

The Herald Republican, Salt Lake City, Utah,  
Monday September 6, 1915.

Thiessen Makes Drought Table--Compiles figures on previous dry spells throughout state of Utah. Least rainfall in 1863. Unofficial records show that 6.73 inches fell in Salt Lake in that year.

Because of continual inquiries made at the weather bureau concerning the drought recently experienced in Salt Lake and throughout the state in general, A. H. Thiessen, director of the local United States weather bureau, has issued an official document on droughts of Salt Lake. The, broken by the rain Wednesday afternoon, was a record in weather annals of the city.

Mr. Thiessen's report of droughts in Salt Lake is as follows:

"In a general way a drought may be defined as a period having unusually deficient amount of moisture. But any definition of a drought that may be given would apply only to that certain section of the country for which it was formulated. For instance, if one defines a drought as a period of thirty days or more in which only 50 per cent of the normal amount of rain fell, it is readily seen that the severity of the drought would be much greater in an arid region receiving normally less than twenty inches a year than in a moist region where the annual rainfall was normally forty inches or more. The seriousness of a drought depends upon many factors. It is less severe if preceded and succeeded by abundant rains. The temperature and wind conditions prevailing during the drought have an important modifying effect. Droughts are felt less from an agricultural standpoint at those places where the soil texture is such that evaporation takes place slowly.

"An exact daily record of rainfall for Salt Lake City is available since 1874, but there are records extending back as far as 1847. In the earlier years records for some of the months are missing and the probable annual amounts were estimated, which throws some doubt on the yearly values.

#### Figures on Rainfall

"The normal rainfall for this city is 16.24 inches as calculated for the period of 1847 to date. The smallest annual amount was 6.73 inches, recorded at Fort Douglas in 1863, and the largest was 27.73 inches in 1866, from the Phelps & Sons record.

"Since 1874, when the record was begun by the United States weather bureau, the smallest amount was 10.38 inches, in 1890, and the largest was 23.64 inches, in 1875.

"The weather bureau office of this city has classified the local droughts under three heads:

Class 1, periods of fifteen days or more having less than .01 inch; class 2, periods of thirty days or more having .10 inch or less; class 3, periods of sixty days or more having .25 inch or less.

"Of class 1, that is periods of fifteen days or more having less than .01 inch, there were 171 since 1875, making an average of four every year. Year 1889 was noted for these short rainless spells, there being eight that year, but the year, as a whole was wetter than usual. The longest period of this class on record was from August to October 2, 1899, or sixty-three days, but that year there was 1.54 inches more than the normal.

1879 Dry year.

"Of class 2, that is periods of thirty days or more having .10 inch or less of precipitation, there were fifty-nine since 1875, three being the greatest number recorded in one year, namely 1879 and 1886, the former being a dry year and the latter a wet one. The longest period of this class was eighty-six days, from June 7 to August 31, 1915, when .09 inch fell, the next longest period was eighty-three days, from July 1 to September 21, 1911, when .08 inch fell.

"Of class 3, that is periods of sixty days or more having .25 inch or less, there were fifteen since 1875, or approximately one every three years. The longest period of this class was 113 days, from June 14 to October 4, 1879, when .25 inch was recorded. In 1890, when only 10.33 inches fell during the whole year, there were two such periods; from June 4 to August 16, sixty eight days, when .04 inch was recorded, and from October 15 to December 19, sixty-six days, when .22 fell.

"It may be said that the drought of the present summer was

severe, but its severity was felt all the more, as there is an over-increasing demand made upon the water supply for the use of the people. The city is larger in area and in population and more lawns, gardens, and trees are yearly added to enhance the glory of an already beautiful city."

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Sunday, May 30, 1915.

WATER SHORTAGE IN THREE STATES

Decrease in flow compared with last year reported for Utah, Idaho and Nevada. Rains will be helpful. Bear, Logan and Green Rivers show drop while nearby streams also fall off.

Climatic conditions, principally a lack of precipitation, have caused a general shortage of water in streams throughout Utah, Idaho and Nevada. E. A. Porter, engineer for the United States geological survey, issued a report yesterday in which he gave the approximate flow of rivers and creeks in Utah, showing a decrease in the figures for last year although he said the shortage possibly may be reduced by rains during the coming thirty days.

