

**Climatological Data for October, 1909.**  
**DISTRICT No. 8, TEXAS AND RIO GRANDE VALLEY.**

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**GENERAL CLIMATOLOGICAL CONDITIONS.**

For the district as a whole the month of October was warm, with somewhat deficient precipitation and an abundance of sunshine. During the greater part of the month the weather was pleasant, although on a number of days there was dense morning fog in many localities. In the Texas portion of the district these fogs were especially numerous on the 6th, 7th, 20th, 21st, and 22d. There were but few rainy days, the average being about 4 in Colorado and about 3 in New Mexico and Texas. In Colorado practically all the precipitation occurred from the 3d to the 9th, inclusive, and the long, dry spell from the 10th to the 30th forms a conspicuous feature of the weather in the extreme upper Rio Grande watershed. In New Mexico the weather was showery, with occasional thunderstorms, from the 1st to the 8th and on the 17th and 18th, and generally fair on the other days of the month. In Texas showers occurred principally on the 8th, 9th, 17th to 19th, and 31st, but they were heavy in a large number of localities. An excessive precipitation of 10 inches was reported from San Marcos on the 19th, and of 8 inches from Columbia on the 31st. At 19 other stations in Texas the twenty-four-hour rainfall equaled or exceeded 2.50 inches which, at several of the stations, was practically the only precipitation during the month. However, some of the precipitation on the last day of the month will not appear in this report, because some of the observers take their observations in the forenoon. Numerous thunderstorms occurred in Texas during the 8th and 9th. Snow fell on several days in Colorado and New Mexico, reaching a maximum fall of 8 to 16 inches in the upper Rio Grande watershed, and of 14 inches in the upper Rio Pecos. The snow in New Mexico had practically all disappeared before the close of the month.

**TEMPERATURE.**

The mean temperature was above the normal in Colorado and Texas, and very nearly normal in New Mexico. A maximum daily excess of over 3° occurred in portions of the upper and lower Rio Grande, lower Rio Pecos, and upper Trinity River valleys. A nominal deficiency occurred in New Mexico over limited areas of the Rio Grande and Rio Pecos watersheds, and in Texas over portions of the Guadalupe watershed. The change in temperature from day to day was comparatively small, although there were two well-defined cold periods during the month. The first extended from the 6th to the 13th, and during its prevalence the lowest temperatures of the month occurred in nearly all portions of the district. The lowest reported from Colorado was 8° on the 9th at San Luis, in the Rio Grande watershed; from New Mexico, 4° on the 8th at Truchas, in the same watershed; and from Texas, 26° on the 12th at Plainview, in the extreme upper Brazos drainage basin. The second cold period extended from the 22d to the 27th. It was less intense than the former and was hardly felt in Colorado. The highest temperatures reported were: In Colorado, 80° on the 2d at Saguache and at San Luis, both in the Rio Grande Valley; in New Mexico, 93° on the 16th at Carlsbad in the Rio Pecos Valley; and in Texas, 105° on the 14th at Fairland in the middle Colorado River Valley. In the Rio Grande drainage basin the local monthly mean temperatures ranged from 40.4° at Hopewell, N. Mex., to 77.0° at Fort McIntosh, Tex.; in the Rio Pecos drainage basin, from 42.4° at Windsor's Ranch, N. Mex., to 67.2° at Barstow, Tex.; and in the remaining drainage basins of the district, from 59.8° at Plainview, in the upper Brazos River Valley, to 76.4° at San Juanito, in the coastal plains.

**PRECIPITATION.**

The precipitation over the Rio Grande watershed was decidedly greater than the normal in Colorado, the average being 1.72 inches, with an excess of 0.90 inch. It was also greater than the normal over a short stretch from the Colorado border line southward to Espanola, N. Mex., but beyond that station there was a general deficiency, which was especially pronounced over the Texas portion. In New Mexico the precipitation over this watershed averaged 0.47 inch, which is 0.32 inch less than the normal. The greatest was 1.61 inches at Mountainair, and the least, 0.00 inch at Albuquerque, while at six stations the amount was too small to be measured. In Texas the average was only 0.15 inch, which is about 1.50 inches below the normal. The greatest was 0.42 inch at Fort McIntosh, and the least, 0.00 inch at Eagle Pass. Some of the precipitation in Colorado and New Mexico was in the form of snow, the greatest monthly amount in Colorado being 15.8 inches at San Luis, and in New Mexico, 9 inches at Chama.

In the Rio Pecos watershed the precipitation was also decidedly deficient, the greatest deficiency occurring from the New Mexico border line southward to the Rio Grande. In New Mexico the precipitation averaged 0.84 inch, which is about 0.50 inch less than the normal. A nominal excess occurred, however, in a few localities. The greatest monthly amount was 1.88 inches at Harveys Upper Ranch, and the least, 0.10 inch at Fort Sumner. Over the Texas portion of this watershed the amount was too small to be measured. Snow occurred in the higher northern localities, the greatest amount reported being 14.2 inches at Harveys Upper Ranch.

