

**KANSAS GEOLOGICAL SURVEY  
OPEN-FILE REPORT 90-61**

**NORTHEASTERN KANSAS FIELD TRIP:  
LAWRENCE TO TOPEKA ON THE RIVER ROAD**

by

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ELDERHOSTEL FIELD TRIP

LAWRENCE TO TOPEKA

30 MAY 1990

YOUR HOSTS: JIM MCCAULEY AND REX BUCHANAN

0.0 Leave Gertrude Sallards Pearson Hall traveling west on 11th Street.

0.2 (distance from one entry to the next)

0.2 (total elapsed distance from one stop to the next) Turn north on Mississippi Street. As you may have noticed, many of the older streets in Lawrence are named after states. It is particularly appropriate that the main street in the downtown is named Massachusetts, because many of the town's earliest settlers were abolitionists from that state.

1.0

1.2 Lawrence Municipal Water Works on Third Street. Turn east. Much of Lawrence's water comes from wells in the alluvium of the Kansas River valley just north of here. Clinton Reservoir on the Wakarusa River west of Lawrence provides the city with an additional source of water.

0.1

1.3 Indiana Street. Turn north. While many early residents of Lawrence were from New England, settlers in the rest of the state were more likely to be emigrants from midwestern states such as Illinois, Indiana, or Ohio.

0.1

1.4 Burcham Park. Cross the Atchison, Topeka, & Santa Fe Railroad tracks and drive to the river's edge to view Stan Herd's sculpture on the left bank. The Kansas River is one of the two great drainage basins in Kansas. The other is the Arkansas River, which drains much of the southern half of the state. The Kansas, or Kaw, drains a watershed of more than 60,000 square miles, carrying an average of 4.75 million acre-feet of water per year. The Kansas River here is actually a small lake backed up by Bowersock Dam beneath the bridges to the east. This low-water dam is a hydroelectric dam, the only one in Kansas. The elevation of the spillway at Bowersock is 812 feet; the elevation here is about 818 feet, making this the lowest point (topographically) in this field trip. During the disastrous 1951 flood, water here was 10 feet deep and stretched from bluff to bluff, a width of more than three miles.

0.5

0.5 Leave Burcham Park, heading west on Second Street. Go to Maine Street, then turn south, passing Lawrence Memorial Hospital.

0.4

0.9 Sixth Street, which is also U.S. highways 40 and 59. Turn west.

0.6

1.5 Here the street climbs up on the escarpment of the Oread Limestone, of which Mount Oread is a part. This road cut is in the Toronto limestone, named after a small town in southeastern Kansas.

0.1

1.6 Traffic light at Sixth and Iowa streets. Continue west.

0.2

1.8 Here the street completes its climb onto the Oread escarpment, passing through a road cut in the Plattsmouth Limestone Member of the Oread Limestone. The elevation here is 1000 feet, more than 180 feet above Burcham Park.

1.0

2.8 Traffic light at Sixth Street and Kasold, which is also County Road #438. Turn north, travelling down off the Oread escarpment. This route is called the River Road because it hugs the south bank of the Kansas River from Lawrence to Topeka.

1.7

4.5 Pass over the Kansas Turnpike (Interstate 70).

0.4

4.9 Turn west at stop sign.

0.6

5.4 Turn north on County Road #7.

0.4

5.8 Here the road passes over the edge of the Buck Creek Terrace. This terrace represents alluvial deposits laid down by the Kansas River during the second to the last of the glacial periods, the Illinoian. This glacier did not reach Kansas, but the Kansas River obviously flowed at a higher level than today. The lower level on which the road continues to the north is the present-day floodplain of the Kansas River, with an elevation of about 830 feet.

