# 1934 Hansel Valley, Utah Earthquake

**March 12, 1934**
**8:05 a.m.**
**Magnitude 6.6**

**March 12, 1934**
**11:20 a.m.**
**Magnitude 6.1**

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## Newspaper Articles

**This publication is an archive of newspaper articles relating to the**

# 1934 HANSELVALLEY, UTAH EARTHQUAKE
## Monday, March 12, 19934
## 8:05 a.m.
## Magnitude 6.6

## Significant Aftershocks
## March 12, 1934; 11:20 a.m.; Magnitude 6.1
## March 15, 1934; 5:02 a.m.; Magnitude 5.1
## April 14, 1934; 2:26 p.m.; Magnitude 5.6
## May 6, 1934; 1:09 a.m.; Magnitude 5.6

Newspaper articles were collected as the basic step of an earthquake education project funded by the U.S. Geological Survey under the National Earthquake Hazards Reduction Program (NEHRP). The project, entitled *Personalizing the Earthquake Threat in the Intermountain West*, involves researching and archiving newspaper articles, individual accounts, photographs, and additional sources of information for 48 earthquakes that have occurred in Utah, Idaho, Wyoming, and Montana since settlement. This information forms the basis for several earthquake education products: World Wide Web site publication of information collected, travelling photographic exhibit, scripted slide sets, manuscript for short book, and classroom activity packets.

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# Information Categories

The content of each newspaper article has been classified by the categories of information it contains. The first letters of the information categories assigned each article are listed by the headlines in the Table of Contents that follows. Listed below is an explanation of the types of information that can be expected within each category.

**A — Aid:**
provide medical services, shelter, donations, loans, advice, encouragement, implement safety measures

**B— Building Damage:**
damage to structure itself plus windows, chimneys, facade (typically damage visible from outside the building)

**E — Earthquake Description:**
where, when, duration, direction, sound, motion, number and timing of aftershocks

**G — Geologic Effects:**
changes at the Earth's surface—fault scarps, rockfalls, landslides, ground cracks, ground subsidence, sand boils, water spouts; effects on springs, lakes, wells

**H — Humor**

**I — Impact:**
changes in daily routine; rumors; influx of reporters and politicians; cost in dollars

**L — Lifelines:**
effects on transportation—roads, bridges, railroads, airports, vehicles
effect on communications—telephone, telegraph
effects on power, gas, water, and sewer lines
effects on dams

**N — Nonstructural Effects:**
effects on plaster, furnishings (typically damage or rearrangement of furnishings visible inside a building)

**P — People:**
emotional and physical effects on people, responses during and after; includes deaths, injuries, near misses

**R — Recovery:**
clean up, rebuild, returning to normal routine

**S — Scientific Explanation of the day**

# 1934 Hansel Valley earthquake - listing of newspaper articles

## NEWSPAPER: Box Elder Journal (Brigham City, UT)

| Date | Headline | Page | Information Categories | Utah Towns Mentioned |
|---|---|---|---|---|
| 03/13/1934 | Earthquake Felt Here Yesterday | 1 | B, E, I, N, P, S | Box Elder Co.- Kelton<br>Cache Co. - Logan<br>Millard Co.- Delta<br>Salt Lake Co - Magna, Salt Lake City<br>Utah Co. - Provo<br>Weber Co. - Ogden |
| 03/14/1934 | The Earthquake Plays Pranks In Box Elder | 2 | G | Box Elder Co. - Cosmo, Monument, Locomotive Springs |
| 03/15/1934 | Quake Is Felt At Snowville | 2 | B, I, P | Box Elder Co. - Snowville |
| 03/16/1934 | The Geologist Tells Story of Earth Tremors | 3 | G, P | Box Elder Co. - Hansel Valley |
| 05/24/1934 | Last date searched | | | |

# 1934 Hansel Valley earthquake - listing of newspaper articles

## NEWSPAPER: Deseret News (Salt Lake City, UT)

| Date | Headline | Page | Information Categories | Utah Towns Mentioned |
|---|---|---|---|---|
| 03/12/1934 | Utah Rocked By Severe Earthquake | 3 | A, B, E, G, I, L, N, P, | Box Elder Co. - Kelton, Locomotive Springs<br>Cache Co. - Logan<br>Davis Co. - Farmington, Cutler<br>Salt Lake Co. - Bingham, Magna, Salt Lake City<br>Utah Co. - Provo<br>Weber Co. - Ogden |
| 03/12/1934 | Sidelights On Quake | 6 | B, H, I, P | Salt Lake Co. - Salt Lake City |
| 03/12/1934 | Whose Fault Is It Anyway? | 7 | S | Utah |
| 03/12/1934 | Local Quake Rated On Par With Long Beach Temblor Of A Year Ago; Not On Wasatch Fault | 7 | E, I, S | Salt Lake Co. - Salt Lake City |
| 03/13/1934 | Utah Area Again Hit By Quakes | 9 | A, B, E, G, P | Box Elder Co. - Kelton, Locomotive Springs<br>Salt Lake Co. - Salt Lake City |
| 03/13/1934 | Dry Wells Come Back With Quake | 10 | G | Box Elder Co. - Kosmo |
| 03/13/1934 | Cities Report Quake Action | 10 | E, B, G, I, N, P, S | Box Elder Co. - Garland, Snowville<br>Tooele Co. - Tooele<br>Utah Co. - Springville<br>Weber Co. - Ogden |
| 03/13/1934 | Logan Damage Only To Surface Checkup Reveals | 11 | B, I, N, L | Cache Co. - Logan |
| 03/13/1934 | The Quake | 11 | P, S | Salt Lake Co. - Salt Lake City<br>Weber Co. - Ogden |
| 03/14/1934 | Fate Saves S.L. From Destruction Say Quake Experts | 12 | G, S | Box Elder Co. - Hansel Valley<br>Salt Lake Co. - Salt Lake City, |
| 03/14/1934 | To Discuss Quake | 12 | S | Salt Lake Co. - Salt Lake City |
| 03/15/1934 | Earthquakes Again Shake Northern Utah | 13 | B, E, G, L, S | Box Elder Co. - Hansel Valley, Snowville<br>Rich Co. - Randolph<br>Salt Lake Co. - Salt Lake City |
| 03/15/1934 | Temblor Sends Inky Black Water From The Earth | 14 | E, G | Box Elder Co. - Locomotive Springs |
| 03/17/1934 | Slight Shocks Still Persist | 14 | E, I | Box Elder Co. - Locomotive Springs |

# 1934 Hansel Valley earthquake - listing of newspaper articles

## NEWSPAPER: Deseret News (Salt Lake City, UT)

| Date | Headline | Page | Information Categories | Utah Towns Mentioned |
|---|---|---|---|---|
| 03/17/1934 | Cove School Held "Unsafe" After Quake | 14 | B, R | Cache Co. - Cove |
| 03/22/1934 | Pack Advises City Prepare For Temblors | 15 | A, L | Salt Lake Co. - Salt Lake City |
| 03/22/1934 | Men Declare Schools Safe After Quake | 15 | B | Cache Co. - Cove |
| 03/22/1934 | Geologist Plans Trip To Kosmo As Guide For Party | 16 | A, S | Weber Co. - Ogden |
| 03/23/1934 | Decrease In Great Salt Lake Level Held Possible Cause For Recent Earthquake Which Rocked Half Of State | 16 | S | Box Elder Co. - Great Salt Lake, Corinne |
| 03/29/1934 | Quake Commission Again Advocated | 17 | A | Salt Lake Co. - Salt Lake City |
| 04/03/1934 | Rumbling Of Mountains In Millard Desert Revealed | 17 | G, H, P, S | Millard County |
| 04/07/1934 | Another Minor Earth Tremor Felt In Salt Lake | 18 | E | Box Elder Co. - Locomotive Springs<br>Salt Lake Co. - Salt Lake City |
| 04/14/1935 | City Feels New Quake | 18 | E, N | Salt Lake Co. - Salt Lake City<br>Tooele Co. - Grantsville |
| 05/07/1934 | S. L. Hit By Severest Quake Since March 12 | 18 | E, N, S | Box Elder Co. - Locomotive Springs, Kelton<br>Salt Lake Co. - Salt Lake City<br>Tooele Co. - Wendover |
| 05/08/1934 | Last date searched | | | |

# 1934 Hansel Valley earthquake - listing of newspaper articles

## NEWSPAPER: Ogden Standard Examiner

| Date | Headline | Page | Information Categories | Utah Towns Mentioned |
|---|---|---|---|---|
| 03/12/1934 | Earthquakes Shake Mountain Area | 19 | A, B, E, I, L, N, P, S | Tooele Co. - Grantsville<br>Weber Co. - Ogden |
| 03/12/1934 | Two Buildings Rub Together In Salt Lake; Glass Broken | 20 | A, B, E, I, N, P, S | Cache Co. - Logan<br>Salt Lake Co. - Salt Lake City |
| 03/12/1934 | Quake Cracks Building On Logan Campus | 22 | A, B, N | Cache Co. - Logan |
| 03/12/1934 | Utah Probably Quake Center | 22 | E, S | Wasatch mountains |
| 03/13/1934 | Device Shows 'Quake Severe | 22 | E, S | Utah |
| 03/13/1934 | Earthquake Stops Water Meter Clock | 23 | L | Weber Co. - Ogden |
| 03/14/1934 | Roaring Sounds Continue After Earth Crust Splits In Kelton And Cosmo Area | 23 | E, G, N, P | Box Elder Co. - Kosmo, Kelton |
| 03/14/1934 | Cracks Show 18-Inch Fall In Earth Surface | 24 | G | Box Elder Co. - Kelton, Kosmo |
| 03/14/1934 | Quakes Leave Few Chimneys In Snowville | 24 | B, S | Box Elder Co. - Snowville |
| 03/15/1934 | Damage To The North | 24 | B, S | Cache County |
| 03/16/1934 | Earth Split for 8 Miles in Quake Zone North of Lake | 25 | B, G, P, S | Box Elder Co. - Kosmo, Snowville<br>Weber Co. - Ogden |
| 03/18/1934 | Logan Geologist Tells What Happened When Utah Was Shaken by Earthquakes | 26 | G, S | Box Elder Co. - Hansel Valley |
| 03/19/1934 | Many Inspect Earth Splits at Lake Shore | 27 | G, P | Box Elder Co. - Hansel Valley<br>Weber Co. - Ogden |
| 03/19/1934 | Chapel Found Badly Damaged | 28 | A, B, G, I, P, S | Box Elder Co. - Kelton, Kosmo, Snowville |
| 03/20/1934 | Four Repairing Quake Cracks | 29 | B, N, R | Weber Co. - Ogden |
| 03/21/1934 | Geologist To Act As Guide | 30 | A, G, P, S | Box Elder Co. - Kosmo<br>Weber Co. - Ogden |
| 03/23/1934 | Earlier Earthquakes | 30 | S | Box Elder Co. - Corinne, Kelton, Snowville |

# 1934 Hansel Valley earthquake - listing of newspaper articles

## NEWSPAPER: Ogden Standard Examiner

| Date | Headline | Page | Information Categories | Utah Towns Mentioned |
|---|---|---|---|---|
| 03/25/1934 | Temblors Caused Great Fright in Nineties, Files of 'Brigham Bugler' Show | 30 | E, G, I, P, S | Box Elder Co. - Hansel Valley, Brigham City, Corinne, Willard, Three Mile |
| 03/28/1934 | Autos Hold More Danger Than Quakes | 34 | A, P, S | Weber Co. - Ogden |
| 04/07/1934 | Slight Quake Felt in Utah and Idaho | 34 | E | Box Elder Co. - Locomotive Springs<br>Salt Lake Co. - Salt Lake City |
| 04/14/1934 | Ogden Feels Quake Tremor | 35 | E, S | Box Elder Co. -Kosmo<br>Salt Lake Co. - Salt Lake City<br>Weber Co. - Ogden |
| 05/06/1934 | Early Morning Quake Is Felt in Ogden | 35 | E | Weber Co. - Ogden, Riverdale |
| 05/08/1934 | Last date searched | | | |

## NEWSPAPER: Post-Register (Idaho Falls)

| Date | Headline | Page | Information Categories | Utah Towns Mentioned |
|---|---|---|---|---|
| 03/12/1934 | Earth Tremors Rock South Idaho and Utah | 36 | E, N, P | Salt Lake Co. - Salt Lake City<br>Summit Co. - Coalville |
| 03/12/1934 | Northern Utah Feels Shocks | 37 | B, I, N, P | Cache Co. - Logan<br>Salt Lake Co. - Midvale, Salt Lake City, Sandy<br>Weber Co. - Ogden |
| 03/13/1934 | Tremors Tuesday Crack Walls And Topple Chimneys | 38 | B, I | Box Elder Co. - Kelton<br>Salt Lake Co. - Salt Lake City<br>Weber Co. - Ogden<br>Utah Co. - Provo |
| 03/14/1934 | Quake Splits Earth In Utah | 39 | E, B, G | Box Elder Co. - Kelton, Kosmo, Locomotive Springs |
| 03/14/1934 | Last date searched. | | | |

# 1934 Hansel Valley earthquake - listing of newspaper articles

## NEWSPAPER: Salt Lake Tribune

| Date | Headline | Page | Information Categories | Utah Towns Mentioned |
|---|---|---|---|---|
| 03/13/1934 | Five Shocks Shake Wide West Area | 40 | B, E, I, N, P, S | Box Elder Co. - Kelton<br>Cache Co. - Logan<br>Salt Lake Co. - Salt Lake City,<br>Sanpete Co. - Mt. Pleasant<br>Sevier Co. - Richfield<br>Weber Co. - Ogden |
| 03/13/1934 | Experts Differ On Center Of Salt Lake Earthquake | 41 | S | Salt Lake Co. - Salt Lake City |
| 03/13/1934 | Schools Remain Closed In City Till Wednesday | 42 | I | Salt Lake Co. - Salt Lake City |
| 03/13/1934 | Quake Blamed For Death Of Ogden Woman | 42 | B, E, I, L, N, P | Weber Co. - Ogden |
| 03/13/1934 | Temblor Felt At Richfield | 44 | B, E, I, N, P | Box Elder Co. - Brigham City, Garland, Kelton<br>Sanpete Co. - Mt. Pleasant<br>Seveir Co. - Richfield<br>Tooele Co. - Erda, Grantsville, Stockton, Tooele |
| 03/13/1934 | Towns Report Varied Events In Temblors | 45 | B, E, I, N, S | none |
| 03/13/1934 | Scientists Explain S.L. Quake Causes | 47 | E, S | Utah |
| 03/13/1934 | Tremor Most Severe In Local History, Pack Asserts | 48 | P, S | Box Elder Co. - Kelton |
| 03/13/1934 | Quake In Utah Declared Equal To 1925 Coast Shock | 49 | P, S | Salt Lake Co. - Salt Lake City |
| 03/13/1934 | Officer Links Quake and Ale | 50 | B, E, I, N, P | Cache Co. - Logan<br>Rich Co. - Randolph, Woodruff |
| 03/13/1934 | 'Let Us Out!' Yell Inmates of Jail As Earth Quivers | 51 | I, P | Salt Lake Co. - Salt Lake City |
| 03/13/1934 | Let's See Now, What Did They All Discuss | 52 | P | Salt Lake Co. - Salt Lake City |
| 03/13/1934 | Weather Freed of Responsibility For Earthquake | 52 | S | Salt Lake Co. - Salt Lake City |
| 03/13/1934 | Salt Lake Quake Recalls Warning of Noted Savant | 52 | S | Salt Lake Co. - Salt Lake City |
| 03/13/1934 | Provo Escapes Quake Damage | 53 | E, N | Utah Co. - Provo |

# 1934 Hansel Valley earthquake - listing of newspaper articles

## NEWSPAPER: Salt Lake Tribune

| Date | Headline | Page | Information Categories | Utah Towns Mentioned |
|---|---|---|---|---|
| 03/13/1934 | Three Tremors Shake Preston, Nearby Towns | 53 | B, N | none |
| 03/14/1935 | Worker Injured In Cavein Caused By Temblor Dies | 54 | P | Salt Lake Co. - Salt Lake City |
| 03/14/1934 | Earthquake Experience | 54 | A, I, S | Salt Lake Co. - Salt Lake City |
| 03/14/1934 | Enormous Cracks Found In Ground At Quake Center | 55 | B, E, G | Box Elder Co. - Kelton, Cosmo<br>Salt Lake Co. - Salt Lake City |
| 03/14/1934 | Schools Held Safe For All But Most Violent Quakes | 56 | N | Salt Lake Co. - Salt Lake City |
| 03/15/1934 | Quake Damages But Two Schools In Cache County | 57 | B | Cache County |
| 03/15/1934 | School News And Views | 57 | I, P | Salt Lake Co. - Salt Lake City |
| 03/15/1934 | Children Resume School After Post-Quake Holiday | 58 | I, P | Salt Lake Co. - Salt Lake City |
| 03/16/1934 | Thirty New Quakes Hit North Utah | 58 | B, E, G, I, L, N, S | Box Elder Co. - Locomotive Springs, Snowville<br>Salt Lake Co. - Salt Lake City<br>Weber Co. - Ogden |
| 03/23/1934 | Survey Shows School Intact | 59 | B | none |
| 03/23/1934 | Record Of Early Earthquake In Recent Shock Area Found In Weather Bureau Files | 60 | B, G | Box Elder Co. - Snowville, Kelton |
| 03/23/1934 | Safety Of School At Cove Certified By Commissioner | 61 | B | Cache Co. - Cove |
| 05/18/1934 | Last date searched | | | |

# 1934 Hansel Valley earthquake - listing of newspaper articles

## NEWSPAPER: Wyoming State Tribune (Cheyenne)

| Date | Headline | Page | Information Categories | Utah Towns Mentioned |
|---|---|---|---|---|
| 03/12/1934 | Large Area Of State Jarred | 62 | E, N, P | Tooele Co. - Grantsville |
| 03/12/1934 | Salt Lake Quake Jars Lamps Here | 62 | N | none |
| 03/13/1934 | 2nd Quake Victim Expires Tuesday | 63 | P | Salt Lake Co. - Salt Lake City |
| 03/15/1934 | Utah Is Jarred By New Shocks | 63 | B, E, L, N | Box Elder Co. - Snowville |
| 03/15/1934 | Last date searched. | | | |

Mar. 12, 8:05 a.m. M6.6; Mar. 12, 11:20 a.m. M6.0;
Mar. 15, 5:02 a.m. M5.1; Apr. 6, 7:16 p.m. M5.5;
Apr. 14, 2:26 p.m. M5.6; May 6, 1:09 a.m. M5½

# EARTHQUAKE FELT HERE YESTERDAY
## School Building At Logan College Damaged

Perhaps the most severe earthquake in Utah's history occurred Monday morning a few minutes after 8 o'clock and again at 11:21 a.m. No particular damage was noted in Brigham City but other sections of the state report serious damage and school buildings were vacated in Salt Lake City, Ogden, Logan, Preston and Kelton.

### A. C. Building Split

Perhaps the most severe damage occurred at Logan where the Home Economics building at the Utah State Agricultural college and the Preston high school building were so severely damaged that they will have to be abandoned.

President E. G. Peterson of the college reported the quake had split the three-story brick economics building from top to bottom. Students already assembled for eight o'clock classes fled to the campus as the chimney fell with a roar. Plaster was split on other campus buildings but the damage was slight.

The Preston school had its west wall forced six inches from the side walls.

In Salt Lake residents scrambled into the streets as the severe jar, which lasted about 20 seconds, and then paused twenty seconds, and then began and maintained itself for about thirty-five seconds, shook the city from end to end. Early office workers were driven into the streets as windows were broken, and plaster cracked from the walls. Chandeliers swayed, pictures fell from walls, and dishes were broken.

The death, attributed to the shock occurred at Ogden. Ida May Venable Atkinson, 21, wife of Grant Atkinson, was ill in bed when the first quake hit. She sat up and called to relatives:

"Why are you shaking my bed?"

Informed that it was an earthquake, Mrs. Atkinson fell back dead.

Charles Bitthell, 55, of 1345 Roberts avenue, an employee of the city waterworks, was seriously injured at Sixtieth South and Highland drive, when a six foot trench in which he was working caved in. He was rescued by fellow workers, and brought to the emergency hospital with severe internal injuries. He was reported in a semi-conscious condition in the L. D. S. hospital at noon.

### Windows Broken

The windows were broken at the Utah Power and Light company plant at Cutler. Employees reported, and the department of commerce station at Locomotive Springs reported the tremor as most severe.

In the south, although windows were broken in Magna and a considerable shock jarred Provo, reports indicated that the shock was not quite as intense as farther north, although excitement was high.

The chief operator of the Western Union Telegraph company, reported that damage between Kelton, Utah, and Burley, Idaho where the quake centered, was principally done to chimneys on homes and other buildings.

The schoolhouse at Kelton was severely rocked and after the chimney of the building had fallen, school was dismissed and the fire of the building put out. No report of injury or fatality has been made, Western officials state.

Dr. Frederick J. Pack, head of the department of geology, University of Utah, is giving his version of the occurrence, stated that it was caused by a slipping of a companion fault to the great Wasatch fault, located at a point near Kelton. Tremors were felt in Nevada, north as far as Boise, Idaho, east to Rawlins, Wyoming, and south as far as Delta, Utah.

**[Box Elder Journal; March 13, 1934]**

## THE EARTHQUAKE PLAYS PRANKS IN BOX ELDER

Reports from western parts of the county indicate that the earthquake was responsible for many curious things:

A dry well at Cosmo, drilled fifteen years ago in a vain effort to reach water, became an active flowing well Monday.

The flows of the springs at Locomotive were entirely shut off during the disturbance for about thirty minutes. Coming back slowly, the waters were a brilliant red in color.

In the vicinity of Cosmo and Monument, fissures and holes were made in the earth, water gushing from many of them. About forty new springs appeared.

Across the highway of the Hansel Valley-Locomotive Springs road at a point about 1½ miles northeast of Cosmo, the earth, at two points about 1500 feet apart, was faulted to a depth of two and one-half feet.

From about 8 a.m., the time of the first shock, all thru the day and into Tuesday afternoon, intermittent sounds resembling thunder and numerous tremors were observed by residents of the district.

A local business man is wondering if the disturbance has brought the oil back into the Lakeside well.

These are not wild rumors. This information has been verified by Bert Eliason, Jr., Lawrence Anderson, Ed Pratt, Ray Anderson, Lloyd Moss, Thomas Roland, all residents of the disturbed district, and a railroad official located at Kelton.

**[Box Elder Journal; March 14, 1934]**

## QUAKE IS FELT AT SNOWVILLE

Superintendent Hervin Bunderson returned from a trip to Snowville Wednesday and reports that nearly all the chimneys fell off the buildings during the earthquake the first of the week. But few chimneys are standing today, he said, and brick masons will find plenty to do there for the next few weeks.

According to Mr. Bunderson, Salt Lake City would have suffered greatly if the tremblers had been as severe as in Snowville where most of the buildings are one and two story. The chimney in the school building will have to be rebuilt, and will cost in the neighborhood of $500 he said. The shocks continued there remittently Monday and until 5 o'clock p.m. Tuesday.

### Drill Practice

After the first shock at 8:06 Monday morning Principal Max decided to give the students lessons in drill practice. When the second heavy quake was felt he sounded the bell and the building was vacated within twenty seconds. Almost immediately after the children were out a large piece of concrete—the coping above a fire wall—fell on the cement walk right in front of the door. This weighed probably 300 pounds and broke into three or four pieces.

The earthquake has been the subject of practically all conversation in the town since, said Superintendent Bunderson.

**[Box Elder Journal; March 15, 1934]**

## THE GEOLOGIST TELLS STORY OF EARTH TREMORS
### Trapper Is Thrown From Boxcar Cabin; Horse Knocked Down

LOGAN, March 15—The startling story of an eye witness told him of the earthquake at Hansel Valley Monday was the feature of an investigation by Prof. Reed Bailey, geologist of the Utah State Agricultural college, Tuesday, and retold by him in Logan, on Wednesday.

The story was told by Earl Croft, a trapper who has an old boxcar rigged up as a cabin in the center of the earthquake zone about half-way between Salt Wells and Kosmo.

"I was in my cabin when the first shock was felt at about 8 o'clock," he told Professor Bailey. I ran to the doorway, and was thrown out. From my knees, I watched my car—an old touring car—roll back and forth over the rough ground as the earth rocked. It was impossible to get to my feet."

Croft was caught between the two main fissures created by the most severe shock recorded at 11:20 a.m., and told this story:

"I was kneeling on the ground setting a trap, when suddenly I felt another shock. Again I tried to rise, but was thrown violently to the ground. On both sides of me, to the east and west, water spouted out of cracks in the ground. I thought my minutes were numbered; but then, just as suddenly as they started, the shocks ceased, and the water stopped except for bubbling springs which brought black sand to the surface, forming small craters or cones."

A sheepherder in the district told Professor Bailey that so violent were the shocks that they threw his horse to the ground.

According to Professor Bailey, three fissures are plainly visible. The three, about a half mile apart, run almost parallel over a plateau marking the southwestern tip of Hansel valley, then down onto the alkaline and salt beds and to the shore of the Great Salt Lake. They extend nearly four miles in length.
**[Box Elder Journal; March 16, 1934]**

# UTAH ROCKED BY SEVERE EARTHQUAKE
## ONE DEATH LAID TO WORST TEMBLOR IN HISTORY OF STATE
### Schools Dismissed As Second Shock Follows

The City and County building was ordered evacuated of all persons this afternoon. Courts and all city and county offices were closed until further notice. The statue on top of the building was shaken nearly a foot out of line by this morning's temblors.

