

Miscellaneous Report 68
June 1966

Fifty Years of Weather in North-Central Minnesota

R. B. Aakre

Agricultural Experiment Station
University of Minnesota

TEMPERATURES

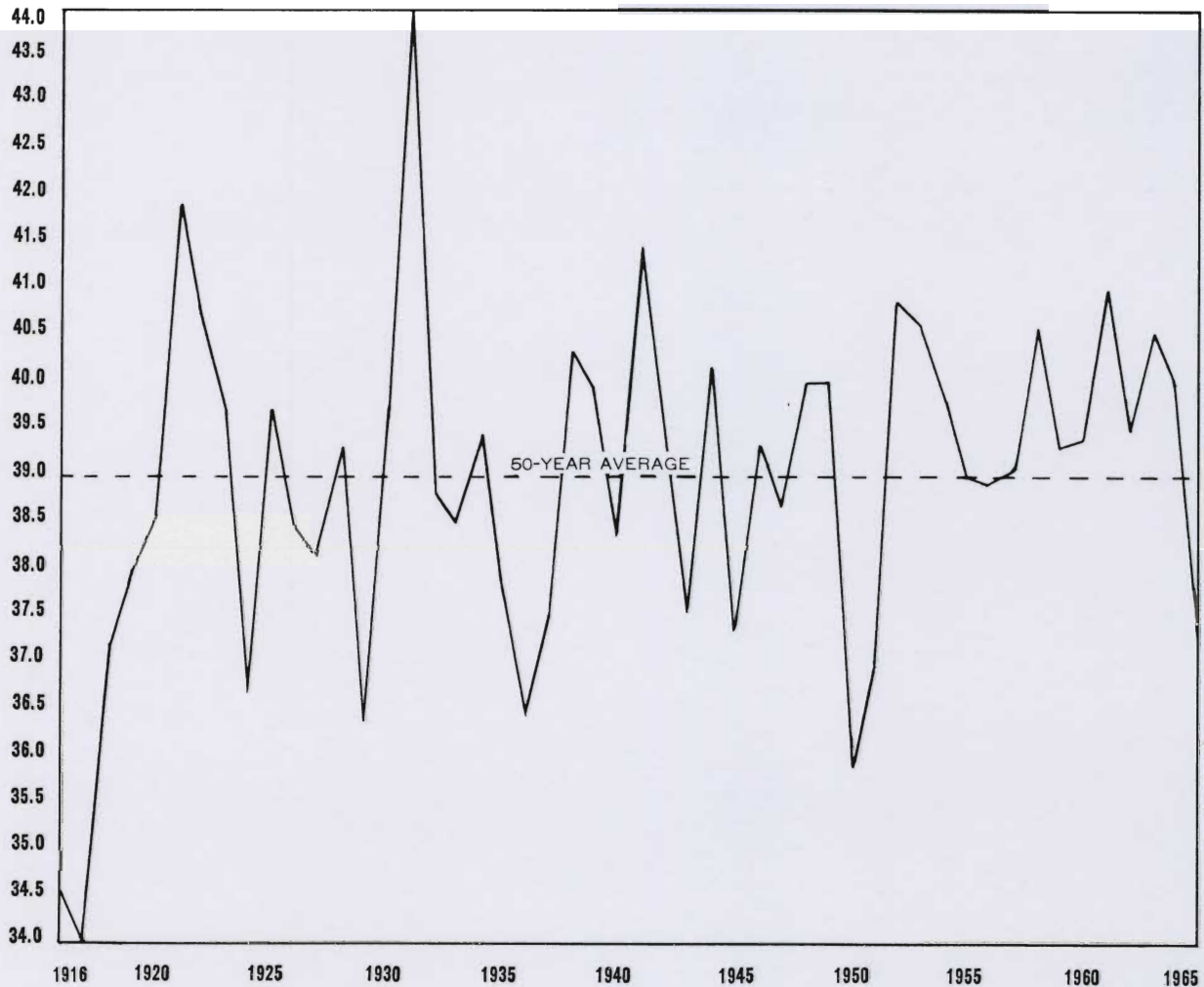


Figure 1. Average annual temperature, °F., 1916-65.

TEMPERATURE

Table 1 shows the average monthly and annual temperatures for the 50-year period 1916-65. The table is divided into 10-year periods, with an average for each month and each year.

The 50-year average for each month is shown at the bottom of the table. The average annual temperature over the 50 years was 39.0 degrees; it ranged

from 34.0 degrees in 1917 to 43.9 degrees in 1931. Figure 1 shows these extremes graphically, with temperature trends throughout the 50-year period.

The greatest temperature extremes occurred early in the period, with more stable temperatures during the middle of the period and an apparent warming trend later. During the 50-year period, 27 years were above and 23 years were below the average annual temperature of 39.0 degrees.