In the watersheds of the Nueces and San Antonio rivers the precipitation averaged about 1.50 inches which, while considerably less than the normal, exceeded the September rainfall by over 0.50 inch. The amounts in the Nueces watershed ranged from 0.36 inch at Sabinal to 3.72 inches at Rossville, and in the San Antonio, from 1.42 inches at Boerne to 1.57 inches at Runge.

A marked excess of over 2 inches occurred in the Guadalupe drainage basin which was due to excessive local rains in portions of that valley. At San Marcos the total monthly amount was 10.10 inches, of which 10 inches fell in twenty-four consecutive hours. This was the heaviest in the watershed. The least was 1.05 inches at Victoria, and the average for the watershed was 3.44 inches. During the preceding month there was no rain at San Marcos, while the heaviest occurred at Victoria.

In the Lavaca watershed the precipitation averaged 1.66 inches, the greatest being 1.80 at Edna, and the least, 1.52 at Hallettsville. This was over twice the amount received during September, but was still considerably less than the normal.

The rainfall over the Colorado River watershed was very nearly normal, with an average of 2.22 inches. A deficiency occurred in the upper and lower portions, and an excess in the middle portion. The greatest monthly amount was 3.90 inches at Knickerbocker, and the least, 0.49 inch at Midland. The rainfall exceeded the September average by over 0.70 inch.

The Brazos River watershed received much more precipitation than it did during the preceding month, the average amount being 3.11 inches as against 0.95 inch in September. It was 0.73 inch above the normal. There was, however, a deficiency in its upper portion, but south of Panter there was a general excess. The greatest monthly amount was 10.75 inches at Columbia, which was also the greatest for the district; and the least was 0.98 inch at Plainview.

In the Trinity River drainage basin the precipitation averaged slightly greater than in that of the Brazos. The average was 3.17 inches and exceeded the September average by over 2 inches. There was a marked excess in the lower portion, while in the middle and upper portions there were stretches with considerable deficiency. The greatest monthly amount was 8.25 inches at Liberty, and the least, 0.60 inch at Bridgeport.

The rainfall over the Neches and Sabine watersheds was much more uniformly distributed than over any of the other watersheds. In the Neches drainage basin the greatest monthly amount was 4.28 inches at Carmona; the least, 2.15 inches at Henderson; and the average, 2.93 inches. In the Sabine drainage basin the greatest monthly amount was 4.67 inches at Marshall; the least, 2.46 inches at Logansport; and the average, 3.66 inches. This was the largest average in the district.

#### RIVER CONDITIONS.

Most of the rivers in the district carried a larger volume of water than during the preceding month. In the Rio Grande it was less throughout its length, there being a gradual diminution from the beginning to the close of the month. At Del Norte, Colo., the discharge ranged from 955 second-feet on the 6th to 418 on the 31st, and the average was 633. This was much less than during any of the preceding three months.

Near Presidio, Tex., the flow of the river has been comparatively good. At Eagle Pass the river was abnormally low during the entire month, with a gradual decrease from day to day. The supply, however, has been abundant for irrigating purposes. At Zapata the river was nearly normal. There was a rise of 2 feet on the 20th. At Llano Grande there has been a slow decrease, but the supply has been ample for stock and irrigation. At Brownsville the stage of the river was 35.3 feet on the 1st and decreased gradually to 30.6 feet on the 31st. The average stage of the river at this place is about 31 feet. During September the highest stage was 40.7 feet on the 5th, and the lowest, 35.9 feet on the 30th.

The average volume of water in the Colorado River was greater during October, 1909, than during the corresponding period of last year; that of the Guadalupe and Neches was about the same, while that of the Brazos, Trinity, and Sabine was less. The average stages of all these rivers, however, were higher than during the preceding month.

A sharp rise occurred in the Guadalupe and in the middle and lower portions of the Colorado rivers after the rains of the 18th and 19th. At Waco, Valley Junction, Long Lake, and Logansport the river stages were the lowest on record for October since the opening of these stations. In the upper Sabine River there was so little water during part of the month that some of the cattle in the bottom pastures had to be moved.

#### MISCELLANEOUS.

The rainfall in Texas during the month was of great benefit to the State and ended the drought in many sections.

At San Marcos an unusually heavy rainfall of 10 inches occurred during the night of the 18th, which flooded the town and caused considerable damage.

A severe windstorm of short duration occurred at Alvin on the 31st, wrecking several houses and damaging a large railroad water tank.

Killing frost was general in Colorado on the 9th. In New Mexico killing frost extended into the southern counties on the 8th and 9th, although a few far southern localities had no killing frost until the last decade, the dates varying from the 22d to the 27th, while a few other southern localities had no frost during the month. There was no damage from the frost. In Texas killing frosts occurred on the 10th and 12th in the extreme upper Brazos and in the upper and middle Colorado valleys, and light frost as far southward as San Antonio. These frosts damaged vegetation in some sections. Light frost occurred also from the 24th to the 26th in the northern half of Texas.

