

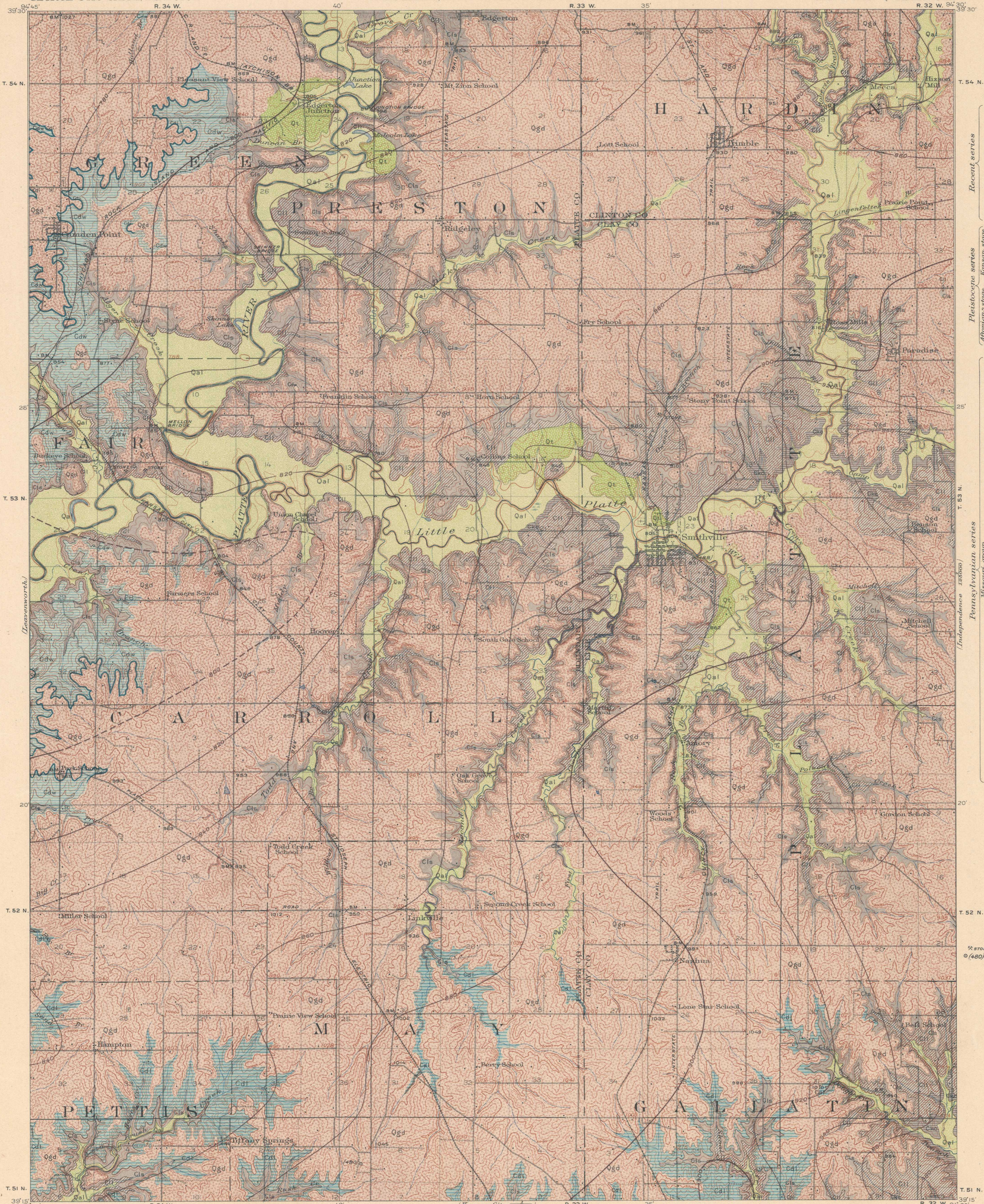
AREAL GEOLOGY

STATE OF MISSOURI
BUREAU OF GEOLOGY AND MINES
H.A. BUEHLER, DIRECTOR AND STATE GEOLOGIST

MISSOURI
SMITHVILLE QUADRANGLE

U.S. GEOLOGICAL SURVEY
GEORGE OTIS SMITH, DIRECTOR

THE SCHOOL OF MINES
STATE COLLEGE, PA.



LEGEND

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

Qal

Alluvium
(in flood plain of present streams)

Qt

Terrace deposits and wash
(gravel and wash covering terraces on slopes of abandoned or near abandoned meanders)

Qgd

Glacial drift
(boulder-clay overlain by thin loess of post-Kansan age, sandstone tabular)

Qig

Interglacial deposits
(sandstone gravelly sand and sand in pre-Kansan valley, gravelly sandstone west of River and at mouth of Cross Creek)

Cdl

Cd

Cdw

Douglas formation
(chiefly shale and sandstone with limestone bed near middle)

Lawrence shale member, Cd

(sandstone chiefly sandstone and sandy shale, overlain by clayey deposit, which locally may unconformably on Lansing formation)

Istian limestone member, Cd

(gray massive limestone)

Weston shale member, Cdw
(blue or drab argillaceous shale)

Cls

Cll

Lansing formation
(sandstone and shales interbedded, the upper three members mapped together as Cll)

Stanton limestone member
(massive limestone)

Vilas shale member
(blue shale with sandstone layers)

Plattsburg limestone member
(shaly limestone shaly in middle)

Lane shale member, Cll
(shale with some sandstone in upper half and irregular limestone in middle)

Cks

Kansas City formation
(limestone and shales interbedded, members not separately mapped)

Iola limestone member
(thin bedded limestone)

Chanute shale member
(shale with two limestone lentils)

Drum limestone member
(thin limestone lentils in part)

Cherryvale shale member
(thin blue shale)

Note: The mapped Carboniferous formations are concealed in places by loess, thin glacial drift, or both.

ECONOMIC AND STRUCTURE DATA

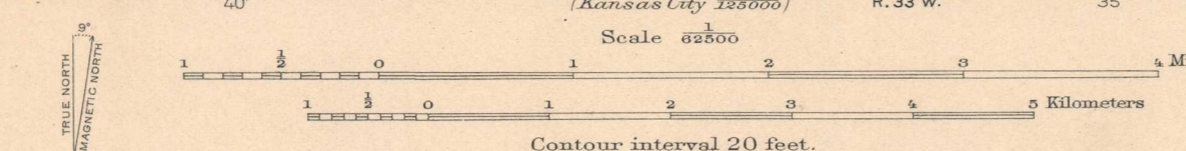
90°

Structure contours on base of Plattsburg limestone member of Lansing formation
(contour interval, 20 feet, datum, mean sea level)

* Stone Limestone quarries
@ (480) Deep borings for oil, gas, or coal
Depth indicated in feet

Economic data. Most of the quadrangle is probably underlain by one or more workable coal beds in the Cherokee shale at depth of 300 feet or more. The mapped Carboniferous rocks include limestone and sandstone beds suitable for building and other purposes. Shale available for brick and other manufactures. Lignite suitable for brick making is plentiful on the glacial drift. Mineral springs issue from sandstones in southern part of quadrangle.

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Surveyed in 1912.



Geology by F.C. Greene,
assisted by Maurice Albertson.
Surveyed in 1912.

SURVEYED BY THE STATE OF MISSOURI.

SURVEYED IN COOPERATION WITH THE STATE OF MISSOURI.

APPROXIMATE MEAN DECLINATION 1912.

Contour interval 20 feet.
Datum is mean sea level.
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