LIBRARY
JUL 12 1965
WEATHER BUREAU

U. S. DEPARTMENT OF COMMERCE, WEATHER BUREAU
IN COOPERATION WITH The Geneva Chamber of Commerce
CLIMATOGRAPHY OF THE UNITED STATES NO. 20 — 25

CLIMATOLOGICAL SUMMARY

LATITUDE 40° 32' North
LONGITUDE 97° 36' West
ELEV. (GROUND) 1633 Feet

STATION Geneva, Nebraska

MEANS AND EXTREMES FOR PERIOD 1934-1963

Month	Temperature (°F) Means: Daily maximum	Daily minimum	Monthly	Extremes: Record highest	Year	Record lowest	Year	** Mean degree days	Precipitation Totals (Inches): Mean	Greatest daily	Year	Snow, Sleet: Mean	Maximum monthly	Year	Greatest daily	Year	Mean number of days: Precip. .10 inch or more	Temperatures Max. 90° and above	Max. 32° and below	Min. 32° and below	Min. 0° and below	Month
(a)	30	30	30	30		30		30	30	30		30	30		30		30	30	30	30	30	
Jan.	33.9	12.5	23.2	71	1939	-18	1963+	1265	.75	.87	1944	6.5	16.0	1936	7.0	1960	2	0	13	30	6	Jan.
Feb.	39.0	17.5	28.3	75	1951	-19	1936	1028	1.12	1.28	1951	6.2	18.7	1948	9.0	1945	3	0	9	26	3	Feb.
Mar.	49.0	26.4	37.7	90	1946	-17	1960+	856	1.65	1.11	1946	5.1	25.5	1960	8.0	1948+	4	*	4	22	*	Mar.
Apr.	63.4	38.4	50.9	95	1939	9	1936	423	2.48	1.80	1945	1.4	12.0	1944	10.0	1944	5	*	*	8	0	Apr.
May	73.9	49.8	61.8	102	1934	25	1935	186	3.78	2.06	1949	*	T	1954+	T	1954+	7	1	0	1	0	May
June	83.5	60.2	71.9	109	1946	36	1951+	36	4.52	2.98	1962	0	0		0		7	9	0	0	0	June
July	90.8	65.4	78.1	118	1934	47	1952+	0	2.91	4.35	1946	0	0		0		5	17	0	0	0	July
Aug.	89.1	64.2	76.7	113	1936	39	1950	9	3.62	5.90	1954	0	0		0		5	15	0	0	0	Aug.
Sept.	79.5	54.0	66.8	105	1939	28	1951+	84	2.67	3.45	1950	0	0		0		4	6	0	*	0	Sept.
Oct.	69.0	42.9	56.0	98	1947	17	1942+	326	1.47	1.72	1960	0.2	4.0	1941	4.0	1941	3	*	*	4	0	Oct.
Nov.	50.5	27.5	39.0	83	1945	- 5	1940	780	1.08	1.63	1953	2.7	12.0	1940	8.0	1957+	2	0	2	21	*	Nov.
Dec.	39.1	18.1	28.6	80	1939	-13	1951+	1104	.79	1.80	1941	5.4	19.5	1945	10.0	1940+	2	0	9	29	2	Dec.
Year	63.4	39.7	51.6	118	July 15, 1934	-19	Feb.14, 1936	6097	26.84	5.90	Aug. 1954	27.5	25.5	Mar. 1960	10.0	Apr. 1944+	49	48	37	141	11	Year

(a) Average length of record, years.

T Trace, an amount too small to measure.

** Base 65°F

\+ Also on earlier dates, months, or years.

* Less than one half.

CLIMATE OF GENEVA, NEBRASKA

Geneva, the county seat, is located at the geographical center of Fillmore County in the southeastern quadrant of Nebraska. The land is a portion of an extensive plain and ranges from flat to slightly undulating. A very gentle slope rises from near 1500 feet elevation at the lowest points along the eastern boundary to about 1700 feet in the west. Drainage is accomplished by tributaries of the Blue River system. The flatness of the ground results in numerous small streams that are irregularly defined and do considerable meandering. The rolling portion of the land is confined mainly to the river valleys. The floors of the larger valleys are from 50 to 100 feet below the upland surface. Most of the streams and many shallow ponds are intermittently dry and wet.