At the Carlsbad project on the Rio Pecos very little water has been used for irrigation during the month, except for the fall planting of alfalfa. At the Hondo project there has been no water available for irrigation during the month. At the Leasburg project water was delivered for irrigation through the canal until the 15th, when it was discontinued preparatory to cleaning and repairing the canal.

#### IRRIGATION IN TEXAS.

So far as known there are at present 92 irrigation companies doing business in the State of Texas, with an aggregate capitalization of \$11,614,820. In the Texas rice fields alone, there are 43 canals, located in the southeastern portion of the State from Orange County westward to Colorado and Jackson counties. The last legislature (thirty-first) passed an act that became a law April 21, 1909, charging the commissioner of agriculture of the State with certain duties in connection with the system of irrigation now in operation in Texas. The following is a copy of that law:

SECTION 1. It shall be the duty of the commissioner of agriculture to prepare and make public reports on the present system of irrigating now in operation in this State, the cost of maintenance and operation of same, the character and kind of irrigation plants which result in the greater saving to users of water, the class and character of water contracts entered into by various canal companies; he shall also inquire into the reasonableness and fairness of rates being charged for water by the various canal companies in this State, and from time to time shall make public the result of his inquiries; he shall collect and publish statistics and other information regarding the irrigation of rice and other crops, as may be of benefit in developing and collaborating a more efficient system of laws safeguarding and defining the rights of users and sellers of water for irrigating purposes; and he shall make up and file an annual report on same with such recommendations (as) he may deem beneficial to the industry, which report shall be filed with the governor and be transmitted to the legislature.

SEC. 2. The commissioner of agriculture is hereby empowered and authorized to employ a competent engineer and expert possessing a practical knowledge of the application of irrigation to the raising of rice and other crops, for the purpose of assisting him in performing the duties required of him in Section 1 of this act.

SEC. 3. The fact that there is now no means of collecting data on canal rates, and that there is no member of the department of agriculture qualified to perform the duties above mentioned, creates an emergency and an imperative public necessity that the constitutional rules requiring bills to be read on three several days in both houses be suspended, and that this act shall take effect and be in force from and after its passage, and it is so enacted.

The same legislature also created a levee and drainage board to work in conjunction with the U. S. Geological Survey, and amended the act of the thirtieth legislature, approved March 23, 1907, providing for drainage districts.

TABLE I.—Climatological data for October, 1909. District No. 8, Texas and Rio Grande Valley.