Table 1. Average temperatures, °F., 1916-65

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Mean
1916	-2.7	3.3	18.0	38.1	49.8	58.6	73.0	65.9	53.5	40.7	26.6	2.3	35.6
1917	-3.1	-3.8	21.6	37.2	49.8	58.6	70.0	61.5	53.3	31.4	31.5	- .4	34.0
1918	-3.9	6.7	28.7	35.2	48.9	60.8	65.3	63.9	46.9	42.8	31.3	20.1	37.2
1919	14.2	10.4	22.9	40.0	53.5	67.0	67.0	63.5	56.5	38.9	19.2	2.7	38.0
1920	.9	10.2	25.0	30.5	53.1	62.7	64.6	64.2	59.8	49.3	26.1	16.9	38.6
1921	13.5	18.8	25.6	44.4	55.4	67.4	73.3	65.8	58.4	46.2	21.3	12.9	41.9
1922	6.7	5.5	28.1	40.7	59.5	64.8	66.0	67.8	58.6	46.6	33.9	9.7	40.7
1923	9.7	4.3	15.0	39.0	53.8	67.2	70.6	61.2	56.1	42.8	34.8	22.2	39.7
1924	- .7	17.5	26.3	38.3	44.2	58.9	64.7	61.8	52.5	49.4	25.8	1.8	36.7
1925	6.6	14.3	29.4	47.1	51.9	62.0	66.1	68.2	57.4	33.5	28.1	11.2	39.7
10-year average	4.1	8.7	24.1	39.1	52.0	62.8	68.1	64.4	55.3	42.2	27.9	9.9	38.2
1926	10.9	17.2	21.0	39.7	56.8	59.0	68.1	65.6	51.6	42.0	20.6	8.0	38.4
1927	6.1	14.9	29.6	41.2	49.2	61.6	65.8	60.9	58.7	46.2	22.3	2.2	38.2
1928	7.4	12.6	22.8	34.5	55.6	58.4	66.6	64.4	52.7	44.4	32.3	19.7	39.3
1929	-6.6	4.1	27.7	40.5	47.9	59.4	67.1	63.6	53.3	44.3	23.5	10.7	36.3
1930	-1.8	17.9	24.4	41.1	52.5	62.0	67.8	67.4	55.3	42.3	30.0	17.3	39.7
1931	16.4	23.8	25.4	42.8	51.6	65.4	68.3	63.5	61.2	50.1	34.5	23.6	43.9
1932	14.1	11.9	15.9	40.7	54.2	65.6	67.3	65.5	54.8	40.6	24.8	10.3	38.8
1933	13.7	4.4	22.4	38.7	54.2	68.5	69.1	63.4	60.2	39.0	22.2	6.2	38.5
1934	14.1	9.1	19.6	39.6	58.8	63.1	65.6	62.1	53.0	47.2	33.4	7.7	39.4
1935	1.7	19.1	24.5	36.8	49.1	58.0	71.6	64.9	53.3	43.2	19.6	12.4	37.9
10-year average	7.6	13.5	23.2	39.6	53.0	62.1	67.7	64.1	55.4	43.9	26.3	11.8	39.0
1936	-2.5	-6.2	23.4	33.2	57.0	60.1	72.5	66.3	58.0	38.5	22.2	13.9	36.4
1937	-2.6	8.1	19.5	37.0	54.6	61.3	68.4	70.4	56.1	39.7	26.7	10.6	37.5
1938	5.8	15.9	33.3	39.3	50.7	62.3	66.6	69.0	55.7	48.6	24.1	12.7	40.3
1939	11.1	2.2	20.2	36.9	56.0	62.4	67.9	66.2	56.8	42.2	32.7	23.9	39.9
1940	3.8	14.9	17.7	37.7	51.6	60.0	67.4	63.1	59.2	47.1	23.0	15.8	38.4
1941	10.0	11.4	22.3	47.4	57.7	64.2	69.1	64.2	57.3	45.4	30.0	19.3	41.4
1942	15.0	12.4	30.0	47.2	50.0	60.1	64.2	64.7	52.0	43.9	25.5	7.8	39.4
1943	1.3	12.1	15.9	38.9	50.0	62.8	69.4	64.7	52.2	44.8	23.5	15.9	37.6
1944	19.5	10.9	20.6	37.5	54.7	62.2	66.0	65.0	55.0	45.3	32.4	13.0	40.2
1945	7.2	11.6	33.0	36.5	45.5	56.3	64.4	64.4	53.6	42.3	25.2	9.2	37.4
10-year average	6.9	9.3	23.6	39.2	52.8	61.2	67.6	65.8	55.6	43.8	26.5	14.2	38.9
1946	8.5	8.1	35.7	43.7	50.0	61.1	66.6	62.1	54.2	43.3	27.1	11.6	39.3
1947	12.4	7.7	21.1	36.3	47.8	57.9	68.3	70.4	54.8	52.4	22.9	12.4	38.7
1948	3.7	8.5	23.9	43.7	53.1	61.2	67.9	67.8	61.7	46.3	29.7	12.8	40.0
1949	10.5	6.7	21.6	43.8	54.2	64.5	67.4	68.2	53.5	45.7	31.8	11.8	40.0
1950	-1.2	11.6	18.3	30.8	50.0	61.2	64.7	60.7	57.6	46.9	23.5	7.1	35.9
1951	4.6	12.4	19.5	37.9	57.2	59.5	66.9	60.8	52.3	43.0	21.9	9.6	37.1
1952	6.7	20.7	22.2	45.4	52.7	65.1	67.1	62.6	56.8	39.8	30.8	20.1	40.8
1953	10.5	12.9	26.5	37.6	51.0	62.6	65.3	66.6	54.9	51.1	33.9	14.3	40.6
1954	1.6	25.1	21.2	38.3	47.7	63.2	66.8	63.7	54.9	43.3	33.4	19.7	39.9
1955	8.5	8.7	16.4	47.6	57.5	63.2	71.0	69.0	54.6	45.4	20.3	5.8	39.0
10-year average	6.6	12.2	22.6	40.5	52.1	61.9	67.2	65.2	55.5	45.7	27.5	12.5	39.1
1956	11.0	9.2	20.2	35.8	51.0	64.6	62.3	62.7	52.0	51.0	31.0	15.2	38.9
1957	1.3	12.1	23.3	40.2	52.9	60.7	71.0	64.1	53.6	44.3	29.4	17.7	39.1
1958	16.1	22.5	29.2	43.7	53.6	55.9	64.3	64.0	56.3	46.4	29.8	5.8	40.6
1959	1.6	10.2	26.7	41.1	54.7	63.6	67.3	67.8	56.1	40.6	19.0	23.2	39.3
1960	9.7	13.4	17.5	40.5	52.8	59.9	66.4	67.2	56.6	45.7	31.1	11.6	39.4
1961	7.0	21.7	33.3	35.6	51.3	64.5	66.5	67.9	55.2	46.7	28.8	13.2	41.0
1962	3.4	9.7	27.3	38.1	55.2	61.2	63.4	64.9	54.0	47.9	33.6	15.2	39.5
1963	.5	7.9	29.9	43.1	51.2	64.6	68.8	64.5	58.4	55.4	34.2	7.6	40.5
1964	15.9	16.3	21.5	41.7	57.4	61.5	68.3	61.0	53.8	44.9	30.5	7.6	40.0
1965	3.7	6.4	15.4	40.0	54.5	61.2	64.7	63.3	48.1	45.9	27.5	21.9	37.7
10-year average	7.0	12.9	24.4	40.0	53.5	61.8	66.3	64.7	54.4	46.9	29.5	13.9	39.6
50-year average	6.4	11.3	23.6	39.7	52.7	62.0	67.4	64.8	55.2	44.5	27.5	12.5	39.0

