

KGS
OF
73-11

MEMO TO: Open File
FROM: Frank W. Wilson
SUBJECT: Possible Earth Rupture Associated with Earthquake
in Clark County
DATE: August 16, 1973

In "Exploring the World Through Geology", a 4-H manual on geology prepared by the Cooperative Extension Service of Kansas State University, authored by Harold E. Jones, there is a picture on page 28 of an "earthquake strike" in Clark County. This picture was called to my attention by Paul Hilpman. On August 14, I called Grace Muilenburg ^{who was credited ~~with~~ for many of the photo} to ask the origin of this photograph. She did not think it had come from her files. She said she would also ask Ada Swineford, who had worked extensively in Clark County and who was staying at her house at that time if she had knowledge of the "rupture". Grace called me back the next day stating that Ada had no knowledge of either the ground rupture or the photograph. Grace then inquired of Harold Jones who called me back on August 16 with the following information: He had taken the picture in August 1969 and at the time had been accompanied by Mr. Barnes, who was the County Agent of Clark County and who is now County Agent at Seward County, stationed in Liberal. They had also been accompanied by an oil geologist who lived in Ashland. Dr. Jones had not recorded his name. The location of the earth rupture according to Dr. Jones' notes is as follows: At the east edge of Ashland there is a gravel road which extends

LIBRARY
USE ONLY

north from U.S. 160. Travel 6.4 miles north of that junction and on the left side of the road in a pasture approximately 50 yards west of the road is the so-called ground rupture. He estimated that it trended 30° east of north and extended at least 200 yards. I asked him, as a Soil Scientist, what he estimated the age of the fracture was and he said that there was no doubt in his mind that it had occurred in the last 50 years. He gave the following description of the geology. He said leaving Ashland, going north, you're in the Whitehorse Formation. At the site of the old Benedictine Monastery is the Day Creek dolomite, then proceed upward through the Cheyenne sandstone and the highest formation is the Taloga formation. He said the rupture was located on level ground, as the photo shows, and it is fairly high in what I assume to be the upland surface. He stated that it definitely was not an erosional feature. ^{ff} Dan Merriam in his "Geologic History of Kansas" records an earthquake epicenter which was reported by Heck, N.H., and Bodle, R.R., 1931, United States Earthquakes, 1929: U.S. Coast and Geodetic Survey, Serial 511, p. 8-9. It was also reported in Heinrich, R.R., 1941, A Contribution to the Seismic History of Missouri: Seismological Society of America Bulletin, V. 31, no. 3, p. 187-224. This earthquake occurred about 10:20 p.m. on November 26, 1929. It is estimated to have had an intensity IV or V shock which was felt at Ashland, Kansas. I have written today to Ms. Inez Kumberg, Curator, Clark County Historical Society, 424 West 4th Street, Ashland, Kansas, requesting any information or personal knowledge she may have

of this event or of the finding of the earth rupture. If this can be confirmed, it is, to my knowledge, the first evidence of ^{surface} earth rupture connected with an earthquake reported in Kansas. It should be noted that Ashland is located near the eastern part of a very large depression which is known as the Ashland-Englewood Lowland, ^{this depression} which is thought by Frye and others, to be associated with extensive solution and collapse caused by the subsurface dissolution of the Permian salt section east of the Crooked Creek fault which runs approximately through Meade, Kansas. It is possible, therefore, that this so-called earth rupture might be associated with subsidence rather than an actual earthquake or that the two events might be connected.

The rupture was subsequently located ^{by me} on the 1953 air photos of Clark County. It is indicated by a small arrow on photo # CHE 3M 27. The photo is inconclusive. There are no other fault-like linear features nearby. The "rupture" is adjacent to a small surface drainage and although it is not connected to it, is approximately parallel to other side-branching gullies. The upland appears to be blanketed by silt or sand. It is possible the structure is caused by collapse of these sediments into a buried pre-Pleistocene drainage feature which localizes subsurface drainage and causes winnowing of the finer-grained material. Somewhat similar features have been noted by me in Meade County, but in that instance the subsidence consisted of many small circular depressions clustered at the head of small tributary gullies. They were not linear as this feature is.

913-864-4991

August 16, 1973

Ms. Inez Kumberg, Curator
Clark County Historical Society
424 West 4th
Ashland, Kansas 67831

Dear Ms. Kumberg:

Dr. Harold E. Jones of the Kansas State University Extension Service has a photograph of an earth rupture north of Ashland which he said was reported to him as having occurred at the time of an earthquake in that area, probably the one of November 26, 1929. This information is of interest to us because if this can be confirmed, it is the only reported instance ~~to~~ ^{to} ~~my~~ knowledge, of an actual rupture at the ground surface associated with an earthquake in Kansas. I am writing to you to inquire whether there was an account in the local newspaper of the earthquake event or of the finding of the ground rupture, also whether you have any personal recollection concerning this.

Very sincerely yours,

Frank W. Wilson
Engineering Geologist

FWW:km

The Clark County Historical Society

424 West Fourth Street
Ashland, Kansas, 67831

MUSEUM
424 WEST FOURTH STREET

ORGANIZED 1939
INCORPORATED 1947

Sept. 10, 1973.

Kansas Geological Survey,
1930 Avenue 'A', Campus West,
The University of Kansas,
Lawrence, Kansas, 66044.

Att'n-Frank W. Wilson, Engineering Geologist.

Concerning your query about an earth rupture occurring in Clark County, possibly Nov. 26, 1929. I have not been able to follow this through the newspaper here. We cannot find one of that date, here, at the Museum, and the Newspaper office evidently hasn't had time to check their files, as I had asked them.

I have talked to some of the older people who were here at that time, and have one man, especially, who recalls something happening around that period. He has been in the vicinity, and has seen the cracks or ruptures that were made, and which are still there. If you are able to make a trip out here, he will be ready to be your guide.

If you do come to Ashland, please stop in and visit our Museum.

Very sincerely yours,
Florence E. Hurd
Florence E. Hurd, Curator,

Pioneer Museum,
P.O. Box 613,
Ashland, Kansas.