The climate is typical of that found near the center of a large continent with relatively warm summers, cold winters and moderate rainfall that is variable in amount. The location of Geneva in the southeastern portion of the state lets it escape some of the extreme variability in the weather that is noted elsewhere. The southeastern section of the state is in a favorable location in respect to the moisture-laden winds from the Gulf of Mexico. In 72 years of record there have been only five years with less than 20 inches of precipitation. Four of these occurred during the drouth years of the 1930's. The moisture content of the air also contributes to a smaller daily range in temperature than if the air were drier. Although it is very doubtful that the many small ponds during wet years contribute much to the rainfall process they do seem to have an effect on keeping the afternoon temperatures slightly lower than in some of the surrounding areas. Although the slope of the ground is very gentle, it is a part of the general rise in elevation that begins at the Missouri River and culminates in the Continental Divide. This extensive rise in elevation has a strong influence on the weather of the region. Low cloudiness, fog and drizzle are likely to develop when easterly winds persist. Conversely, air that has crossed the Rocky Mountains and moved downslope all the way to Geneva brings dry warm conditions.

Normally, about three-fourths of the annual precipitation falls during the growing season (April through September). The seasonable nature of the precipitation combined with the sparsity of real dry years gives rise to successful dry land farming. However, the combination of level land, a good supply of ground water and considerable variability in precipitation is leading to an increase in the use of irrigation. The leading crops are corn, winter wheat, and grain sorghums. About half of the corn and an eighth of the sorghum acreage are under irrigation.

WINTER: Winter is characterized by frequent and rather large temperature changes. The weather generally alternates between the warm periods with westerly to southwesterly winds and the periods when northerly or northeasterly winds bring in very cold air. In about eight years out of ten the lowest temperature reached is between -5° and -19°. The temperature fails to go below zero in about one-third of the Decembers and Februarys and in about one-sixth of the Januarys. Temperatures have reached 70° in every month of the year, but in the majority of Decembers and Februarys the highest is in the upper fifties or sixties and in January the fifties or lower sixties. Precipitation in December and January is generally light, but there is a noticeable increase in February. Most of the winter precipitation falls as snow which is often accompanied by strong winds that pile the snow into drifts. It is not unusual to have one or more periods of rain or freezing rain. The freezing rain occurs when warm moist winds from the Gulf of Mexico reach the area and overrun colder air near the ground.

SPRING: Slow steady snows or rains characterize the early spring precipitation. Snow is common the first part of March, but by the latter half of the month much of the precipitation falls as rain. Some snow falls in about two-thirds of the Aprils and occasionally some falls in May. More and more of the moisture falls as brief showers as the spring advances, and by mid-May most of the precipitation is associated with thundershowers. Sharp temperature changes are frequent in early spring and then gradually decrease in severity and number. The lowest temperature of record during the spring months is -17° on March 4, 1960, and March 11, 1948; the highest 102° on May 30, 1934 and May 28, 1895.

SUMMER: Nearly all of the summer precipitation occurs during showers and thunderstorms. At times the thunderstorms become severe, and may be accompanied by hail and damaging winds. In about nine years out of ten the highest temperature reached falls into the 95° - 109° range. The temperature fails to reach the 100 degree mark in approximately one summer out of ten.

FALL: The warm conditions of summer often persist into early fall. Temperatures above 100° are reported in about one-third of the Septembers. The thunderstorm activity of late August continues into early September, but drops off rapidly as the month progresses. There are many fine days during late September and October with mild daytime readings and clear crisp nights. Cloudiness begins to increase in November as winter approaches. Nighttime temperatures fall into the thirties or lower before the end of September in three years out of four, and into the twenties in nearly all Octobers.

WIND: The prevailing direction is southeast April through June, southwest July through October and northwest November through March. The yearly average speed is 11 to 12 miles per hour. March and April are the windiest months with an average speed a little over 13 miles per hour.

EXTREMES OF RECORD: (71 years of temperature records, 73 years of precipitation records through 1963). Highest 118°, July 15, 1934, lowest -32° February 12, 1899. Greatest daily precipitation 6.75" October 11, 1928. Greatest monthly precipitation 13.78" May 1903. Greatest annual precipitation 42.58" 1915. Least annual precipitation 14.85" 1936.

Average Temperature (°F)