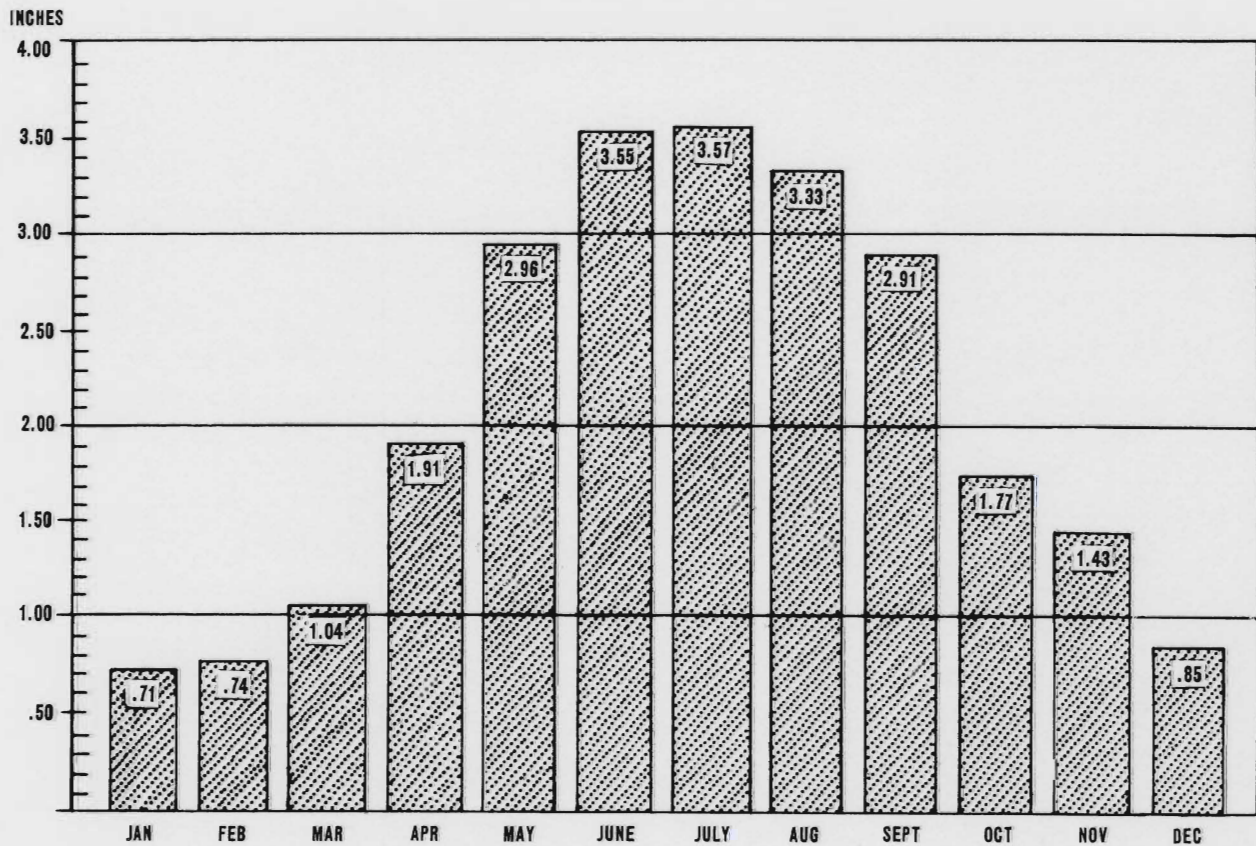


Figure 3. Average monthly precipitation, inches, 1916-65.

PRECIPITATION

Table 2 shows monthly and annual precipitation from 1916 through 1965. Average annual precipitation during the 50 years was 24.76 inches. Two-thirds of the precipitation fell during five months—May through September. The average annual precipitation ranged from a low of 15.03 inches in 1917 to a

high of 36.21 inches in 1953. Although there was no correlation between yearly precipitation and yearly temperature, both temperature and precipitation were above the 50-year average on 27 years and below average 23 years. During the first 25 years average annual precipitation was 23.08 inches, while during the last 25 years precipitation averaged 26.40 inches, a 3.32-inch increase.

Table 2. Inches of precipitation, monthly and annual, 1916-65

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1916	1.66	0.24	1.38	3.52	3.80	3.87	1.89	4.22	2.87	1.80	0.16	0.76	26.17
1917	0.22	0.91	1.00	1.40	0.12	1.45	2.27	2.48	1.59	2.72	0.18	0.69	15.03
1918	0.23	0.18	0.12	2.10	2.75	0.78	2.24	4.29	0.82	2.92	2.18	2.17	20.78
1919	0.10	1.40	0.41	0.91	2.05	6.29	4.25	4.67	1.50	1.63	2.43	0.46	26.10
1920	0.83	0.39	0.89	0.95	1.69	5.46	4.34	2.07	3.10	1.57	0.52	1.36	23.17
1921	0.54	0.81	0.87	1.81	4.92	5.25	3.56	1.81	3.55	0.38	0.61	1.31	25.42
1922	0.35	3.72	0.97	1.22	2.66	4.20	0.92	1.89	3.28	0.95	4.68	1.42	26.26
1923	1.12	0.29	0.66	1.84	1.38	3.19	4.18	1.89	0.75	1.11	0.69	1.20	18.30
1924	0.43	0.51	0.36	2.79	2.03	3.11	4.29	3.81	3.23	2.22	0.38	0.11	23.27
1925	0.32	0.89	1.10	1.70	0.63	4.11	2.37	3.38	5.46	1.02	0.76	0.46	22.20
10-year average	0.58	0.93	0.78	1.82	2.20	3.77	3.03	3.05	2.62	1.63	1.26	0.99	22.67
1926	0.40	0.73	1.55	0.05	1.34	2.89	4.66	2.27	3.80	3.81	1.10	0.45	23.05
1927	0.68	1.39	1.13	1.77	3.57	2.17	2.72	4.41	1.17	1.45	1.64	1.08	23.18
1928	0.43	0.27	0.96	2.97	0.73	4.40	5.04	6.64	4.32	2.48	0.26	0.57	29.07
1929	1.23	0.13	0.94	0.67	0.90	2.16	0.74	2.04	3.45	1.94	0.16	0.74	15.10
1930	0.35	1.32	0.51	0.57	3.91	3.34	0.90	0.22	3.57	1.56	2.28	0.18	18.71
1931	0.19	0.09	1.21	0.54	2.41	5.78	2.11	1.65	1.71	1.49	2.60	0.48	20.26
1932	0.64	0.56	0.71	1.19	4.39	3.97	4.71	5.47	0.73	1.94	3.29	0.39	27.99
1933	0.80	0.68	0.49	1.98	3.92	0.75	0.79	2.08	2.41	3.47	1.21	1.72	20.30
1934	0.52	0.31	0.76	1.30	0.83	4.11	4.24	1.72	1.57	2.41	0.99	0.96	19.72
1935	1.54	0.14	1.60	2.07	1.94	2.32	5.59	3.44	1.37	3.03	1.35	0.50	24.89
10-year average	0.68	0.56	0.99	1.31	2.39	3.19	3.15	2.99	2.41	2.36	1.49	0.71	22.23
1936	0.72	1.17	1.24	1.19	2.91	1.79	0.61	1.95	2.36	0.54	1.45	2.59	18.52
1937	1.43	1.51	0.30	3.32	2.91	2.52	3.51	2.47	5.93	0.63	1.16	0.51	26.20
1938	0.63	0.61	1.30	3.78	5.88	1.97	1.17	2.50	2.25	0.65	5.38	0.62	26.74
1939	1.89	1.76	1.03	0.75	1.90	5.79	0.75	3.39	1.07	2.54	0.07	0.37	21.31
1940	0.35	0.99	1.70	4.06	2.05	2.02	4.23	2.34	0.77	3.01	3.62	0.31	25.45
1941	1.15	0.31	1.06	2.67	2.53	4.94	2.88	5.64	5.32	2.61	0.16	0.48	29.75
1942	0.32	0.29	1.47	1.66	4.42	2.58	2.40	5.02	2.50	2.34	0.93	1.00	24.93
1943	0.71	1.01	1.42	1.57	4.50	5.41	3.63	7.60	2.48	1.71	1.18	0.16	31.38
1944	0.39	0.27	1.02	0.83	5.77	7.69	4.90	5.45	2.46	0.24	1.92	0.38	31.32
1945	0.96	1.28	1.32	2.55	1.15	2.76	4.72	3.41	2.85	1.25	1.22	0.95	24.42
10-year average	0.86	0.92	1.19	2.24	3.40	3.75	2.88	3.98	2.80	1.55	1.71	0.74	26.00
1946	0.77	0.59	1.06	1.53	2.80	3.82	3.41	2.05	3.28	4.97	1.55	1.34	27.17
1947	0.42	0.44	0.62	2.55	2.73	3.57	1.82	4.15	6.50	1.34	1.99	0.61	26.74
1948	1.03	0.79	1.23	3.24	1.48	2.84	3.66	2.99	0.78	0.67	1.34	1.59	21.64
1949	1.12	0.69	0.53	0.15	4.56	5.48	7.96	4.06	2.11	4.64	1.42	0.74	33.46
1950	2.13	0.20	1.98	4.05	4.81	2.94	4.12	1.18	3.75	2.18	1.04	0.94	29.32
1951	0.47	1.70	2.22	2.23	1.89	3.54	1.91	4.29	4.59	2.39	0.83	1.72	27.78
1952	0.87	0.05	1.28	0.73	0.39	6.10	6.14	5.33	0.66	0.15	1.31	0.23	23.24
1953	1.04	0.49	1.19	2.78	5.37	3.74	9.04	5.69	3.54	0.53	1.70	1.10	36.21
1954	1.23	1.36	1.47	2.57	3.05	0.90	2.74	1.72	2.60	1.17	0.94	0.16	19.91
1955	0.74	1.54	1.44	0.93	6.76	2.53	6.57	0.85	3.36	2.07	1.75	0.85	29.39
10-year average	0.98	0.79	1.30	2.08	3.38	3.55	4.74	3.23	3.12	2.01	1.39	0.93	27.49
1956	0.81	0.37	1.07	1.58	2.08	0.60	2.25	5.59	1.57	2.78	1.16	1.13	20.99
1957	0.36	1.07	1.22	2.88	2.22	5.99	5.24	1.59	2.72	1.48	1.00	0.36	26.13
1958	0.63	0.12	0.30	0.64	1.76	4.06	5.21	3.22	2.58	1.08	2.54	0.76	22.90
1959	0.29	0.40	0.34	0.63	6.22	3.62	3.54	4.85	4.13	1.62	0.98	0.82	27.44
1960	0.67	0.09	0.15	3.29	3.78	2.66	4.89	2.41	1.86	1.03	0.92	0.79	22.54
1961	0.19	0.31	0.36	2.93	2.57	0.50	3.60	1.22	5.51	1.85	0.69	1.04	20.77
1962	0.65	1.04	0.43	1.92	4.98	2.66	5.10	2.49	4.83	0.49	0.23	0.69	25.51
1963	0.07	0.51	2.05	2.58	3.72	4.52	5.05	2.37	1.81	0.87	1.34	0.44	25.33
1964	0.40	0.35	0.75	3.30	3.67	4.78	3.73	7.41	3.51	0.44	1.03	1.02	30.39
1965	0.47	0.50	2.80	1.33	3.42	5.38	1.83	2.93	7.53	1.45	2.97	1.76	32.37
10-year average	0.45	0.48	0.95	2.11	3.44	3.48	4.04	3.41	3.61	1.31	1.29	0.88	25.44
50-year average	0.71	0.74	1.04	1.91	2.96	3.55	3.57	3.33	2.91	1.77	1.43	0.85	24.76