The severest earthquake in Utah's history jarred the northern half of the state starting today at 8:06:45 a.m. It continued severe until 8:08 but continuous rumblings were registered on Pacific coast seismographs for 33 minutes.

A second shock, almost as severe as the first, was felt at 11:21 a.m.

Following the second shock all city schools were ordered evacuated and closed until further notice. Most of the buildings were emptied quietly but at South high a semi-panic resulted. Several girls fainted and a number of students became ill from fright.

One death and one injury were directly attributed to the earthquakes.

According to Dr. Frederick J. Pack, head of the University of Utah department of geology, the quake was centered at Kelton, Utah, at the head of Great Salt Lake, 100 miles northwest of here. It was caused, Dr. Pack believes, by a shift in the Basin range fault. The shocks will continue throughout the day, he predicted.

The death attributed to the shock occurred at Ogden. Ida May Venable Atkinson, 21, wife of Grant Atkinson, was ill in bed when the first quake hit. She sat up and called to relatives:

"Why are you shaking my bed?"

**Woman Falls Dead**

Informed that it was an earthquake, Mrs. Atkinson fell back dead.

Charles Bitthell, 55, of 1345 Roberts avenue, an employee of the city waterworks, was seriously injured at Sixtieth South and Highland drive, when a six foot trench in which he was working caved in. He was rescued by fellow workers, and brought to the

emergency hospital, with severe internal injuries. He was reported in a semi-conscious condition in the L. D. S. hospital at noon.

Perhaps the most severe damage occurred at Logan where the Home Economics building at the Utah State Agricultural college and the Preston high school building were so severely damaged that they will have to be abandoned.

President E. G. Peterson of the college reported the quake had split the three-story brick economics building from top to bottom. Students, already assembled for eight o'clock classes, fled to the campus as the chimney fell with a roar. Plaster was split on other campus buildings but the damage was slight.

The Preston school had its west wall forced six inches from the side walls.

In Salt Lake residents scrambled into the streets as the severe jar, which lasted about 20 seconds paused twenty seconds, and then began and maintained itself for about thirty-five seconds, shook the city from end to end. Early office workers were driven into the streets as windows were broken, and plaster cracked from the walls. Chandeliers swayed, pictures fell from walls, and dishes were broken.

**Laid to Basin Range Fault**

With no seismographs in operation in the city, the exact center of the disturbance could not be located, but geologists in the main confirmed the view of Dr. Pack that the quake had originated in the Basin-range fault, a parallel fault with the great Wasatch fault in the Wasatch mountains.

Pasadena, Cal., Seattle, Wash., and Denver seismographs recorded intense and severe shocks, at times corresponding to the local disturbance. The Seattle geologist, W. M. Chappell, said both needles were thrown off the record, making a "most spectacular showing." The Seattle time was 7:08 a.m. PST.

In Pasadena, Cal., the Carnegie Seismological laboratory started recording at 7:07:51 a.m. PST and reports indicated that the shock was so violent that the origin could not be traced.

**Salt Lake Buildings Rock**

In Salt Lake buildings rocked violently as the tremor shook the town. In the residential section trees were swayed as if in a strong wind. Immediately following the first shock, a terrific gale of wind blew up the streets in the business district, carrying a heavy load of dust.

At the Miller floral greenhouse in Farmington the hothouse windows were broken, and steam pipes loosened up. The Robert Griffiths store in Farmington reported serious damage with a cracked wall and fallen plaster.

No damage was reported in Idaho, although the shock was felt with considerable severity at Boise, 8:07 a.m. with eight or ten undulations felt distinctly, lasting about five or six seconds, at Idaho Falls.

**Ambulances Held Ready**

No damage was reported at the delicate instruments of the two Salt Lake radio stations KSL and KDYL, although the transmitting towers swayed strongly. The police ambulances, doctors and nurses that were held in readiness were not needed as check-ups revealed no serious injuries.

At the Utah Light and Traction company shop, James R. Bettridge, an employee, received a broken toe when the quake forced him to drop a huge casting upon which he was working. The 50,000 gallon overhead sprinkler at the shops rocked violently, L. E. Radler, chief clerk, said.

The Walker Bank building reported but slight damage, chiefly in personal belongings, pictures, vases that were injured in falling. The Judge building received several cracks in the walls, and Sam Beckstead, building engineer of the Newhouse building reported cracked plaster in several offices, as did Fred D. Feisch, engineer of the Boston building. Engineer Lawrence H. Heath, of the Clift building said that paint was cracked over plaster movements in numerous places.

The huge chandeliers in the Newhouse hotel and Hotel Utah swung in enormous arcs, causing hotel patrons in the lobbies to rush to the streets. Telephone service was disrupted for half an hour as calls flooded the exchange.

**Water Lines Intact**

H K. Burton, superintendent of city waterworks, said that a hasty check of all pipelines and reservoirs revealed no damage.

Numerous new cracks appeared in the interior of the city and county building and in two places on the third floor across the entire arch way of the corridor. The tower of the building was inspected and no new damage reported, although the city engineer recommended immediate removal of the concrete slabs on the old chimney which had been moved about three inches.

The Dooly building received what appeared to be a plaster crack from the top floor to the bottom on the north side of the building. Considerable plaster fell,

reported F. B. Higginbotham, building manager.

At Cheyenne, Wyo., the department of commerce airways weather bureau reported that the tremor was felt as far east as Rock Springs.

At Reno, Nev., Prof. Vincent P. Gianella, University of Nevada geologist, said that the university's seismograph recorded three strong earthquakes at 7:07 a.m., PST. The needle was kept quivering for 33 minutes, he said, estimating the distance as 552 miles from Reno somewhere in the Wasatch mountains. He said the jar had a strong east-west movement.

**Windows Broken**

The windows were broken at the Utah Power and Light company plant at Cutler, employees reported, and the department of commerce station at Locomotive Springs reported the tremor as most severe.

In the south, although windows were broken in Magna and a considerable shock jarred Provo, reports indicated that the trembler was not quite as intense as farther north, although excitement was high.

The chief operator of the Western Union Telegraph company reported that damage between Kelton, Utah, and Burley, Idaho, where the quake was centered, was principally to chimneys on homes and other buildings.

The schoolhouse at Kelton was severely rocked and after the chimney of the building had fallen, school was dismissed and the fire in the building put out. No report of injury or fatality has been made, Western Union officials state.

The Tribune and Ezra Thompson buildings swayed against each other in Salt Lake attracting a large crowd of pedestrians. In the residential section, furnace doors swung open, while water splashed out of Monday morning wash tubs. Late sleepers were awakened as beds were rolled out from walls and frantic house pets scurried for the out-of-doors.

Clocks were stopped in the Belvedere apartments, reported building manager L. P. Jack. On the north side of the building there were a few plaster cracks.

Bricks from a falling chimney during the tremor crashed through a window in the home of Mrs. G. J. Dooley, 323 east Second South street. Her neighbor's chimney, at 317 east Second South street was dislodged by the earth-jar.

Dishes were knocked from the pantry walls and stoves jerked off balance until they fell over, reports from Bingham indicated.

One woman fainted in the near panic caused in the city and county buildings by the second tremor, as judges, jurymen, and spectators leaped for the exits.

**Ogden Reports Death As Result Of Shock**

OGDEN, March, 12—Ida May Venable Atkinson, 21, wife of Grant Atkinson, of 3161 Grant avenue, died this morning as the result of the first earthquake shock which struck this vicinity. Mrs. Atkinson had been ill for two weeks of heart trouble, and was in bed when the first tremor came.

She sat up suddenly, crying out: "What are you shaking my bed for?"

When relatives reached her, she was dead.

She was born at Kaysville, July 12, 1913, a daughter of Charles R. and Elisa Higgs Venable. Surviving are her husband, her father, a step-mother, one sister and three brothers.

The second shock of the day struck here at approximately 11:19 a.m., and was slightly less hard than the first.

The first shock cracked the wall of the First National bank, and plaster fell in several other large buildings. Chandeliers swayed, houses in several vicinities rocked, and a few chimneys lost a brick or two.

**[Deseret News; March 12, 1934]**

## SIDELIGHTS ON QUAKE

Opinion was divided this afternoon on whether the Angel Moroni, tall golden statue on the topmost spire of the temple, had been tipped and turned slightly on his base. Officials of the Church architect's office seemed to think there had been a slight forward movement in the statue, with a slight twist to the right causing the Angel's trumpet to point a few points south by east. Bishop David A. Smith of the Presiding Bishop's office declared that the statue has not moved, but many people disagreed.

Salt Lake school children under a test proved capable of action in an emergency. Some 30,000 were in class rooms. Unknown to the children, Supt. L. John Nuttall, Jr., had issued orders to the principals that in the event of any disturbance to use the fire alarm and the fire drill procedure.

When the second quake tremor came at 11:23 the alarm was sounded and the pupils formed in their lines and marched through the designated exits. Some schools cleared in one minute. There was a congestion and near panic at one entrance at the South high school where several fainted.

The Ensign school on the steep hillside at F street and Ninth avenue is regarded as the hardest school to clear orderly. Many students are on the third floor. The school was evacuated by a stop watch in 1 minute and 29 seconds.

Time to clear the City and County building was determined at 11:23 today as one minute flat. Trials in three city and five district courts were automatically stopped when the quake which lasted a minute cleared the courts. All adjourned temporarily save Judge James H. Wolfe. It might be said that the courts adjourned informally as the bailiffs were among those seeking the fresh air. Judges on the bench and without any audience or "court crier" announced that the court would stand adjourned. There was no objection from the empty counsel table or the empty benches.

One woman on the third floor fainted.

The Rev. Leonard Ellers, guest minister at the Immanuel Baptist church, was broadcasting over KDYL at the time of the quake. While the microphone swayed and jerked, the Reverend Ellers continued to broadcast his Lenten message, but a woman in the audience screamed several times before an announcer clapped his hand over her mouth. As a result of the scream numerous listeners phoned the station to inquire.

Miss Fanny Mahaney, English teacher at West high school, was writing questions on the blackboard when the second quake hit. The blackboard moved away from her and then swung back again.

Calmly, Miss Mahaney turned around to her class.

"Will a couple of boys come up and hold this wall for me while I write these questions?" she asked with a reassuring smile.

Then she ordered the class to leave the building in an orderly manner.

There was one quake casualty at Washington school. A canary in the singing teacher's room was killed when the trembler knocked its cage over.

B. P. Spry, C. W. A. safety director, ordered all CWA workers out of buildings and out of trenches this afternoon as the possibility of additional quakes became apparent. CWA workers painting in the dome of the capitol building were swung around on the scaffold but fortunately it did not break.

Gov. Henry H. Blood was discussing the highway problem at the Hotel Utah before the special conference of western governors at 11:23 this morning when the floor rose and fell.

Delegates to the conference smiled. They realized that Salt Lake was experiencing its second quake.

"I want you to understand," said Governor Blood as he steadied himself by clutching at the speaker's table, "that we don't have these all the time. This is just a little special performance that we are putting on for the entertainment of our visitors."

A few moments later, Tasker L. Oddle, former governor of Nevada and United States senator from the Sagebrush state, said:

"Governor Blood and I have been in many battles

together on behalf of highways. I want you to know that he is a power in the land. When he merely mentions the subject as he did here a little while ago, the earth trembles for miles around."
**[Deseret News; March 12, 1934]**

## WHOSE FAULT IS IT, ANYWAY?
## Expert Gives Opinion On Quake; Believes Others May Follow

The following observations and opinions on today's earthquake were expressed by Prof. F. F. Hintze of the University of Utah geological department:

"This morning's earthquake appears from early reports to be local to some part of the Great Basin. Seismographs on the Pacific coast will probably have records that will assist in fixing the epicentrum. Unfortunately the instrument at the University of Utah was not in operation and no local record therefore is available.

"The probable cause of the temblors is one of the numerous fault lines which run north and south through central Utah and along the Basin ranges to the westward. Besides faulting, volcanoes are frequent causes of earthquakes, but as there are no active volcanoes in this general area and faults are numerous it is most reasonable to think that a readjustment of large earth blocks has given rise to today's shakings.

"Utah's major fault line consists of a series of more or less parallel faults running nearly north and south through the state. The Hurricane ledge in Southern Utah is a well-known and easily recognizable fault scarp, and the west face of the Wasatch mountain marks another fault surface.

"To the west of the Wasatch fault still others, which follow in general the margins of the mountain ranges that cover the Great Basin. The western limit of this faulted region is the east face of the Sierra Nevada mountains. Slipping may occur on any of these faults at any time, and earthquakes are therefore likely to re-occur at any time.
**[Deseret News; March 12, 1934]**

## LOCAL QUAKE RATED ON PAR WITH LONG BEACH TEMBLOR OF YEAR AGO; NOT ON WASATCH FAULT

BERKELEY, CAL., March 12—(AP)—The earthquake which shook Salt Lake City today was described by Prof. Perry Byerly, of the University of California seismology department, as being as severe as the shocks which caused so much damage to Santa Barbara, Cal., in 1925. Byerly also said today's quake was equally as intensive as the quake which occurred in Nevada on Dec. 20, 1932.

"The quake began recording on our instruments at 7:07 to 7:45 a.m.," said Prof. Byerly. "The shocks continued for an hour and a half. The epicenter apparently was some 500 miles away."

"The shocks were extremely severe, as much so as those of the Santa Barbara and Nevada quakes. Today's shocks were so bad that they must have caused considerable damage if they were in an inhabited region."

At Pasadena, the earthquake was recorded at starting at 7:07 to 7:09 a.m. (P.S.T.) on instruments of the Carnegie Institution of Washington seismological laboratory.

The records, seismologists said, indicated the shock was considerably heavier than the destructive Long Beach earthquake of March 10 last year, and that the point of origin evidently was some distance from Salt Lake City.

WASHINGTON, March 12—(AP)—The Georgetown seismological observatory reported today the Utah earthquake was considerably heavier than that which damaged Long Beach, Cal., a year ago.

Records showed it began at 10:11:24 a.m., eastern time, with maximum intensity at 10:22 a.m. It was calculated to have been centered 2,100 miles from Washington.

Another quake, severe in character, was recorded

as having begun at 1:26 p.m., eastern time, and was in progress as the records were changed, thereby making further data impossible.

Numerous quakes, smaller in intensity than this morning's record breaker, are liable to occur in this region until the disturbance is complete, said Frederick J. Pack, University of Utah geology professor today.

"The center of disturbance is at the little town of Kelton, on the north end of Great Salt Lake," said Dr. Pack, "as nearly as we can locate it from the telegraphic reports. This would make the quake definitely on one of the Basin-Range faults, confirming my first opinion of this morning that the quake was not on the Wasatch fault.

**Parallel To Wasatch**

"The Basin-Range faults are a series of faults parallel to the Wasatch fault, and immediately to the west of it. The disturbances definitely appear to be on Basin-Range fault, since Pocatello, Burley, Twin Falls, Idaho which reported feeling the quake are not on the Wasatch Fault. The quake centered near Salt Lake, and went west as far as Elko, Nev., east as far as Green River, Wyo., south as far as Delta, Utah and north as far as Twin Falls, Ida.

"For one thing the rapidity with which the shocks came indicated that it was not far away from us. The fault on which the adjustment took place is one of the Great Basin faults—that area which lies between the Wasatch mountains and the Sierra Nevada has numerous faults extending north and south—and the tremor occurred on one of the most easterly of those.

"The quake was not of deep origin, nor was it a purely surface disturbance, but probably originated at a moderate depth. It is definitely the most severe in the recorded history of this territory although those of earlier times were of enormously greater intensity.

Discussing the water situation in the event of a really disastrous quake, Dr. Pack said, "The Old Sunnyside reservoir was directly astride the Wasatch fault, but since many of us insisted that the new one be built to the west of the fault this dangerous condition has been remedied. There will be sufficient water for Salt Lake in the event of a quake, because of the numerous artesian wells that have been opened up west of the fault."

J. J. Beeson, prominent Salt Lake geologist and former member of the Seismographic Society of America in California, stated "Having been in both the Salt Lake quakes and the one in southern California a year ago, I can state that this quake is of about one-half the intensity of the quake of last spring in California."

He characterized today's shock as part of a gradual movement eastward of a series of shocks originating on the Pacific Coast. "The cause of this is undoubtedly a settlement of earth between the Rocky Mountains and the Pacific Coast. Similar shocks are likely to occur over a period of years, as the readjustment takes place on an eastward movement from the Coast. The quakes shook California last spring, Nevada last fall and now Utah this spring."

Mr. Beeson continued: "While I have made no examination, it appears that this quake was caused by a settlement on the Wasatch fault or a parallel fault across the Salt Lake valley. However, these small ones are less dangerous than if the disturbances accumulate and take place all at once in one great movement."

POCATELLO, Idaho, March 12—(AP)—E. D. Rhodenbaugh, professor of geology at the University of Idaho, southern branch, said that the tremors were caused by a shift in the Wasatch fault. A branch of the Wasatch fault extends from the mountains east of Salt Lake City to Bear Lake and Montpelier in Idaho where two other breaks branch, one reaching into the Grey's lake section and the other terminating near Putnam, 25 miles northwest of Pocatello. The latter break is known as the Bannock fault, the professor said.

The shocks today were the most severe in the history of Pocatello. Previous tremors were felt here Nov. 11, 1905, October 5, 1915, and Dec. 12, 1917, according to the weather bureau.

The first shock today lasted about 30 seconds, it was estimated, and moved in a lateral, north-south direction. The second, though not so long in duration, was described as being more sharp and intense.
**[Deseret News; March 12, 1934]**

Mar. 12, 8:05 a.m. M6.6; Mar. 12, 11:20 a.m. M6.0;
Mar. 15, 5:02 a.m. M5.1; Apr. 6, 7:16 p.m. M5.5;
Apr. 14, 2:26 p.m. M5.6; May 6, 1:09 a.m. M5½

# UTAH AREA AGAIN HIT BY QUAKES
## Cracks Three Feet Wide Appear In Earth Near Lake

Salt Lake City schools will resume tomorrow on their regular schedules, Supt. L. John Nuttall, Jr., announced today.

All buildings have been inspected, and were reported safe by Howard Barker, buildings and grounds superintendent, who said no structural defects as a result of the quake were found.

A very careful inspection was made of the main supports, foundations, and joints of South High school, because of reports that the building was severely strained by the tremor. No evidence of damage from the quake was found, according to the report.

Utah's earthquake series was still in progress today. Several distinct shocks were felt in the northern section of the state, some of such intensity as to open fissures in the earth, change the course of streams and so disturb the underground formations as to produce new springs and replenish artesian wells which had long ago dried out.

The series of quakes continued in the early hours this morning, being distinctly noticeable at the Airport at 4:29 a.m. and at the same instant at Burley, Ida.

Earthquakes continued today at Kelton, Utah, center of yesterday's disturbance. Chester Keller, airway keeper at Locomotive Springs, near Kelton, said a sharp quake was felt there today at 12:25 p.m.

Dr. Reed W. Bailey, professor of geology at the Agricultural College, Logan, said the principal displacement is on an unnamed fault near the Salt Wells and Hansel Valley faults. Prof. Bailey, who is at Kelton studying the quakes with a group of A. C. students, said that from 300 to 1000 feet under the surface of the earth is a solid rock stratum fault that probably slipped two feet down on the east face. At Kosmo, Utah, near Kelton, fissures 18 inches wide were reported to have occurred.

At the department of commerce observation station at Locomotive Springs in Box Elder county, distinct shocks were felt this morning at 4 a.m., 4:45 a.m., 5 a.m., and several minor temblors between 5 and 5:20 a.m.

In the vicinity of Locomotive Springs, west of Promontory, fissures from 1 to 3 feet wide were reported opened during the disturbances, some of them pouring out hot water with such volume that railroad ties plunged into the holes were immediately thrown back.

Meanwhile the second death in Utah as a result of the quake was reported this morning when Charles Bithel, 55, of 1343 Roberta avenue, a city waterworks employee, died at a local hospital.

Mr. Bithel was removing timbers from a waterworks trench 6 feet deep at Sixtieth South and Highland Drive yesterday when the trench caved in, injuring him internally. It is believed the quake loosened the dirt, thus causing the cave in.

A precautionary measure taken by the public safety department, under the direction of Commissioner John M. Knight and Police Chief W. L. Payne, was the "line-up" of safety first units by Officer Thomas W. Dee, first aid instructor for the police and fire departments.

Instead of massing forces at department headquarters, Officer Dee placed 750 boys from his first aid classes at strategic points in various parts of the city, subject to call at any moment.

At the same time transportation facilities were ready at a moment's notice and employees of the gas company and the waterworks department were ready to shut off gas or water in case of emergency. Units of nurses also were notified to be ready for instant call, and the department first aid equipment was in automobiles in front of the public safety building.

This comprehensive organization and the assembling of various units was the result of a safety first survey of the entire city and county made several months ago by Officer Dee under the direction of Commissioner Knight and Chief Payne providing for the speedy assembly of doctors, nurses, members of trained first aid classes, messengers, ambulances and necessary equipment in the event of sudden disaster.
**[Deseret News; March 13, 1934]**

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## DRY WELLS COME BACK WITH QUAKE
### Farmer Reports New Fault Near Tip Of Great Salt Lake

LOGAN, March 13—William Greaves, a farmer living near Kosmo, on the north lip of the Great Salt Lake, telephoned to Reed Bailey, geologist at the Utah State Agricultural college early today saying he had found plain evidence of a fault at Kosmo. The ground had slipped several feet, he said, and large cracks had opened in the surface of the earth. Old flowing wells, which had been dry for years started flowing immediately after the first Monday morning quake.

The college geologist immediately set out for Kosmo and will be there all of today, studying the results of the earth tremors.

**[Deseret News; March 13, 1934]**

## CITIES REPORT QUAKE ACTION
### Ogden Geologist Gives Opinion; Schools Held Outdoors

OGDEN, March 13—Dr. John G. Lind, instructor of geology at Weber college, commenting upon the earth tremor, said that the quake here might be caused by a light slip of the gigantic fault on which Ogden is built, but added that the quakes at other points lent weight to the theory that the movement is a general one and not confined to the Wasatch fault.

Dr. Lind pointed out that the quake here had a wave motion as contrasted with the sharp shaking of some quakes which demolish buildings. It is possible, he said, that Monday's shocks were caused by the slipping of the rock fault beneath the ground, resulting in the transmission of a wave motion to the sediment above. Such a slipping would result in an east and west motion of the earth at right angles to the fault.

Students at the Sacred Heart academy were dismissed following many calls from parents. There was no interruption at the city and county schools. Mrs. Jack Madsen who was working on the ninth floor of the First National Bank building was startled when her typewriter slid into her lap and the doors of file cabinets shook open. When she stood up a door swung open and bumped her.

**Water Dashes From Wells**

Mrs. Ben Trimble fainted at the municipal wells in Ogden valley. Telephone wires were snapped from the building at the Artesian park wells. Waves were washed from the well basins but the flow of the wells was not disturbed. Falling plaster at the Weber county infirmary at Roy, struck Mrs. Annie Barton, but did not injure her. Inmates at the institution were badly frightened by the quake.

GARLAND, March 13—Monday morning two earthquake tremors were distinctly felt by residents of northern Box Elder county. Reports from Snowville indicated considerable damage to the Snowville public school and to the Nelson cafe. One woman fainted at Garland.

The tremors were so severe that people ran from their houses to the street. Children at the Garland school were permitted to leave the building after the second tremor, about 11:23, which brought down some of the plaster from the ceiling of one of the top floor rooms.

The Garland school was conducted outside Monday afternoon at the request of parents, although the Tremonton school and the Bear River high school continued with classes as usual.

SPRINGVILLE, March 13—A slight but distinct earthquake shock was felt here Monday morning shortly after 8 o'clock. It was severe enough to rattle dishes and windows and jar furniture. Light cords, curtains and hanging objects swayed for some time after the shock.

TOOELE, March 13—Doors banged, tables danced, lights swayed and buildings rocked and many persons became dizzy during the earth tremor experienced here Monday at 8:15 a.m. while only a slight disturbance occurred at 11 o'clock. In the business section groceries were thrown from shelves and one window was reported broken, but no other damage was noted here.

This is said to be the first time in Tooele's history

that earthquake shocks have been felt here.

**[Deseret News; March 13,1934]**

## LOGAN DAMAGE ONLY TO SURFACE CHECKUP REVEALS

LOGAN, March 13—Cache Valley returned to normal here today with resumption of all scheduled activities following the excitement caused by the earthquake Monday.

Classwork in the Logan city schools and at the Utah State Agricultural college was resumed. The city schools were excused following the shock felt at 11:30 a.m., while the college classes being held in the home economics building were dismissed following an inspection of the building by Fire Chief C. W. Rapp.

A further examination showed cracks to be only surface damage, however, and today everything was functioning normally. Plaster was knocked from a number of downtown business houses and some chimneys were toppled over as the only other serious damage.

An examination showed dams of the state, the Utah Power & Light company and Logan City located near the mouth of Logan canyon were not disturbed by the shocks, a hasty examination Monday afternoon showed.

**[Deseret News; March 13, 1934]**

## THE QUAKE

Of all the destructive forces of nature, such as fire, tidal waves, and wind, the trembling of the earth in proportion to its frequency is perhaps the least hurtful. Over the surface of the globe, an average of about a hundred earthquakes a day are taking place, but only when the slip of the earth's crust is of a major nature and where it centers near cities, is great damage ever done. Nevertheless, few things have as peculiar effect on the emotions as when we feel this solid earth quivering beneath our feet. It has typified to us all that is substantial. As we whirl through space it forms the very foundation of material existence.