Stations.	Counties.	Elevation, feet.	Length of record, yrs.	Temperature, in degrees Fahrenheit.						Precipitation, in inches.				Sky.				Observers.	
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall unmeltd.	Number of rainy days, .01 inch or more.	Number of clear days.	Number of partly cloudy days.		Number of cloudy days.
<i>Colorado.</i>																			
Amethyst (near).....	Mineral	8,730	1															Don C. La Font.	
Blanca.....	Costilla	8,403		45.3		70	1	11	9	58	1.18	0.65	1.0	5	21	9	1	L. C. Audrain.	
Cumbres.....	Conejos	10,015	3		+ 3.1	76	1	14	31	53	2.37	0.90	0.8	6	6	4		Venta A. Good.	
Garnett.....	Costilla	7,578	16								+ 1.07	0.61	0.0	5	21	6	4	Chas. Speiser.	
Hermitt.....	Hinsdale	9,843									1.94	0.90	3.8	7	19	8	4	C. C. Mason.	
La Veta Pass.....	Costilla	9,000									1.59	0.83	13.2	4	18	5	8	Norvin R. Lively.	
Manassa.....	Conejos	7,700	3	46.0		75	1	13	9	50	1.71	0.89	4.4	6	18	10	3	J. B. Chapman.	
Platoro.....	do.	9,675	2									0.89	4.4	6	18	10	3	Walter R. Hook.	
Saguache.....	Saguache	7,740	17	48.2	+ 2.0	80	2	18	30	50	1.62	+ 0.72	0.68	15.8	5	5	1	Eugene Williams.	
San Luis.....	Costilla	7,794	18	46.6	+ 1.5	80	2	8	9	53							P. B. Albright.		
Wagon Wheel Gap.....	Mineral	8,434	10															Ellwood Bergey.	
<i>New Mexico.</i>																			
Agricultural College.....	Dona Ana	3,863	43	62.1	+ 0.1	90	1	30	10	53	0.18	- 0.58	0.11	0.0	3	22	9	0	N. M. Agric. College.
Alamogordo (near).....	Otero	4,338	9	63.6		90	1	31	9	46	0.13		0.13	0.0	1	25	6	0	Jas. C. Dunn.
Alamogordo.....	do.	4,320									0.04		0.02	0.0	2				Agent E. P. & S. W. R. R.
Albuquerque.....	Bernalillo	5,300	32	59.4	+ 2.7	86	1	34	9	44	0.00	- 0.74	0.00	0.0	0	27	2	2	University of N. M.
Amisett.....	Taos	9,018									1.15		0.42	0.0	5	18	8	5	Geo. W. Oates.
Ancho.....	Lincoln	6,112									0.19		0.15	0.0	3	23	3	5	Agent E. P. & S. W. R. R.
Aspen Grove Ranch.....	Rio Arriba	9,000									0.07		0.55	2.0	3	20	7	4	John D. Maupin.
Bateman Ranch.....	do.	8,900									0.00		0.00	0.0	0	25	6	0	John W. Bateman.
Bluewater.....	Valencia	6,732	8								0.00		T	0.0	0	25	6	0	Bluewater Developm't Co
Bluewater Reservoir.....	do.	9,000									0.21		0.21	0.0	1	23	6	2	Do.
Boas.....	Chaves	4,154		56.3		87	16	24	12	55	0.21		0.31	0.0	1	23	6	2	D. C. Savage.
Capitan.....	Lincoln	6,348									0.82		0.39	0.0	7	13	15	3	Agent E. P. & S. W. R. R.
Carlsbad.....	Eddy	3,120	15	63.2	- 0.3	93	16	33	10	55	0.19	- 1.10	0.11	0.0	3	6	20	5	U. S. Reclamation Serv.
Carrizozo (1).....	Lincoln	5,429	3								0.10		0.10	0.0	1	1			A. H. Harvey.
Carrizozo (2).....	do.	5,438									0.10		0.10	0.0	1	1			Agent E. P. & S. W. R. R.
Chama.....	Rio Arriba	7,851	2	47.0	- 0.8	77	1	14	9	44	1.55	+ 0.32	0.55	9.0	4	26	3	2	Frank C. Johnson.
Clouderoft (1).....	Otero	8,650	7	47.0		70	22	21	9	37	0.52		0.38	0.5	3	31	1	9	M. P. Coakly.
Clouderoft (2).....	do.	8,650									1.29		0.67	0.0	4	17	12	2	Agent E. P. & S. W. R. R.
Corona.....	Lincoln	6,666									0.33		0.17	0.0	0	20	2	2	Do.
Coyote.....	do.	5,900									0.70		0.34	0.0	0	22	4	5	Teofilo Vill.
Cundiyo.....	Santa Fe	6,889									0.70		0.36	0.0	0	22	4	5	Eric and Westerman.
Demonstration Farm.....	San Miguel	6,800	1								0.70		0.36	0.0	0	22	4	5	W. H. Birkhead.
Duran (1).....	Torrance	6,272	1	54.8		84	16	28	9	48	1.12		1.05	T	0	22	3	2	Agent E. P. & S. W. R. R.
Duran (2).....	do.	6,272									0.29		0.19	1.0	2	22	6	3	Frank L. Faxton.
Edison Mine.....	Taos	10,600									1.64		1.10	0.0	3	21	9	1	Boyd Williams.