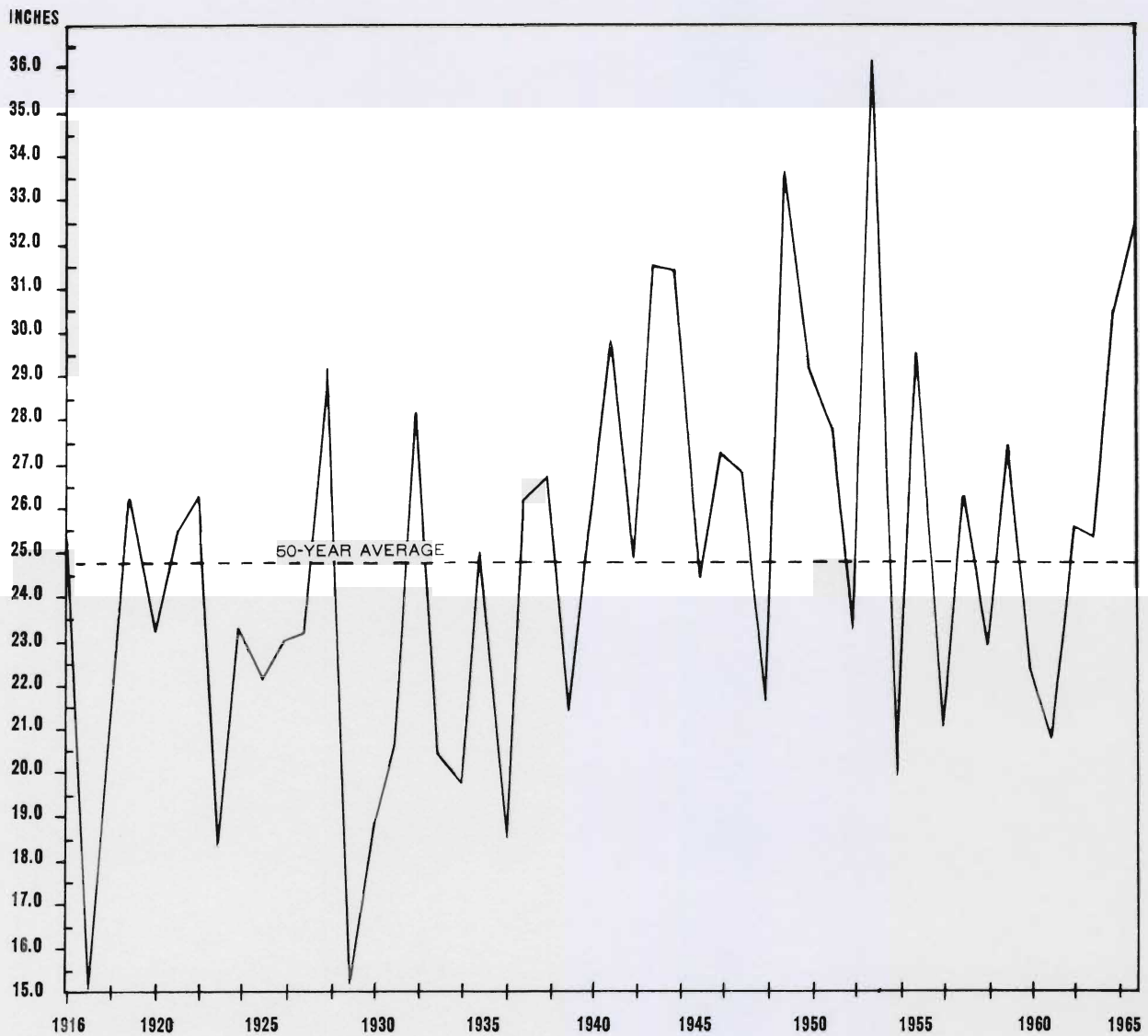


Figure 3. Average annual precipitation, inches, 1916-65.

Table 3 shows the number of rainy days in June, July, and August with .01 inch or more and .10 inch or more, and the total precipitation for each month from 1916 through 1965.