Yesterday when the earth shook in this Rocky Mountain region the works of man came to a sudden halt. Jurors hearing cases at court unceremoniously left the box. A teacher, standing before his class, became livid with the sickening sensation. A janitress on the high floor of one of the bank buildings was found stretched out unconscious. A young matron in Ogden, feeling the gentle swaying of her bed, was told that it was an earthquake and she fell back dead—the victim solely of her fear.

We live in an earthquake zone. These great mountains, backbone of the continent, were produced by the rising of masses of the earth's crust as it contracted and pushed upward. An infinitude of earthquakes accompanied the changing position of the strata.

But the Rockies, while comparatively young in geological time, seem to have their growth and are less subject to destructive quakes than is the coast range of California.

Two precautions can be taken against these disturbances. One is a proper construction of buildings which will withstand the earth movement. The other is the protection of our water system in order to extinguish fires which are proverbially more destructive than the shaking down of the buildings. A heavy quake is almost always accompanied by fire. Lamps and stoves are overturned. Electric current may be broken. Gas leaks from mains may pour out their explosive vapor. In the confusion man is himself likely to start the conflagration.

It is therefore essential to safety that the water mains be so protected that the shifting along the fault line where the quake originates will not tear them apart and leave the city helpless.

Our artesian basin now connected to the city and the Sunnyside reservoir, which are located west of the Wasatch fault will help greatly. But the flexible joints employed in California, where water mains cross fault lines, might also be studied as an additional protective measure by our water engineers and city commission.

**Editorial [Deseret News; March 13, 1934]**

## FATE SAVES S. L. FROM DESTRUCTION SAY QUAKE EXPERTS
### Thirty New Shocks Felt This Morning At Locomotive Springs; Series Laid To Settling After Monday's Slip

Salt Lake would have been destroyed to the same extent that Long Beach, Cal., was a year ago if the epicenter of Monday's quake had been under this city, instead of in the Hanzel valley near Kelton.

This was the conclusion agreed on by geologists today as they completed the work of collecting data on the temblor. The findings of Dr. Frederick J. Pack, professor of geology at the University of Utah, agreed, in the main, with those of Prof. Reed W. Bailey, geology professor at the Utah State Agricultural college. While 30 separate shocks of short duration shook the vicinity of Locomotive Springs this morning as the ground settled after Monday's slip, the geologists' tabulations showed a total of 50 mud volcanoes created by the tremor, and four huge fault scarps ranging from three-eights of a mile to three-fourths of a mile in length and with a "throw" or face of from 6 to 15 inches in height. The mud volcanoes, some of which were four feet across, with three-foot craters the fissures, the changed stream courses, the once dry pipes now flowing and the flooded flats, were all phenomena found near the center of the quake in the lower end of Hanzel valley 15 miles southeast of Kelton in Box Elder county on the north end of Great Salt Lake.

**Gush Salt Water**

The section which is characterized by long stretches of alkali flats between low ranges, was shaken with tremendous force by the earth slip of Monday. At Cosmo, old dry flowing wells spouted fine black slimy sand from deep in the earth. In many places springs were gushing salt water out of the mud craters.

Professor Bailey's findings showed that the displacement took place on an un-named fault west of the Salt Wells and Hanzel Valley faults and east of the Stansbury and Beaver faults, the whole area west and north of the big Wasatch fault.

The underlying strata, said Professor Bailey, is anywhere from 400 to 500 feet beneath the surface. It is in this strata that the fault is located. When it had slipped the east side had fallen below and probably away from the west side. This had created the temblors throughout the northern part of the state and in southern Idaho.

**Forced by Weight**

The one large "throw" followed, with slight breaks and new beginnings, for miles on the direct line of the fault. The water pouring from the fissures, said Dr. Bailey, was forced up from the spongy earth by the falling of the millions of tons of earth material. The salt water came from the great Salt Lake level, approximately eight miles away and the fresh water came from underground currents. The whole underlying area is soaked with water, and the terrific pressure of the fault's fall forced the water up through the earth crevices made by the slip.

Three-fourths of the fifty mud volcanoes had stopped flowing by the time of the arrival of the geologists yesterday.

Dr. Pack said that there is no cause for alarm as to the probable recurrence of similar quakes to those Monday.

"There will not likely be further quakes for some time," said Dr. Pack, "as this readjustment has taken care of numerous earth stresses."

Thirty-thousand school children in Salt Lake today went back to the school buildings, ordered closed for inspection yesterday, as the inspection revealed only slight traces of damage, chiefly in fallen plaster.
**[Deseret News; March 14, 1934]**

## TO DISCUSS QUAKE

"The Recent Earthquake," will be the topic of Dr. F. F. Hintze, of the department of geology, University of Utah, in an address tonight at 7:30 before the senior class of the Wasatch ward M.I.A., it was announced by Nicholas G. Morgan, instructor of the class. The public is invited to attend the address. The chapel is at Fifteenth East and Emerson avenue.
**[Deseret News; March 14, 1934]**

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# EARTHQUAKES AGAIN SHAKE NORTHERN UTAH

## GEOLOGIST WARNS MORE TEMBLORS MAY BE EXPECTED

### Four Distinct Shocks Felt Here While 18 Are Recorded At Locomotive Springs; Black Water Flows From Earth Fissures

The severest shock of the numerous minor earthquakes felt in Salt Lake since 8:07 Monday morning jarred Salt Lakers in bed early today at 5:02. No damage was reported, and heavy sleepers slept through the shake undisturbed.

More shocks of varying severity are yet to be expected, said Prof. F. F. Hintze of the University of Utah geological department.

"It now appears that this is a more prolonged and serious movement of the earth's crust than was at first believed," he said. "All indications are that the adjustments have not yet been completed and that a considerable number of the temblors may be expected."

Dr. Frederick J. Pack, geology professor at the university, stated as his opinion that a stable condition in the earth's strata is reached only after numerous minor quakes have followed a major fracture in the earth.

"Therefore, we may expect other shocks as the millions of tons of rock readjust themselves, but this condition is not to be interpreted as anything serious," he added.

**Runs Black Water**

Considerable disturbance was still apparent at the epicentrum of Monday's quake, in Hanzel Valley near Kelton, where Locomotive Springs continued to give evidence of under-surface movements by running black water and by an increased volume.

The quakes felt at Salt Lake included the violent one at 5:02:30 a.m., one at 5:30:30 a.m., at 6:46:30 a.m. and a second violent tremor at 6:57:30 a.m.

At Locomotive Springs, quakes began at 2:25 a.m., and occurred at the following times; 2:26, 2:26:30, 2:53, a shock at 2:54 that lasted for 30 seconds, one at 2:57 classed as violent, the one at 5:02:30 that was the strongest since Monday, 5:06, 5:30, 5:30:30, 5:32, 5:32:30, 6:15, 6:29, 6:43, a shock classed as strong at 6:46, 6:46:30, and another strong movement at 6:57 a.m.

**School Condemned**

In northern Utah, residents began the work of adjusting themselves to damaged residences and public buildings. In Randolph, Reuben D. Law, superintendent of schools, ordered a two-story elementary school building condemned and abandoned as unsafe.

"The south wall, a long unsupported wall, was shaken loose by the first quake," he said, "and as it has cracked away from the framework so dangerously, I have ordered the children moved to temporary quarters in another building in town. We hope to have a new school building up by autumn."

In Snowville, close to the Idaho line, and 20 miles north of Locomotive Springs, the epicenter of the quake movements, chimneys were shaken down by the earth-jar, a four-room brick schoolhouse was damaged to the extent of $500 and a church building to the extent of $1000. Merchandise was thrown from the shelves of the Snowville store. The town's water main was broken for 10 hours, although repairs were rushed. The 250 residents of the town declared that the quake hit harder in Snowville than in other sections.

**[Deseret News; March 15, 1934]**

Mar. 12, 8:05 a.m. M6.6; Mar. 12, 11:20 a.m. M6.0;
Mar. 15, 5:02 a.m. M5.1; Apr. 6, 7:16 p.m. M5.5;
Apr. 14, 2:26 p.m. M5.6; May 6, 1:09 a.m. M5½

## TEMBLOR SENDS INKY-BLACK WATER FROM EARTH

Black water flowed again today from Locomotive Springs, the epicenter of Monday's earthquake and of the many minor earth movements since. After the first shock Monday the springs were completely dry for 30 minutes. At the end of that time came back flowing inky-black, and of a miry, slimy consistency, as shown above. This black flow continued for eight hours before the water cleared, but the volume of the springs had increased 30 per cent. After the 5:02 shock this morning the flow became inky black again, with a further 25 per cent increase in volume.
**[Deseret News; March 15, 1934]**

## SLIGHT SHOCKS STILL PERSIST
### Quake Center Registers Tremors Of Mild Extent

A few earth tremors were recorded in Utah's earthquake center, Locomotive Springs, this morning, but they were of such slight extent and duration that times were not taken on them, reported the department of commerce airways weather bureau station this morning.

As the disturbances faded in strength and diminished in area, geologists flocked to the scene of the four-day series of temblors, which began with the quake of last Monday morning, felt throughout the northern part of the state and the southern half of Idaho.

Dr. Frederick J. Pack, Deseret professor of geology of the University of Utah, cancelled a trip for himself and a group of geology majors today when he was advised of poor weather conditions. Since rain in this region would make the soil extremely muddy, Dr. Pack postponed the trip until next weekend.

P. J. Shenan, geologist for the federal geological survey, and Dr. Hyrum Schneider, university geologist, spent yesterday in the quake epicenter studying the shocks' aftermath.
**[Deseret News; March 17, 1934]**

## COVE SCHOOL HELD 'UNSAFE' AFTER QUAKE
### Board Head, Inspector Tell Of Cracks In Walls

LOGAN, March 17—The Cove grade school building is "unsafe and should be removed," according to a report made to the Cache county board of education by Building Inspector H. R. Adams.

The building, according to Mr. Adams, "has constantly widening cracks on all four outside walls as well as in the partitions between the rooms.

Supt. J. W. Kirkbride and Albert McCann, president of the board, visited the school immediately following the earthquake Monday, and said following their return that there were cracks in the building wide enough to put a hand through.

Efforts have been made by the board to include the school in the consolidation program of the district, closing the school and moving the children to either Richmond or Lewiston to school by busses. At the present time there are 50 students taking work in all eight grades in the two rooms of the school.

No action on the report has been taken by the board of education.

Action was also postponed on proposed closing of the Wellsville junior high school as an economy measure and transporting of the ninth grade students to the South Cache high school at Hyrum. The matter was once decided in favor of closing the school, but was re-opened at the request of member J. J. Hendry of Wellsville.
**[Deseret News; March 17, 1934]**

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## PACK ADVISES CITY PREPARE FOR TEMBLORS
### More Quakes Are Likely U. Geologist Declares

Measures to control earthquake damage in the future by the appointment of an earthquake commission were suggested for Salt Lake last night by Dr. Frederick J. Pack, Deseret professor of geology, before a group of members of the Utah Society of Engineers, meeting in the Newhouse hotel.

"Utah is in danger of further temblors," said Dr. Pack," and an earthquake commission could study preventive measures in safeguarding the water supply and the enforcement of a much stricter building code.

**Plan for Future**

"Although, due to the relatively much older geological age of this territory, we are many times more secure from shocks than California, where tremors are often felt weekly, we need to plan for the future. I find practically as many overhanging cornices, as many fire walls and as many building fronts likely to fall outward and kill people, should a shock of sufficient severity hit here, as resulted in loss of many lives in Long Beach last year."

Dr. Pack also declared that, just as in Long Beach, where the outer wall of a fire station fell and kept fire-fighting equipment from coming out, Salt Lake's fire stations would probably behave in the same fashion in the event of a severe shock.

"Although people pointed to the artesian wells here as a certain source of water in the event of a bad earthquake, these wells would go as quickly as other sources, because electric power would be shut off to prevent fires," he continued. "Diesel engines should be installed at the artesian well basins, to provide power to pump water into the city system to provide for emergency."

**Watch Markers**

Equipment shops should also be built at strategic points, where the water conduits and mains cross the Wasatch fault, he recommended, since communications would be shut off in the event of a quake. He pointed out that San Francisco had recently installed flexible joints on water mains which crossed dangerous faults, the joints provide leeway of motion up to 20 inches with fair success.

Triangulation stations, or monuments, have now been installed along three-fourths of the Wasatch fault, said Dr. Pack. They are made of cement blocks, buried three and one-half feet into the earth, tapering from 16 inches square to 10 inch square, protruding an inch above the surface of the ground. These are placed on each side of the fault, and movements of the earth can thus be readily measured. Measurements taken over a period of five years should give definite knowledge of the earth's movements, said Dr. Pack.
**[Deseret News; March 22, 1934]**

## MEN DECLARE SCHOOLS SAFE AFTER QUAKE
### Buildings Not Damaged, Cove, Preston Assert

COVE, March 22—Levi H. Allen, former county commissioner, representing a group of Cove residents, moved today to squelch reports that were made by Supt. J. W. Kirkbride and Building Inspector H. R. Adams of Hyrum, that the local school is unsafe. He claims that the "cracks" have been in the building for years, even before an addition was built some time ago.

At the same time James B. McQueen, high school custodian at Preston, Idaho, reports slight damage, if any, caused by the recent earthquake. He claims it is not true that the east and west walls were forced out, that the roof settled six inches under the tower, or that rocks were loosened on the southwest corner.

A row of tin shingles down either side of the roof makes it appear as though the walls had moved out and left unbleached shingles exposed, he said.
**[Deseret News; March 22, 1934]**

## GEOLOGIST PLANS TRIP TO KOSMO AS GUIDE FOR PARTY

OGDEN, March 22—Walter Buss, instructor of geology at Weber college announces that he will act as guide to a party of Ogden people to the earthquake zone near Kosmo on Sunday, March 25. The trip is 200 miles, and Mr. Buss said that he has offered his services as guide in response to numerous requests. It is expected that the party will leave Ogden about 8 a.m. and reach the quake zone at about 11 a.m. or noon.

Persons wishing to make the trip are requested to call Weber college and contact Mr. Buss.
**[Deseret News; March 22, 1934]**

## DECREASE IN GREAT SALT LAKE LEVEL HELD POSSIBLE CAUSE OF RECENT EARTHQUAKE WHICH ROCKED NORTH HALF OF STATE

Possibility that the rather sudden rise and fall in the elevation of Great Salt Lake may have had some influence on the cause of the earthquakes which recently shook Utah and nearby states, appeared today from a compilation of statistical data on lake levels and previous tremors.

The present near-record lowest of the lake has certainly lifted a tremendous pressure from the lake bed and may possibly have disturbed the balance of pressures sufficient to have brought about the shifting of earth in the vicinity of the epicenter near Kelton, just north of the lake.

Discovery yesterday in the local weather bureau records of a notation of violent seismic activity in the region north of the Great Salt Lake back in 1897 and 1898, started a study of the records on the lake levels. The investigation showed that the prolonged disturbances in the '90's and that those of ten days ago, both occurred when the lake was unusually low.

The level of the lake in 1897 was 3 feet 8 inches on the mid-lake gauge, while now it is even lower, being 9 inches below zero on the same gauge. The average measurement is around 5 feet. The lowest level of record occurred in 1902, when the gauge read 2 feet 4 inches below zero.

Records on file in the federal weather bureau office show that the lake level has dropped six feet since 1924 and that a drop of several feet occurred during the few years preceding the 1897 and 1898 disturbances. It should be mentioned, however, that the lake's drop in the '90's was quite gradual and that no tremors were reported, or at least recorded, during a rather sudden drop preceding the establishment of the record low mark of 1902.

The possible effect on the balance of pressures, brought about by a big variation in the lake's levels can readily be imagined when it is considered that an acre-foot of salt water weighs about 3,000,000 pounds or 1500 tons and that a six-foot drop in the level would reduce the number of acre feet of water by several million and thus result in lessening the pressure by several billion tons. A more or less sudden lifting of this great weight might cause the earth under the lake to rise from decompression and thus precipitate an earthquake.

This actually happened in the bygone ages when Lake Bonneville covered this region with water which in places was 1000 deep, it is definitely shown in G. K. Gilbert's work "Lake Bonneville," published in 1890. According to his chart a rise of 168 feet in the central bed of the lake occurred during the gradual fall of the lake's level. This is proved by the fact that a certain point on Stansbury island near the center of the lake is now 1070 feet above a certain plane while a point east of Utah lake in only 902 feet above this same plane, though it is on same shore mark left as Lake Bonneville dried up. In other words as the water pressure was diminished the earth under the lake pushed up.

The notation which disclosed the earth disturbances of 1897 and 1898, was made by V. A. Hill, at that time weather observer at the town of Corinne. It was made on the margin of the regular report and reads: "Escape of gas is reported a mile or so out in Great Salt Lake from the mouth of Bear river, which throws up mud and water. It was first reported on Feb. 21." Mr. Hill recorded heavy shocks were felt on Feb. 8, 1897, and also on Feb. 13, 14, 20 and 21, and again at about the same time of the following year.
**[Deseret News; March 23, 1934]**

Mar. 12, 8:05 a.m. M6.6; Mar. 12, 11:20 a.m. M6.0;
Mar. 15, 5:02 a.m. M5.1; Apr. 6, 7:16 p.m. M5.5;
Apr. 14, 2:26 p.m. M5.6; May 6, 1:09 a.m. M5½

## QUAKE COMMISSION AGAIN ADVOCATED

Creation of a state earthquake commission to sponsor legislation properly governing future construction of buildings, was strongly advocated by Dr. Frederick J. Pack, head of the University of Utah geological department, in an address before the Salt Lake Real Estate board meeting today at the Chamber of Commerce.

Dr. Pack pointed to the recent earthquakes which rather violently rocked Salt Lake, Utah and much of the surrounding states as sufficient evidence of the need for such action. The tremors were rather violently felt in Salt Lake although the epicenter was near Kelton, Utah, about 100 miles away.
**[Deseret News; March 29, 1934]**

## RUMBLING OF MOUNTAINS IN MILLARD DESERT REVEALED

IBEX, Utah, April 3—(AP)—Mountains that make rumbling noises as though trying to talk are a powerful lot of company to one who has lived virtually alone in a desert for more than 30 years, J. J. Watson, Millard county cattleman has found.

For a long time Watson was about the only one who heard these companionable noises. Officials of the U. S. Coast and Geodetic survey to whom he reported the phenomena were not particularly impressed after learning their informant was the only permanent resident of an arid region the size of a small European kingdom and had lived by himself for more than a quarter of a century, 35 miles from the nearest post office.

Visits by a Washington geologist and a Japanese scientist, however, proved the desert cattle raiser was not imagining things and that the House range of mountains, forming the western boundary of the Sevier desert, had for years been making audible sounds—sort of a grumbling expression of the growing pains they had been experiencing.

Watson, who first settled in the area in 1887, has kept a diary and over long periods made daily entries of the un-mountain like actions of Swazey and Notch peaks. Sometimes the noises were accompanied by temblors so perceptible as to frighten his horses and cause them to snort and shake with fear, especially in the night. The activity would usually begin with the advent of cold weather in the late fall and sometimes continue for several months.

After 45 years of the periodic behavior, however, the mountains suddenly stopped "acting up" and they had been quiet for nearly three years in advance of the recent quake which shook northern Utah and southern Idaho.

At this time, Watson reported, he felt the shock very plainly and what appeared to be a column of heavy black smoke, 700 or 800 feet high, rose from the floor of a barren valley some 30 miles distant. It lasted for an hour or two. Watson as yet has been unable to investigate to ascertain if a break in the earth's crust had given birth to a small volcano, but his diary shows that something of the kind happened in the vicinity many years ago.

The House range is not considered of volcanic origin, but there are a number of places where steam or hot vapor issues from the surface. Both Swazey and Notch peaks, which are only about 1,000 feet high, are of fossil formation—mountainous masses of fossils on a granite foundation. The desert from which they arise is only about 400 feet above sea level and at one time was believed to have been a shallow bay of the Pacific ocean. They have been gradually rising since that time, geologists believe.

The area receives usually less than six inches rainfall a year, springs are 40 to 50 miles apart, but impounding water in "pot holes" in the quartzite rock, Watson has been able to make a success of cattle raising in this almost unexplored wilderness, studying geology and keeping a daily record of geological happenings help him to pass the time.
**[Deseret News; April 3, 1934]**

## ANOTHER MINOR EARTH TREMOR FELT IN SALT LAKE

Indicating that the Hansel valley faults which started slipping in northern Utah on March 12 are not yet readjusted, another minor earth tremor shook Utah and southern Idaho slightly last evening, according to U. S. weather bureau reports received at Airport from the Locomotive Springs station.

The quake occurred at 7:16 p.m. and was felt by a few residents of both Salt Lake and Pocatello, Idaho, but no damage was reported.

**[Deseret News; April 7, 1934]**

## CITY FEELS NEW QUAKE

An earthquake of rather severe proportions shook Salt Lake at 2:27½ this afternoon.

No damage was reported although the temblor caused chandeliers to sway and buildings to rock.

The shock also was reported felt at Grantsville, Burley and Pocatello, Idaho.

**[Deseret News; April 14, 1934]**

## S. L. HIT BY SEVEREST QUAKE SINCE MARCH 12
### Shock Fails To Arouse Sleepers Grown Blase With More Or Less Mild Temblors

Most Salt Lakers, grown blase over repeated earthquake shocks of more or less mild character succeeding the violent Hansel valley temblors of March 12, slept through yesterday's shock at 1:10 a.m.

The shock was the severest since the first quake of the two felt March 12, according to weather bureau officials, who said today that the Sunday shock was felt at department of commerce stations at Burley, Wendover, Locomotive Springs and locally, with the severest tremor reported at Locomotive Springs.

A second shock was reported at the Burley station at 7:35 a.m. but no trace of this was felt at other places.

Rattling windows and creaking walls, swinging chandeliers, and crooked-hanging pictures have become almost familiar sights and sounds to Salt Lakers since the scores of light shocks that succeeded the Locomotive Springs quake, as the earth has settled in a series of readjustments.

After shocks such as this are inevitable, according to Dr. Hyrum Schneider, geology professor at the University of Utah, and are of the type predicted by Dr. Frederick J. Pack, Deseret professor of geology at the school, who stated at the time of the previous quake that numerous aftershocks of the settling type would occur.

Press dispatches reported that Sunday's quake was felt in Pocatello, Idaho, where buildings swayed, although no damage was reported. Residents of Crystal, Idaho, 20 miles south of Pocatello, stated that the shock was accompanied by a heavy rumbling noise.

The quake was also felt at Kelton, Utah, and in Idaho Falls, Ida.

**[Deseret News; May 7, 1934]**

OGDEN STANDARD EXAMINER

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# EARTHQUAKES SHAKE MOUNTAIN AREA

## DEATH COMES TO OGDEN WOMAN AS HOUSE TREMBLES

### Much Excitement But Little Damage Follows Series Of Temblors; Buildings Sway, Light Fixtures Swing And Some Plaster Loosened

A series of earth tremors which extended generally over the western country this morning cracked plaster, swayed light fixtures, startled citizens and was indirectly responsible for one death.

Startled by the quaking, Mrs. Ida May Venable Atkinson, wife of Grant Thomas Atkinson, died of a heart attack immediately after the first shock was felt at eight-seven o'clock this morning. Since the birth of her baby, 17 days ago, she had suffered from heart trouble.

Residents in all parts of the city vacated their homes and ran out into the street as the first shock occurred, but returned when it was found that damage was almost negligible.

Dishes fell, plaster was cracked and furniture shifted about in rooms. One woman said she was awakened when her bed rolled on its casters and bumped a rocking chair.

A plaster crack developed in the First National building, immediately under the clock in the bank.

Working on the ninth floor of the building Mrs. Jack Madsen was startled when her typewriter slid into her lap and the doors of file cabinets shook open. When she stood up a door swung and bumped her.

Clocks in the Weber county court house stopped at eight-six o'clock and those in the post office at eight-seven. Then, again, at eleven-twenty o'clock another quake was felt which added interest in the tremor developments.

**Woman Faints**

At the municipal wells in Ogden valley, Mrs. Ben Trimble fainted. Telephone wires were snapped from the buildings at the Artesian park wells. Sheet music fell from the piano and waves were washed from the wells basin. There was no increase or slackening of the flow of the wells. It is expected that government underground water survey gauges will record the time and the relative intensity of the shocks when they are examined.

At the home of Leonard Garner in the Lakeview apartments, 3601 Grant avenue, the chandeliers swayed until they hit the ceiling and broke light globes inside.

Falling plaster at the Weber country infirmary at Roy struck Mrs. Annie Barton but did not injure her. Dishes rattled and furniture shifted about. The quake frightened inmates badly.

The walls of the Hotel Ben Lomond and the Hotel Ogden, which adjoin, rubbed together and dust arose, spectators reported.

**Wall Cracked**

One of the walls of the Ogden Dressed Meat company, Wilson Lane, was cracked for a length of seven feet, according to Myron Loew. "The quake started the dressed beef swaying," Mr. Loew reports, "and it was either the swaying of the beef or the quake itself that cracked the wall. We had to go in to stop the beef from swinging."

**Schools Undamaged**

No damage was suffered by any public school building in Ogden or Weber county, according to school officials. Classes in both city and county schools were continued without interruption today. Students at Sacred Heart academy were dismissed following a flood of telephone calls from parents.

The students viewed the quakes as a novel experience and instructors took time to explain the nature and probable cause of the movements.

