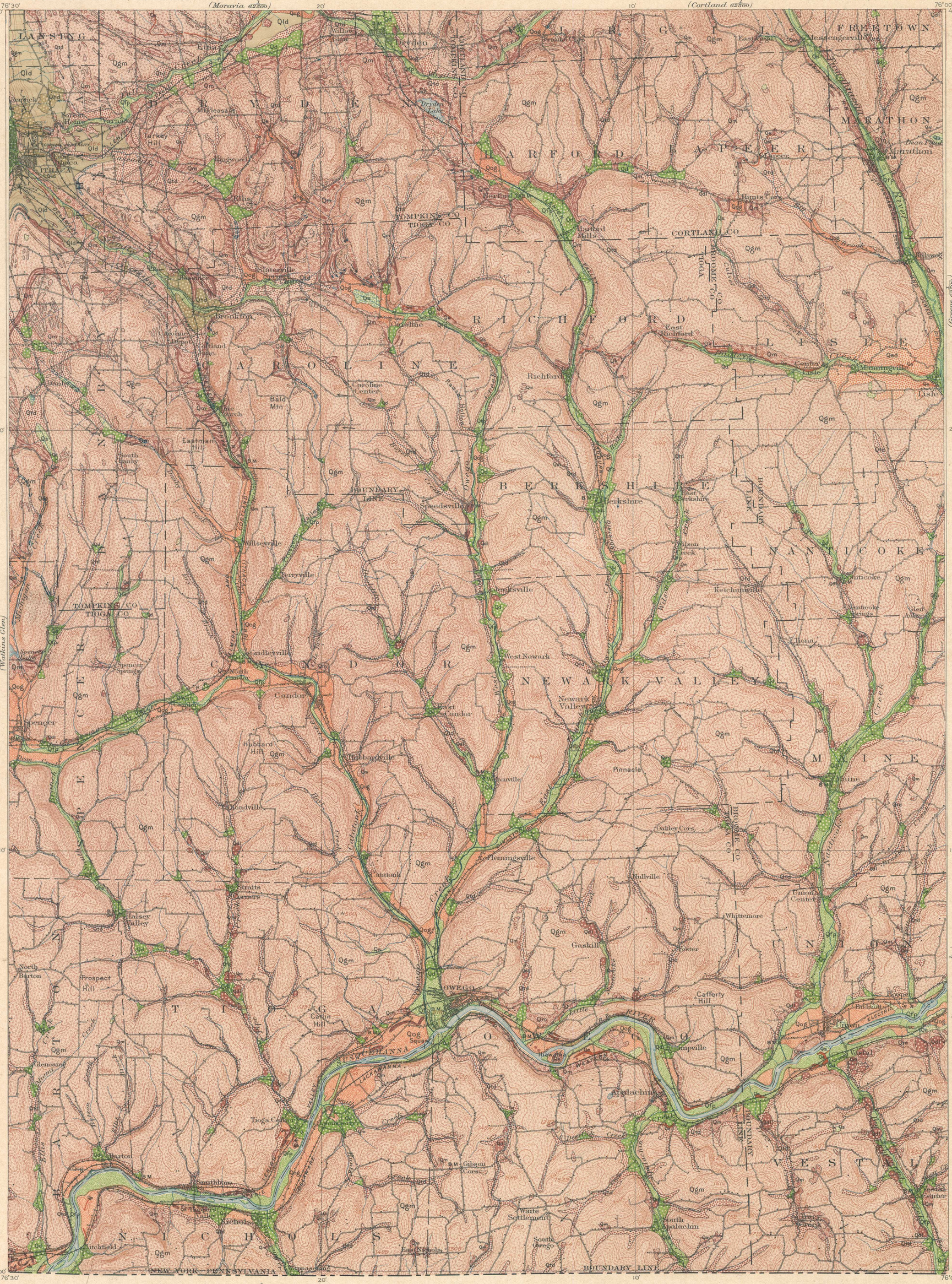
U.S. GEOLOGICAL SURVEY
GEORGE OTIS SMITH, DIRECTOR

SURFICIAL GEOLOGY

NEW YORK
CATATONK QUADRANGLE



LEGEND

SEDIMENTARY ROCKS

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

Recent

- **Qs** — Swamp muck
- **Qfp** — Modern flood-plain alluvium
- **Qd** — Modern deltas and alluvial fans
- **Qhd** — Hanging deltas *(coarse sand and gravel deposited in glacial lakes)*
- **Qld** — Glacial lake deposits *(clay and fine sand, in places thin and with numerous outcrops of underlying till)*

Wisconsin stage of Pleistocene epoch — QUATERNARY

- **Qog** — Outwash gravels *(flood-plain deposits in channels from ice margin)*
- **Qed** — Esker deltas *(sand and gravel plains associated with eskers)*
- **Qe** — Eskers *(narrow ridges of stratified drift)*
- **Qk** — Kames and kame moraines *(irregular hills of stratified drift with kettle depressions)*
- **Qm** — Terminal and marginal moraines *(moraine terraces and well-defined morainal ridges and terminal loops shown by denser pattern)*
- **Qdl** — Drumloids *(elongate elliptical hills of till in broad valleys)*
- **Qrd** — Thick drift *(valley fillings and indefinite moraines)*
- **Qgm** — Ground moraine *(till sheet)*

Outflow channels through which streams from glaciers and glacial lakes escaped over divides

Marginal channels occupied by streams bordering ice lobes

Cliffs, probably wave cut

Bowlder belts, probably old lake shore lines

Older striæ.

Most recent striæ

H. M. Wilson, Geographer in charge.
Topography by J. H. Jennings, R. D. Cummin, C. C. Bassett, and Nat. G. Van Doren.
Control by N. Y. State Survey, W. W. Gilbert, and H. B. Paige.
Surveyed in 1898 and 1900-1901.

SURVEYED IN COOPERATION WITH THE STATE OF NEW YORK.

MAGNETIC NORTH — TRUE NORTH
APPROXIMATE MEAN DECLINATION 1902.

Scale $\frac{1}{125000}$

1 ½ 0 1 2 3 4 5 Miles

1 ½ 0 1 2 3 4 5 Kilometers

Contour interval 40 feet.
Datum is mean sea level.

Edition of Dec. 1908.

Geology by R. S. Tarr, assisted by B. S. Butler and G. D. Hubbard.
Surveyed in 1904-1905.