The information in this table can be applied to an important lesson in forage harvesting. Many farmers have considered June a "wet month" and thus avoided early forage harvest, supposedly waiting for

"drier weather." But table 3 shows that of June, July, or August, neither month has any particular advantage as a "dry month" for forage harvest, nor is there any particular pattern in the number of rainy days or amount of precipitation per month. The 50-year average rainfall for each of the three months was about equal: 3.54 inches for June, 3.57 inches for July, and 3.33 inches for August.

Table 3. Inches of precipitation in June, July, and August, 1916-65

Year	Number of rainy days*			No. of days with .10 or more inches precipitation			Inches of precipitation		
	June	July	August	June	July	August	June	July	August
1916	17	11	18	10	3	9	3.87	1.89	4.21
1917	14	14	16	6	8	5	1.45	2.27	2.48
1918	7	15	9	5	8	7	.78	2.24	4.29
1919	15	11	14	10	8	9	6.29	4.25	4.67
1920	14	8	5	10	8	3	5.46	4.34	2.07
1921	9	11	8	7	7	5	5.25	3.56	1.81
1922	12	12	9	10	2	5	4.20	.92	1.89
1923	10	11	13	8	5	4	3.19	4.18	1.89
1924	12	10	11	7	7	6	3.11	4.29	3.81
1925	17	12	9	13	7	7	4.11	2.37	3.38
1926	13	9	10	6	6	3	2.89	4.66	2.27
1927	13	10	9	8	6	6	2.17	2.72	4.41
1928	13	13	10	10	9	8	4.40	5.04	6.64
1929	10	6	7	5	1	6	2.16	.74	2.04
1930	17	8	2	9	3	1	3.34	.90	.22
1931	14	12	8	8	5	7	5.78	2.11	1.65
1932	11	14	12	8	8	8	3.97	4.71	5.47
1933	8	7	5	4	3	3	.75	.79	2.08
1934	10	6	8	10	6	4	4.11	4.24	1.72
1935	11	14	13	7	8	7	2.32	5.59	3.44
1936	10	5	8	5	2	5	1.79	.61	1.95
1937	9	11	8	5	8	5	2.52	3.51	2.47
1938	11	6	9	3	6	5	1.97	1.17	2.50
1939	13	4	12	12	2	7	5.79	.75	3.39
1940	15	10	12	5	9	7	2.02	4.23	2.34
1941	12	7	12	10	5	5	4.94	2.88	5.64
1942	9	11	13	7	8	11	2.58	2.40	5.02
1943	14	7	13	11	5	8	5.41	3.63	7.60
1944	15	10	14	8	8	9	7.69	4.90	5.45
1945	12	11	9	9	7	4	2.76	4.72	3.41
1946	12	8	11	10	4	4	3.82	3.41	2.05
1947	8	5	10	8	5	8	3.57	1.52	4.15
1948	11	14	13	3	6	8	2.84	3.66	2.99
1949	11	15	12	7	12	6	5.48	7.96	4.06
1950	12	16	10	5	10	3	2.94	4.12	1.18
1951	18	5	20	10	3	12	3.54	1.91	4.29
1952	13	15	14	9	11	7	6.10	6.14	5.33
1953	15	11	10	8	8	7	3.74	9.04	5.69
1954	10	7	8	5	4	6	.90	2.74	1.72
1955	8	11	8	6	10	4	2.53	6.57	.85
1956	8	12	15	2	8	9	.60	2.25	5.59
1957	18	9	6	8	7	3	5.99	5.24	1.59
1958	12	16	11	7	7	8	4.06	5.21	3.22
1959	15	12	12	10	6	7	3.62	3.54	4.85
1960	11	6	11	7	6	7	2.66	4.89	2.41
1961	5	15	7	2	10	3	.50	3.60	1.22
1962	10	18	7	5	13	4	2.66	5.10	2.49
1963	14	11	12	12	8	8	4.52	5.05	2.37
1964	12	9	18	9	6	8	4.78	3.73	7.41
1965	11	11	12	7	7	9	5.38	1.83	2.93
50-year average	12.0	10.4	10.6	7.5	6.6	6.2	3.54	3.57	3.33

*Rainy day: .01 precipitation



A cold day below Prairie River dam, Grand Rapids.

MINIMUM TEMPERATURES

The average minimum temperatures recorded in table 4 show January 1929 as the coldest month, with an average minimum temperature of 19.7 degrees below zero. January 1944 had the highest minimum, 9.0 degrees above zero.

Warmest minimum temperatures occurred in July,

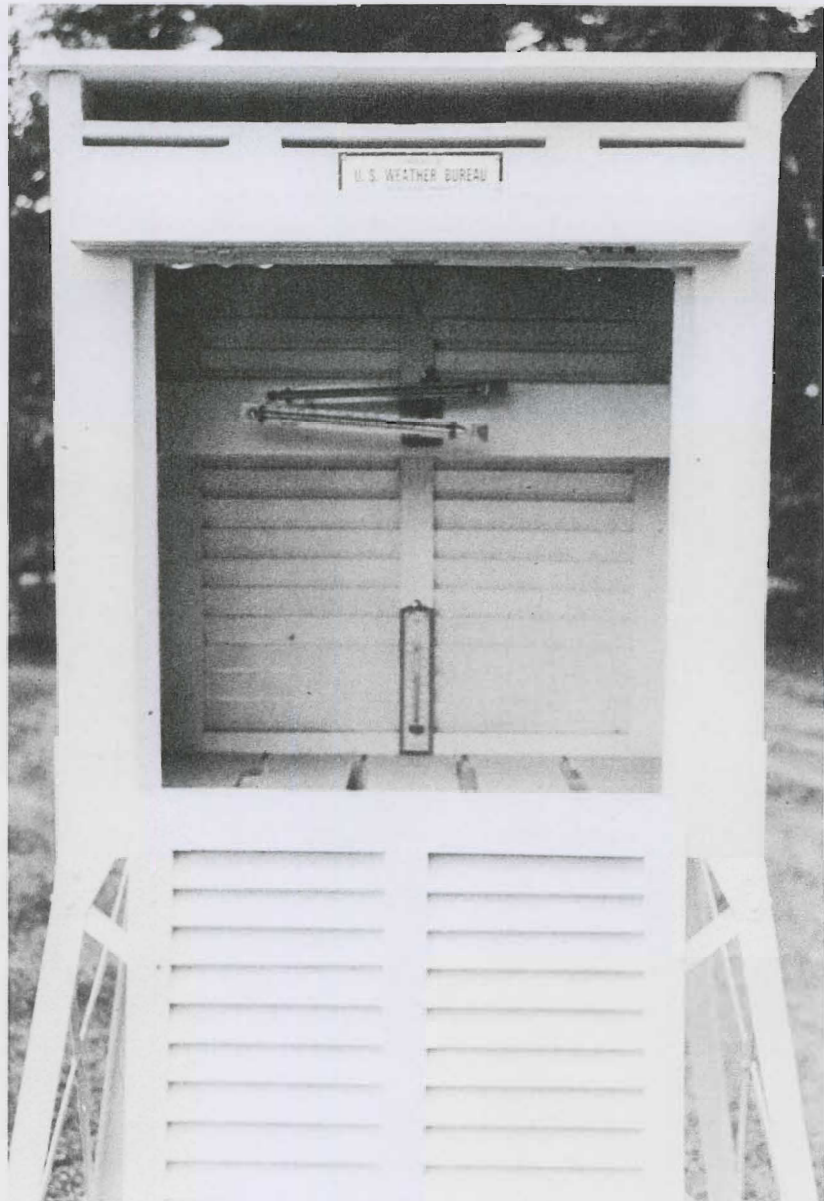
with a range of 10.6 degrees, from 49.4 degrees in 1956 to 60.0 degrees in 1957.