Elk (near).....	Chaves	4,014	10	58.2		81	1	32	27	38	1.64	- 0.45	1.10	0.0	3	21	9	1	Agent E. P. & S. W. R. R.
Escobedo.....	Otero	5,590	13	52.4	+ 0.5	81	3	23	30	50	0.84	+ 0.08	0.30	0.0	0	26	5	0	Mrs. E. F. McBride.
Española.....	Rio Arriba	6,140	4	50.0		77	21	21	31	54	1.36		1.34	0.0	0	23	7	1	Agent N. M. Cent. R. R.
Estancia.....	Torrance	6,231	30	52.8	+ 1.0	83	15	24	24	53	0.82	- 0.54	0.42	0.0	5	19	8	4	U. S. Sanitarium.
Fort Stanton.....	Lincoln	3,960	7			90	1	20	26	24	0.10		0.10	0.0	1	24	7	0	F. A. Marsonare.
Fort Sumner.....	Guadalupe	6,635									0.87		0.62	0.0	3	24	7	0	Agent E. P. & S. W. R. R.
Gallinas.....	Lincoln	7,500	3	49.2		78	1	14	9	45	1.07		0.33	4.4	7	9	18	4	U. S. Forest Service.
Gallinas Planting Stat'n.....	San Miguel	9,400									1.88		0.77	14.2	6	18	9	4	Simon B. Warner.
Harvey's Upper Ranch.....	do.	5,224	10								0.51		0.18	2.5	4	25	2	4	J. M. Webster.
Hillsboro.....	Sierra	8,484	1	59.8		92	16	29	10	52	0.59		0.58	0.0	2	24	4	3	Ralph W. Johnson.
Hodges.....	Taos	3,904	3								0.67		0.35	4.1	4	8	15	8	U. S. Reclamation Serv.
Hondo Reservoir.....	Chaves	9,500									0.67		0.35	4.1	4	8	15	8	N. L. Johnson.
Hopewell.....	Rio Arriba	5,840	5	40.4		65	1	9	9	38	0.94		T	0.0	0	20	6	5	John T. Blanton.
Laguna.....	Valencia	4,500	5	54.2		79	1	24	9	46	0.84		T	0.0	0	20	6	5	Gus Weiss.
Lagunita.....	Guadalupe	3,111	1	54.5		85	16	26	27	49	0.94		0.54	0.0	0	24	3	4	F. A. Turnbull.
La Huerta.....	Eddy	5,415	5								0.15		0.10	0.0	0	24	6	1	D. Barclay Sutherland.
Lake Valley.....	Sierra	6,384	23	51.6	+ 1.8	81	1	18	9	51	0.17	- 0.28	0.09	0.0	0	23	8	0	Wm. P. Keil.
Las Vegas.....	San Miguel	4,900	18	54.4	+ 1.5	82	14	26	9	48	0.05	- 0.82	0.48	1.5	5	21	7	3	Dr. Wm. C. Bailey.
Los Lunas (near).....	Valencia	4,919									0.89		0.05	0.0	1	22	9	0	Richard Pohl.
Los Tanos.....	Guadalupe	6,557	4	54.2		80	3	23	9	48	T		0.80	0.0	2	23	4	4	Agent E. P. & S. W. R. R.
Magdalena.....	Socorro	7,050	5								1.40		T	0.0	0	24	6	1	Wm. Pender.
Mineral Hill.....	San Miguel	3,500	4								1.40		0.60	1.0	4	24	0	7	W. M. Nelson.
Monument.....	Eddy	6,547	7	54.4		84	1	27	9	43	1.61		1.11	T	3	27	3	1	James M. Cook.
Mountalnair.....	Torrance	3,989									0.60		0.30	0.0	2	27	4	0	John W. Corbett.
Newman.....	Otero	4,414									0.04		T	0.0	0	27	4	0	Agent E. P. & S. W. R. R.
Noria.....	Dona Ana	4,171									0.04		0.04	0.0	1	25	5	1	Do.
Orogrande.....	Otero	5,016									0.15		0.09	0.0	3				Eugene F. Jones.
Osoero (near).....	Lincoln	5,016									0.12		0.09	0.0	2	24	5	2	Agent E. P. & S. W. R. R.
Osoero (2).....	do.	3,100									0.37		0.11	0.0	5	27	1	3	A. M. Hove.
Otis.....	Eddy	6,200									0.54		0.35	0.2	5				Otto Goetz.
Otto.....	Santa Fe	5,285									0.95		0.70	0.0	2	16	12	3	Agent E. P. & S. W. R. R.
Pastura.....	Guadalupe	8,650		41.5		74	3	6	9	46	0.90		0.50	8.0	2	26	5	0	Mrs. L. R. Penn.
Red River.....	Taos	4,030	11	61.4	+ 1.5	92	1	28	10	54	T	- 0.50	T	0.0	0	26	3	2	Chas. H. Raitt.
Rincon.....	Dona Ana	4,265	11	61.0	+ 3.6	88	1	33	28	48	0.62	- 0.03	0.40	0.0	3	26	2	3	U. S. Reclamation Serv.
Rio Grande Dam.....	Sierra	6,910	5	54.2		77	1	28	9	33	0.31		0.14	T	5	25	2	4	W. H. Martin.
Rosedale.....	Socorro	3,578	12	57.5	- 2.0	89	16	29	10	53	0.63	- 0.89	0.63	0.0	1	23	6	2	U. S. Weather Bureau.
Roswell.....	Chaves	4,439	14	58.4	+ 0.5	84	14	30	10	46	0.25	- 0.59	0.25	0.0	1	23	7	1	Agent A. T. & S. F. R. R.
San Marcial.....	Socorro	6,509	6	54.6		85	14	25	20	54	0.36								