0.3

6.1 Baldwin Creek.

0.1

6.2 Turn west.

0.2

6.4 Turn north and cross Lake View Lake. This is an ox bow lake. It was once part of a meander loop in the Kansas River. But the Kaw took a short cut to the north, abandoning this bend of the river as a shallow, U-shaped lake. The water level in this lake closely reflects the level of the groundwater in the alluvium of the Kansas River. The only natural lakes in Kansas are either ox bows, such as this, or water-filled depressions formed by the underground solution of soluble rocks such as salt in central and western Kansas. Before the construction of man-made lakes, natural lakes, such as Lake View, were important recreation areas. A private club has owned this lake for nearly 100 years. Ox bows are usually short-lived lakes, their demise being silt, which washes in from runoff and floods and eventually fills the basins. This lake must be dredged to maintain a satisfactory water depth.

0.5

6.9 Crossing of the Atchison, Topeka, & Santa Fe Railroad. The siding is named Lake View. This is the same railroad crossed at the entry to Burcham Park. It is the main line of the Santa Fe and is used by Amtrak's Southwest Chief, which makes daily runs between Los Angeles and Chicago.

0.3

7.2 Turn west.

0.5

7.7 A center-pivot irrigation system north of the road. This is a long sprinkler on wheels that slowly circles and irrigates the field with groundwater, which is pumped from the ground under pressure. This water pressure is used to propel the wheels and rotate the sprinkler. Sprinklers such as this are much more common the High Plains from Nebraska south into Texas, where the huge aquifer known as the Ogallala Formation is tapped to grow thirsty crops, such as corn, that couldn't otherwise survive on the semiarid High Plains. In eastern Kansas, precipitation averages about 35 inches per year; however, dry periods and drought still occur and some irrigation systems have been installed. Large, dependable aquifers are required for these systems, and in eastern Kansas, such aquifers are restricted to the major stream valleys.

0.3

8.0 Here the road passes the west end of Lake View Lake.

0.2

8.2 Turn north.

0.5

8.7 Turn west.

0.3

9.0 End of pavement. To the north is the beginning of the levee on the south side of the Kansas River. It was built to protect Lawrence from floods.

1.0

10.0 Railroad crossing. Elevation 841 feet.

1.8

11.8 Oakley Creek. South of the road is a field of alfalfa (known in Europe as lucerne). It is a legume, grown for hay and to put nitrogen back into the soil. It sinks deep roots that can actually reach the water table and help it survive on groundwater. Alfalfa is cut several times per year; the number of hay crops that can be taken off of a field usually depends on the amount of summer precipitation.

0.4

12.2 Here the road climbs up out of the floodplain and passes an exposure of the Plattsmouth limestone. This unit caps much of Mount Oread at an elevation of 1000 feet or more. Here the elevation is about 880 feet, the result of a gentle westward dip of the surface bedrock in eastern Kansas, where rocks generally dip west/northwest, away from the Ozark Dome.

0.5

12.7 After passing the Kanwaka shale (which isn't exposed here), the road crests a hill capped by the Lecompton Limestone. The Lecompton ranges from 30 to 66 feet in thickness.

0.1

12.8 Turn north.

0.1

12.9 Turn west.

0.4

13.3 Stop sign and junction with Douglas County Road #1023. Go north. This road has recently been designated the Eisenhower Memorial Drive in honor of the centennial of Ike's birth and the fact that his parents met while attending Lane University in Lecompton.

0.4

13.7 Turn west and enter Lecompton. The town was once known as Bald Eagle, because of the profusion of the birds that lived along the Kansas

River in this area. Today bald eagles commonly nest in the trees in this area and to the east, feeding in the open waters of the river. Lecompton was a hot bed of pro-slavery sentiment during the territorial days of Kansas history, and was for a brief time the territorial capital of Kansas.

0.3

14.0 Lane University. This college was founded in 1854 by the United Brethren; the building was constructed on the foundation of the old territorial capital. In 1903 the school was moved to Holton and renamed Campbell College.

0.5

14.5 At the edge of this hill capped by the Lecompton Limestone is an exposure of the Spring Branch limestone, the lowest member of the Lecompton Limestone. The Spring Branch is five to 14 feet thick, and single-celled, wheat-shaped fossils called fusulinds are abundant in many of its outcrops.