John G. Lind, instructor of geology at Weber college, said today that the quake here might be caused by a slight slip of the gigantic fault on which Ogden is built, but added that the quakes at other points lent weight to the theory that the movement is a general one and not confined to the Wasatch fault.

He pointed out that the quake here had a wave motion as contrasted with the sharp shaking of some quakes which demolish buildings. It is probable, he said, that today's shocks were caused by the slipping of the rock fault beneath the ground, resulting in the transmission of a wave motion to the sediment above. Such a slipping would result in an east and west motion of the earth at right angles to the fault.

Observers today said that the first shock, at eight-seven this morning, came from the west moving eastward, and that the next noticeable shock, about eleven-twenty, came from the south moving north.

**Travelers Undisturbed**

Passengers on transcontinental trains that reached

Ogden about one hour after the first shock said they felt nothing due to the fact that the shock was absorbed in the motion of the train.

Railroad cars standing in the Ogden yards, however, rocked violently back and fourth. A porter who was dressing in an empty car thought the car was being jacked up by workman for repairs.

Perhaps the most frightened man in Ogden was a man who was asleep on a bench in the union station when the shock occurred. He woke up to see the great station chandeliers swaying overhead and the brass cuspidor beside the bench tilting first one way and then the other. He was wide awake in a moment and leaped over the bench with a shout and headed for the door.

Railroad telegraph wires between Ogden and Montello, Nevada, were reported out of order due to the shock.

For about twenty minutes after the quake the police department was kept busy answering telephone calls about what had happened, some stating that their automobiles were wavering, others that the house was shaking and still others said they felt dizzy and sick at the stomach. No calls were received at the fire station.

The forest service building on Adams avenue and Twenty-fifth street vibrated perceptibly. There were few in the building at the time but the elevator operator said the building swayed considerably. Clocks in the post office stopped. There was no damage in either the forest service or the post office buildings.

A. L. Ellis of Riverdale, reported a hard shock followed by gradual rolling shocks.

Mrs. Earl East of Warren, reported the quake as a mild one with no damage done.

A back bedroom window at the home of Mr. and Mrs. L. H. Strong, 2922 Taylor avenue, was broken by the shock.

Arie Van De Graaf, official U. S. weather observer here, reported the arrival of the quake at seven minutes and fifty-two seconds after eight o'clock. He was standing in the doorway of a brick building, he said, and he felt the walls move.

He reports that J. Cecil Alter, meteorologist of Salt Lake City, reported the quake felt south to Grantsville.

Evanston, Wyoming, felt a distinct shock this morning and a clock was stopped in the Kastor clothing store at exactly eight-seven.

Trains were stopped at the entrance to a tunnel near Evanston pending an inspection after the shock.

At Kemmerer lights were seen to sway in the Catholic church where Lenten services were in progress and the rector of the Episcopal church said some of the candles went out as the church rocked.

The shock was distinct at Frontier, Wyo., a mining town where a hurried inquiry was made to determine if a mine explosion had occurred.

**[Ogden Standard Examiner; March 12, 1934]**

## TWO BUILDINGS RUB TOGETHER IN SALT LAKE; GLASS BROKEN
### Schools Closed Lest There Be Panic In Event Of More Shocks
### S. L. Man Is Injured
### Wyoming And Idaho Feel Mother Earth Squirm And Shiver

SALT LAKE CITY, March 12—(AP)—A series of severe earthquakes jarred northern Utah and southern Idaho today, beginning at eight-five a.m., mountain standard time, and continuing until eleven-twenty-one a.m.

The major damage occurred at Logan, Utah, 85 miles north of here where the walls of the economics building at the Utah State Agricultural college were split by the tremors. School officials said the three-story structure would have to be abandoned.

Students at the school fled to the campus when the chimney on the economics building fell with a roar. The plaster in several other school buildings was cracked and chimneys fell from several residences.

The only casualty reported was Charles Bithell, 55, an employee of the city waterworks department here. He was buried when a six-foot trench under construction in the southern part of this city caved in. Officials of the construction job attributed the cave-in to the quake, although it occurred some time after the first shocks. Bithell was taken from the debris and rushed to a city hospital. The extent of his injuries had not been determined.

**Schools Closed**

The Salt Lake City board of education ordered all public schools in the city closed as a precautionary

measure. Although none of the school buildings was damaged except for cracked plaster, officials said they sent the children home to prevent possible loss of life should a major quake occur.

In the Continental bank building two windows were cracked and cracks appeared in plaster in the Clift building. The statue atop the city and county building was knocked out of plumb.

Reports received here indicated the series of tremors were felt from Boise, Idaho, on the northwest to Rock Springs, Wyo., on the east. How far the quake extended south was not known, but Provo, Utah, 45 miles south of here, reported a slight jar and Idaho Falls, Idaho, and other southeastern Idaho cities were shaken.

The first quake was felt in this city at eight-seven a.m. The tremors continued for five minutes. Another minor shock occurred at eight-thirty a.m., and a more severe jolt at eleven-twenty-one a.m.

When the latest movement occurred, the 1500 students at South high school here rushed for the doors. Two students suffered minor injuries during the rush to get out of the building. The order closing the schools followed.

**Buildings Rasp**

The tall buildings in the business district of this city swayed severely during the heaviest quake. The adjoining Ezra Thompson and Salt Lake Tribune buildings rasped together, sending up a cloud of dust. Clocks stopped in virtually all downtown structures and two windows in a bank building in the heart of the business district here were broken. Plaster in other downtown buildings was cracked.

Professor Perry Byerly of the University of California seismology department said the quake was as severe as the shocks which did extensive damage to Santa Barbara, Calif., in 1925.

Dr. Frederick J. Pack, head of the University of Utah geology department, expressed belief the quake was caused "by the Wasatch or one of the basin-range faults between the Wasatch mountains and the Sierra Nevadas."

"There are at least a score of these basin-range faults running north and south," he said. "The nearest is on the west side of the Oquirrh Range (20 miles southwest of Salt Lake City). It seems the disturbance more than likely was caused by these basin-range faults, since the shocks were strong at Burley, Idaho, out of the Wasatch fault. The fact the shocks died out toward the west indicates the disturbance was local."

**POCATELLO DAMAGE**

POCATELLO, March 12—(AP)—Pocatello was severely shaken twice today by two earth tremors which sent citizens, agog with excitement, scurrying into the streets for safety. The shocks occurred at eight-seven and eleven twenty-one a.m.

Following the second vibration, which was more intense here than the first, public schools were dismissed until a thorough inspection could be made.

Cracked chimneys were reported at the Emersion, Lincoln and Jefferson schools and at the general hospital by Fire Chief A. B. Canfield who made an immediate inspection. The walls in several schools and other buildings were also cracked. The balcony at Reed Hall gymnasium where Pocatello and McCammon High school were to play for the district basketball title this afternoon, was condemned as unsafe after the second shock loosened beams. The game was to go on, however. Several homes and one business house reported broken windows.

**[Ogden Standard Examiner; March 12, 1934]**

## QUAKE CRACKS BUILDING ON LOGAN CAMPUS
### Home Economics Unit Will Have To Be Abandoned, Peterson Says

LOGAN, March 12—(AP)—The earthquake which rumbled through northern Utah and southern Idaho shortly after eight a.m. today split the walls of the home economics building at the Utah State Agricultural college here and officials of the school said the structure will be abandoned.

The chimney on the economics building fell with roar, President E. G. Peterson of the school reported, and the students already assembled for early classes fled to the campus.

Dr. Peterson said the three-story economics building was an old structure and the split walls would make unsafe its future use.

The plaster was split in other buildings on the campus, but the damage was only slight, Dr. Peterson said.

Reports received here said the Preston, Idaho, high school was cracked by the quake, the west wall being forced nearly six inches away from the side walls.

School officials expressed the belief the building would have to be abandoned.

**[Ogden Standard Examiner; March 12, 1934]**

## UTAH PROBABLY QUAKE CENTER
### Instrument Shocks Were Continuous For 33 Minutes

RENO, NEV., March 12—(AP)—Professor Vincent P. Gianella, University of Nevada geologist, said today the university's seismograph recorded a "strong earthquake" at seven-seven a.m. (Pacific standard time) today. The shock, he said, kept the instrument's needle quivering for 33 minutes.

Professor Gianella estimated the center of the disturbance to be 552 miles from Reno somewhere in the Wasatch mountains of northern Utah and southern Idaho. He said the quake had a "strong east-west component."

The shocks were not felt in Reno. Professor Gianella said there apparently was no connection between today's quake and the one which rocked Nevada last January 30.

**[Ogden Standard Examiner; March 12, 1934]**

## DEVICE SHOWS 'QUAKE SEVERE

Persons who yesterday declared that the earth tremors that occurred here were just as severe as some which several years ago caused great damage in California cities, are not far wrong, according to an instrument in Leinhardt's drug store at Twenty-second and Washington avenue, which recorded the tremors in red ink.

The instrument, it should be understood, is not designed to record earth shocks. That each shock was definitely marked by the instrument attests to the severity of the shocks.

The instrument is a variety of barometer named a "cyclo-stormograph." It consists of a slender horizontal arm of metal that ends in a pen point. This point bears upon a small revolving drum covered with a paper chart upon which is recorded the variations in weather prospects.

When the first shock occurred at eight-seven o'clock yesterday morning the arm was violently agitated—so much so that it made a straight perpendicular mark measuring one and three-eighths inches.

Two other distinct shocks are recorded on the paper-covered drum. One occurred just a few minutes after the first and its recording mark measures one third of an inch. The third shock, which was generally felt, resulted in a mark five-twelfths of an inch long.

**[Ogden Standard Examiner; March 13, 1934]**

## EARTHQUAKE STOPS WATER METER CLOCK

Monday morning's earthquake stopped a clock in the city's large venturi water meter at Artesian park at eight-five and one-half o'clock, Assistant Waterworks Superintendent Harry F. Irwin reported this morning.

The automatic recording chart showed that the water in the meter well had violently surged to lift the float.

Mr. Irwin declared the wells' flow is exactly the same now as it was before the series of quakes.

**[Ogden Standard Examiner; March 13, 1934]**

## ROARING SOUNDS CONTINUE AFTER EARTH CRUST SPLITS IN KELTON AND KOSMO AREA
### Some Terrified Residents Of Box Elder County Pack Up To Leave In Hurry; Convulsions Described By Agent

Growling and roaring sounds that accompanied the splitting of the earth's crust near Kosmo, at the northern end of Great Salt Lake during Monday's earthquake, continued in diminished volume today.

Describing the phenomena that attended the shocks in this vicinity, M. T. Shore, Southern Pacific railroad agent in Kelton, said today:

**Lake Covers Flats**

"The first shock was a severe jolt. I looked out and saw chimneys tumbling down and buildings moving all over the landscape. The interiors of homes at Kosmo, Locomotive Springs and Kelton were all shaken into a topsy-turvy mess.

"The earthquake played its best tricks at Kosmo, where at least 40 gushing wells poured forth on the ground and flooded an area of several hundred feet.

"The north end of Great Salt lake pushed out over the landscape after the first shock and spread its salty water over an area of about two miles beyond its normal bounds. Within 12 hours the water receded, leaving great ponds in the lower places.

"Approximately two miles east of here a great roar filled the air as a huge crack, about 10 inches wide, opened in the earth's surface. The east face of the crack had dropped from three to 14 inches in various places.

"A short time later there was another deafening roar and another crack opened up a few hundred feet from the first. Both ran across the Kosmo-Hansel valley highway and traffic was suspended until they were filled.

**More Shocks Felt**

"The cracks extended for several miles and all who saw the earth separating reported that the breaking was accompanied by loud roars. The growling and roaring continued yesterday and today.

"All Monday night and yesterday, less severe quakes were felt and sometimes eight or more occurred within an hour. People residing in the vicinity were terrified and many hastened to pack their belongings and prepare to move.

"Locomotive springs dried up for several hours and then started flowing again."

**[Ogden Standard Examiner; March 14, 1934]**

## CRACKS SHOW 18-INCH FALL IN EARTH SURFACE

KELTON, March 14—Residents of this place who viewed the large cracks in the earth at Kosmo, 10 miles east of here Tuesday report that constant underground rumblings can be heard, also that slight tremors of the earth can be felt every few minutes. These cracks, which range from four to six inches wide and extend for several miles in the vicinity of Kosmo, a station on the old Southern Pacific line at the north end of Great Salt lake, came into existence immediately after the earthquakes of Monday. Several spring holes at Kosmo which have been dry for years suddenly started to give forth hot water.

Locomotive springs, about seven miles west of Kosmo ceased to flow for several hours after the quake, but on Tuesday were again flowing at the normal rate. In places along the cracks at Kosmo the earth on the east side has dropped as low as 18 inches. A truck became stalled Tuesday noon at one point on the highway when the front wheels dropped into a crack. Chimneys on all buildings at Kelton were knocked down during the quake.

On Tuesday several parties of students and geologists from the University of Utah and the Utah State Agricultural college went to Kosmo. Several newspaper men also were on the scene.

**How To Get There**

Those interested in visiting the scene of the earth cracks must drive to Tremonton thence west on an oiled highway to Rattlesnake pass and take the Hansel valley road to the left, designated by a highway sign. The road then runs toward the lake and ends up at Kosmo. The cracks cross the highway two miles east of the Kosmo station.

**[Ogden Standard Examiner; March 14, 1934]**

## QUAKES LEAVE FEW CHIMNEYS IN SNOWVILLE

BRIGHAM CITY, March 14—After investigating in Box Elder county, it appears that the most damage accountable to the recent earthquake was at Snowville. James Cottom, resident of that place for many years reports that every chimney in town with the exception of four was knocked down. Not only did the chimneys on the Cottom home fall but two partitions in the home were shaken down and the occupants had to flee outside for safety. A washing machine in one Snowville home was tipped over. Canned goods in the two Snowville stores were knocked from the shelves and almost every home suffered some damage in broken glass.

It was pointed out that Snowville lies in a direct line north from Kelton, and in the same valley probably received the strongest and first earth vibrations as they came north from the center of the quake zone at Kelton, 35 miles away.

**[Ogden Standard Examiner; March 14, 1934]**

## DAMAGE TO THE NORTH

Cache County schools have been inspected since the quake of last Monday, disclosing two buildings with cracks and one structure is to be condemned.

The earthquake blow was heavier in the north part of the state, due to the fact that the area was nearer than Ogden to the center of the disturbance.

When the reports were coming in Monday, there were indications the cause of the tremors was to the north of Ogden, as has been proved since then by the discovery of the earth cracks 15 miles southeast of Kelton.

**[Ogden Standard Examiner; March 15, 1934]**

OGDEN STANDARD EXAMINER

# EARTH SPLIT FOR 8 MILES IN QUAKE ZONE NORTH OF LAKE

## Standard-Examiner Reporter Visits Phenomena In Kosmo Region

## 200-Mile Auto Trip

## Logan Geologist Describes His Observations At Shock Center

By Will W. Bowman

Gaping cracks in the earth's crust where the ground on one side has dropped as much as 19 inches, new springs and mud geysers—these are the phenomena which may be observed in the vicinity of Kosmo at the north end of Great Salt Lake, near the center of quake disturbances which have shaken Utah for several days.

Hundreds probably will visit the scene within the next few weeks to observe what happens when earth blocks slip past each other along an old fault.

It is better than a 200 mile automobile trip from and return to Ogden but the roads are hard-surfaced all the distance with the exception of approximately 15 miles.

### Via Tremonton

The sightseer should drive to Tremonton and take the oiled highway west toward Snowville. About 25 miles out of Tremonton near Rattlesnake pass, a sign indicates a dirt road to the south, or left. It is marked "Hansel Valley and Locomotive Springs." About 15 miles out on this road the motorist will suddenly come upon the first crack in the earth, running at right angles across the road. Apparently whole acres of land on the east side have dropped as much as 19 inches lower than the ground on the west of the rent. The motorist may safely follow the road, across the crack, to Kosmo, a station situated on the old line of the Southern Pacific railroad, at the north end of the lake. On his way he will cross another yawning rent in the earth. Kosmo is about two miles beyond the first crack.

Professor Reed W. Bailey, geologist from the Utah State Agricultural college, who has spent several days at Kosmo and has thoroughly inspected the phenomena, says one of the cracks extend a distance of about eight miles. The deepest falling away of the ground on one side that he found was 19 inches. The cracks, in following an old fault, run both north and south and east and west. The maximum width of the cracks is about 14 inches.

Mr. Bailey learned that the old Dilley ranch near Snowville which was an historic postal station in the early days on the Corinne-Boise line was practically demolished by the quake.

### Greater Well Flow

The Logan geologist explained the earth rents occurred in the Salt Wells fault zone, the displacement being all of sinking. In Cache valley, he related, actual tests have revealed that flowing wells are spouting higher and producing a greater volume since the quake.

An old pump well at Kosmo became a flowing well for several hours immediately after the quake and then subsided and is again a pump well.

Monument rock, beyond Kosmo, a short distance, is about a mile and one-half from the present lake shore although in earlier days the water came clear to the rock.

Southeast of this eminence a few yards, in an alkali area which was once covered by the lake, numerous new springs immediately commenced to flow and to the southwest a few yards a large number of sand or mud springs developed. Some of these are as small as an automobile tire and others are 15 or 20 feet across.

### Mistake Corrected

As a result of the new water produced the area between Monument Rock and the present shore of the lake, has become wet and boggy and is now a mud flat. This gave rise to the story, which residents at Kosmo said was not true, that the lake had suddenly risen, covered the area, and receded. The residents had just "sounded" one of the new wells with a rock tied to a long rope. They said they were unable to find bottom.

While the sightseer is in the vicinity he may want to drive on a few miles further to Locomotive Springs, on the shore of the lake. There is an emergency airplane landing field here on the Salt Lake to Portland route. A large volume of water flows from these springs. Attendants at the field said the water turned black and cloudy and was slightly warmer immediately following the quake. Thursday evening at sunset it was again flowing crystal clear.

On the return trip those who would prefer to see some new country may continue on southeastward from Kosmo, instead of returning through Hansel valley to the Snowville cutoff road. This road leads down past Promontory and on into Corinne. It is, however, rather rough.

**[Ogden Standard Examiner; March 16, 1934]**

OGDEN STANDARD EXAMINER

# LOGAN GEOLOGIST TELLS WHAT HAPPENED WHEN UTAH WAS SHAKEN BY EARTHQUAKES

## Great Blocks Slip And Send Out Waves Of Tremors

## Kosmo Near Center

## Earth Fractured There And Water Spurts From Cracks

(The following is an authorized interview by Will W. Bowman of The Standard-Examiner staff with Professor Reed W. Bailey of the geology department at the Utah State Agricultural college.)

The recent earthquake shocks in Utah have awakened an interest among geologists in the great basin faults which in the geological past produced the valleys and mountains of this region.

The slipping along old fault planes on which probably thousands of feet of displacement had already taken place in the past, has been renewed within the past few days, sending out vibrations through the rocks which caused the earth to quake. It was these shocks that residents of Utah and Idaho cities felt.

Learning from William Greaves, a Hansel valley land owner, that cracks had opened up in the earth across the road a few miles east of Kosmo, I immediately proceeded to the area with a group of Utah State Agricultural college advanced geology students.

Several days of observation over the Salt Wells fault zone revealed that many cracks had opened up in the earth's surface of the Salt Wells zone near Kosmo. We found five such fissures which were large enough to be considered of major importance although there were numerous smaller ones between and paralleling the major ones.

### One-Foot Scarp

These five major fissures extended generally in a north-south direction with the displacement on each being downward to the east. Where they cross the road the down-dropping on the east was about a foot on each fault. In other words a one-foot scarp was exposed, facing the east. Road maintenance workers leveled this scarp down so that automobiles could safely pass over the cracks.

Walking over the area we traced one of these north-south faults a distance of eight miles. It extended about four miles north and four miles south of where it crosses the road.

On the alkali flats just south of the road, great numbers of new springs came into existence along the cracks and fissures and also in apparently unbroken ground. These are all cold springs and some of them are still flowing, although many of them dried up shortly after they started.

One very conspicuous feature on the white alkali flats are the black sand cones resembling volcanic craters in miniature. These were formed when the water from the new springs, flowing upward, deposited black sand from deep in the ground.

### Water Spurts

According to a trapper we met, who was on the ground at the time of the quake, water gushed out of many of the cracks, geyser-like. The physical evidence remaining verifies his statements.

These new springs and craters appeared when these huge blocks of earth settled, compressing the water-soaked sands and silts below, and forced water out just as water is squeezed from a sponge by the press of a hand.

In addition to the dominant north-south fractures, cracks developed in an east-west direction, along which springs and craters also appeared.

The fact that the faulting was both north-south and east-west suggests that in the Salt Wells fault zone, definite blocks of rock underlying the valley fill, slipped downward along old fault fractures.

Friction and blows from these descending, crowding blocks of earth set up waves which were transmitted to adjacent regions, through the earth's crust.

The mountains and valleys between the Wasatch range and the Sierra Nevada mountains are the result of this same type of faulting and slipping, only on a much larger scale and over a vast period of time measured in millions of years.

### Major Fault

Between the Wasatch fault and the Salt Wells fault zone are a number of major faults along which thousands of feet of displacement has occurred in the past. The most active of all of these until Monday has been the Wasatch fault. Since the time of prehistoric

Lake Bonneville, which previously covered these valleys, faulting has occurred along the Wasatch, resulting in displacements of 30 feet or more at different places. One of the most recently-active sections of the Wasatch fault is the area immediately back of Ogden. In the depression of this fault Ogden's two city waterworks reservoirs are situated.

One of the most conspicuous evidences of this post-Bonneville faulting can be seen at the mouth of Taylor's canyon where a fracture has cut across the alluvial fan formed by drainage from this canyon, dropping the westward portion down about 15 feet, leaving an abrupt scarp, or embankment. Constant erosion by the stream since that time has been able to produce only a small niche in the scarp.

The recent shocks probably would have been very much more severe in Logan, Brigham City, Ogden and other cities, had it not been for the intervening faults and the deeply filled alluvial valley between the Salt Wells zone and these places.

**Act As Cushion**

These intervening faults and alluvium (gravel, sands and clay in places to depths of thousands of feet) served as a cushion and absorbed much of the sharpness of the shock before the quake impulses reached the cities.

There is no way in which any geologist could have predicted that the recent slipping in the Salt Wells fault zone was about to occur or that it would have occurred in that particular place. All that we know, is that we are in a region which is traversed by many faults which are responsible for our broad, relatively flat valleys and our sharp mountain ranges, and that slipping can be expected, but the time or place not foretold.

Of course, with the recent movements near Kosmo, we have been made aware of a zone of instability in the foundation rocks of Utah. It is, therefore, not unlikely that the next movements may be in that section.

Seismographic records of earthquakes show that ordinarily the first shock is the most severe, and that it is usually followed by a series of tremors of diminishing intensity. These may last over a period of weeks or even months. In Japan, a region of intense earthquakes, numerous tremors are felt every day and periodically they become very destructive.

These recent displacements of the earth in the Salt Wells earthquake zone, are the first, so far as is known, to have occurred in Utah since the pioneers came into the valleys.

**[Ogden Standard Examiner; March 18, 1934]**

## MANY INSPECT EARTH SPLITS AT LAKE SHORE
### Road Officer Estimates 2,000 Autos Driven To Quake Zone

Approximately 2,000 automobile parties visited Sunday the Salt Wells fault zone at the north end of Great Salt lake, where slippage caused an earthquake last Monday, Lieutenant B. C. Hillis, of the state highway patrol, estimated.

Most of the cars made the trip both ways through Hansel valley from the Snowville oiled road. Some, however, used the old road through Promontory.

Lieutenant Hillis reported that the Hansel valley road to Kosmo was dusty because of the heavy travel.

An examination of underground water survey gauges in the Ogden valley artesian basin revealed that the earthquake of last Monday probably shook the water in the basin around as though it were in a tin pan.

The gauge deep down in the No. 50 artesian well showed that with the first surge the water dropped five feet and then rose six-feet above normal, a swing of 11 feet. It then resumed its normal flow. On other gauges lesser variation of from two to nine inches was recorded before the normal flow was resumed.

**[Ogden Standard Examiner; March 19, 1934]**

Mar. 12, 8:05 a.m. M6.6; Mar. 12, 11:20 a.m. M6.0;
Mar. 15, 5:02 a.m. M5.1; Apr. 6, 7:16 p.m. M5.5;
Apr. 14, 2:26 p.m. M5.6; May 6, 1:09 a.m. M5½

# CHAPEL FOUND BADLY DAMAGED

## Further Study Conducted On Quakes; Numerous Spectators Gather

BRIGHAM CITY, March 19—Dr. Frederick J. Pack, professor of geology at the University of Utah, who within an hour after last Monday's earthquakes came out in the public print and declared the center of the quake zone to be within a few miles of Kelton, spent Sunday at the scene of the earth disturbances on the north end of Great Salt Lake.

Dr. Pack was accompanied on this second trip of investigation by his wife, his daughter, Eleanor and his nephew, David H. Mann, Ogden Standard-Examiner reporter.

The geologist commenced his investigation of the quake damage in Snowville. The party visited the L.D.S. church building. It was found that the rock structure had been shaken so thoroughly that large chimneys on each side of the roof had been tossed 20 feet in one piece.

Large stones had been loosened from the walls and hurled inside the building. Every foot of the walls was cracked so that the building will probably have to be rebuilt.

Investigation of the Snowville school building showed serious cracks in the walls. Stone cornices had been tossed out into the school yard.

