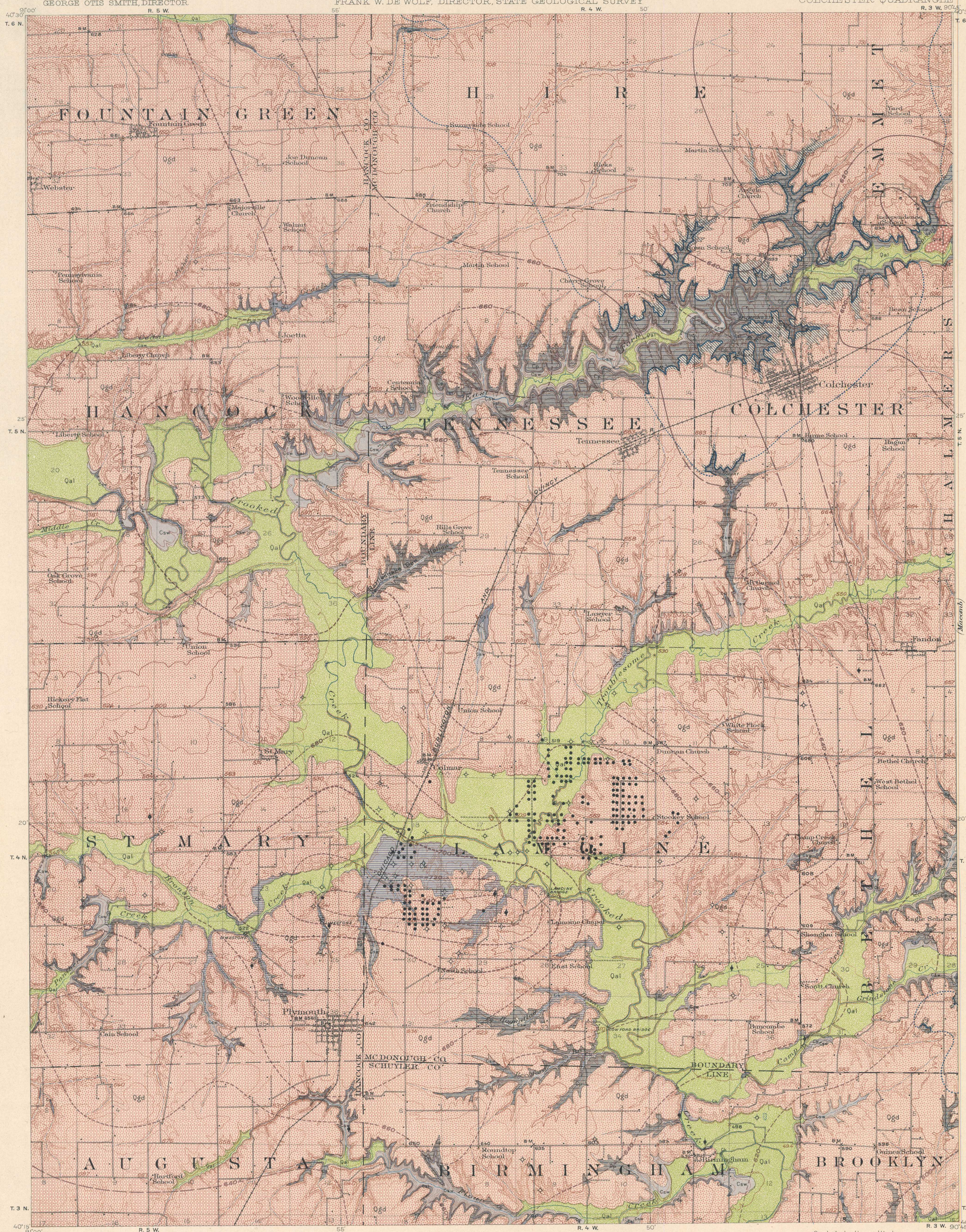
DEPARTMENT OF THE INTERIOR
FRANKLIN K. LANE, SECRETARY
U. S. GEOLOGICAL SURVEY
GEORGE OTIS SMITH, DIRECTOR