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Ann'l
1934	30.9	29.7	37.8	53.0	69.2	78.2	86.8	78.6	61.4	60.2	44.0	26.0	54.6
1935	27.0	35.0	45.6	48.1	53.9	66.9	83.6	76.8	66.2	51.4	33.8	29.0	51.4
1936	15.5	9.8	43.3	48.2	65.9	76.0	86.6	82.6	69.4	52.9	39.1	30.5	51.7
1937	11.8	22.6	36.0	50.5	63.2	71.8	80.9	83.5	69.2	54.0	37.7	27.4	50.7
1938	28.4	28.6	46.4	52.4	59.5	71.8	79.8	79.2	69.4	63.4	37.7	30.6	53.9
1939	33.9	23.0	40.4	50.2	67.9	73.4	81.5	74.6	72.2	54.7	41.2	35.0	54.0
1940	9.2	25.2	38.3	48.6	60.4	73.4	82.2	74.4	70.2	60.6	34.8	30.2	50.6
1941	26.5	27.3	34.2	53.6	67.0	71.0	78.2	77.4	68.2	54.8	41.0	32.7	52.7
1942	25.2	26.7	38.9	53.4	58.0	70.5	78.7	74.2	62.8	55.0	40.8	25.1	50.8
1943	19.3	33.1	32.7	52.2	56.6	71.3	77.2	79.1	64.2	54.2	37.2	28.3	50.4
1944	31.8	29.8	28.8	43.0	64.4	71.6	75.8	75.4	64.3	55.0	39.0	26.4	50.4
1945	27.4	30.0	44.9	47.4	55.8	63.4	74.6	75.0	65.1	53.3	39.6	21.4	49.8
1946	28.0	35.7	49.1	56.4	56.8	74.0	75.8	72.6	65.0	54.6	38.8	32.7	53.3
1947	29.6	23.8	35.0	48.5	57.8	67.4	73.7	81.8	69.8	64.1	34.6	28.5	51.2
1948	20.4	25.2	31.6	56.6	61.5	70.6	75.8	75.6	69.8	53.6	38.2	25.9	50.4
1949	15.3	22.0	36.0	52.1	64.2	71.7	76.8	73.7	61.9	55.1	45.6	29.5	50.3
1950	22.1	30.7	35.4	47.0	60.5	71.5	71.3	70.2	64.4	57.8	35.8	27.8	49.6
1951	22.4	32.0	34.0	47.1	61.9	66.1	73.5	73.8	62.1	52.1	34.4	22.2	48.5
1952	25.8	34.9	33.1	49.4	61.2	78.2	77.7	74.5	69.4	52.6	39.1	26.6	51.9
1953	27.1	35.0	43.3	46.8	60.3	76.9	77.7	76.6	69.3	59.4	40.8	32.0	53.8
1954	22.4	41.4	36.5	55.6	57.7	75.4	83.6	76.5	71.0	52.5	44.9	32.9	54.2
1955	24.8	21.8	37.4	59.0	66.2	68.5	82.0	81.1	69.9	55.7	32.9	22.7	51.8
1956	22.1	26.9	39.2	49.0	65.6	75.5	77.0	76.9	68.6	61.2	39.6	33.4	52.9
1957	18.7	33.4	39.1	49.6	59.8	70.1	80.4	76.9	63.1	52.8	38.0	36.2	51.5
1958	27.6	23.6	32.7	50.1	63.8	70.2	72.9	75.6	67.9	56.9	43.3	28.5	51.1
1959	22.1	25.6	40.4	51.5	62.5	73.4	74.1	80.7	66.1	50.5	35.2	35.4	51.5
1960	20.4	21.5	25.4	54.2	61.5	69.8	74.3	75.4	68.1	56.8	40.9	29.6	49.8
1961	26.9	34.1	40.4	47.7	58.9	70.9	77.1	76.5	62.9	54.8	37.4	20.9	50.7
1962	20.0	28.0	32.7	51.2	69.5	70.8	74.8	75.7	63.5	56.6	41.1	29.5	51.1
1963	14.4	31.2	43.2	54.5	63.5	75.9	78.8	74.9	67.9	62.8	44.3	21.8	52.8

Total Precipitation (Inches)