### Crevices Followed

The party next visited the first of the earthquake crevices which cross the road near Kosmo, 38 miles from Snowville. The crevices or scarps were followed more than two miles. At one point a large hole, through which a man might pass, was found on the scarp, the hole growing larger as it deepened. Traveling back and down to the valley floor the party found several large blow holes, full of salty water, which came into existence immediately after the quakes and which flowed great quantities of water and mud out onto the flats. One mile south, two more large crevices were found, running from the flats up and toward the western mountains. The same sort of springs was found on the flats as near the first scarp. Dr. Pack explained that the crevices were caused when a huge slab of earth settled down a bit and the springs were caused when the pressure of the moving earth forced the water to the surface.

Investigation of the Kosmo railroad depot led to several small mud cones, which were dry but which on the day of the quakes flowed large quantities of mud and sand down to the edge of Great Salt Lake.

### Cars Around Rock

Two miles southwest the party landed at "Monument point" a large rock, the size of a six story building which rises abruptly from the edge of the dry lake bed. Had the rock been able to speak it would have muttered in surprise, for after standing there for centuries, with scarcely a sound to break the stillness, now dozens of human beings clamored over the sides and 35 automobiles were parked at its base.

From casual observation it appeared that the huge rock had been completely shaken and with each shake a new spring of water had gushed up from beneath. Water had burst forth every few feet around the base of the rock and four large holes from 10 to 20 feet in diameter were found a few yards out on the flats.

It appeared that regular rivers had gushed forth from the holes immediately after the quakes. Sunday found the streams small.

The popularity of the quake zone was proven during the day, for no less than 206 automobiles were counted on the scene loaded with spectators who were anxious to learn about earthquakes.

### Will Bring Party

Dr. Pack stated during the trip that about Wednesday he will send several of his university geology students to trace the crevices, or scarps, to their end. Next Saturday Dr. Pack will bring to the scene 200 people who will have an opportunity to study earthquake results first hand.

It was pointed out during the trip by the geologist that when an earthquake comes, it is far safer to remain in the home than to run outside. Many people have arrived on the outside just in time to be struck by falling chimneys.

In Los Angeles, he stated, the children are being trained in earthquake drill. At a given signal each child quickly gets under his desk, which would give him protection from falling plaster or other objects.

**[Ogden Standard Examiner; March 19, 1934]**

# FOUR REPAIRING QUAKE CRACKS
## Minor Damage Discovered At Forest Service Structure

While four workmen started today to repair small plaster, chimney and floor cracks that appeared in the new forest service building after the recent earthquake, Clement J. Gerber, federal construction engineer, said the cracks are "minor and not dangerous."

The cracks were discovered immediately after the earthquake. A space of about one-eighth of an inch appeared when the swaying of a 100-foot brick chimney, which rises about 35 feet above the roof, caused it to draw away slightly from the building at the point where it rises above the roof.

**Pole Sways**

Though the bricks were laid in cement mortar, tiny cracks appeared around the edge of a number of bricks at this point. The chimney is safe unless another severe shock occurs, Mr. Gerber said. It will be repaired by scraping away the mortar and pointing the joints.

The seven-inch concrete floor of the small hothouse, seven stories above the ground, was cracked in many places. Tiny thread-like lines appeared. The immediate cause was the swaying of the 50-foot flagpole which is anchored in the floor below—the sixth floor—and extends up through the penthouse floor and upward through the glass roof.

The cracks are said not to extend all way through the thick floor. They will be repaired by chipping away the surface as far as the cracks go and pouring additional concrete.

**Glass Broken**

The swaying flag pole cracked two panes of glass in the roof. A number of vertical cracks also appeared in the six-inch concrete window coping upon which the glass roof rests. The cracked portions will be replaced.

Cracks in plaster are said to be very minor.

"These slight cracks are no cause for alarm," said Mr. Gerber. "The fact that this building rests on piles lessened the shock to the building, since the piles absorb much of it.

"The concrete in the building was comparatively new and not as seasoned as it will be. It therefore cracked more easily."

Photographers today took pictures of cracks in the chimney for record purposes.

**Final Formality**

While the building has been fully inspected both by representatives of Murch Brothers, contractors, and by government officials, it has not been formally accepted by the government.

It is believed that the minor character of the cracks will not affect the matter of the government's acceptance.

The contractors, while not responsible for damage by earthquake, has asked that credit for the repairs be submitted to them.

The men employed to make repairs today are one bricklayer, two plasterers and one cement finisher.

**[Ogden Standard Examiner; March 20, 1934]**

Mar. 12, 8:05 a.m. M6.6; Mar. 12, 11:20 a.m. M6.0;
Mar. 15, 5:02 a.m. M5.1; Apr. 6, 7:16 p.m. M5.5;
Apr. 14, 2:26 p.m. M5.6; May 6, 1:09 a.m. M5½

## GEOLOGIST TO ACT AS GUIDE
### Persons Interested In Earthquake Invited To Make Trip

Walter Buss, instructor of geology at Weber college, announced today he will be glad to accompany a party of Ogden people to the earthquake zone near Kosmo, next Sunday acting as their guide in tracing the earth faults.

The announcement was made, he said, as a result of numerous requests that he accompany an Ogden party and explain the cracks and the nature of the movements that caused them.

No definite time has been set for the proposed trip Sunday. By leaving at eight o'clock, however, the group could reach the quake zone between eleven and twelve, spend several hours examining the quake zone and return to Ogden in the early evening, said Mr. Buss. The trip is about 200 miles by auto. The roads are said to be generally good.

"Evidences of the quake near Kosmo are well worth the trip," said Buss who visited the quake area with a small party of students last Saturday. "It is a phenomenon that Utah people are not well acquainted with, and it is of considerable interest. I will be glad to explain things to members of the party and to answer questions."

Anyone may join the party provided he makes arrangements for his own transportation. Mr. Buss requested persons who wish to make the trip Sunday to call Weber college, telephone 3948, and leave their numbers.

**[Ogden Standard Examiner; March 21, 1934]**

## EARLIER EARTHQUAKES

From the records of the weather bureau, data has been obtained of earth shocks near Corinne, Kelton and Snowville from 1893 to 1919.

As early as 1897 and 1898 heavy shocks were experienced north of the lake.

This indicates that the earth's surface near Kelton has been in motion over a long period, and that region is in an earthquake zone.

During November, 1919, three shocks of moderate intensity were felt at Kelton. That is nearly 15 years ago. With the same lapse of time, the next severe shocks would not be experienced until 1949.

**[Ogden Standard Examiner; March 23, 1934]**

## TEMBLORS CAUSED GREAT FRIGHT IN NINETIES, FILES OF 'BRIGHAM BUGLER' SHOW
### Cloudburst And Large Earth Fissures Are Mentioned In Old News Articles; Walls Sway, Strong Men Become Ill

By David H. Mann

Since the recent earthquakes in northern Utah, a large part of the public interest has been centered on this subject, especially because the phenomenon is a new experience to the present generation. Geologists of this state have for years waited for an earthquake. Hundreds of citizens have made trips to the Hansel valley region in Box Elder county to study the scarps or crevices found there. Today will find crowds on the scene.

**Weekly Publication**

Friday came the announcement from the Salt Lake office of the weather bureau that notes found on the margin of weather reports kept in Corinne in 1897 by V. A. Hill revealed that earthquakes had been felt there several times that year. Mr. Hill also mentions quakes in 1900, 1905, 1915 and 1919.

My search through old records in Brigham City resulted in the discovery of several bound volumes of "The Brigham Bugler" filed away in the down stairs

portion of the public library. "The Brigham Bugler" was a weekly newspaper and search of its pages revealed the entire story of the earthquakes which occurred in 1896 and 1897.

The first quake item found was in the issue of Saturday, October 10, 1896, regarding shocks felt at eight-forty in the morning. The story goes on to say that residents of Corinne, Willard and Three Mile also felt the quake. The following statement reveals much. "People who lived here since the town was founded some 46 years ago report having felt at long intervals two or three other similar harmless shocks."

This statement covers the period from 1850 to the time of the writer, which was 1896. The remainder of this article will give the history of quakes following.

**Fissures Appear**

In the issue of the Brigham Bugler of October 17, 1896, is the following article.

"During the past two weeks the people of Corinne have actually felt twenty separate and distinct earthquake shocks. Tremors have been felt there that were felt in no other place. The town seems to be over the center of some internal disturbance, but more extraordinary than this, is the authentic story that comes from 'Point Lookout.' It seems that last June a great cloudburst and earthquake occurred near there at the same time. Now that region is marked by great fissures in the earth. Some of these cracks are a foot and a half in width. Stones can be dropped into them and they go rattling down to a depth of 80 feet.

"Some people attribute the numerous slight shocks recently felt at Corinne probably ten miles to the south of Point Lookout, to the earth settling back after its upheaval at Point Lookout."

It is significant to note the width of the cracks and the depth to which rocks rattled down the scarps compared to the recent quake.

**Greatest Shock**

The next mention of quakes is found in the issue of February 13, 1897, four months later.

"Earthquakes are getting to be a common occurrence around here, yet the familiarity does not seem to breed contempt. The uncanny feeling they give one sticks to him closer than a brother, and for weeks any unusual noise or the rumble of a heavy wagon over a distant bridge made our citizens prick up their ears and brace themselves in anticipation of another good shaking up.

"At about six-fifteen Monday evening occurred the last, (so far) of the series of quakes that has been playing hide and seek during the past few months in the bowels of the earth beneath us.

"This was the Jumbo shock of all. In five minutes a lighter one occurred. The first stopped clocks; shook bricks from chimneys and swayed the courthouse tower so that it caused the town clock to strike five times. The walls of houses appeared to sway back and forth several inches. Strong men were so frightened they turned pale in the face and sick at the stomach. Some of the earth motions seemed to be directly up and down, but the main vibrations were west to east."

**At River Mouth**

The edition of "The Brigham Bugler" for February 20, 1897, mentions the quakes again in the following language:

A peculiar thing about our earthquakes is that they are almost confined to the valley lying on the north and northeast of Great Salt lake, the center being near the muddy mouth of Bear river, where it empties into the briny lake. They extend over 20 or 30 miles. There are nearly always about two shocks. A shock that is now considered a light one in Brigham, is many times more severe near the river's mouth. A hard one in Brigham is frightful out there. One observer said the land there during a severe shock rose and fell like a billowing ocean. Even now slight shocks are felt there almost daily. They have so cracked up the ice in the frozen river that dislodged cakes have floated out into the lake, leaving the river open.

"A sport from Salt Lake best express the feeling of helplessness that comes over a person during one of the earthquakes. It was last fall, a shock came, it frightened him to his feet. Staggering across the floor he found everything trembling violently, there was nothing secure, in great agitation he exclaimed:

" 'Great God. There's nothing to take hold of'.

**Column of Smoke**

Two weeks later "The Brigham Bugler" reported the following, in its issue of Saturday, March 6, 1897.

"The sensation of the week has been the reported volcano out west of Brigham. First came the story that there was a volcano in Great Salt lake southwest of Promontory. Citizens of Corinne said they saw one there. A Promontory correspondent of the Bugler yesterday said they cannot see any such lake spouter, but Martin Rohwer, a thoroughly reliable young farmer who lives on a ranch out west of Corinne, tells a most convincing story.

"He says that three weeks ago he saw a great column of smoke rise up into the heavens. At first he

thought it must be a sheep camp on fire as it came right out of the lake, or flat alkali lake lands where nothing grows. Later his wife called his attention to the same occurrence and by closely watching it he found the column of smoke shot high up into the air several times an hour.

"It was especially active every afternoon. The smoke would first rush up like a great smokestack several hundred feet high then gradually sink down until it could hardly be seen. Later he could see a mound of earth in the vicinity; one never before seen there. It was undoubtedly cast up by these convulsions of nature.

"Mr. Rohwer is positively convinced it is an active volcano. From his ranch the position appeared to him in the region of the mouth of Bear river, nearly 20 miles almost due west of Brigham. At this time of the year when the snow and mud are so deep he says it would be impossible to reach the scene of this natural wonder. Another convincing fact is that its location is near where the recent numerous earthquakes were severest. In this vicinity for weeks at a time shocks were felt daily, some of them making the ground rise and fall like a billowing ocean.

**Father's Story**

On Saturday March 27, 1897, two weeks later, the following was reported by "The Bugler."

"During the past month there has not been a single earthquake shock in this neighborhood. It was just one month ago, too, when the report came that a volcano had been seen out near Great Salt lake. This abrupt cession of earthquakes is extraordinary when it is taken into consideration that prior to that time shocks were felt daily and sometimes several times a day in Corinne and other points near the scene of the reported volcano.

"In an interview with a Bugler reporter Saturday, Martin Rohwer said that since his return to his ranch west of Corinne he has seen no further eruptions. A few days after Mr. Rohwer last beheld the spouter his father was down much nearer the place, within five or six miles. In addition to the big spouter he saw two much smaller eruptions. It will no doubt be several weeks before the mud will be dried up enough so that they can go down to investigate. Mr. Rohwer had no doubt but that he can find cinders and other marks of eruption. He says he can go to the place blindfolded. It is on the alkali lake bottoms seven or eight miles southwest of Corinne."

"The Bugler" in its issue of Saturday, August 7, 1897, reports another earthquake of the usual nature and felt in surrounding towns. One year later, on March 12, 1898, the following item appears:

**Cavern Described**

"In conversation with Christin Freeze a few days ago, a Bugler reporter was given the following respecting a decidedly interesting cavern or extinct volcano out west of Corinne. It is situated half a mile south of the source of Blue creek. The opening is not more than a foot and a half or two feet in diameter; barely large enough for a man to squeeze through. The walls are perpendicular and it requires a rope 25 feet long to lower a man to the first floor. Here you enter a large room about 20 by 30 feet and 20 feet in height. The walls are solid rock. Everything is covered over with a fleecy white mineral, while long white ghost-like stalactites hang from the ceiling like unique chandeliers of matchless beauty. The shimmer of rays of the lantern on the sparkling covering produces a delightful spectacle. From this room narrow passageways branch out in all directions. In them the air is foul, and the rays of light seem lost in the thick darkness a foot from the lantern.

**Intense Heat**

"Feeling your way into one of these black narrow passages, you may toss a stone out into the darkness beyond, but no reverberations greet the alert ear as the stone strikes the bottomless pit. A noise as the rushing of water or the sighing of wind is distinctly heard way off in the impenetrable night where darkness ever reigns supreme. Solid rock hems you in on all sides. The heat is so intense that when the youthful explorer is drawn up to the surface, his clothing is as wringing wet as though he had just been snaked out of a ditch. Persons have been lost in this cavern and they have had exciting times finding their way out."

The next earthquake of record which can be found in local files of newspapers happened in 1900. Another is recorded in October, of 1915, and again on November 19, 1919. One death resulted in Brigham City indirectly by the 1919 quake. According to reports, Rufus Tiner an employee of the cement plant west of Brigham City, was severely burned when coal dust which had gathered on the rafters of the plant was shaken into the air by the quake at noon, November 19, 1919, and exploded upon contact with the cement ovens in operation in the building. Mr. Tiner died several years after the quake, it was said, from the effects of the burns.

**Reports Verified**

The mention of the interview with Martin Rohwer

of Corinne by "The Bugler" reporter in March, 1897, suggested to the writer of this article that another interview with Mr. Rohwer be made, to verify the newspaper report of 36 years ago. Mr. Rohwer was found Saturday morning at his farm near Corinne and quickly verified the report of "The Bugler."

Questioned, Mr. Rohwer stated he was at Connor Springs west of Little Mountain and 25 miles west of Brigham. Straight south, he said, he saw the huge column of smoke rise time and time again out in the lake bed, at least five miles away. But, he stated, when spring came and the mud dried up he never did go out and make an investigation but on several occasions while traveling to Brigham City and while passing over Little mountain he was able to see two large mounds in the distance where the smoke had been seen arising from the lake.

**Writer Arrives**

"A short time after the report in the local paper of the smoke rising from the lake," stated Mr. Rohwer, "the San Francisco Examiner ran an article about the smoke rising from Great Salt lake and sent a man to investigate. When the man stepped off the train at Corinne he was told there was nothing to the story and so went back to California without investigating further.

"There is a man in Penrose at the present time who can also verify my story," further declared Mr. Rohwer "and he is William Miller. He also saw the huge columns of smoke rising to the heavens from the center of the lake." The thing he did remember very well, declared Mr. Rohwer, was the fact that after the spouts were seen in the lake, no more earthquakes were to be felt in the region for several years.

**Mud Geyser Occurs**

Recent happenings near the headquarters of the Bear river migratory bird refuge indicate that what Mr. Rohwer saw in the distance coming from the lake may have been a mud geyser. In August 1931, while drilling for water at the refuge headquarters gas was struck by the drillers, which time and time again blew tons of mud and water high into the air. In fact, the well had to be abandoned. Pictures of the geyser, throwing mud 75 feet into the air, are on file at the refuge headquarters in Brigham City. It seems possible that the quakes of 1897 opened up scarps in the lake bed, gas came up through the cracks and blew black mud high into the air, which furnished the basis of the scene beheld by Mr. Rohwer from Connor Springs.

**Location of Cavern**

Regarding the story of the huge bottomless cavern mentioned by "The Brigham Bugler" in the interview with Christan Freeze in 1898, Mr. Freeze was interviewed at his home in Brigham Saturday noon. Mr. Freeze verified the story and stated that it was possible that at present he was the only living soul who knows the location of the cavern. He especially remembered, he said, of going down into the cavern and the white brittle mineral substance which covered the rocks at the bottom and how it seemed to catch on one's clothes and cling like barbed wire. A candle he stated, would hardly burn down in the hole from lack of air and the place, to his memory had never been explored.

Asked if he could locate the cavern at the present time, he stated that he was positive that he could find the place, and that it would be possible to drive a car to within a few rods of the location, which is about 30 miles northwest of Brigham City.

**[Ogden Standard Examiner; March 25, 1934]**

## AUTOS HOLD MORE DANGER THAN QUAKES
### Pack Says Road Hazard Ten Thousand Times Greater

"I am not afraid of earthquakes. You people in Ogden stand ten thousands times more chances of being killed by automobiles than by earthquakes but of course the later are the most spectacular," said Dr. Fred J. Pack of the University of Utah, in an address on the subject of earthquakes at the Rotary club meeting in the Hotel Ben Lomond this noon.

Dr. Pack declared that when he felt the earth tremor two weeks ago he was filled with great joy because his predictions of 25 years past had been fulfilled. There will be future disturbances here, he said but the movements will take place much farther apart because in this region the growth of the mountains has about been completed while on the Pacific coast the ranges are still rapidly rising.

Dr. Pack declared that the people of Ogden were probably not aware that they owe him a debt of gratitude. He said that when it was proposed to build a reservoir ten miles above Huntsville, he with Dr. Fortier condemned the site and some people don't like him because of that. But he said he directed Mayor Fell to the artesian basin and suggested that he drill wells at that point and today Ogden has a wonderful supply of water.

**[Ogden Standard Examiner; March 28, 1934]**

## SLIGHT QUAKE FELT IN UTAH AND IDAHO

SALT LAKE CITY, April 7—(AP)—A slight earthquake was felt by residents in a wide area including Pocatello, Idaho, and Salt Lake City at seven-sixteen o'clock last night.

In Salt Lake City the disturbance was so indistinct that many persons told of it by friends, called newspaper offices to confirm the reports.

It was felt similarly at Pocatello.

The United States weather bureau reported that a major shock was felt in the vicinity of Locomotive Springs, north of here.

**[Ogden Standard Examiner; April 7, 1934]**

Mar. 12, 8:05 a.m. M6.6; Mar. 12, 11:20 a.m. M6.0;
Mar. 15, 5:02 a.m. M5.1; Apr. 6, 7:16 p.m. M5.5;
Apr. 14, 2:26 p.m. M5.6; May 6, 1:09 a.m. M5½

## OGDEN FEELS QUAKE TREMOR
### Minor Shocks Can Be Expected, Geologist Declares

A pronounced earthquake shock was felt in Ogden at 2:25:50 o'clock this afternoon.

Professor Reed W. Bailey of the Utah State Agricultural college geology department, who was in the editorial rooms of The Standard-Examiner at the time, said such shocks are common and can be expected following major earthquakes such as occurred in the Salt Wells fault zone near Kosmo at the north end of Great Salt Lake, last March 7.

**Natural Situation**

"It is just natural that where we have those stresses set up in the earth, the pressure along old fault planes becomes greater than the friction and they slip. After the first and second major slippings and movements, adjustments usually continue in those blocks. A mapping of these new features in the area has indicated clearly that the March 7 movement was on a number of planes instead of just one. More or less minor shocks have been felt repeatedly, especially by those persons residing in Hansel valley, since the first major shock of March 7."

Railroad reports said earth tremors stopped several clocks in Salt Lake City today at two twenty-eight p.m. No property damage was reported.

A report from Kelton, where the earth tremors of March 7 centered, said that the shocks were felt there though they were brief and slight. The shocks were said to be more severe at Salt Lake City than at Kelton.

Railroads reported that there was no damage to their property either east or west. No one at Evanston or points eastward felt the shock.

**[Ogden Standard Examiner; April 14, 1934]**

## EARLY MORNING QUAKE IS FELT IN OGDEN

Several persons, from widely scattered sections of Weber county, called the Standard-Examiner early this morning and reported they experienced a sharp earthquake shock at about one-twelve o'clock this morning.

Reports came from Riverdale and from practically all sections of Ogden city.

**[Ogden Standard Examiner; May 6, 1934]**

POST-REGISTER (Idaho Falls, Idaho)
Mar. 12, 8:05 a.m. M6.6; Mar. 12, 11:20 a.m. M6.0;
Mar. 15, 5:02 a.m. M5.1; Apr. 6, 7:16 p.m. M5.5;
Apr. 14, 2:26 p.m. M5.6; May 6, 1:09 a.m. M5½

# EARTH TREMORS ROCK SOUTH IDAHO AND UTAH

## Quakes Rattle Windows Here About 8:06 A.M.
## Distinct Shocks Felt In Idaho Falls And Vicinity
## Extends North Here
## Earthquakes Also Noted At Rexburg, Rigby, Shelley, Reports Show

Three distinct earth tremors shook Idaho Falls and most of the Upper Snake River Valley, along with the rest of southern Idaho, northern Utah and part of Wyoming, Monday morning. No damage, however, was reported throughout this district—the quakes rattling windows and dishes, also making hanging fixtures swing back and forth.

The first two tremors came close together at 8:06 and 8:07 o'clock this morning and lasted but a second or so. The second was longer and more severe, rattling the windows in the Post-Register and other downtown buildings. The third quake was felt at 11:20 o'clock and was probably a little longer than the other two.

Immediately following the first tremors The Post-Register office was swamped with telephone calls from residents of the city and surrounding territory reporting the quakes and to learn if any damage had resulted. Although the tremors were considered to be quite severe, no reports were received by The Post-Register up to early afternoon, not only here but throughout the territory.

The quake seemed to take in nearly all of southern Idaho, Pocatello reporting severe shakings. North from here the shocks were reported as felt as far as Roberts on the northwest and up to Rexburg and vicinity on the north. No one was found at Swan Valley, Ashton or Driggs who felt the quakes.

The New Sweden and Woodville sections seemed to be the hardest hit, according to reports received at The Post-Register on the tremors, although no damage resulted. In the New Sweden section houses swayed, pans on the stoves rattled and light fixtures swung gently. At Woodville it was reported that the school house shook violently, moving the piano a few inches from the wall. Dubois did not feel the tremors, according to long distance telephone calls put in by The Post-Register.

### First to Call

Mrs. L. P. Dawson of 490 South Water avenue was the first person to call The Post-Register office this morning relative to the first tremors. Mrs. Hugo Osterberg of New Sweden called as Mrs. Dawson's call was being received on the other trunk line of the office. A call also came in early from L. L. West of New Sweden.

Rigby reported that the tremors rocked the hanging fixtures back and forth and moved the furniture a few inches.

### Two At Pocatello

POCATELLO, March 12 (AP)—Two sharp earth shocks of about 15 seconds duration jarred Pocatello residents at 8:07 a.m. today. The Pocatello Tribune building and others in the downtown section were shaken by the quake being accompanied by a heavy rumbling sound. One home reported a window broken by the tremors.

### Recorded at Boise

BOISE, March 12 (AP)—The quake which shook Utah and Idaho and possibly other sections for a brief period this morning was recorded by the weather bureau here as occurring at 8:07 a.m., mountain standard time.

No recording instruments are in the weather bureau but the meteorologist on duty made a brief note of the event, saying:

"A slight earthquake was observed at 8:07 a.m. About eight or 10 undulations were distinctly felt. The duration was about five seconds."

Immediately after the quake, numbers of telephone calls were received at the newspaper offices but no damage was reported.

Residents told of lights started swaying, and one newspaperman said his chair was rocked as he sat at breakfast, "two different times, about two seconds apart."

From Twin Falls came a report by commercial wires that the shock was felt there but no damage was reported. Windows in the business section were rattled, the report indicated, but none broke.

### Felt at Cheyenne

CHEYENNE, Wyo., March 12 (AP)—The department of commerce airways weather bureau here reported over its teletype system this morning that the slight earth tremor which shook Salt Lake City was

POST-REGISTER (Idaho Falls, Idaho)

recorded as far east as Rock Springs, Wyo.

The shock, of very slight intensity, was recorded at Salt Lake City, Coalville, Utah, near the Utah-Wyoming line and at Rock Springs.

No damage was reported.

**[Post-Register; March 12, 1934]**

## NORTHERN UTAH FEELS SHOCKS
## Sway Buildings At Salt Lake, Cracks One At Logan
## Clocks Stopped
## Windows Broken Out In Zion City; Damage Slight

SALT LAKE CITY, March 12 (AP)—Schools in this city were ordered closed today as a precautionary measure as earthquake shocks continued to shake the city.