The 50-year average minimum for January was 5.2 degrees below zero, and for July 54.0 degrees. On a 12-month basis the average minimum was 26.9 degrees, ranging from a low of 21.1 degrees in 1917 to a high of 32.2 degrees in 1931.

Table 4. Monthly and annual average minimum temperatures, °F., 1916-65

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Mean
1916	-17.1	-12.7	2.1	26.2	38.3	45.8	58.6	52.9	41.3	30.6	16.6	-9.5	22.8
1917	-18.7	-17.9	7.6	25.6	33.2	43.9	55.7	48.0	41.0	22.5	22.1	-9.5	21.1
1918	-15.9	-7.9	17.4	19.0	36.4	46.7	50.8	49.6	30.1	28.1	21.4	11.9	24.0
1919	.4	-3.3	7.5	27.1	36.1	53.5	50.8	49.4	43.3	28.0	9.9	-7.6	24.6
1920	-10.4	-1.4	11.6	18.2	38.5	49.3	51.3	48.1	47.0	37.5	18.7	8.3	26.4
1921	1.5	4.7	12.6	30.5	41.2	53.4	59.1	50.6	45.5	33.5	12.5	1.4	28.9
1922	-6.1	-9.9	13.9	28.4	44.2	49.6	52.0	51.9	43.5	33.4	27.6	-1.6	27.2
1923	-4.0	-11.2	-1.5	26.3	36.6	49.6	55.4	45.0	39.9	29.6	24.3	11.4	25.1
1924	-14.5	3.2	12.5	25.3	31.0	44.4	49.5	48.4	39.4	34.5	15.7	-9.5	23.3
1925	-6.1	1.8	18.7	33.9	35.3	49.1	51.0	53.4	46.4	24.9	18.2	1.5	27.3
10-year average	-9.1	-5.4	10.2	26.1	37.1	48.5	53.4	49.7	41.7	30.3	18.7	0.3	25.1
1926	-1.4	3.8	8.5	25.3	39.9	45.1	52.6	52.4	41.0	31.3	12.9	-5.0	25.5
1927	-6.7	1.6	17.7	30.0	38.8	48.5	52.8	45.9	48.5	34.1	13.8	-9.9	26.3
1928	-4.4	.2	7.4	21.4	39.5	45.2	53.1	51.4	42.0	34.5	24.4	10.9	27.1
1929	-19.7	-9.2	17.5	28.6	34.0	44.0	52.2	49.1	41.8	33.1	14.9	1.8	24.0
1930	-13.0	7.1	12.6	27.2	39.8	49.6	54.0	50.5	42.9	33.5	20.3	7.6	27.7
1931	6.5	12.8	15.2	28.3	37.9	53.0	54.9	50.6	48.1	38.0	25.8	15.2	32.2
1932	5.5	-1.6	4.1	28.4	40.8	52.3	54.5	51.7	40.9	31.4	16.3	0	27.0
1933	1.8	-8.1	11.8	27.7	41.9	53.1	54.0	48.8	47.0	28.0	14.7	-5.4	26.3
1934	5.2	-2.9	7.7	29.1	42.9	50.3	51.4	48.7	42.0	36.0	25.3	-3.1	27.7
1935	-9.6	8.8	14.6	25.0	35.8	46.6	59.7	53.8	40.5	32.4	10.9	4.2	26.9
10-year average	-3.6	1.3	11.7	27.1	39.1	48.8	53.9	50.3	43.5	33.2	17.9	1.6	27.1
1936	-12.9	-19.1	14.2	21.2	43.9	45.5	55.8	53.3	45.0	27.0	12.8	3.8	24.2
1937	-15.3	-4.1	5.7	27.4	41.3	47.6	55.4	57.6	43.9	30.2	18.2	-.8	25.6
1938	-4.9	4.5	19.6	26.9	39.4	49.8	53.7	55.5	42.5	36.2	15.6	2.9	28.5
1939	.6	-10.8	5.5	24.0	41.7	50.2	53.6	52.3	43.6	31.9	20.4	13.7	27.2
1940	-7.7	4.0	5.8	25.5	37.9	46.4	52.9	52.2	45.4	37.1	15.3	5.7	26.7
1941	-.3	-.1	10.4	36.5	44.7	52.7	56.2	52.0	47.1	34.9	21.7	10.4	30.5
1942	4.5	.4	19.5	32.3	35.9	48.6	52.0	53.3	40.7	30.8	15.3	-1.5	27.7
1943	-9.2	-2.2	3.0	24.8	36.7	50.1	56.0	52.3	40.5	30.4	15.6	4.3	25.2
1944	9.0	-2.8	10.6	22.4	41.9	49.6	54.2	52.4	44.3	31.3	27.5	3.9	28.7
1945	-2.0	-.9	20.3	24.9	31.7	43.9	52.0	52.5	42.7	29.1	18.3	.9	26.1
10-year average	-3.8	-3.1	11.5	26.6	39.5	48.4	54.2	53.3	43.6	31.9	18.1	4.3	27.0
1946	-1.8	-4.1	22.5	30.2	36.3	47.9	53.4	48.5	41.4	31.8	16.4	2.1	27.1
1947	.2	-5.4	7.8	24.5	34.8	44.5	54.3	57.7	42.3	40.4	15.8	3.2	26.7
1948	-9.0	-5.7	12.0	31.1	37.9	48.7	54.6	56.0	47.2	32.4	22.5	1.3	27.4
1949	.2	-7.0	10.3	29.2	39.7	51.7	56.3	56.3	41.0	35.6	24.1	1.4	28.2
1950	-13.9	-2.7	6.0	22.2	38.5	48.0	53.1	47.6	45.9	36.8	15.0	-3.2	24.4
1951	-7.3	1.0	8.1	27.0	43.9	47.1	53.7	50.9	42.3	33.7	13.3	.2	26.1
1952	-6.0	11.2	11.5	30.5	37.8	51.9	54.8	50.0	44.5	26.4	21.6	11.9	28.8
1953	.2	.4	15.8	26.6	37.2	50.2	52.4	53.6	43.8	37.2	24.1	3.3	28.7
1954	-10.0	13.6	9.1	26.3	36.2	57.6	53.2	50.8	45.4	33.3	25.5	11.7	29.4
1955	-1.9	-4.3	1.3	34.6	43.8	51.3	59.5	56.6	42.8	33.6	11.9	-5.3	27.0
10-year average	-4.9	-.3	10.4	28.2	38.6	49.9	54.5	52.8	43.7	33.2	19.0	2.7	27.4
1956	-.7	-5.9	7.3	23.9	38.3	51.0	49.4	49.8	39.9	38.6	23.0	4.0	26.6
1957	-11.0	-.9	10.1	28.6	39.0	49.0	60.0	51.8	42.3	33.5	23.0	8.0	28.8
1958	6.7	-7.5	18.5	30.0	38.3	42.7	51.9	50.8	45.8	35.2	20.4	-4.8	27.8
1959	-10.9	-3.4	14.7	27.9	42.9	51.0	55.1	56.1	45.5	33.8	10.2	14.8	28.1
1960	-.9	1.3	5.1	30.1	40.0	47.4	52.9	55.6	45.2	34.1	24.2	1.5	28.0
1961	-5.0	10.0	23.2	25.2	36.9	49.3	54.7	54.0	45.0	35.7	21.1	5.0	29.6
1962	-7.7	-7.0	18.0	26.1	43.5	48.6	52.2	52.1	42.5	37.3	25.9	5.2	28.6
1963	-9.3	-4.6	17.6	30.5	39.2	52.9	57.1	52.4	46.6	42.9	25.5	-2.2	29.1
1964	5.0	2.9	9.5	28.4	44.0	49.1	55.1	49.9	42.4	34.1	23.0	-1.6	28.5
1965	-9.7	-6.6	2.9	30.7	42.3	47.8	52.2	50.4	39.5	36.0	19.0	15.2	26.4
10-year average	-4.4	-.1	12.7	28.1	40.4	48.9	54.1	52.3	43.5	36.1	21.5	4.5	28.2
50-year average	-5.2	-1.5	11.3	27.2	38.9	48.9	54.0	51.7	43.2	32.9	19.0	2.7	26.96