0.3

14.8 Coon Creek.

0.2

15.0 Crossroads. The River Road goes north.

1.0

16.0 Turn west just past the Christmas tree farm and climb about 50 feet above the Kansas River floodplain.

0.8

16.8 Turn north.

0.1

16.9 Cross the Santa Fe tracks and turn west. The elevation is 850 feet. To the north is a field of winter wheat. In most years, Kansas grows more wheat than any other state, resulting in its nickname of "The Wheat State." Nearly all the wheat is winter wheat, planted in the fall and grown through the winter. Cattle are often pastured on wheat fields during the winter. Rapid growth occurs in the spring, when the wheat develops kernels (or "heads out"). The kernels are allowed to dry somewhat before harvesting in the early summer. After a disastrous 1989 crop that was ravaged by drought, the 1990 crop looks good, with estimates of up to 460 million bushels for statewide production.

1.9

18.8 The center-pivot system north of the road is used to irrigate a field of corn. A Broadway lyric boasts of being "corny as Kansas in August" although several states produce more corn than Kansas. Only northeast Kansas is considered part of the Corn Belt. Much of the corn here is grown in the rich bottom lands along streams. The most productive corn-raising counties in Kansas are in the western part of the state, where irrigation makes it possible to grow corn, mostly for use in feeding livestock.

0.2

19.0 Turn south, crossing the railroad tracks. There once was a siding here called Grover. Turn west shortly after crossing the tracks.

0.5

19.5 Spring Creek. A total of 100 Spring creeks appear on topographic maps of Kansas, including three in Douglas County alone. It is the most popular stream name in Kansas. This Spring Creek has its source in springs near the small town of Big Springs on a ridge three miles south. These springs were a watering spot along the Oregon Trail, which followed this ridge from Lawrence to Topeka.

0.4

19.9 Greenwood Valley Road leads south from here.

0.5

20.4 The road climbs up out of the floodplain past exposures of Lecompton Limestone. These limestones cap the hills in and around Lecompton five miles east of here and are more than 100 feet above river level. Here they are about 50 feet above the river. The uppermost limestone is named the Beil and is noted for the large number of invertebrate fossils it contains, representing the marine life that existed in the shallow seas that covered the area during the Pennsylvanian Period, about 300 million years ago. These fossils include corals, crinoids (a starfish-relative also called a sea lilly), brachiopods, and the single-celled fusulinds.

0.6

21.0 The road curves into a small valley, past additional exposures of limestones in the Lecompton Limestone.

0.7

21.7 Here the gravel turns to pavement as we cross from Douglas to Shawnee County.

0.4

22.1 Here the road returns to the floodplain, where the elevation is 854 feet.

1.1

23.2 An old stone schoolhouse sits on the southeast corner of this crossroad. One-room schools dot the Kansas landscape. Once the mainstay of public education in more agrarian times, one-room schools are now a thing of the past in Kansas. The last one closed this spring near Dermot in the far southwest corner of the state.

0.6

23.8 Whetstone Creek.

0.4

24.2 Creek Road. Turn south.

0.5

24.7 Junction with U.S. Highway 40. Turn west.

0.3

26.0 Deer Creek Limestone. This formation ranges from 20 to 80 feet thick.

0.2

26.2 Tecumseh Creek.

0.3

26.5 Tecumseh Road leads a short distance north to the town of Tecumseh, named after the famous Shawnee Indian Chief. It is the oldest town in Shawnee County, predating Topeka.

0.5

27.0 Stinson Creek, named after the founder of the town of Tecumseh.

1.2

28.2 Blinking light. Croco Road.

1.0

29.2 Deer Creek.

0.2

29.4 Turn south on Deer Creek Parkway to Interstate 70.

0.8

30.2 Take I-70 east to Wanamaker exit and the Kansas Museum of History. The following entries points of interest keyed to milepost numbers, the rectangular green signs on the right-hand side of the road.