School officials said none of the institutions of learning was damaged except cracking of plaster, but the students were dismissed to prevent possible loss of life should a more severe tremor occur.

A severe tremor was felt at 11:19 a.m., today.

SALT LAKE CITY, March 12 (AP)—A sharp earthquake rocked this city shortly after 8 a.m. today.

Tall buildings in the city swayed distinctly and clocks stopped in numerous places. The Salt Lake Tribune office, in which is located the office of the Associated Press, swayed for several seconds and the clock stopped at 8:05 a.m. Other clocks in the buildings also stopped.

Hundreds of early morning pedestrians stopped in the street and watched the buildings shake.

The shock was felt in Ogden, Utah, 40 miles north of here, and in Midvale and Sandy to the south. Residents hurriedly called the newspaper offices to determine the extent of the quake, some of them saying the tremors moved furniture away from the walls.

Two windows in the Continental National bank building here were broken.

Pocatello and Idaho Falls, Idaho, the latter city nearly 300 miles north of here, reported the shocks were felt there. The first tremor was felt at 8:06 a.m., Mountain Standard time, and another a moment later. One resident of Pocatello reported the shock broke a window in his home. Others said the windows rattled and fixtures in their homes swayed.

**Felt at 8:05 A.M.**

In this city, the tremors, the first at 8:05 a.m., continued over a period of five minutes, the first slight followed by a much heavier quake. The adjoining Tribune and Ezra Thompson buildings, in the heart of the business district, swayed against each other several times, attracting a large crowd of pedestrians.

From the residential districts came reports of furnace doors swinging open and the water splashing out of Monday morning wash tubs. One woman said her bed was rolled several feet from the wall by the force of tremors.

The shock was reported to be the worst ever felt in Logan, in the northern end of Utah, where cracks were reported to have been caused in plaster of houses.

Plaster in the Clift office building in this city was cracked.

Frederick J. Pack, head professor of Geology at the University of Utah, said the shocks were felt distinctly at the university, located on the bench at the foot of the Wasatch mountains east of this city. He reported hanging objects swung widely.

A minor shock was reported here at 8:32 a.m.

Previously shocks had been felt here in January, 1931, and in November and December, 1932, but they were slight.

**Wall Split**

LOGAN, Utah, March 12 (AP)—The earthquake which rumbled through northern Utah and southern Idaho shortly after 8 a.m. today split the walls of the home economics building at the Utah State Agricultural college here and officials of the school said the structure will be abandoned.

The chimney on the economics building fell with a roar, President E. G. Peterson of the school reported, and the students already assembled for early classes fled to the campus.

**[Post-Register; March 12, 1934]**

POST-REGISTER (Idaho Falls, Idaho)

# TREMORS TUESDAY CRACK WALLS AND TOPPLE CHIMNEYS

## Severe Disturbance Centers In Northern Utah And South Idaho

## Inspect Buildings

## Salt Lake Schools Remain Closed; Pocatello Closed Monday

SALT LAKE CITY, March 13 (AP)—Pending a thorough inspection, schools of Salt Lake City will remain closed today but educational institutions will resume normal functions in most other north Utah and south Idaho cities which were rocked by a series of earthquakes yesterday. Damage to buildings in all instances was confined to cracks and toppled chimneys.

The most severe disturbance was centered in an area bounded by Boise, Idaho, on the north; Rock Springs, Wyo., on the east; Richfield, Utah, on the south and Elko, Nev., on the west.

The quake was less severe in Wyoming and Nevada than in Utah and southern Idaho.

On the recommendations of W. L. Payne, Salt Lake City police chief, and Dr. L. E. Viko, city health commissioner, Dr. L. John Nuttal, Jr., superintendent of public instruction, announced that as a precautionary measure all public institutions under his jurisdiction will remain closed until buildings are closely inspected for hidden flaws.

**Close at Pocatello**

At Pocatello, 10 public schools were closed following the disturbance. An inspection was started at once and all structures were found safe. The walls of one building were badly cracked. J. R. Nichols, dean of the University of Idaho, southern branch, at Pocatello, called on the state department of public works at Boise to send an expert to examine buildings on the campus. Large cracks appeared in several places in the administration building, in the hall which houses the auditorium and in the library considerable damage was done and beams were loosened in the gymnasium.

At Twin Falls, W. B. Smith, city superintendent of schools, ordered all activities suspended at 2 p.m., yesterday. The reasons, he said, were parents' expressions of fear of impending disaster. Sessions will be resumed immediately on the normal schedule, he said. No damage to buildings was done.

At Ogden, another of the more populous centers of the affected district, all schools were kept with the exception of a Catholic institution, the Sacred Heart academy, which was ordered closed on the recommendation of the parents of many of the students.

At Kelton, Utah, the quake destroyed a chimney of the town's only school house, and resumption of operations will be impossible, school officials said, until repairs are made.

At Provo, Utah, classes continued as usual, but officials conducted an immediate inspection of all buildings. All were deemed safe for occupancy.

At the Utah State Agricultural college in Logan, classes in some buildings were suspended, and activities in all of the city's schools were halted for the day. Walls of some of the college buildings were cracked and the chimney of one grade school building toppled to the ground.

Schools in Franklin county, Idaho, were dismissed after a 150-pound capstone from the top of the high school building at Preston, the county seat, toppled over and left the west wall swaying six inches from the rest of the building.

No damage was done at Boise and schools continued without interruption.

No damage was reported at Idaho Falls.

**[Post-Register; March 13, 1934]**

POST-REGISTER (Idaho Falls, Idaho)

Mar. 12, 8:05 a.m. M6.6; Mar. 12, 11:20 a.m. M6.0;
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Apr. 14, 2:26 p.m. M5.6; May 6, 1:09 a.m. M5½

# QUAKE SPLITS EARTH IN UTAH

## Rumblings Diminish Near Kosmo, At North End Salt Lake

SALT LAKE CITY, March 14 (AP)—Growling and roaring sounds that accompanied the splitting of the earth's crust near Kosmo, Utah, at the northern end of Great Salt Lake during Monday's earthquake, continued in diminished volume today.

Describing the phenomena that attended the shocks in this vicinity, M. T. Shore, Southern Pacific railroad agent at Kelton, Utah, said today:

"The first shock was a severe jolt. I looked out and saw chimneys tumbling down and buildings moving all over the landscape. The interiors of homes at Kosmo, Locomotive Springs and Kelton were all shaken into a topsy-turvy mass.

"The earthquake played its best tricks at Kosmo, where at least 40 gushing wells poured forth on the ground and flooded an area of several hundred feet.

**Salty Water Spreads**

"The north end of Great Salt Lake pushed out over the landscape after the first shock and spread its salty water over an area of about two miles beyond its normal bounds. Within 12 hours the water receded again, leaving great ponds in the lower places.

"Approximately two miles east of here a great roar filled the air as a huge crack, about 10 inches wide, opened in the earth's surface. The east face of the crack had dropped from three to 14 inches in various places.

"A short time later there was another deafening roar and another crack opened up a few hundred feet from the first. Both ran across the Kosmo-Hansel Valley highway and traffic was suspended until they were filled.

"The cracks extended for several miles and all who saw the earth separating reported that the breaking was accompanied by loud roars. The growling and roaring continued yesterday and today.

"All Monday night and yesterday, less severe quakes were felt and sometimes eight or more occurred within an hour. People residing in the vicinity were terrified and many hastened to pack their belongings and prepare to move.

"Locomotive Springs dried up for several hours and then started flowing again."

**[Post-Register; March 14, 1934]**

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# FIVE SHOCKS SHAKE WIDE WEST AREA

## Residents Flee Homes And Offices As Temblors Sway Buildings

## All Schools Closed

## Idaho, Wyoming And Nevada Jarred; City Takes Precautions

Five distinct temblors, described by geologists as the most severe that have ever struck the region during the years for which records are available, shook Salt Lake, all of northern Utah and parts of three surrounding states Monday morning.

The first shock, of major intensity, occurred at 8:08 a.m. and was followed by three minor temblors at 8:32 a.m., 10:30 a.m. and 11:14 a.m., with the final shock of the day, another major one, occurring at 11:21 a.m. Alarmed residents, who fled from their homes and from office buildings in many instances when the first temblor shook buildings, were assured by geologists Monday afternoon that there was no basis for the belief that further, major shocks would occur.

Despite the assurances, all Salt Lake City schools were closed by Dr. I. John Nuttall Jr., superintendent, on the recommendation of Chief of Police W. I. Payne and Dr. L. K. Vixor , city health commissioner, a precautionary measure, and the school buildings will be inspected Tuesday before Dr. Nuttall will permit them to be reopened.

### City Building Vacated

Similarly, at the city and county building all persons were ordered to vacate following a meeting of the city and county commissions. The building will be open for business Tuesday.

The shocks were felt as far north as Boise, Idaho, to the south as far as Richfield, east as far as Rock Springs, Wyo., and west at Ely and Elko, Nev. Damage was reported from a wide area, but it was all of a minor nature.

Dr. Frederick J. Pack, Deseret professor of geology at the University of Utah, fixed the center of the quake at the north end of the Great Salt lake, near the town of Kelton. He said on the basis of telegraphic reports he determined that one of the Great Basin faults, running north and south through the lake, had slipped.

Reports from towns in the four states indicated the shocks were felt for a distance of about 450 miles east and west and about the same distance north and south.

### Calls Swamp Geologists

Dr. Hyrum Schneider, another university geology professor, said he could not say definitely where the point of origin was, but said reports indicated it was north of Salt Lake.

Both geology professors were swamped throughout the day with calls from panic stricken persons checking reports that there were more and even stronger temblors in store for them. The professors termed such reports false and said it was impossible to determine whether there would be further disturbances.

Both expressed the belief the strongest temblors already had struck the region and that any further shocks probably would be minor, but could be expected during the next 24 hours. They said they would be greatly surprised if a disturbance of disastrous proportions occurred.

Newspaper officers were besieged throughout the day with calls from residents reporting minor damage to their homes. There was every indication that not a section of the city had escaped. Beds, chairs and tables were rocked, chandeliers were shaken, plaster was jarred loose and a few buildings were cracked. At the first disturbance, residents just arising fled from their homes partly clad, expecting further temblors to follow.

Reports that the Main street corner of the Clift building had been cracked proved groundless when the building manager, Lawrence H. Heath, said the crack had been caused by the weather years ago.

Plaster tumbled into the lobby and president's suite of the Newhouse hotel.

At the city and county building, officials said the building was safe, but some apprehension was felt regarding capstones of the chimneys and the statue atop the building, which was bent. After the order to vacate had been issued, guards were posted to prevent persons from entering. Plaster fell in several rooms in the building. Engineers, after an inspection, ordered removal of all capstones.

Many buildings were reported cracked at Logan and in Cache valley, and, following the second major shock at 11:21 a.m., city schools and classes in the Home Economics building and main building of the Utah State Agricultural college were dismissed. Plaster fell in many structures.

**Severe Shocks Recorded**

Seismologists at Berkeley and Pasadena, Cal., reported their instruments recorded shocks that were more severe than the earthquake which struck Long Beach last March 10, causing heavy loss of life. A similar report came from seismologists at Washington, D. C.

One death was indirectly attributable to the earthquake at Ogden. Mrs. Ida May Venable Atkinson, who had been ill for two weeks with heart trouble and was in bed when the first tremor struck. She complained that her bed was being shaken and when she was told the disturbance was caused by a quake she died.

Charles Bithell, 55, of 1345 Roberts avenue, a city water department employee, was injured internally when a trench weakened by the first shock collapsed at Sixteenth South street and Highland drive, and trapped him. The walls gave way soon after he entered the 10-foot deep trench to place support planks. He was reported in a critical condition at a hospital.

Mr. Bithell was buried nearly to his hips and was extricated by fellow workers who took him to the emergency hospital for treatment. Later he was removed to the L.D.S. hospital.

As the wall gave way, one of the workers shouted a warning to Mr. Bithell, but before he could climb out the trench collapsed.

**Reservoirs Undamaged**

Commissioner George D. Keyser reported an inspection of the reservoirs of the city water department showed no damage had been done.

Immediately after the first shock, Chief Payne called Norman Sims, commander of the Salt Lake post No. 2, American Legion, requesting the Legion Alerts to stand by to step in and take charge of the situation in the event of a major disaster. Police prowl cars were put into service at noon in case of an emergency.

At Kelton, near the center of the disturbance as located by Dr. Pack, the chimney on the schoolhouse was shaken loose by the two major shocks, although other shocks also were felt. Classes were dismissed.

Among other towns in the four states which reported feeling the shocks distinctly were Idaho Falls, Pocatello, Lava Hot Springs, Paris, Mackey, Twin Falls and Burley, Idaho; Kemmerer, Evanston and Rock Springs, Wyo.; Richfield and Mt. Pleasant, Utah.

St. George and Price reported the tremors were not felt there, indicating Richfield was the farthest south to be shaken.

**[Salt Lake Tribune; March 13, 1934]**

## EXPERTS DIFFER ON CENTER OF SALT LAKE EARTHQUAKE
### Pack Locates Shock Near Kelton, Other Geologists Place It In Different Faults

Slipping of one of the many faults in the great basin fault area extending from the Wasatch mountains to the Sierras on the Nevada-California border caused the earthquake disturbance, but which fault slipped was a subject of conjecture Monday by Utah geologists. It was generally agreed that the offending fault will not be determined until a check is made of the intensity of the tremors in various localities or actual evidence uncovered of disturbance along a known fault.

The only geologist who gave an opinion as to the definite location of the disturbance was Dr. Frederick J. Pack, Deseret professor of geology at the University of Utah. He placed the epicenter a few miles south of Kelton in the Great Salt Lake.

**Fault "Not Determined"**

J. J. Beeson, prominent Utah geologist , declared that while there may have been a shifting of the Wasatch fault or the Wasatch Springs fault, there is also equal likelihood that there was movement along one of the many other faults.

Mr. Beeson spent Monday morning in driving in Mill Creek, along the Wasatch boulevard to Big Cottonwood canyon, and to the airport, but he reported there were no cracks in the highway of any evidence of disturbance or movement of either the Wasatch fault or the Warm Springs fault. He declared that the position of the Wasatch fault is definitely known at the mouth of Little Cottonwood canyon. The Warm Springs fault runs from Utah lake through the Jordan Narrows and up Salt Lake valley to the warm springs north of the city. The shocks, he said, might have come from some other range basin fault farther to the west.

R. T. Walker, chief geologist of the United States Smelting, Refining and Mining company, expressed the

belief that the slipping fault was west of Salt Lake and not immediately local in that disturbance close to Salt Lake would have been sharper, with faster vibrations, but not necessarily with more intensity.

"Actual determination will require a checking of observations on intensity, the direction of the movements, [ ? ]
**[Salt Lake Tribune; March 13, 1934]**

## SCHOOLS REMAIN CLOSED IN CITY TILL WEDNESDAY

Salt Lake schools will reopen only after a thorough examination has been made to determine what, if any, damage was done to school buildings by the earthquakes Monday.

Dr. L. John Nuttal. Jr., superintendent, announced Monday night that the schools will reopen Wednesday morning, unless there are further earth disturbances or unexpected finding of damage to buildings.

A careful preliminary survey of the buildings was made Monday by engineers of the school board's department of buildings and grounds under direction of Howard Barker, department superintendent.

The check, made after all school children had been removed from the buildings, after the 11:21 a. m. quake, revealed no structural defects caused by the tremors, Dr. Nuttall and Mr. Barker said.

The engineers found only slight cracks in plastering, practically all of which already were in existence, the school officials said. Nothing wrong was found with footings, walls, roofs, floors and other structural parts. Such cracks as were found in the plastering, Dr. Nuttall explained, were due to settlement and temperature stresses. Any reports circulated after the quakes concerning damage to school buildings apparently were not founded on fact.

Officials of Judge Memorial school, St. Mary-of-the-Wasatch and Kearns St. Ann's orphanage school announced all departments of the institutions will be closed Tuesday pending a check of possible damage caused by the shocks.

Rowland Hall and schools of the Granite district will be open. Dr. Calvin S. Smith, superintendent of Granite district, said schools of the district were closed Monday afternoon and an examination of the buildings was made revealing no damage. An inspection at Rowland Hall was reported to have disclosed no damage.
**[Salt Lake Tribune; March 13, 1934]**

## QUAKE BLAMED FOR DEATH OF OGDEN WOMAN
### Shock Fatal To Victim Of Heart Trouble; Bank Building Cracked

OGDEN—Four shocks, two of major proportions and two minor tremors, had been felt in Ogden up to a late hour Monday. The first shock came shortly after 8 a.m., when buildings swayed, houses danced and late sleepers were driven frantically from their beds.

One death was attributed to the first quake. Mrs. Ida May Venable Atkinson, 21, wife of Clarence Thomas Atkinson, was the victim. She had been suffering for 17 days with heart trouble following the death of a child at birth.

Mrs. Atkinson, bedridden, was sleeping when the first shock occurred. Members of her family were about her. She apparently felt the shock, was awakened, and rose in bed to inquire: "Why are you shaking the bed. I am sleepy. I don't want to waken now."

**Strain Brings Death**

The strain of rising in bed was too much for her heart. She fell back upon the pillows and died almost immediately.

Damage was reported to some buildings in the city. A crack appeared in the plaster of the First National Bank building near the ground floor.

At the Weber county infirmary in Roy, plaster fell and struck Mrs. Annie Barton. She was uninjured. The entire building swayed, dishes rattled and the inmates were frightened, but no injuries were reported.

While reports of damage came in, reassuring announcements came from others who said that the quakes had little effect upon their buildings. The first

National Bank building was rocked to a considerable extent, but no particular damage resulted. That building is one of the tallest in Ogden. The Eccles building, across the street from the First National building, at Twenty-fourth street and Washington avenue, apparently was not damaged at all.

**Hotel Guests Rush to Halls**

In the Hotel Ben Lomond, transients and residents rushed to the halls when the first shock struck. They were comforted, however, by the assurance of Harry W. Beckett Jr., manager, that the hotel was built with all caution, taking into consideration the probability of quakes caused by the Wasatch fault.

Walls of the Hotel Ben Lomond and the Ogden hotel, adjoining, rubbed together, spectators said, but only dust caused by the friction resulted.

Telephone wires connected at the residence of Mr. and Mrs. Ben Trimble at the artesian wells, from which Ogden obtains its water supply, were snapped, but they were quickly repaired.

City Commissioner Fred K. Williams, superintendent of the city waterworks system, said late Monday that a thorough check had been made on the pipe lines leading to the distributing reservoirs on the foothills, and that everything in the system is functioning perfectly.

**"No Reason" to Fear Breaks**

"There seems to be no reason to fear a break in the pipe lines or a collapse of the reservoirs," said Commissioner Williams. Mayor Herman W. Peery announced that all firemen and police, as well as himself, are subject to 24-hour call, and should any emergency arise the public safety forces of the city are ready and capable of handling the situation.

Schools were kept open throughout the day, with exception of Sacred Heart academy, a Catholic school. Parents besieged that institution with calls, resulting in the dismissal of classes for the afternoon. In Ogden the quakes assumed a wave motion, in contrast to sharp tremors. Railroad telegraph wires between Ogden and Montello, Nev., on the Southern Pacific were affected. The sway of the earth caused the wires to "hit," swinging together, and disrupting communication momentarily.

**No Break in Line**

There was no break reported in the line itself, however. The first quake in Ogden lasted almost one minute. There were two other shocks, lasting from five to ten seconds, between the 8:06 and the 11:01 shocks.

Officials of the Union Pacific railroad said that their line is in perfect condition, travel not being interrupted. Reports of the quake came from as far east on the Union Pacific as Medicine Bow, Wyo. The greatest fear of railroad officials was the possibility of rocks tumbling down the mountain sides near entrances of tunnels. There are ten tunnels between Ogden and Medicine Bow, but not one was affected by the tremors.

Passengers on transcontinental trains, arriving in Ogden following the quakes, said that they felt no tremors. That is explained by the fact that the trains would take up the motion of the earth.

**Rail Cars Rocked**

Railroad cars standing in the yards of the Ogden Union Railroad and Depot company were rocked violently.

Mrs. John Madsen, working on the ninth floor of the First National Bank building, was surprised to find a typewriter tipped into her lap She stood up and a door bumped her in its sway. Clocks in the Weber county courthouse stopped a 8:06 a.m. In the federal building, clocks stopped at 8:07. In some homes chandeliers swung until they bumped into the ceilings, bulbs being broken. A wall of the building of the Ogden Dressed Meat company was cracked.

All police and firemen were kept on duty throughout the night. Although it was the opinion of Mayor Peery that no alarm should be felt, because of the splendid construction of most tall buildings in the city.

**Wide Excitement Prevails**

An air of excitement was prevalent, many citizens walking the downtown streets in anticipation of further shocks.

One person in Ogden, talking with another man in Uintah at about 11:20 a.m. said the Uintah man told him: "I didn't feel the first shock which has been reported—but wait—here is something. It's shaking my house now."

**[Salt Lake Tribune; March 13, 1934]**

SALT LAKE TRIBUNE

# TEMBLOR FELT AT RICHFIELD
## Quake Not Noticed At Elsinore, Monroe Or Panguitch

RICHFIELD—Swinging chandeliers and rattling dishes caused some excitement here shortly after 8 a.m. Monday, when a slight earthquake shook the town. No damage was done.

Reports from Elsinore and Monroe, where tremors of other years have been more severe than here, indicated Monday's disturbance was not even noticed.

Panguitch and other southern towns also reported not feeling the tremor, as did Salina to the north and Milford.

**Schoolhouse Chimney Destroyed by Quake**

BRIGHAM CITY—For the first time in many years, Brigham City and vicinity was rocked Monday morning by an earthquake of a full minute's duration. Large clocks at the jewelry stores and in public buildings stopped at 8:06 a.m., which marked the time of the quake.

The tremor was distinct and quite severe for this section. The motion of the earth seemed to be from east to west, and was felt in all parts of the city. Many families here were seated at the breakfast table and each person experienced quite a sensation when the dishes began to move about the table, chandeliers began to swing and windows to rattle. Many people rushed from their homes in the excitement. The tremor was felt more distinctly perhaps in the upper stories of the large business blocks.

From current reports, no damage was done in this section, but Hervin Bunderson, superintendent of schools, received a message from Reynold Johnson, principal at the Kelton school, stating that the earthquake destroyed the chimney on the schoolhouse there. It will be impossible to hold school at Kelton until the damage is repaired, Mr. Bunderson said.

**Earthquake Barely Perceptible in Ely**

ELY, Nev.—Although this area is just over the line from Utah, the earthquake which rocked that state Monday morning was barely perceptible here, and few people were aware of the shakeup. As the news spread during the day, however, that Utah had been shaken by an earthquake, anxious inquiries began to pour into newspaper officers from former residents of that state and from those with relatives there, as a great part of the population of this district is composed of former Utahns.

**Sheep and Cow Bells Rung by Earthquake**

MT. PLEASANT—James Johnson, harnessmaker, reported Monday that he heard bells ringing while distributing his cash in the register in his store a little after 8 a.m. He said he thought it was the shoemaker in the adjoining building making the noise with bells in his shop, but upon investigation found that the shoemaker had not arrived and that sheep and cow bells hanging on the wall were responding to earthquake temblors.

**Windows Broken In Tooele Buildings**

TOOELE—Earthquakes were about the only subject of conversation here Monday following the tremors, which began about 8:17 a.m. and which reached all parts of the county, so far as it has been possible to determine.

Two windows were reported broken at the Lincoln school, three miles northeast of here, and a window in the Baker Ice Cream shop cracked, but so far as has been learned no other damage was done.

Goods were shaken off shelves in some of the stores.

Reports from the International Smelting company plant, St. John, Stockton, Erda, Grantsville and other localities indicate the disturbance was general in Tooele county.

**Garland School Held In Open After Quake**

GARLAND—Garland district school of Garland was held out in the open Monday afternoon after parents expressed their apprehension of having the students in the building in the event of subsequent severe quakes. During the quake that came about 11:20 a.m., school children left the building until the trembling ceased.

The Tremonton grade school and the Bear River high school continued with their classes after the noon hour.

A slight crack about 20 inches long was made down the front of the building housing the Coombs & Persson Clothing store and the Blue Bell confectionery of Garland. Only a bit of plaster was shaken down from one of the rooms in the Garland school.

**[Salt Lake Tribune; March 13, 1934]**

SALT LAKE TRIBUNE

# TOWNS REPORT VARIED EVENTS IN TEMBLORS
## Damage Small, But Quake Starts Fire Gong A-Ringing

POCATELLO, Idaho, March 12—Citizens of this locality were regaining their composure Monday night, after what many termed a "harrowing sensation"—that of experiencing two distinct earth tremors. No casualties or injuries were reported.

The shocks, occurring at 8:05 a.m. and at 11:20 a.m. caused persons throughout both the business and residential districts to run into the streets. Anxious parents besieged the school administration offices throughout the morning and at 11:30 a.m. school was dismissed for the day.

**Buildings Checked**

Classes will be scheduled to resume Tuesday morning. Fire Chief A. B. Canfield and members of his department made a thorough check of all public buildings, including the schools, and reported late Monday that none suffered serious damage. Numerous plaster cracks were discovered in the walls and brick chimneys were split. An old tin smoke stack at the general hospital fell.

Most serious damage done was at the gymnasium of the University of Idaho, southern branch, where an investigation led officials to close the balcony during the Pocatello-McCammon championship basketball game. Dean John R. Nichols said the large steel girders had moved as much as an eighth of an inch. Plaster was cracked at the tops of windows where cross beams are anchored. He asked that the state department of education make a thorough inspection.