Temperature recording instruments are housed in this shelter on station grounds.



MAXIMUM TEMPERATURES

Monthly average maximum temperatures are shown in table 5; they range from a 50-year average of 18.0 degrees in January to 80.7 degrees in July. January temperatures ranged from 6.6 degrees in January 1929 to 29.2 degrees in January 1944. July temperatures ranged from 89.1 degrees in July 1936 to 74.5 degrees in July 1962.

Average temperatures are useful for computing *degree days*, both heating degree days and growing degree days.

Heating degree days are commonly used by fuel and power companies to determine probable fuel requirements of homes and industrial plants. They represent the departure of the daily average tem-

perature from a base temperature, usually 65 degrees, because below that point heat is needed for comfort in most buildings. For example, if the average temperature for a day is 50 degrees it is considered as 15 heating degree days.

Growing degree days are often used by canning companies and others to predict various stages of plant growth and development, to estimate root growth in order to determine when it is wise to cease cultivation, and to schedule plantings so that harvest is spread over a fairly wide period. Since temperatures that will occur during the growing period are not known at planting time, schedules are based on growing degree days calculated from the average temperature of the area.

Table 5. Monthly and annual average maximum temperatures, °F., 1916-65

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Mean
1916	11.6	19.4	33.9	50.0	61.3	71.4	87.4	78.9	65.7	50.8	36.6	14.1	48.4
1917	12.5	10.3	35.6	48.7	66.4	73.3	83.2	74.9	65.5	40.3	40.9	8.8	46.7
1918	8.0	21.2	40.0	51.3	61.5	74.9	79.7	78.2	63.7	57.4	41.1	28.3	50.4
1919	28.0	24.2	38.2	52.9	70.9	80.6	83.2	77.6	69.7	49.7	28.4	13.0	51.4
1920	12.2	21.7	38.4	42.8	67.7	76.1	78.0	80.2	72.7	61.1	33.5	25.6	50.8
1921	25.5	32.9	38.5	58.3	69.6	81.4	87.4	80.9	71.2	59.0	30.1	24.4	54.9
1922	19.5	21.0	42.3	53.0	74.7	80.0	80.1	83.6	73.7	59.7	40.2	21.0	54.1
1923	23.4	19.8	31.4	51.6	70.9	84.7	85.7	77.3	72.3	55.9	45.3	32.9	54.3
1924	13.2	31.8	40.1	51.3	57.5	73.4	79.9	75.2	65.6	64.4	35.9	13.2	50.1
1925	19.2	26.8	40.1	60.3	68.5	74.8	81.1	83.0	68.4	42.1	38.0	21.0	51.9
10-year average	17.3	22.9	37.9	52.0	66.9	77.1	82.6	79.0	68.9	54.0	37.0	20.2	51.3
1926	23.1	30.6	33.4	54.1	73.8	72.8	83.6	78.8	62.2	52.6	28.2	21.0	51.2
1927	18.9	28.2	41.4	52.4	59.6	74.6	78.8	75.9	68.9	58.2	30.7	14.3	50.1
1928	19.1	25.0	38.2	47.5	71.8	71.5	80.1	77.3	63.4	54.3	40.2	28.4	51.4
1929	6.6	17.4	37.8	52.4	61.9	74.9	81.9	78.2	64.8	55.4	32.1	19.6	48.6
1930	9.4	28.7	36.1	54.9	65.1	74.4	81.5	84.3	67.7	51.0	39.6	27.0	51.6
1931	26.3	34.7	35.5	57.4	65.2	77.7	81.6	76.4	74.3	62.1	43.2	32.0	55.5
1932	22.6	25.4	27.7	53.1	67.5	78.9	80.0	79.3	68.7	49.7	33.2	20.6	50.6
1933	25.5	16.9	32.9	49.6	66.4	83.9	84.2	77.9	73.4	49.9	29.6	17.7	50.7
1934	22.9	21.0	31.5	50.0	74.6	75.9	79.8	75.5	64.0	58.4	41.5	18.4	51.1
1935	13.0	29.3	34.3	48.5	62.3	69.4	83.4	76.0	66.1	54.1	28.2	20.7	48.8
10-year average	18.7	25.7	34.9	52.0	66.8	75.4	81.5	78.0	67.4	54.6	34.7	22.0	51.0
1936	8.0	6.7	32.6	45.1	70.0	74.8	89.1	79.2	70.9	49.9	31.6	24.1	49.3
1937	10.2	20.2	33.2	46.6	67.9	75.0	81.4	83.1	68.3	49.1	35.2	22.1	49.4
1938	16.4	27.2	47.0	51.6	61.9	74.9	79.5	82.5	68.8	61.0	32.7	22.4	52.2
1939	21.6	15.2	34.9	49.7	70.3	74.5	82.2	80.0	70.0	52.4	44.9	34.0	52.5
1940	15.2	25.7	29.6	49.8	65.2	73.6	81.8	73.9	72.9	57.1	30.6	25.8	50.1
1941	20.3	22.9	34.1	58.3	70.7	75.7	82.1	76.4	67.5	55.9	38.3	28.2	52.5
1942	25.4	24.4	40.5	62.1	64.0	71.6	76.4	76.0	63.3	56.9	35.6	17.1	51.1
1943	11.8	26.4	28.8	53.0	63.3	75.5	82.8	77.1	63.8	59.1	31.4	27.4	50.0
1944	29.2	24.6	30.5	52.6	67.4	74.8	77.7	77.5	65.6	59.2	37.3	22.2	51.6
1945	16.4	24.0	45.7	48.0	59.2	68.7	76.8	76.2	64.4	55.4	32.1	17.6	48.7
10-year average	17.5	21.7	35.7	51.7	66.0	73.9	81.0	78.2	67.6	55.6	35.0	21.3	50.7
1946	18.8	20.3	48.8	57.1	63.7	74.3	79.7	75.6	67.0	54.8	37.8	21.1	51.6
1947	24.6	20.8	34.3	48.1	60.7	71.3	82.2	83.1	67.2	64.5	29.7	21.6	50.7
1948	16.4	22.6	35.8	55.7	68.3	73.7	81.3	79.5	76.2	60.1	36.9	24.3	52.6
1949	20.8	20.4	32.8	58.4	68.8	77.4	78.6	80.0	65.9	55.7	39.5	22.1	51.7
1950	11.5	25.9	30.6	39.3	61.4	74.3	76.3	73.7	69.3	56.9	32.0	17.3	47.3
1951	16.5	23.7	30.8	48.8	70.5	71.8	79.2	70.7	62.3	52.2	30.4	19.3	48.0
1952	19.3	30.1	32.9	60.3	67.6	78.2	79.3	75.2	69.1	53.2	40.0	28.4	52.8
1953	20.7	25.3	37.2	48.5	64.8	75.0	78.3	79.6	66.0	64.9	43.6	25.2	52.4
1954	13.2	36.6	33.3	50.3	59.2	75.4	80.4	76.6	64.4	53.3	41.3	27.7	51.0
1955	18.9	21.6	31.4	60.6	71.1	75.0	82.4	81.4	66.3	57.1	28.7	17.0	50.9
10-year average	18.1	24.7	34.8	52.7	65.6	74.6	79.8	77.5	67.4	57.3	36.0	22.4	50.9
1956	22.7	24.3	33.1	47.6	63.7	78.2	75.2	75.6	64.1	63.4	38.9	26.5	51.1
1957	13.5	25.0	36.5	51.8	66.8	72.4	82.0	76.4	64.8	55.0	35.7	27.3	50.6
1958	25.4	24.0	39.8	57.4	68.9	69.0	76.7	77.2	66.8	57.7	39.1	16.4	51.5
1959	14.1	23.8	38.6	54.2	66.4	76.1	79.4	79.4	66.6	47.4	27.8	31.7	50.5
1960	20.3	25.4	29.8	50.9	65.7	72.4	79.8	78.7	68.1	57.2	38.0	21.8	50.7
1961	18.9	33.4	43.4	45.9	65.7	79.7	78.3	81.8	65.3	57.6	36.5	21.3	52.3
1962	14.4	20.3	36.5	50.0	65.8	73.8	74.5	77.6	65.5	58.5	41.3	25.2	50.4
1963	10.3	20.3	42.1	55.7	63.2	76.2	80.5	76.6	70.2	67.9	42.9	17.3	51.9
1964	26.8	29.7	33.5	55.0	70.8	73.8	81.5	72.1	65.1	55.7	38.0	16.9	51.6
1965	17.0	19.3	27.9	49.3	66.6	74.6	77.2	76.2	56.7	55.8	35.9	28.5	48.8
10-year average	18.3	24.6	36.1	51.8	64.5	74.6	78.5	77.2	65.3	57.6	37.4	23.3	50.9
50-year average	18.0	23.9	35.9	52.0	66.0	75.1	80.7	78.0	67.3	55.8	36.0	21.8	51.0