TABLE 1.—Climatological data for October, 1909. District No. 8—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, yrs.	Temperature, in degrees Fahrenheit.						Precipitation, in inches.				Sky.				Observers.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall unmeted.	Number of rainy days, 0.1 inch or more.	Number of clear days.	Number of partly cloudy days.	
<i>Texas—Cont'd.</i>																		
Panther	Hood	1,000	19															E. H. Snider.
Pierce	Wharton		3	69.4		90	3†	40	10	44	2.10	- 0.29	1.32	0.0	5			R. B. Pointer.
Plainview	Hale	3,370	1	59.8		89	16	26	12	51	0.98		0.65	0.0	3	23	6	J. F. Sander.
Port Lavaca	Calhoun	20	8	73.4		91	8	46	10	40	3.01		1.61	0.0	3	23	7	J. H. Bickford.
Rioardo	Nueces			73.2		94	14	44	25	44	0.45		0.45	0.0	1	22	6	Lindsay Waters.
Riverside	Walker	169	5								3.20		3.20	0.0	1			Mrs. C. W. Higdon.
Robert Lee	Coke	1,850	1	66.0		95	14	38	24†	47	1.77		1.09	0.0	3	26	4	H. D. Pearce.
Rockland	Tyler	138	5								2.16		1.25	0.0	3			D. W. Bellamy.
Roseville	Atascosa	558	2	70.7		99	6	38	26	47	3.72		3.47	0.0	2	18	11	W. F. M. Ross.
Runge	Karnes	308	14								1.57	- 1.17	1.05	0.0	2			Reiffert & Frobese.
Sabinal	Uvalde	964	5	71.5		98	15	15	37	51	0.36		0.36	0.0	1	17	12	Jas. Johnston.
San Angelo	Tom Green		1	62.5 <sup>a</sup>		87 <sup>a</sup>	3	49 <sup>a</sup>	10†	42 <sup>a</sup>	1.80 <sup>b</sup>		1.80 <sup>b</sup>	0.0	2	24 <sup>a</sup>	2	C. W. Goff.
San Antonio	Bexar	701	24	71.0	+ 0.8	93	14	43	19	40	1.55	+ 0.06	1.55	0.0	1	19	8	U. S. Weather Bureau.
San Augustine	San Augustine			67.4 <sup>a</sup>		93 <sup>a</sup>	5†	36 <sup>a</sup>	25	44 <sup>a</sup>	2.79		1.51	0.0	5	20	8	F. A. Wilson.
San Juanita	Hidalgo			76.4		95	8†	47	24	39	0.10		0.10	0.0	1	9	4	J. B. McAllen.
San Marcos	Hayes	588	16	68.2	- 0.5	92	14	38	10	45	10.10	+ 7.37	10.00	0.0	2	23	0	Miss L. C. Ford.
San Saba	San Saba	1,712	5	66.5		98	14	34	10	47	1.71		0.85	0.0	3	27	0	Jas. Burns.
Santa Gertrudes	Nueces		7								0.68		0.68	0.0	1			J. B. Wright, jr.
Seymour	Baylor	1,180	3	64.4		92	14	36	12	43	1.67		0.95	0.0	4	26	3	F. M. Deaver.
Somerville	Burleson	251						40	9		4.20		2.00	0.0	3	28	0	W. A. Dolan.
Sonora	Sutton	2,200	6															Mike Murphy.
Sugarland	Fort Bend	79	11	71.4		95	6	42	25	37	6.28	+ 2.62	4.71	0.0	3	24	6	O. M. Bakke.
Taylor	Williamson	583	8	69.6	+ 1.3	93	14	42	10	40	3.16	+ 0.60	2.66	0.0	5	24	4	U. S. Weather Bureau.
Temple	Bell	630	15	68.0	+ 0.1	95	14	43	24	40	3.44	+ 0.77	2.20	0.0	3	23	0	W. B. Tyler.
Tilden	McMullen		3	75.3		100	14	43	25	43	1.78		1.50	0.0	2	6	10	Wm. Kuykendall.
Uvalde	Uvalde	937	1	72.0		99	14†	39	25	49	0.37		0.37	0.0	1	25	0	F. M. Gutzendaner.
Valley Junction	Robertson	289	4								3.40		2.00	0.0	2			T. M. Williams.
Victoria	Victoria	187	11	72.6	- 1.2	92	7	45	9†	42	1.05	- 2.86	0.60	0.0	3			C. C. Zirjacks.
Waco	McLennan	424	20	69.4	+ 1.2	95	14	45	11	36	4.38	+ 1.60	2.54	0.0	3	21	1	E. H. Hall.
Waxahachie	Ellis	556	13	67.6	+ 1.7	97	6†	39	26†	48	2.90	+ 0.04	1.75	0.0	3	24	2	C. D. Longerre.
Weatherford	Parker	864	20	66.5	+ 0.4	91	14	39	25†	38	1.91	- 0.81	0.86	0.0	4	25	4	Miss J. Stickfort.
Wharton	Wharton	105	7	69.0		89	17†	44	10	43	2.73		2.18	0.0	3	24	2	Mrs. F. M. Hughes.
Wills Point	Van Zandt	534	4	71.6		95	3	42	28	41	4.53		1.85	0.0	3	23	4	W. W. Gibbard.
Zapata	Zapata			75.0		98	15	43	11	52	0.12		0.12	0.0	1	12	17	F. H. Earnest.