AREAL GEOLOGY

STATE OF ILLINOIS
GOVERNOR EDWARD F. DUNNE, T. C. CHAMBERLIN, E. J. JAMES, COMMISSIONERS
FRANK W. DE WOLF, DIRECTOR, STATE GEOLOGICAL SURVEY

ILLINOIS
COLCHESTER QUADRANGLE



LEGEND

SEDIMENTARY ROCKS

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

QUATERNARY

Recent series

Qal — **Alluvium** (in flood plains of present streams, only larger deposits mapped)

Pleistocene series

Qtd — **Terraced stream deposits** (chiefly silt, only the larger remnants mapped)

Qgd — **Glacial drift overlain by thin loess** (pebbly clay and pockets of sand; a few outcrops of Kansan interglacial sand and soil are included in mapping)

CARBONIFEROUS

Pennsylvanian series

Cc — **Carbondale formation** (shale and sandstone with Murphysboro (Colchester) coal at base)

Cp — **Pottsville formation** (shale, sandstone, and clay; a little limestone, and a few lenticular coal beds)

UNCONFORMITY

Mississippian series

Meramec group

Csl — **St. Louis limestone** (fine-grained limestone, in greater part brecciated)

Csw — **Spergen and Warsaw formations** (shale and impure limestone in thin lenticular beds, contains many geodes)

Osage group

Ck — **Keokuk limestone** (crystalline crinoidal limestone)

ECONOMIC AND STRUCTURE DATA

Outcrop of Murphysboro (Colchester) coal bed at base of Carbondale formation (approximate location beneath glacial drift shown by dotted line)

Structure contours showing altitude of Murphysboro (Colchester) coal bed where known to be present (contour interval 20 feet, datum mean sea level)

Structure contours showing altitude of Murphysboro (Colchester) coal bed where largely removed by erosion (long dashes indicate that exact position of coal horizon is doubtful and some coal may be present; short dashes indicate that coal bed is all removed by erosion and its former elevation is estimated from position of Pottsville and older formations)

- *Coal mine shaft*
- *Coal mine drift*
- *Limestone Quarry*
- *Clay Clay mine*
- *Clay or shale pit*
- *Productive oil wells*
- *Wells having slight show of oil*
- *Dry oil wells*

Note: The outcrop and altitude of the Murphysboro coal, the only important coal bed in the area, are shown on the map. Pottery clay occurs in the Pottsville formation 30 to 40 feet below the Murphysboro coal horizon. Clays and shales suitable for other clay products are abundant in the Pennsylvanian and Quaternary formations. Limestone for lime and cement manufacture and stone and sand for building and concrete can also be obtained from appropriate formations in the quadrangle. Oil is locally obtained from Silurian rocks by deep drilling.

R. B. Marshall, Chief Geographer.
W. H. Herron, Geographer in charge.
Topography by Frank Tweedy and W. S. Gehres.
Control by C. B. Kendall, S. R. Archer, and E. M. Bandli.
Surveyed in 1911.
SURVEYED IN COOPERATION WITH THE STATE OF ILLINOIS.

TRUE NORTH
MAGNETIC NORTH
APPROXIMATE MEAN DECLINATION 1911.

Scale $\frac{1}{62500}$

1 ½ 0 1 2 3 4 Miles

1 ½ 0 1 2 3 4 5 Kilometers

Contour interval 20 feet.
Datum is mean sea level.
Edition of Oct. 1916.

Geology by Henry Hinds.
Surveyed in 1912.
Oil wells located chiefly by W. C. Morse, 1914, with additions by F. H. Kay in 1915.
SURVEYED IN COOPERATION WITH THE STATE OF ILLINOIS.