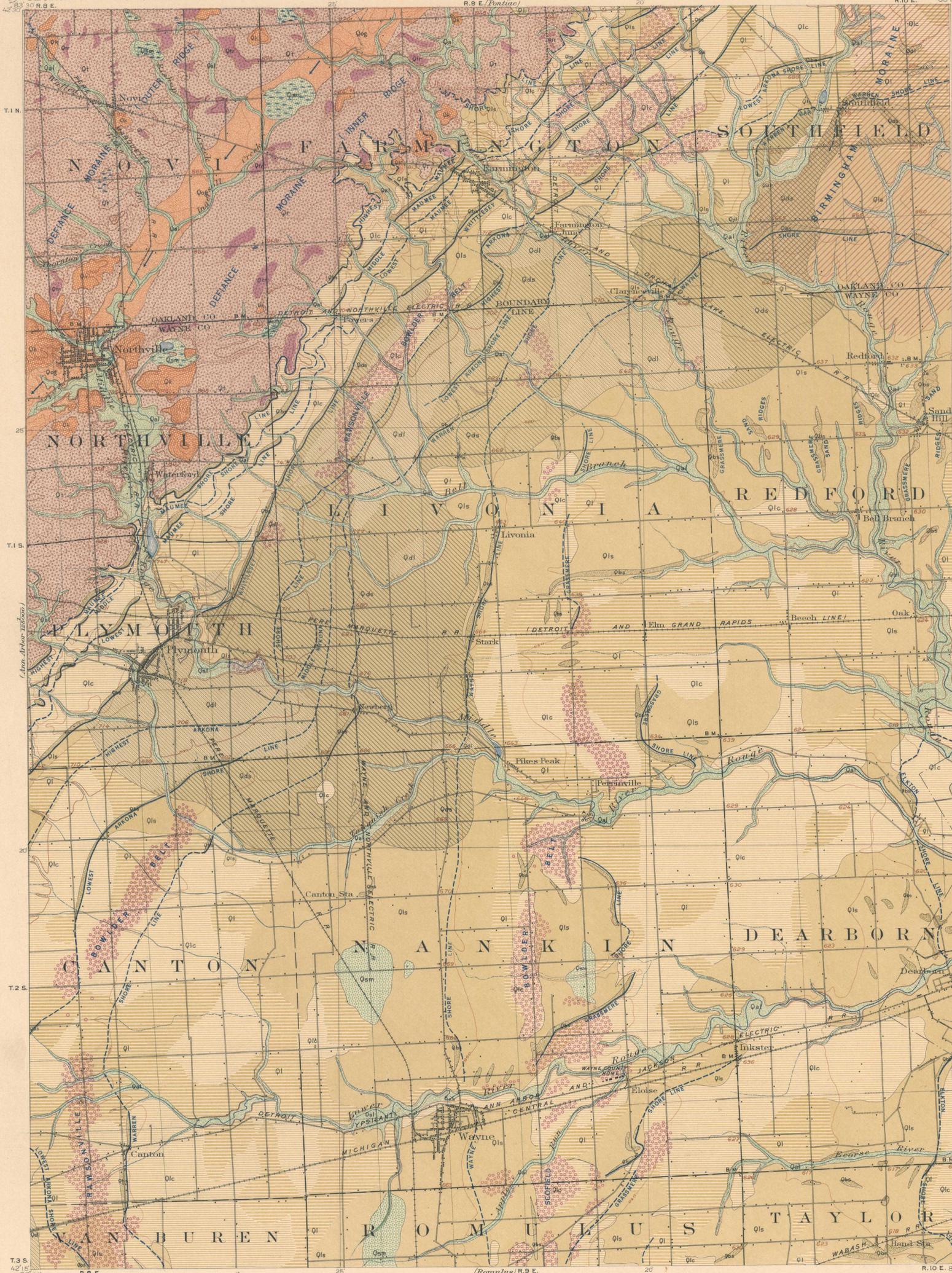


AREAL GEOLOGY

DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY
GEORGE OTIS SMITH, DIRECTOR

STATE OF MICHIGAN
BOARD OF GEOLOGICAL SURVEY
R.C. ALLEN, DIRECTOR

MICHIGAN
WAYNE QUADRANGLE
R. 10 E.



LEGEND

SEDIMENTARY ROCKS
(Areas of subequal deposits are shown by patterns of dots and circles; subsequent deposits by patterns of parallel lines)

Qam
Swamp muck and peat

Qal
Alluvium
(Loam, silt and muck; only larger areas shown)

Qls
Lacustrine sand in bed of glacial lakes
(includes some delta, beach and dune sands)

Qds
Pebbly delta sand
(deposited in glacial lakes; includes some beach sand)

Qdl
Pebbly delta loam
(deposited in glacial lakes; includes some beach sand and clay)

Ql
Lacustrine loamy soil in bed of glacial lakes
(admixture of sand and clay in near delta deposits; pebbly in places)

Qlc
Chiefly lacustrine clay in bed of glacial lakes
(more or less reworked moraine clay pebbly in places)

Qog
Moraine covered by thin lake sediments
(Birmingham moraine deposited in glacial Lake Sturgeon and its upper portion reworked into fine sand and clay)

Qog
Boulder belts
(scattered boulders and cobbles deposited by glacier along its border)

Qk
Outwash gravel
(deposited in channel of glacial stream while distance from ridge was being formed)

Qk
Kames
(irregular hills of stratified drift)

Qr
Morainal till with hilly surface
(Duluth moraine, not submerged by glacial lakes; prominent knolls and ridges indicated by Qr)

Recent
Deposits in glacial lakes; Muskegon to Livonia
Deposits in glacial lakes; Muskegon to Livonia
Deposits in glacial lakes; Muskegon to Livonia
Deposits of Huron-Erie glacial lake and its associated streams

QUATERNARY

Direction of glacial drainage

Note: Distribution of bedrock formations is shown in figure in text.

☉ Clay pits
* indicates abandoned pit

Economic note: Clay for brick and tile can be obtained from Qal and Ql; gravel for road and concrete from Qk, Qog, and portions of Qds; building sand from Qds, Qls, and Qlc; boulders and cobbles for construction work from Qr, Qr, and the boulder belts; peat and muck from Qam. Sand is obtained from some drained swamps.

H.M. Wilson, Geographer.
Robert Muldrow, Topographer in charge.
Topography by Robert Muldrow and J.T. McCoy.
Control by George T. Hawkins and J.R. Ellis.
Surveyed in 1903.

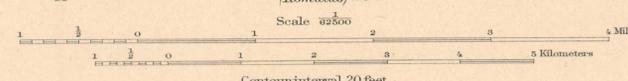


DIAGRAM OF TOWNSHIP:

6 5 4 3 2 1
7 6 5 4 3 2 1
8 7 6 5 4 3 2 1
9 8 7 6 5 4 3 2 1
10 9 8 7 6 5 4 3 2 1
11 10 9 8 7 6 5 4 3 2 1
12 11 10 9 8 7 6 5 4 3 2 1

Geology by W.H. Sherzer.
Surveyed in 1911.
SURVEYED IN COOPERATION WITH THE STATE OF MICHIGAN.