Records of the city engineer's office show a falling off also in the streams running from the Wasatch mountains east of the city into the Jordan river

The Green river at Green River station, Utah, is the largest stream in the state. Saturday, May 22, the discharge at that point was approximately 14,000 second feet; one year ago, this date, the record was 32,000 second feet, a shrinkage of 18,000 feet. Provo river, at a point just above the mouth of South Fork, was discharging 220 second feet on Saturday, May 15, as compared with 1090 second feet for the same day in 1914, a shortage of 870 feet. The Weber river at Oakley, above all the canals, May 15, was discharging 454 second feet as compared with 1890 second feet for May 15, 1914; a shortage of 1436 feet.

The Bear River at Collinston, just the power plant, was discharging 980 second feet, May 15, as against 5740 second feet, same day, 1914; a falling off of 4760 feet. The government engineer remarks that the Bear river drainage has suffered more from lack of precipitation than any other stream in the state. The reason is that it comes within the dry zone that has so affected the country to the north, particularly Idaho, which is reported as in a serious condition from lack of moisture. This is also reflected in the status of the Humboldt river in Nevada where on May 22, the discharge at Lovelock was 140 second feet,

whereas one year ago it was 1210 feet, a shrinkage of 1070 feet. But the Truckee river appears to be running fairly full, and west of that point there is no trouble reported.

#### Logan River Suffers.

Logan river is a sufferer, with a discharge May 15 of only 170 second feet, while same date in 1914 the record was 648 second feet a falling away of 478 feet. The Ashley country is reported in an unenviable shape, with the Duchesne river at Myton discharging May 15 last, only 1000 second feet, whereas the flow one year previous was 3220 second feet, a shortage of 2220 feet. On the other hand the southern part of Utah shows an improvement, due to the fact that it came within the heavy rain zone that drenched New Mexico and Arizona earlier in the spring. The Rio Virgin, at Virgin City, recorded on May 14 last, a discharge of 1100 second feet, while just one year previous the record was 828 second feet, an increase of 272 feet. The Sevier river comes to an extent under the same drainage conditions as the Rio Virgin, and so is in sympathetic touch with it. The Sevier river at Junction City, May 20 last showed a discharge of 731 second, while on May 20, 1914, it was 675 second feet, an increase of 56 feet.

#### City Creek Shows Drop.

City Creek delivered 25 second feet May 20 of this year, as compared with 68.77 second feet just one year previous. The average for April last was 18 second feet against 27.10 second feet for April 1914. Parley's creek on May 20, 1915, discharged 33 second feet as compared with 112 second feet May 20, 1914. The average for last April was 42 second feet, whereas the record was 77.56 second feet one year previous. Big Cottonwood creek discharged May 20, 1915, 151 second feet, against 357 second feet the same day in 1914. The average for April last was 120 second feet to 107 second feet May 20, 1914, the flow in April last year having been retarded by climatic conditions. Little Cottonwood creek discharged 200 second feet May 16 last as compared with 281 second feet just one year previous. The discharge May 20, 1914 was 286 feet, but for this, May 20, there is no record at date of writing. The average discharge for this creek for April, 1915, was 66 second feet, to 67 second feet for April, 1914.

WATER SHORTAGE IS GENERAL OVER THE STATE.

E. A. Porter, District Engineer of U.S. Geological Survey, Compares Rivers' Flow.

In view of the shortage of water in Salt Lake county and other portions of the state, E. A. Porter, district engineer of the United States geological survey, has compiled a special comparative statement showing the conditions of water resources up to the first of the current month as compared with those which existed at the same time in 1912, 1914. The figures given cover the discharge of water in cubic feet per second.

The Grand river at Moab showed 13,000 cubic feet at this time last year; on August 1, this year, the discharge was only 2900 feet; the Green river at Green River, Utah, showed 6100 feet, while the present discharge is 2500; Bear river, near Collinston, 900 feet last year, 180 feet August 1; Weber river, below diversions, near Plain City, 142 last year, 13 feet August 1.

The above comparative figures show the contrast between last year and this, while the figures showing the discharges for 1912 are considerably greater. The table indicates a water shortage in Utah that has been limiting irrigation and power operations during the present summer. The report says low water conditions will not have as serious effect on crops from now on, as grain has practically matured and water will be needed only for irrigation of hay, sugar beets, fruits, etc. The 1915 flow of water is below the average, while in nearly all cases the 1914 flow was above the average.

*Part 14*

IN DIST. COURT  
UTAH CO., UTAH,

\* FILED \*

NOV 11 1915

*E. A. Palfrugman* Clerk.

*W. M. Stuard* Deputy.

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