\* Precipitation included in that of the next measurement.  
 \*\* Temperature extremes are from observed readings of the dry-bulb; means are computed from observed readings.  
 † Also on other dates.  
 ‡ Data are from standard instruments not supplied by the U. S. Weather Bureau.  
 § Instruments are read in the morning; the maximum temperature then read is charged to the preceding day, on which it almost always occurs.  
 ¶ Estimated by observer.  
 †† Precipitation for the 24 hours ending on the morning when it is measured.  
 ‡‡ Precipitation is less than 0.01 inch rain or melted snow.  
 a, b, c, etc., indicate, respectively, 1, 2, 3, etc., days missing from the record.





TABLE 2.—Daily precipitation for October, 1909. District No. 8—Continued.

Stations.	River basins.	Day of month.																															Total.		
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31			
<i>Texas—Cont'd.</i>																																			
San Juanita	Coast								.10																									0.10	
San Marcos	Guadalupe																			a													10	10.10	
San Saba	Colorado							.32											.85	.54														1.71	
Santa Gertrudes	Coast									.68																									0.68
Seymour	Brazos						.95	.10											.60	.02														1.67	
Somerville	do.							.70											2.00															1.50	4.20
Sonora	Rio Grande																																		
Sugarland	Brazos							1.07											.50													T	4.71	6.28	
Taylor	do.							.43											2.51	.15											.01	.06	3.16		
Temple	Brazos							.67	.57										3.20															3.44	
Tilden	Nueces								.28											1.50														1.78	
Uvalde	do.																		.37															0.37	
Valley Junction	Brazos									1.40									3.00															3.40	
Victoria	Guadalupe							.25											.20														.60	1.05	
Waco	Brazos							.46	1.38										2.54															4.28	
Waxahachie	Trinity							.18	.57										1.15														T	2.90	
Weatherford	do.							.12	.66										.86	T												.27	1.91		
Wharton	Colorado							2.18											.55															2.73	
Wills Point	Sabine							1.85											1.01														1.67	4.53	
Zapata	Rio Grande									T									.12															0.12	

a signifies 10.00 inches.

TABLE 3.—Maximum and minimum temperatures at selected stations October, 1909. District No. 8, Texas and Rio Grande Valley.

Date.	Colorado.				New Mexico.														Texas.											
	Garnett.		San Luis.		Agricultural College.		Carlsbad.		Fort Stanton.		Mountainair.		Rosedale.		Roswell.		Santa Fe.		Santa Rosa.		Abilene.		Big Springs.		Brownsville.		Corpus Christi.			
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
1...	76	30	78	30	90	54	89	51	80	51	84	51	77	50	81	53	74	48	88	57	85	56	88	60	86	57	81	62	82	
2...	75	31	80	27	86	54	87	56	74	41	81	47	70	45	83	53	73	46	87	56	85	54	88	56	83	62	81	69	80	
3...	73	31	73	34	84	58	87	49	78	44	79	47	70	45	83	47	70	46	86	50	85	56	87	59	86	60	82	86	86	
4...	66	34	72	33	85	59	84	49	72	37	75	43	71	46	80	47	65	48	82	50	86	59	87	60	86	61	81	86	86	
5...	65	37	70	34	85	55	84	46	72	37	78	39	69	47	80	43	68	48	80	43	87	57	87	60	86	62	82	84	74	
6...	55	34	58	34	85	61	86	49	69	42	71	46	69	45	80	46	62	37	67	49	87	59	85	63	88	65	83	83	76	
7...	55	31	54	32	75	57	84	50	66	37	65	36	63	37	69	41	56	35	71	41	86	59	88	65	87	62	82	83	69	
8...	39	27	40	29	75	45	73	47	59	31	61	31	58	37	61	42	50	31	62	42	75	47	79	57	88	72	85	76	76	
9...	54	18	47	8	65	38	65	39	56	30	53	27	60	28	61	38	49	26	60	33	64	47	66	42	80	72	79	53	58	
10...	66	25	60	24	75	30	83	33	71	31	55	28	64	34	78	29	62	32	77	35	79	47	81	40	79	62	79	79	58	
11...	65	30	61	28	81	35	87	38	72	39	71	37	70	38	78	35	64	33	77	38	81	46	83	43	83	53	79	54	54	
12...	66	27	66	27	78	43	79	36	74	34	73	42	68	40	59	37	83	30	65	36	64	39	73	38	85	53	80	59	59	
13...	72	27	69	30	87	40	91	36	76	31	76	46	74	50	86	33	70	37	85	37	88	47	92	40	86	65	82	86	86	
14...	71	30	71	30	87	40	92	42	80	40	78	44	74	46	86	44	72	43	88	53	91	65	95	50	88	68	86	86	86	
15...	69	24	76	27	88	37	91	45	83	30	72	41	74	44	83	40	71	40	86	38	88	57	96	50	88	68	80	80	67	
16...	68	27	70	30	88	44	93	42	79	31	78	44	73	48	89	37	70	40	88	58	88	64	90	63	85	68	80	74	74	
17...	65	27	74	31	75	57	87	48	70	37	72	38	64	42	80	47	65	39	80	43	84	69	80	65	85	71	81	77	75	
18...	61	27	73	30	67	49	73	48	55	36	55	32	51	38	55	44	49	36	59	38	72	50	76	55	86	73	80	75	67	
19...	60	22	70	26	69	35	67	40	66	35	60	33	60	31	58	43	59	36	68	39	58	48	61	44	85	69	81	67	67	
20...	67	22	72	28	88	35	88	37	74	30	67	40	70	37	80	35	66	36	78	42	77	50	85	50	88	68	80	80	68	
21...	70	19	71	24	85	42	87	42	82	29	76	34	74	42	78	38	70	37	82	39	84	62	89	56	88	67	83	72	72	
22...	70	20	70	22	87	43	91	43	81	31	75	44	74	44	82	39	68	38	79	39	80	60	87	61	87	66	82	71	63	
23...	70	18	66	46	73	50	82	44	65	32	64	33	62	38	64	39	61	29	68	33	69	48	76	50	84	66	85	85	63	
24...	66	18	67	20	85	37	76	43	72	24	69	33	66	35	73	31	64	34	73	32	68	44	72	36	76	56	70	55	55	
25...	66	20	67	20	75	35	72	41	71	31	66	33	63	39	66	39	60	28	70	37	67	47	71	41	77	57	74	55	55	
26...	67	21	70	20	82	33	82	33	77	34	74	37	72	42	76	32	65	36	73	44	79	46	86	46	86	59	81	80	80	
27...	68	20	70	19	83	33	79	37	78	25	78	37	70	40	72	31	67	33	74	30	78	47	80	39	85	61	79	62	62	
28...	65	15	67	19	83	35	81	40	77	25	74	31	68	41	74	35	66	35	79	32	79	52	81	42	84	60	78	72	72	
29...	68	15	67	26	82	36	90	41	75	27	71	38	60	42	84	36	64	35	79	34	78	57	86	56	85	62	78	73	73	
30...	62	15	58	24	79	38	87	45	70	31	69	36	65	42	82	40	59	33	76	43	78	61	81	59	87	68	79	73	73	
31...	60	14	50	22	71	44	80	53	59	36	61	31	60	36	67	47	47	25	66	38	78	55	76	61	87	75	86	76	76	
Means	65.2	24.4	66.4	26.9	80.6	43.6	83.1	43.3	72.0	33.5	70.7	38.0	67.5	40.9	75.0	40.0	63.5	36.5	76.1	41.3	78.9	53.4	82.3	52.0	85.1	64.1	80.6	67.3	67.3	67.3