**Chandeliers Swing**

Cracks also were discovered in Frazier hall and old cracks in other buildings were made larger. From all sections of the city came reports of shaken windows, crockery being rattled on cupboard shelves, foodstuffs being knocked from shelves in stores and swinging chandeliers.

Severity of the shock was illustrated at the east side fire station, where at 11:20 a.m. the five-ton truck was rocked to such an extent that the heavy brass gong sounded three times.

Another instance at 8:05 a.m. was in the Bannock county jail, when Night Jailer C. W. Ellsworth made a hurried inspection of the large cell tank in which 45 prisoners are incarcerated.

"I thought they (the prisoners) were attempting to shake down the bars and that they were jumping on the floor," he said.

In the district courtroom a part of the wall settled, throwing a doorway out of alignment so much it was impossible to close either the transom or the door.

**Coffee Urn Explodes**

A bare chance that one accident, that of Mrs Lulu Curl, 40, employee of the Bannock hotel, who suffered hot water burns from an exploded coffee urn, could have resulted from the earth tremors, was expressed. A safety valve on the urn stuck and about 20 minutes after the second shock the steam pressure lifted the lid and emitted the hot water.

Mrs. Curl, who resides at the Quinn apartments, was treated at the general hospital for first degree burns on the arms and back. Her condition was not serious. The movement was said to have been the most severe of any ever felt in this country. The weather bureau records show that other shocks occurred December 1, 1917, October 5, 1915, and November 11, 1905.

BURLEY, Idaho, March 12—Two marked temblors were felt in Cassia county Monday, shortly after 8 a.m. and about 11:20 a.m. with intermittent light shocks between. Chimney bricks and plastering were shaken down and some wells were affected, but no material damage done. The tall Amalgamated sugar mill chimney was not damaged. A seismoscope in the shop of A. C Williams registered a deflection of six inches, indicating a marked but not abrupt earth surface wave. Pupils in the Oakley and Albion schools were dismissed.

ROCK SPRINGS, Wyo, March 12—Rock Springs remained undamaged Monday after two earthquake shocks had caused teakettles to skitter across stove tops, light fixtures to shimmy and chairs to dance. The majority of the citizens did not realize that they had been visited by a temblor, many thinking that heavy trucks, trains or tractors caused the rumble and shaking.

The first shock came at 8:07 Monday and lasted for several seconds. This was a distinct shock. One

man described the sensation of trying to sit in his chair to tune his radio, only to have the radio shimmy away while he tried to keep his seat beneath him. The second shock, distinct but briefer in duration, was felt at 11:22 in the morning. This was slight and was hardly noticed in the larger buildings of the city.

MACKAY, Idaho, March 12 (AP)—A slight earthquake was felt here this morning. The first shock occurred at about 8 o'clock and the second was an hour later. No damage was reported.

IDAHO FALLS—Although earthquake shocks were felt in Idaho Falls and vicinity Monday, no damage was reported.

PARIS, Idaho, March 12—Two distinct earthquake tremors were felt here this morning, shaking houses, rattling dishes and swaying electric light fixtures. The first was at 8:08 o'clock and the second at 11:20 o'clock. The tremor was more effective, in Rich county than Bear Lake.

LAVA HOT SPRING, Idaho, March 12—A strong earth tremor was felt for ten seconds here at 8:07 this morning. Citizens scurried to their windows to see if the inactive volcanoes near this town had taken a new lease on life. Except for breaking bottles in the Nye pharmacy and causing hairlines to appear in several structures, it did no damage.

KEMMERER, Wyo., March 12—An earth tremor was distinctly felt in Kemmerer at 8:10 o'clock this morning.

Beds were moved in the Hotel Kemmerer, chandeliers and dishes moved in the Hotel Kemmerer cafe, while a number of homes reported having felt the shock and the moving of furniture. Lights were seen to sway during services in the Catholic church and the Rev. Mr. Thompson, holding Episcopal services, reported that some of the candle lights went out when the church was rocked. It was also distinctly felt at Frontier. No reports of any property damage have been received.

**[Salt Lake Tribune; March 13, 1934]**

# SCIENTISTS EXPLAIN S.L. QUAKE CAUSES

## Minor Slip In Mountain Fault Blamed By Schneider

A minor slip on one of the many faults in the Rocky Mountain region was the comment of Dr. Hyrum Schneider, University of Utah geologist professor, on the earth tremors which caused fear among Utah and southern Idaho residents Monday.

Dr. Schneider, who said he felt two distinct shocks in this basement office at the university and was told of another felt on the top floor of another building, declared the shocks were the most severe he had ever experienced and were stronger than any recorded in this region. The shocks felt distinctly at the university occurred at 8:05 am., 11:14 a.m. and 11:21 a.m., he said.

"It is hard to say just which one of the many faults slipped," he said, "and it is just as difficult to locate exactly the epicenter. It may have been the major fault on the eastern side of Cache valley or in the faults in the Soda Springs region of southern Idaho.

**Origin Believed in Idaho**

"It is a reasonable inference that the point of origin was north of Salt Lake, and on the basis of reports from communities which felt the tremors I am rather inclined to locate the source of the movement in a southern Idaho fault, although that is only a guess.

"People have only a vague idea what a fault is. A fault is a fracture on the surface of the earth along which some relative movement has occurred. Any slipping up or down or to either side along the line of fracture results in what we call a fault. The mere fact that a fracture exists does not indicate the presence of a fault. Even if this fracture should spread it does not make a fault.

"We have a number of clearly recognizable faults in a gravel pit near the university campus in which the displacements on the lines of fracture amount to only two to five inches, indicating that mountain slides do not have to slip great distances to form a fault.

**Causes Outlined**

"Tension or compression might cause the fracture and later similar tension or compression might cause the earth crust to slip at the fracture and form a fault.

"Tensional fractures are rather common around igneous intrusions. These intrusions are caused by heated rock forcing its way upward from within the earth, but not reaching the surface.

"The Wasatch fault is a tensional fault but was not formed by an igneous intrusion. There are evidences that in early times there were many upheavals in this valley and the fault was formed when the mountain side moved up and the valley side down. It is hard to say in the case of the Wasatch fault just how it was formed as the whole region was pushed up.

"There are both tensional and compressional faults in the Rocky Mountain region. There are many, many faults in the region in addition to the major Wasatch fault, but they are relatively small.

"I am of the opinion the Wasatch fault has just about adjusted itself, but one never can tell when slipping will occur. The fault passed at the foot of the Wasatch range to the east of Salt Lake and extends from a point north of Brigham City, southward to Nephi."

**[Salt Lake Tribune; March 13, 1934]**

SALT LAKE TRIBUNE

# TREMOR MOST SEVERE IN LOCAL HISTORY, PACK ASSERTS

The earthquake shocks which alarmed residents of Salt Lake, all of northern Utah and southern Idaho Monday were described by Dr. Frederick J. Pack, head of the University of Utah geology department, as the most severe that have struck the region in historic times.

Dr. Pack said the exact location of the center of the quake was at a point in the north end of the Great Salt Lake, near the town of Kelton. He explained that the shocks were due to a slipping in the most easterly of a series of Great Basin faults lying between the Wasatch fault on the east and the Sierra fault on the west. The fault which slipped, he said, is miles northwest of Salt Lake.

Dr. Pack and his assistants spent much of their time answering telephone calls from persons panic stricken by reports that new and more severe shocks were to be expected at various hours during the afternoon. Such reports, he declared, were groundless, and added that with all available scientific instruments it would be impossible to determine the hour at which a tremor would occur.

**Slight Tremors Foreseen**

"When you have an earthquake," he continued, "it usually consists of a series of individual disturbances, then quickly reaches a maximum and gradually declines with minor shocks. It is not unusual that the minor disturbances will last over a period of 24 hours and we should not be surprised if we have slight tremors for that length of time.

"We should be surprised, however, if we experienced a tremor of disastrous proportions. The many reports of expected disturbances are entirely unfounded."

Dr. Pack explained that he located the center of the disturbance with the aid of telegraphic reports.

"With the use of the telegraphic reports and knowing the geology of the region," he said, "we plotted the intensity of the shocks as reported from the various localities and very easily put our hand on the point of origin."

Explaining the probable cause of the slipping of the faults, he said:

**Explains Causes**

"The whole region between the Wasatch mountains and the Sierra Nevada mountains, known as the Great Basin, is undergoing a slow readjustment and whenever accumulated pressure is great enough to overcome friction in the fracture of the earth, slipping occurs. There are about 20 or more faults running north and south in the Great Basin region."

There are two general origins of earthquakes, he said, one in volcanic regions and the other in movements of the crust of the earth. When the crust moves it necessarily fractures and that fracture is comparable to ice breaking up on a river.

"In a very large sense," he explained, "the region between the Wasatch and Sierra Nevada mountains is comparable to ice when it breaks up.

"Monday's disturbance was relatively slight and the displacement caused by the slipping of the fault also was slight. Evidences point to the conclusion that there have been many much more severe earthquakes in the region than the present one. They occurred, however, before historic times.

"Although the Great Basin is an earthquake region, it is not be compared in point of intensity or frequency of occurrence with that of the Pacific coast. We may have further earthquakes in the future, but it is scarcely to be expected that they will be extremely violent."

**[Salt Lake Tribune; March 13, 1934]**

SALT LAKE TRIBUNE

# QUAKE IN UTAH DECLARED EQUAL TO 1925 COAST SHOCK

## California Instruments Record Temblors Continuing For Hour And Half

BERKELEY, Cal, March 12 (AP)—The earthquake which shook Salt Lake City today was described by Professor Perry Byerly of the University of California seismology department, as being as severe as the shocks which caused so much damage to Santa Barbara, Cal., in 1925. Byerly also said today 's quake was equally as intensive as the quake which occurred in Nevada December 20, 1932.

"The quake began recording on our instruments at 7:07.45 a.m." said Professor Byerly. "The shocks continued for an hour and a half. The epicenter apparently was some 500 miles away."

"The shocks were extremely severe, as much so as those of the Santa Barbara and Nevada quakes. Today's shocks were so bad that they must have caused considerable damage if they were in an inhabited region"

**Time Recorded**

At Pasadena, the earthquake was recorded as starting 7:07.49 a. m. (P.S.T.), on instruments of the Carnegie institution of Washington seismological laboratory.

The records, seismologists said, indicated the shock was considerably heavier than the destructive Long Beach earthquake of March 10 last year, and that the point of origin evidently was some distance from Salt Lake City.

BOISE, March 12 (AP)—The earthquake in Boise was a delightful diversion for a few people, but a vast disappointment to far many more who knew naught of it.

A check at most public buildings and many private residences failed to disclose a single instance of damage, although a few, particularly in the higher buildings, reported swaying chandeliers.

The weather man had the most definite report. Sitting in his office this morning, he felt his desk move and looked up to see if a jesting visitor had shaken it. Then he felt his chair move and immediately snatched a pencil to record that the quake was felt at 8:07 a.m., lasting 10 seconds.

**Records Second Shake**

He recorded a less pronounced shake at 11:25 a.m., about six minutes after a new temblor was felt in Salt Lake City.

Immediately after the quake finished, reporters rushed to the street to see if any damage had occurred. One went so far as to see if the bronze eagle atop the statehouse had taken flight—but it appeared not to have rustled a brazen feather.

Weather bureau records indicate this was the first tremor Boise has felt since 1916. In that year there were six, coming in April, May and July. Even with all six quakes, no harm was reported.

CHEYENNE, Wyo., March 12 (AP)—A distinct earthquake shock startled residents in nearly every town in the extreme western part of Wyoming shortly after 8 o'clock this morning.

Although no great damage was reported, the action of the tremor caused consternation among the residents when dishes rattled, clocks stopped and beds moved.

At Rock Springs the tremor was felt from 8:07 to 8:08.4.

Trains were stopped at the entrance to a tunnel at Evanston, pending an inspection after the shock.

**Church Lights Sway**

At Kemmerer lights were seen to sway in the Catholic church, where Lenten services were in progress, and the rector of the Episcopal church said some of the candles went out as the church rocked.

The shock was distinct at Frontier, Wyo., a mining town where a hurried inquiry was made to determine if a mine explosion had occurred

SEATTLE, Wash., March 12 (AP)—The tremor felt in Utah today was the most severe recorded by the University of Washington seismograph in some time, W. M. Chappell, operator of the instrument, said today, throwing both needles off the record.

The shock began at 7:08 a.m. Pacific standard time, and was about 800 miles southeast. Chappell said it made a "spectacular" record.

ELKO, Nev., March 12 (AP)—Two earthquakes, the first at 7:09 a.m. (P.S.T.) and another at 1:20 a.m. (P.S.T.), were felt here today. Although the first shock was strong, there were no reports of damage.

RENO, Nev., March 12 (AP)—Professor Vincent P. Gianella, University of Nevada geologist, said today

the university s seismograph recorded a "strong earthquake" at 7:07 a.m. (P.S.T.) today. The shocks, he said, kept the instrument's needle quivering for 33 minutes.

Professor Gianella estimated the center of the disturbance to be 552 miles from Reno, somewhere in the Wasatch mountains of northern Utah and southern Idaho. He said the quake had a "strong east-west component."

The shocks were not felt in Reno, Professor Gianella said. There apparently was no connection between today's quake and the one which rocked Nevada last January 30.

SANTA ROSA, Cal., March 12 (AP)—A slight earthquake was felt here at 8:10 a.m. (P.S.T.) today, the shock was described as an "up and down" movement. No damage was reported.

Several so called "phantom quakes" were recorded here recently and seismologists said they possibly might have been caused by underground explosions of accumulated steam.

Geologists said the shocks might have been of semi-volcanic origin, the steam accumulating until its pressure caused explosions.

**[Salt Lake Tribune; March 13, 1934]**

## OFFICER LINKS QUAKE AND ALE
### Policeman Blames 3.2 For 'Dizzy Feeling' During Earth Shock

LOGAN, March 12—Two severe earthquake shocks were felt here at 8:06 a.m. and 11:21 a.m., Monday, which did some damage to buildings throughout Cache valley. No estimate of the damage was available. It consisted of chimneys toppling over, plaster falling and cracks in several homes.

Following the second shock at 11:21 a.m., city schools and classes in the Home Economics building and third floor of the main building at Utah State Agricultural college were dismissed on recommendation of Fire Chief C. W. Rapp. Walls of the college building were cracked, while the chimney at the Woodruff school toppled over. Cracks were reported in Nibley hall on the Logan senior high school campus, and in several of the rooms at the high school plaster fell, much to the discomfiture of students, who ran from the building during the second shock.

Several residences reported falling plaster and cracked walls. At the homes of Moses G. and G. W. Thatcher chimneys toppled over, while Percy Smith, local printer, reported that cracks were made in several rooms of his house and a piece of the foundation cracked off. The J. C. Penney company building had the front wall sprung so that it was impossible to lock the front door, while at the Logan Garment company a 12 foot long pillar split from ceiling to floor.

Similar reports of damage was reported from Providence, Mendon and Clarkston.

**Capstone Topples**

At Preston, Idaho, a 250-pound capstone from the top of the Preston high school toppled over and left the west wall swaying six inches from the rest of the building, being held only by steel tie rods. Schools in Preston and Franklin county, Idaho, were dismissed.

Sheriff Ray Osbourne of Randolph reported that the first shock struck at 8:10 a.m. and the second at 11:20 a.m. and that no damage was done with the exception of falling plaster in the school building at Randolph. The same was true at Woodruff.

A peculiar thing of the earthquake was the completion Sunday night of a home-made seismograph by Jack Edwards, 13, son of Mr. and Mrs. J. J. Edwards and Don Edwards, 12, son of Mr. and Mrs. Don Edwards, which recorded a shock here about 6 a.m. The seismograph was in the basement of the Edwards home, 428 North First West street, and worked on a ballast with water dripping from a bucket and wires running into the ground. According to the recordings from the seismograph, markings show that a trembler was felt at 6 a.m. The shock at 8:10 a.m. destroyed the machine, but Monday afternoon the boys were repairing it and setting it on a permanent base.

Jack Edwards said this was the first instrument that had worked for them, that they had built several others, but none of them workable.

**Disrupts Barber Shop**

Professor Reed Bailey, geologist of the Utah State Agricultural college, reported that the shocks were apparently echoes of underground movements, there being no apparent movement on the surface. Professor

Bailey also reported that whether more shocks would be felt was a matter of personal conjecture, saying that in most earthquake areas shocks were felt for several days after the first one, but that the first was the most severe.

Several amusing things were seen along the street during the first shock. At a local barber shop a man was just being shaved and ran screaming from the chair to the center of the street with the lather still on his face. Another instance was that a local police officer had just drank a glass of 3.2 beer and during the shock got dizzy and blamed it on the beer until he found out it was an earthquake.

Logan residents during the first shock ran from their homes, some still in their nightclothes and others half dressed, and stood gaping in the street watching buildings, trees, light poles and other things sway. Employees at the Logan city light plant in Logan canyon reported that for a time the building seemed as though it was going to crash, but an examination following the first shock failed to reveal any damage. No damage was reported on the city dam or to any of the pipe lines. Light and power service was not disrupted during the shock and the local phone office handled more than 2000 calls following the first shock, it was reported.

**[Salt Lake Tribune; March 13, 1934]**

## 'LET US OUT!' YELL INMATES OF JAIL AS EARTH QUIVERS

Prisoners of the county jail wanted "out" when they felt earth tremors Monday.

"Let us out! Open up the doors! There's an earthquake! Take us out!" were some of the cries that reached the ears of turnkeys as the earth shook.

Regular visiting hours were abolished for the afternoon as it was feared if another quake came there might be an attempt at a general jail break.

Courts in the county building were thrown into a general pandemonium when the 11:21 o'clock quake came. Jurors left their places without being excused and there was a general rush for the halls and doorways.

In City Judge M. J. Brownstone's chamber, the quake caused plaster to fall over the doorway. Court was hastily adjourned.

A pair of workmen, engaged in cleaning the interior of the dome at the state capitol, claim the distinction of have the most precarious place in the city for experiencing an earthquake. Perched upon improvised scaffolding, the workmen clung to their insecure supports as the building swayed. When the temblor subsided, the workmen climbed to safety and declined to attempt further work.

John Harkelson, 65, a resident at the Lincoln House, had reason to be grateful for the earthquake. It shook a clock that hadn't run for years from a shelf. Upon picking up the timepiece, Harkelson found it was running and apparently keeping good time.

Members of the sheriff's force who moved their offices from the county building to the county jail after the closing order for the latter structure, closely watched the tall brick chimney that stood at the south side of the jail. Prisoners on the south tiers of the jail vocally made known their fears that the chimney would fall over into the jail.

**[Salt Lake Tribune; March 13, 1934]**

Mar. 12, 8:05 a.m. M6.6; Mar. 12, 11:20 a.m. M6.0;
Mar. 15, 5:02 a.m. M5.1; Apr. 6, 7:16 p.m. M5.5;
Apr. 14, 2:26 p.m. M5.6; May 6, 1:09 a.m. M5½

## LET'S SEE NOW, WHAT DID THEY ALL DISCUSS?

Following are fragments of conversation overheard Monday on the streets of Salt Lake; readers are allowed one guess as to the topic:

. . ."We were just sitting down to breakfast". . .

. . ."Looked at my watch and it was exactly 8:06.".

. . ."And Professor Whositt out at the university says there'll be two more." . . .

. . ."Everybody dashed into the hall.". . .

. . ."Spilled part of the water out of the goldfish bowl":. . .

. . ."Bet there'll be headlines about it in the Los Angeles papers.". . .

. . . "Set the chandeliers to swaying just like this". .

. . ."We thought Daddy was shaking the bed to play a joke on us.". . .

. . ."Fainted right on the street.". . .

. . ."So I grabbed both sides of the bathtub and hung on for dear life.". . .

. . . "Dismissed school and sent the children home.". . .

. . . "Shook just like a dog shakes a bone.". . .

. . . "So I grabbed the kiddies and we dashed into the street.". . .

. . ."Safest place is an airplane.". . .

. . ."Slept right through and never knew what happened.". . .

. . ."Some day. . . a good one like they get on the coast.". . .

. . ."Well, it's earthquake weather, you know.". . .

**[Salt Lake Tribune; March 13, 1934]**

## WEATHER FREED OF RESPONSIBILITY FOR EARTHQUAKE

Crop failures or even rheumatism, perhaps, can be attributed to the weather, but not earthquakes.

The term" earthquake weather" has no scientific meaning, and those who lay any store by it are clinging to an idea which has long since been proved false.

So declared Weatherman J. Cecil Alter after many citizens had inquired if the unseasonably warm weather was the cause of the temblors which rocked Salt Lake and other parts of the intermountain country Monday.

And Mr. Alter is backed by the good authority of a group of California scientists who addressed the American Association for the Advancement of Science in Salt Lake last June.

They told the association that careful observations over a period of years in California and other parts of the world have proved conclusively there is no connection between weather and earth disturbances.

Mr. Alter kept close check of Monday's quakes, not because he believes the upper air has anything to do with the movements of mother earth, but merely because he is interested in all natural phenomena.

**[Salt Lake Tribune; March 13, 1934]**

## SALT LAKE QUAKE RECALLS WARNING OF NOTED SAVANT

Professor Bailey Willis of Stanford university, world renowned authority on earthquakes, can now tell Salt Lake people, "I told you so."

In an address to the American Association for the Advancement of Science in Salt Lake last June, Dr. Willis warned that Salt Lake is in an earthquake zone and that the people of this city could expect a good shaking at almost any time.

"You live directly in an earthquake zone," he said at that time. "The Wasatch fault, which skirts the Wasatch mountains, is a young, active fault. It has in the past given rise to many earthquakes, and in the future it will give rise to many more."

He told the Salt Lake people he is not an alarmist, but has made it his chief business to preach the doctrine of preparedness. And any city, through proper precautions, can be prepared to withstand the effect of a major quake.

**Urged Strict Building Code**

He said that the most important steps to be taken are the enactment and enforcement of a strict building code and measures to guarantee a water supply, which

would not be shut off by a movement along the Wasatch fault.

Comparatively simple precautions, he declared, will make a house or building safe. The general rule is that construction be rigid and light. In the case of a frame house, the sheathing should be nailed on diagonally, and if the house is of masonry the mortar should be strong and the walls tied into the interior framework.

He pointed out at that time that what is known as class A buildings, those with steel or reinforced concrete frame, can be built so strong that they will resist almost any quake.

**Emphasized Water Safeguards**

Dr. Willis emphasized particularly the necessity of guaranteeing a water supply in case the large water mains should be broken as they cross the fault line.

Such a calamity could be averted by installing flexible joints in the pipes where they cross the fault, or by providing reservoirs on this side of the fault with a capacity sufficient to last the city a week or so in case of a quake.

The artesian wells are a partial guarantee of a water supply in the event of an earth disturbance, Dr. Willis said, but the other precautions suggested also should be taken.

If Dr. Willis were in Salt Lake now, it is safe to say that he would tell Salt Lake people not to sit back and do nothing in the belief that Monday's shocks eliminated all danger of future earth disturbances.

Those who heard him last June have interpreted his remarks as a warning that temblors of a destructive nature may occur in the future, and it behooves Salt Lake, and all other cities, for that matter, to get busy and make themselves earthquake proof.

**[Salt Lake Tribune; March 13, 1934]**

## PROVO ESCAPES QUAKE DAMAGE
### Second Shock Occurs As 5000 Persons Watch Civic Parade

PROVO—No apparent damage was done to property in Provo by earthquakes felt here about 8:07 and 11:20 a.m., Monday. However, many residents felt the shocks, especially the first.

According to reports beds were rocked and many persons were awakened in this manner; dishes were shaken from cupboards and windows rattled in residences and business houses.

At the city and county building a chandelier in the center of the main floor was set to swinging by the first shock and continued to swing for more than half an hour, John Harrison, custodian, reported. At the Provo post office four clocks were stopped.

After the shocks, principals of the Provo city schools, accompanied by Superintendent H. A. Dixon, inspected their respective buildings. Inspection revealed that no damage was done and school will continue Tuesday as usual.

The second shock was noticed by few persons in Provo. More that 5000 persons were gathered in the business section watching a parade in connection with the eighty-fifth anniversary of Provo and few noticed the disturbance.

Dr. George H. Hansen, professor of geology at Brigham Young university, said that such tremors were not unexpected, as Provo is in the area covered by the Wasatch fault line.

**[Salt Lake Tribune; March 13, 1934]**

## THREE TREMORS SHAKE PRESTON, NEARBY TOWNS

PRESTON, Idaho, March 12—Three severe earthquake tremors were felt Monday by residents of Preston and vicinity. The first occurred at 8:10 a.m. Damages were all on this tremor. Several windows, including the large plate glass window in the J. C. Penney company, were broken. Many people report dishes were shaken from tables and cupboards, and one home, belonging to Jethro Hathcock, was moved three inches on its foundation. Walls in the recently renovated county courthouse were cracked in several places and strips of plaster fell to the floor.

The main administration building of the Preston

high school, formerly Oneida stake academy, revealed the intensity of the shock more than any other building. Several top stones were shaken loose and fell to the lawn below, weakening the roof structure of the building and allowing a slip of the main rod braces. The Jefferson school also showed a bad crack in the rear wall.

Superintendent Campbell ordered school dismissed for the day.