362.5 Tenth Avenue exit. The Kansas Statehouse and state office buildings are accessible from this exit.

361.4 The twin spires of St. Joseph's Catholic Church are visible south of the highway.

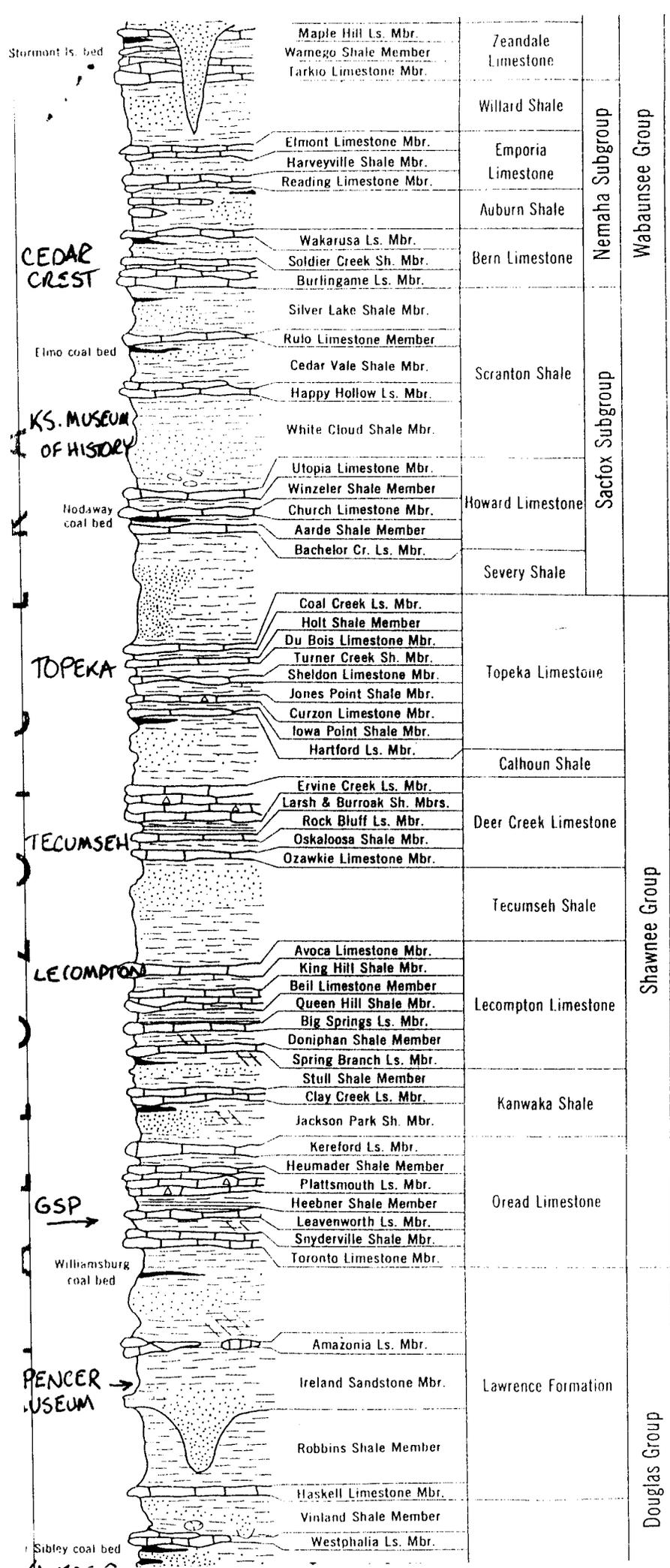
358.3 The Kansas River is visible to the north. A mile south is Gage Park, home of the Topeka Zoo and a well-known rose garden.

357.1 On the hill to the north is Cedar Crest, the official residence of the governor of Kansas.

356.6 North is the Menninger Foundation.

356.1 Wanamaker Road exit.





VIRGILIAN STAGE

UPPER PENNSYLVANIAN SERIES

PENNSYLVANIAN SYSTEM

BEDROCK FROM  
LAWRENCE TO TOPEKA

1 INCH = 75 FEET