  

Date.	Texas.																												
	Del Rio.		El Paso.		Fort McIntosh.		Fort Stockton.		Fort Worth.		Galveston.		Hallettsville.		Houston.		Lufkin.		Palestine.		Plainview.		San Antonio.		Seymour.		Taylor.		
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
1...	85	55	89	61	93	60	88	57	89	61	78	68	86	53	85	59	92	48	88	60	84	46	86	55	87	45	86	56	56
2...	85	52	82	56	93	61	86	51	88	61	82	69	86	53	88	59	91	50	88	60	82	46	86	56	89	48	87	55	55
3...	87	60	84	61	94	64	85	55	90	59	86	69	87	53	89	60	92	50	93	63	83	46	88	59	89	50	88	60	60
4...	86	60	84	60	91	64	84	50	90	60	80	67	88	55	90	60	92	49	88	65	83	49	86	60	90	56	89	58	58
5...	87	60	84	59	93	59	83	54	90	63	81	70	89	57	90	58	93	52	91	62	81	46	88	58	90	55	89	58	58
6...	87	68	86	63	93	65	86	59	90	66	85	73	91	66	92	63	97	55	92	68	81	44	87	61	90	54	90	63	63
7...	88	65	76	56	94	68	90	57	90	65	81	73	91	58	92	62	93	55	89	62	77	54	89	64	89	55	89	61	61
8...	91	66	75	52	96	71	86	48	78	53	82	75	92	69	82	65	86	57	77	60	68	48	87	68	80	50	86	58	58
9...	73	48	65	43	93	63	69	40	65	50	78	64	71	55	70	58	73	57	63	52	59	35	73	53	75	44	68	48	48
10...	84	38	74	38	87	48	80	37	77	46	75	62	79	46	79	51	78	40	76	47	74	33	83	43	79	43	82	42	42
11...	88	42	80	43	94	46	87	41	77	51	79	63	82	53	84	57	76	44	76	52	75	40	86	54	72	46	83	52	52
12...	83	52	78	46	93	53	84	38	62	44	75	62	87	57	77	56	78	50	65	46	59	26	79	54	62	36	71	49	49
13...	88	56	84	53	93	63	93	39	85	49	80	74	90	64	84	61	79	48	82	52	89	38	85	57	85	42	85	53	53
14...	95	56	86	53	99	64	95	50	95	64	80	74	90	65	88	66	89	54	87	65	88	45	93	62	92	51	93	64	64
15...	94	53	88	48	100	66	93	44	87	59	73	73	90	64	85	67	90	61	86	63	86	45	91	62	92	46	91	62	62
16...	88	52	87	50	93	65	94	54	87	67	80	75	87	67	84	66	87	62	84	67	89	45	87	68	90	55	86	67	67
17...	86	70	72	56	93	71	90	62	85	70	81	76	86	69	83	69	85	62	85	67	81	60	86	68	87	58	87	68	68
18...	79	62	66	48	92	71	77	48	73	62	80	75	79	65	83	68	85	62	80	63	72	42	85	61	74	50	80	62	62
19...	77	58	69	39	90	65	74	46	62	57	77	68	84	63	85	64	82	67	72	61	57	40	71	61	56	48	69	58	58
20...	85	55	81	44	88	64	90	45	77	53	77	71	84	67	82	64	83	63	79	60	82	41	81	60	78	47	80	55	55
21...	88	61	85	44	93	69	92	44	84	62	77	72	76	6															