**[Salt Lake Tribune; March 13, 1934]**

## WORKER INJURED IN CAVEIN CAUSED BY TEMBLOR DIES

Injuries suffered when he was caught beneath a cave-in caused by the earthquake Monday at Sixtieth South street and Highland drive proved fatal Tuesday to Charles Bithell, 55, of 1345 Roberta avenue. He died in a local hospital Tuesday at 7 a.m. of chest and stomach injuries.

Weakened by the first shock, the walls of the trench gave way shortly after one of his fellow workers shouted a warning.

Born in Salt Lake July 25, 1873, Mr. Bithell had been a employee of the city water department 23 years. He is survived by three daughters, Mrs. Loot Ewing, Mrs. Robert K. Duffy and Mrs. Douglas D. Cantwell; three sons, Charles, Claude and LeRoy Bithell, all of Salt Lake; a sister, Mrs. Bert McIntyre of San Francisco, and six grandchildren.

Funeral services will be conducted Friday noon at the Deseret mortuary, 38 East Seventh South street. Burial will take place in the Mt. Olivet cemetery.

**[Salt Lake Tribune; March 14, 1934]**

## EARTHQUAKE EXPERIENCE

Five distinct temblors, which shook Salt Lake City and surrounding territory into a fever of excitement on Monday, at least lend credence to the warning sounded a year ago by Professor Bailey Willis of Stanford university. In an address to the American Association for the Advancement of Science, in Salt Lake City last June, Professor Willis said:

"You live directly in an earthquake zone. The Wasatch fault, which skirts the Wasatch mountains, is a young, active fault. It has in the past given rise to many earthquakes and in the future will give rise to many more."

The scientist had no idea of frightening our people. He simply wanted to urge them not to discount the possibility. His remarks now bear the stamp of public experience. Fortunately, little if any damage was done and no loss of life occurred. The temblors here constituted an earthquake without a sting, providing thrills, but no damage.

The experience merely emphasizes the warning of Professor Willis, which, briefly, is that in building for the future we cannot ignore the possibility of earthquakes. Our water supply must be projected so that protection is afforded the city in any emergency. We cannot afford to be indifferent, even when the years prove that earthquakes are rare in our experience.

Similar attention must be given to construction and the building code. The city cannot afford to take any chances with this risk. It must be prepared for the worst, even if the worst never happens. Building against the hazard of earthquakes is not fearful building, but intelligent construction.

In this connection it is pleasing to note the precautions exercised by the Salt Lake City school authorities in the recent experience. Classes were dismissed and the children sent home, allaying the concerns of parents and taking no chances with the safety of the children. Chief of Policy William L. Payne and L. John Nutttall , Jr., superintendent of schools, who were responsible for the action, are to be commended for their quick and precautionary response to an emergency situation. While the action, perhaps, was not imperative, the course was the one surest to be free of future regrets.

The wisdom of the school administration is further emphasized by the decision to defer the opening of the public schools until a thorough and minute inspection has been made of every structure. They might easily

assume that no damage was done, but this would be a poor substitute for a first hand inspection. This evident desire to take no chances with precious young lives should be a source of gratification to every parent.

This action of the school authorities is suggestive of inspection precautions for the future. Buildings which would not stand the rigors of passing temblors should be condemned and razed. Because of rigorous climatic demands, Salt Lake City construction has to be substantial. Protection against the possibility of earthquakes need register no fear nor entail heavy additional expense.

The experience of Monday may never come again. The danger may be entirely passed, but the future alone can determine that. The future course of the city, nevertheless, must take this hazard into account, and guard against it. That is reflective only of intelligent planning, which should be followed by humanity wherever it is, for it finally must appear that there is no complete escape from this or some other equally dangerous hazard of living, wherever we are.

**Editorial**

**[Salt Lake Tribune; March 14, 1934]**

## ENORMOUS CRACKS FOUND IN GROUND AT QUAKE CENTER

### Scientist Discovers Fifty Mud Volcanoes Created By Tremor In Hanzel Valley; Shock Dries Spring, Second Starts It

Four enormous fault scarps, extending from a quarter to a half-mile in length, and fully 50 mud volcanoes, some of which were four feet across, with three-foot craters, marked the epicenter of the earthquake that rocked Utah and intermountain states Monday and Tuesday, it was reported Tuesday night by Dr. Frederick J. Pack, Deseret professor of geology at the University of Utah, after he had spent a day inspecting the center of the seismic disturbance.

The epicenter of the quake is located in the lower end of Hanzel valley, 15 miles southeast of Kelton in Box Elder county on the north end of Great Salt lake. Dr. Pack reported, and is within three miles of the spot announced Monday by Dr. Pack as the probable center of the shock.

"The area presents the most interesting series of earthquake phenomena that Utah has experienced in historical times," Dr. Pack declared. "The surface phenomena in connection with the Long Beach earthquake is not to be compared with the Utah manifestations, although the force of the two quakes probably was about equal.

**Huge Scarp Found**

"Imagine a great crack across the earth, from four to six inches wide, extending from the Hotel Utah to Fifth South street, with one side of the fissure a foot below the level of the other fissure," Dr. Pack said, "This will give you an idea of the largest of the scarps.

In addition to the four large earth cracks, the surface of the ground is checkered with innumerable smaller ones, Dr. Pack declared.

"When the first shock rocked the state Monday at 8:05 a.m., the great Locomotive Springs went dry," Dr. Pack said. "In fact, water ran into the spring instead of running out. This peculiarity continued for half an hour, until after the second violent shock, when the waters of the springs resumed their flow with approximately 30 per cent more volume than before.

"The waters were colored with a reddish brown sediment, which grew less abundant as the flow continued," he said. "Discolored water flowed from the springs for eight hours."

"Not fewer than 50 new springs and an equal number of mud volcanoes sprang into being and flowed abundantly, following the earthquake," he said. "Some of the mud volcanoes were four and five feet in diameter, and built up cones to a height of three feet."

"Water from most of the springs was fresh, but many produced salt water."

"Between Monday noon and midnight," Dr. Pack said, "employees at the emergency landing field at Locomotive Springs counted 20 distinct disturbances. At 4 P.M., while at the landing field, I counted four distinct shocks," he said.

Dr. Pack was accompanied by his wife, his son Eugene and a department of commerce employee who served as guide.

**Watch Tower Moved**

Employees at the department of commerce intermediate landing field reported that the

disturbances were so violent that they loosened weather boards on the sides of the watch tower and moved the entire structure several inches to the west. Had the initial quakes continued for another minute, the structure would have collapsed, it was declared.

Water that flowed from the newly created mud volcanoes poured on a flat that is normally dry and so rapid was the accumulation of the water that the Southern Pacific company dispatched crews to the scene to dig ditches under the tracks to protect a portion of the fill on the old main line.

An artesian well at Cosmo, 50 miles west of Logan, which for 13 years had been stone dry, developed an abundant flow of water under stimulus of the earthquake.

**Believed Temporary**

Dr. Pack expressed a belief that the flow of water was a temporary manifestation.

Professor Reed Bailey and ten geology students of the Utah State Agricultural college Tuesday visited Cosmo and reported that quakes occurred there during the entire day Tuesday, the worst one coming at about 5 p.m.

City and county authorities took stock Tuesday of the effects of the quake, and came to the conclusion that the city and county are in fairly good condition for coping with earth shocks.

City officials decided to embrace every opportunity for developing the city's water supplies west of the Wasatch fault, and expected that two artesian wells, now in the process of drilling, would help in event the Wasatch fault slips. City Commissioner George D. Keyser pointed out that the city has an available water supply of 11,000,000 gallons, in readiness this side of the fault. This supply represents more than half the maximum daily consumption.

**Quake Effects Studied**

The city building code will be examined, to determine if the inclusion of a "quake section" will be necessary.

County commissioners decided to remove trimmings and fixtures from the city and county building that might be shaken loose during the course of a quake. As soon as equipment can be assembled, all capstones and structural ornaments on the building will be removed

Another great earthquake that evidently centered in the south Pacific, 6000 miles from Pasadena, Cal., was recorded Tuesday, Associated Press reports indicated. The quake was recorded on instruments at the seismological laboratory of the Carnegie Institution of Washington at Pasadena. The beginning of the quake recording was at 5:24 a.m.

**[Salt Lake Tribune; March 14, 1934]**

## SCHOOLS HELD SAFE FOR ALL BUT MOST VIOLENT QUAKES
### Examination Finds Buildings Sound; Classes Will Resume Wednesday

Salt Lake schools can withstand an earthquake three times as violent as the disturbances that shook the state Monday and Tuesday, it was stated by Howard Barker, superintendent of buildings and grounds, after he and several engineers made a minute inspection of each of the city's 44 schools. School sessions will resume Wednesday.

"The entire amount of plaster that the quakes shook from the walls of all the school buildings in the city was less than a double handful," Superintendent Barker said.

Not a single masonry crack was found that could be attributed to the quake, and practically every plaster crack that was inspected was either the result of contraction and expansion or had been caused by the settling of the building, the engineers declared.

Engineers who conducted the surveys were H. M. McNeil, assistant to Mr. Barker; D. P. Thomas, C. N. Douglas, D. F. Burnett, James Anderson, Oren Law and Daniel Garbett.

"The earthquake has definitely proved that Salt Lake's school buildings are substantially constructed, and that the lives of school children will not be imperiled unless an earthquake of more than ordinary violence occurs," said Mr. Barker.

Reports were received that the East, West and South high schools had been badly damaged by the earthquake, but no cracks or breaks were discernible, it was declared. At the South high school a number of portable panels in the auditorium were disarranged slightly.

So far as the safety of students was concerned,

school could have been resumed Tuesday morning, but it was decided by school authorities that a thorough and complete inspection should be made to determine the exact condition of each building.
**[Salt Lake Tribune; March 14, 1934]**

## QUAKE DAMAGES BUT TWO SCHOOLS IN CACHE COUNTY
### Cove And North Cache Buildings Hurt, Check-Up Discloses

LOGAN—Inspection of Cache county school buildings Tuesday by Building Inspector H. R. Adams, Superintendent J. W. Kirkbride and Clerk Lloyd M. Theaurer, revealed all buildings escaped quake damage except Cove school and North Cache high school. At North Cache high school, Superintendent Kirkbride reported, a crack on one side of the building appeared, although it was not serious.

The Cove school, an old building, had several cracks in before the quake and these opened about an inch wider in the east room, where the students assemble, making it unsafe. Although classes are not dismissed it is expected this building will be under "fire" at the board meeting Thursday, when steps will be taken to have it condemned.

This building was under "fire" a short time ago when residents of Cove asked that the partitions in the building be removed and a recreation center made. The board put it up to the vote of these people, in hopes they would reject the project because of the condition of the building, but they insisted that they wanted the work done. Whether the earthquake has changed their minds was not known, but Superintendent Kirkbride said the building was not safe.
**[Salt Lake Tribune; March 15, 1934]**

## SCHOOL NEWS AND VIEWS
### Quake Disturbs Pupils Before Class Dismissals

Shirley Newman, Editor
Roy Cole, Associate Editor

LOWELL SCHOOL—After experiencing an earthquake while at their homes before school Monday morning, the pupils of Lowell were just in the right mood to get excited over the slightest temblor, so when the quake at 11:20 came they were easily disturbed. Some of the classes were dismissed before noon, and others left at that time for the remainder of the day.

Mary Jane Penniston, 7B, writes: On Monday, March 5, the upper grades were given the privilege of hearing President Roosevelt speak on the N.R.A. We all assembled on the top floor, where a loud speaker was the center of interest. The talk was very interesting and instructive.

Kennedine Corina, 3B, writes: We drew pussy willows last week. They have been placed on the side blackboard for decoration. They are very pretty as they are drawn in charcoal.
**[Salt Lake Tribune; March 15, 1934]**

## CHILDREN RESUME SCHOOL AFTER POST-QUAKE HOLIDAY

More than 30,000 Salt Lake school children returned to their classes Wednesday morning after a day and a half holiday called by the school board as a result of Monday's earthquake.

School work was resumed after a thorough examination by engineers of the school board's department of buildings and grounds revealed no damage to the buildings was caused by the earth shocks.

Praise of the cooperative attitude of Salt Lake citizens and organizations during the period when the city was threatened by a possible serious situation was expressed Wednesday by Police Chief W. L. Payne.

"A willingness to cooperate wholeheartedly with the police department was demonstrated by numerous persons and organizations," Chief Payne declared. "It appeared evident that if the quake had resulted in serious damage, involving injury to persons or loss of life, that the police department would have received splendid aid in handling the situation.

"It is most gratifying to know that Salt Lake stands ready to meet any emergency of such a nature. If there had been a disaster I am confident that the citizens would have conducted themselves in an orderly manner."

City and county officials have emphasized that the city and the county are in fairly good condition for coping with earth shocks, but city officials have recognized a need as a result of the earthquake for taking advantage of every opportunity for developing the city's water supply west of the Wasatch fault, so if that fault ever slips the city will have enough water available for the emergency.

**[Salt Lake Tribune; March 15, 1934]**

## THIRTY NEW QUAKES HIT NORTH UTAH
## Three Felt In Salt Lake; Slight Disturbances Are Expected To Continue
## Shocks To Be Checked
## Snowville Suffers Greatest Damage; Many Residences Lose Chimneys

Millions of tons of rock under the earth's surface in Hanzel valley, shifting to adjust themselves to their new positions at the epicenter of Monday's earthquake, brought nearly 30 new temblors to northern Utah Thursday, three of which were felt in Salt Lake.

Geologists were of the opinion the shifting of positions, accompanied by minor disturbances, might continue for some time. Since the first strong shock was felt in Salt Lake Monday morning, when four enormous faults were created in Hanzel valley by the shifting of the earth, the Locomotive Springs airways radio station of the department of commerce reported to the Salt Lake airport weather office more than 100 tremors. Locomotive Springs is within a few miles of the point of origin of the quake.

**Continues for Hours**

Shocks were frequent in the quake region on Monday and Tuesday, subsided on Wednesday and resumed Thursday. Salt Lake residents reported feeling tremors at 5:05 a.m., 6:47 a.m. and 6:57 a.m. Thursday. Windows and dishes were rattled and chandeliers swung. Thursday's shocks at Locomotive Springs began at 2:25 a.m. and continued noticeably until 4:57 a.m. The Salt Lake airport weather office reported a slight shock at 4:15 p.m. The movement was detected while an observer was looking through a telescope at balloons sent up to determine wind direction and velocity.

"It is difficult to say," said Dr. Frederick J. Pack, Deseret professor of geology at the University of Utah, "just how long these disturbances will continue.

"Following the Long Beach quake of last March, minor disturbances continued for a month. It would not be unusual if such a condition existed in Hanzel valley, although such a statement cannot be considered a prediction.

**"Rocks Must Readjust"**

"In the case of major disturbances, it takes a little while for the millions of tons of rock under the earth's surface to readjust themselves to stable positions. This is apparently what is happening in the quake region now.

"We are not looking for major disturbances, but rather expect to experience a gradual decline in

intensity. The major readjustment apparently has been completed, and it is doubtful if the surface of the earth at the faults has undergone any change since Monday."

Dr. Pack said he had tentatively planned to take his geology majors, about 30 men and women, to the scene Saturday for an inspection and study of the faults.

Dr. F. F. Hintze, another university geologist, plans a trip to the region probably Friday or Saturday. He said he would study in detail causes and effects of the quake and hoped to make interesting observations at Rozel, in the quake region, where an old oil well oozes small amounts of oil. He said the well apparently is fed from a fissure on the fault trend.

At Locomotive Springs the spring waters turned black after Thursday's disturbances. On the first day the shocks blackened the waters, but they cleared later.

**Springs Emit Steam**

The springs gained their name when they were first discovered, Dr. Pack explained. The water is slightly warm, he said, and in the fall of the year on a crisp day, steam rises from the springs. This steam gives the appearance of rising from a locomotive and, when they were first seen, the discoverer believed a railroad was near by.

Probably the most severely shaken town in the state was Snowville, near the Idaho border and about 40 miles from Hanzel valley. All but three of the 40 houses in the villages lost their chimneys and merchandise was thrown from the shelves of the Snowville store during Monday's temblors.

School was dismissed at Snowville after the first shock Monday morning and with the second major disturbance at 11:20 a.m. a portion of the front wall crumbled and plaster fell from the school building. The community was without drinking water for ten hours as a result of the breaking of the town's water main.

Lights were swayed by a shock at Ogden at 5:06 a.m. Thursday.

The government took official notice of the series of shocks Thursday when headquarters of the U. S geological survey at Washington ordered that a study be made in the vicinity of Locomotive Springs.

The survey is to be made by P. J. Shenan, geologist for the survey, who left Thursday for the quake region. Mr. Shenan, who formerly had headquarters in the national capital, has been working in Salt Lake this winter with Ralf R. Wooley, senior hydraulic engineer for the survey, in making river surveys in Utah and other intermountain states.

After a thoroughgoing study of the region, Mr. Shenan will make an official report to the government.
**[Salt Lake Tribune; March 16, 1934]**

## SURVEY SHOWS SCHOOL INTACT
### Custodian Denies Reports Of Quake Damage To Building

PRESTON, Idaho—Contrary to repeated reports condemning the Preston high school administration building, James B. McQueen, high school custodian now reports slight damage, if any, caused by the recent earthquake.

He claims it is not true that the east and west walls were forced out, that the roof settled six inches under the tower, or that rocks were loosened on the southwest corner. A row of tin shingles down either side of the roof makes it appear as though the walls had moved out and left unbleached shingles exposed. Until the earthquake, students had paid no attention to this.

Except for the few rocks which were shaken from the west gable, there was practically no ill effect from the earthquake, he says.
**[Salt Lake Tribune; March 23, 1934]**

# RECORD OF EARLY EARTHQUAKE IN RECENT SHOCK AREA FOUND IN WEATHER BUREAU FILES

## Region North Of Lake Revealed As Center Of Disturbance In 1898; More Temblors Noted During Same Year

Buried in the files of the local weather bureau office is a record of violent seismic activity in the region north of Great Salt lake—center of the earthquakes which recently shook Utah and surrounding states.

It tells of a period of prolonged disturbances back in 1897 and 1898, which caused phenomena similar to those attending the temblor of 10 days ago. During that early quake observers noted a violent churning of the waters of the lake and discovered that gas was escaping through the brine from subterranean recesses opened by the cracking of the earth.

The records of these quakes were discovered Thursday by Howard E. Warner, supervisor in charge of a C W A project, doing special research work in the weather bureau office. They were noted on the margin of the regular weather reports kept by V. A. Hill, at that time weather observer at the town of Corinne.

Dr. Frederick J. Pack, Deseret professor of geology at the University of Utah, said Thursday night that he had no records of quakes in the region other than the recent ones. He announced, however, that his observations had revealed that the scarps left by the recent shocks followed the line of eroded scarps left by previous quakes, and which might have been caused in 1897 and 1898. Dr. Pack plans to inspect the region again Saturday.

### Heavy Shocks

Mr. Hill recorded that heavy shocks were felt during the late afternoon of February 8, 1897, and also on February 13, 14, 20 and 21.

"Escape of gas," he wrote, "is reported a mile or so out in Great Salt Lake from the mouth of the Bear river, which throws up mud and water. It was first reported on February 21."

When Mr. Hill jotted that down on his report the quakes were not over—Mother Earth was due for more convulsions before the year was out. Fairly heavy shocks again were recorded on August 3 and September 15, after which there was a quiet period until February 20, 1898, when tremors of less intensity were felt.

Mr. Hill does not state whether damage was done, but he notes that the first two shocks of the year-long cycle were heavy.

### Other Quakes

Further study of weather bureau records shows that light earthquakes were felt at Promontory, which is in the same territory, on October 2 and 3, 1898, and again on April 9, 1900.

The earliest record available of temblors north of Great Salt lake goes back to August 30, 1893, when the weather observer at Snowville made the margin note that a light earth shock was felt at 4:30 p.m. In the recent quake Snowville was the hardest hit of any of the towns in the section. Chimneys were thrown to the ground and walls in many of the older structures were badly cracked.

After Mr. Warner had discovered the quake records, J. Cecil Altar, in charge of the weather bureau office, found reports of earth disturbances at Kelton. The observer there noted two or three shocks of moderate intensity on October 2, 1915, and again on November 19, 1919.

It also was found that a light quake occurred at Snowville on November 11, 1905.

Mr. Alter said that although quakes have apparently centered in other parts of the state during Utah's history, the region at the north tip of Great Salt lake appears to be the most unstable part of the state.

**[Salt Lake Tribune; March 23, 1934]**

SALT LAKE TRIBUNE

# SAFETY OF SCHOOL AT COVE CERTIFIED BY COMMISSIONER

## Reports Building Damaged By Quake Called Unfounded

COVE—Reports that the Cove school was unsafe and that the cracks had been widened by the recent earthquake are unfounded, Levi H. Allen, former county commissioner and representing a group of Cove residents, told press representatives Wednesday. Work started three weeks ago in tearing out partitions to make a recreation center in the front end of the school building is still under way, Mr. Allen said, and the residents feel the building is still safe, contrary to the reports of Superintendent J. W. Kirkbride and Building Inspector H. R. Adams of Hyrum.

Mr. Allen stated the "cracks" were there when an addition was built years ago. Some time ago a group was granted permission by the school board to use the front part of the building as a recreation center, by removing two partitions. Later the board called a meeting of the Cove residents who voted in favor of the recreation center.

Mr. Allen further stated the Cove school was one of the schools considered by the school board in the consolidation plan which has been opposed by Cove residents.

**[Salt Lake Tribune; March 23, 1934]**

WYOMING STATE TRIBUNE

## LARGE AREA OF STATE JARRED

By the Associated Press

A distinct earthquake shock startled residents in nearly every town in the extreme western part of Wyoming shortly after 8 o'clock this morning.

Although no damage was reported, the action of the tremor caused consternation among the residents when dishes rattled, clocks stopped and beds moved.

At Rock Springs the tremor was felt from 8:07 to 8:08 a.m. A weather map on the wall of the weather bureau office there rattled and shook. A barber reported that bottles of tonic on his shelves fell down.

Trains were stopped from going through a tunnel at Evanston pending an inspection after the shock which was felt distinctly there.

A train was rumbling through Rock Springs at the time of the shock and that noise apparently kept many from noticing the disturbance.

**Covers Wide Area**

The tremor was reported at Burley, Idaho, Mendosa, Nev., and at Grantsville, Utah, it was said at the Rock Springs Weather Bureau.

At Kemmerer the shock was felt about 8:10 a.m. Beds were moved and chandeliers and dishes in hotels and homes moved perceptibly. In some homes furniture moved slightly. Lights were seen to sway. In the Catholic Church Lenten services were in progress and the rector of the Episcopal Church said some of the candles went out as the church rocked.

The shock was distinct at Frontier, Wyo., a mining town where a hurried inquiry was made to determine if a mine explosion had occurred. There was no reported damage in the Kemmerer mining district.

Green River folks reported their breakfast tables shook and some were awakened by their beds rocking in what was believed to be the first earth shock ever recorded there. Offices in downtown buildings shook. Most of the people at Green River had no idea of what was happening but remarked that it "certainly was a funny feeling."

The force of the disturbance was felt as far east as Lander in Fremont County where three distinct shocks were reported shortly after 8 o'clock. No damage was reported.

Monday's quake was equally as intensive as the quake which occurred in Nevada on Dec. 20, 1932.

The records, seismologists said, indicated the shock was considerably heavier than the destructive Long Beach earthquake of March 10 last year, and that the point of origin evidently was some distance from Salt Lake City.

**[Wyoming State Tribune; March 12, 1934]**

## SALT LAKE QUAKE JARS LAMPS HERE
### Capitol Chandeliers Swayed By Temblor; Heavy Damage Results From Severe Shocks In Utah; One Dies

Earth shocks which centered in Salt Lake City Monday morning, causing some property damage and perhaps one death, were felt in western Wyoming and its effects were seen in Cheyenne when heavy light fixtures at the state capitol swayed from the high ceilings.

The chandeliers in the statehouse here began swaying slightly at about 11:30 a.m. No other noticeable effects of the quakes were reported here.

**[Wyoming State Tribune; March 12, 1934]**

## 2ND QUAKE VICTIM EXPIRES TUESDAY

SALT LAKE CITY, March 13 (AP)—The second death attributed indirectly to the earthquake which shook Utah and southern Idaho yesterday occurred today when Charles Bithell, 55, died in a local hospital of injuries suffered in a waterworks trench cavein.

Bithell was buried when the six-foot trench under construction in the southern part of this city gave way shortly after the heaviest of the several tremors which shook the city. Waterworks department officials said the trench banks were weakened by the quake.

Mrs. Ida Venable Atkinson, 21, of Ogden, Utah, died of fright yesterday while her home was quivering from the earth movements.

**[Wyoming State Tribune; March 13, 1934]**

## UTAH IS JARRED BY NEW SHOCKS
### One Community Without Water; Only 3 Chimneys Remain Up In Town

SALT LAKE CITY, March 15 (AP)—Earth shocks continued today in Northern Utah, but with no additional damage reported. At least 30 shocks were reported in the vicinity of Locomotive Springs, at the northern end of Great Salt Lake, and four of them were felt in this city, between 5:02 and 7:07 a.m.

Reports received here today from Snowville, Utah, near the Idaho border, told of widespread damage to the town of some 250 inhabitants in Monday's tremors.

Shortly after pupils of the one-room brick school had been dismissed following the first shock Monday, a stronger tremor crumbled a portion of the front wall and dislodged plaster. Damage to the school building was estimated at $500.

The town's water main was broken and the community was without water for 10 hours. All but three chimneys in the town were thrown down and merchandise was toppled from shelves in stores. No one was injured.

**[Wyoming State Tribune; March 15, 1934]**