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Ann'l
1934	.32	1.61	.81	.42	.63	2.39	.14	3.98	1.88	1.97	1.83	.71	16.69
1935	.16	1.25	.59	.68	7.73	5.84	.92	2.99	4.78	1.88	1.62	.33	28.77
1936	1.64	.88	.18	.80	2.49	1.75	1.07	2.53	2.76	.04	.00	.71	14.85
1937	.63	.50	2.04	1.67	3.28	1.74	3.77	.27	1.76	2.35	.05	.07	18.13
1938	1.00	1.45	1.75	3.44	7.78	3.06	5.18	2.10	3.81	T	.88	.11	30.56
1939	.44	1.00	1.62	1.78	1.86	3.52	1.71	3.66	.10	.00	.02	.75	16.46
1940	.97	.87	1.32	3.06	1.81	1.06	1.92	3.17	.52	2.50	3.24	1.34	21.78
1941	1.57	.77	.62	5.97	3.72	5.12	2.46	2.17	2.95	1.85	1.16	2.59	30.95
1942	.30	.64	1.88	1.93	6.24	5.02	.83	6.82	6.00	.77	.56	1.74	31.73
1943	.12	1.08	.72	2.88	2.48	5.64	3.85	1.66	.96	1.16	.52	.19	21.26
1944	1.13	.98	2.60	5.84	5.73	6.42	1.31	9.59	1.45	1.75	1.99	.42	39.21
1945	.61	1.35	.81	5.21	4.00	3.70	2.16	1.19	2.69	.51	.04	2.76	25.03
1946	.61	.13	2.14	.58	2.77	4.86	5.40	2.80	3.96	3.48	3.32	.09	30.14
1947	.89	.43	.76	5.41	2.92	10.78	2.74	2.30	.55	1.25	1.22	1.43	30.68
1948	.68	3.06	1.66	1.11	3.19	4.47	2.51	2.97	2.36	1.24	3.38	1.33	27.96
1949	2.17	.92	1.65	1.92	6.71	8.42	3.16	8.64	3.79	1.85	T	.44	39.67
1950	.20	.93	.72	1.49	6.16	1.11	5.67	4.22	4.53	2.98	.65	.20	28.86
1951	.79	3.32	2.21	3.74		8.79	3.78	5.85	4.08	2.44	.52	.74	
1952	.40	1.61	4.29	4.61	2.79	4.77	4.29	3.77	.21	.00	1.32	1.51	29.57
1953	.35	E .55	1.23	3.36	2.04	4.41	2.12	.81	1.26	.88	3.09	1.88	E21.98
1954	.13	E1.22	.53	2.35	2.40	3.51	.31	9.27	.81	2.20	.00	.42	E23.15
1955	1.36	1.12	.20	.84	1.15	6.09	1.82	.77	3.61	.65	.12	.46	18.19
1956	1.26	.41	.10	2.19	2.16	4.31	5.12	2.25	2.32	.98	.78	.12	22.00
1957	.46	.24	2.77	1.99	4.49	6.63	.90	5.32	1.01	1.65	.95	.45	26.86
1958	.54	1.76	E4.48	3.04	3.54	1.65	7.40	1.74	4.26	.06	.90	.11	E29.48
1959	.87	.96	3.37	1.79	7.64	2.23	1.31	4.06	3.71	E2.42	.97	.59	E29.92
1960	1.45	2.30	2.27	2.44	4.53	7.18	6.64	3.46	2.17	2.61	.02	.30	35.37
1961	.18	.95	3.06	2.10	5.35	2.60	1.63	1.26	6.01	1.08	2.54	1.21	27.97
1962	.50	1.25	1.42	.62	3.21	4.39	3.83	4.79	1.77	2.93	.53	.52	25.76
1963	.65	.11	1.68	1.11	2.22	4.20	3.43	4.20	3.94	.72	.10	.20	22.56

CLIMATE OF GENEVA, NEBRASKA (Continued)

FREEZING TEMPERATURES: The average date of the last 32° temperature in the spring is April 29, and the first in the fall is October 13. The average dates of some other temperature thresholds are: 28° April 18 - October 24; 24° April 5 - October 31; 16° March 20 - November 19.

FREEZE PROBABILITIES: There is a 90% chance that the last 32° or lower temperature in the spring will occur after April 13, 70% that it will occur after April 23, 30% after May 6, and only 10% after May 15. In the fall there is a 10% chance that the first 32° or lower temperature will occur before September 28, 30% before October 7, 70% before October 19, and 90% before October 27. The latest date of a 32° temperature in the spring (since 1921) is May 29, 1947. The earliest 32° reading in the fall (since 1921) is September 19, 1938.

PRECIPITATION PROBABILITIES: There is only a 5% chance of receiving .60 inch in a weeks time in January. The likelihood of receiving .60 inch in a weeks time increases to 10% by the first of February; 20% during the fourth week of March; 30% by the second week of April; 40% during the last part of April; 50% by third week of May and reaches a peak of 54% the second and third weeks of June. After this peak is reached the probability falls off gradually to a low of 37% during the third week of July. The chance improves again to a secondary peak of 47% by August 10th before it starts the autumn decline that carries the probability to 40% by September 7th; 30% by September 20th; 20% October 18th; 10% by December 10th, and back to near 5% by the years end. Based on precipitation records that date back to 1890, one year in ten has:

Equal to or:	Less Than	More Than	Equal to or:	Less Than	More Than
January	.17	1.45	July	.76	6.89
February	.24	1.84	August	.81	6.75
March	.19	3.06	September	.52	5.10
April	.60	5.21	October	.06	3.82
May	1.49	7.44	November	T	3.13
June	1.62	7.91	December	.08	2.00
			Annual	20.48	36.56

STATION HISTORY

Precipitation observations were begun in 1890 and temperature readings were added in 1893.

The entire period of record has been supplied by three observers. Mr. R. B. Spear opened the station and served through June 1892. Mr. F. M. Flory took over the observations in July 1893 and continued furnishing records until Mr. Tyler Edgecombe took over in March 1919. Mr. Edgecombe passed his 45th year of service early in 1964 and it appears he will add many more years of record.