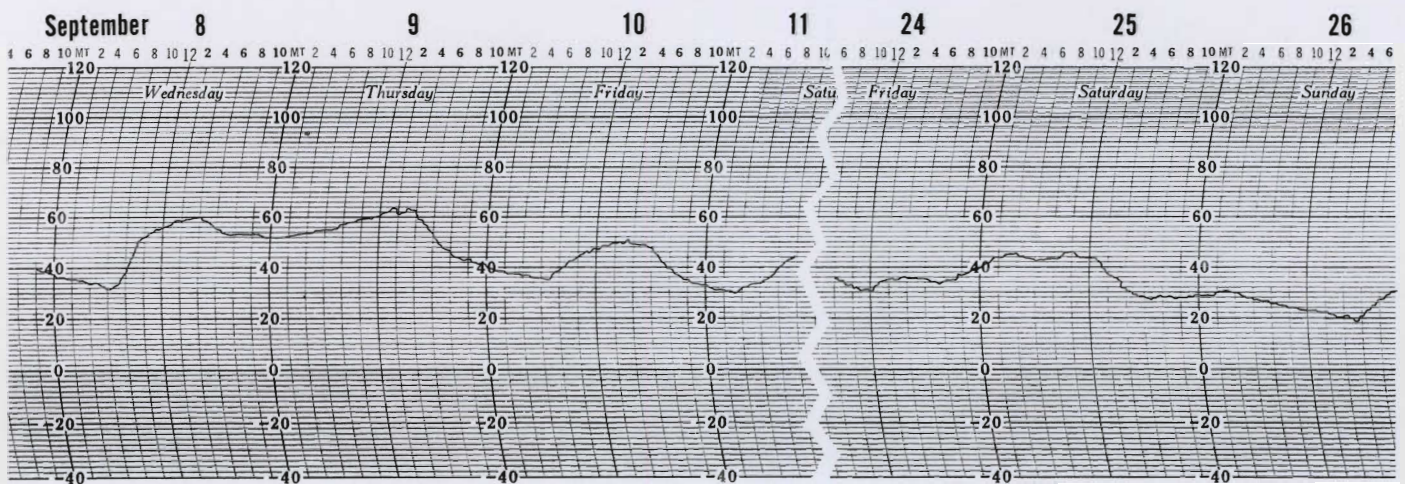


Figure 4. Facsimile of thermograph record shows that temperature dipped briefly to 32 °F. on September 8 and 10; "killing" frost did not occur until September 25-26.

SPRING AND FALL FROSTS

Dates of the latest frost each spring and the first frost each fall are listed in table 6. In this discussion frost is considered as the occurrence of temperature 32 degrees or lower.

Range of last frost in spring is from April 30 in 1922 to June 26 in 1926; average date for the 50-year period is May 29. First frost in the fall occurs within a narrower range of dates, with August 17 as the earliest, October 1 as the latest, and 43 of 50 frosts occurring in September. Average date for fall frost is September 14, and average length of season free of temperatures 32 degrees or lower is 107.3 days.

The column "No. of days in month below 32 degrees" indicates how many days the temperature dipped to 32 degrees or below during the balance of the month. Sometimes early fall frosts have been followed by a frost-free period of several days to a month. For example, in 1930 frost occurred September 6 when the temperature dropped to 30 degrees. Frost did not occur again until September 29, or 23 days later. In such cases, where the first frost is of short duration and does not kill vegetation, the actual growing season is considerably longer than indicated by the frost-free period for the year.

During 1965 a "thermograph," or temperature-

recording thermometer, was installed to help study the effect of weather on agricultural crops. The thermograph records temperature continuously, 24 hours a day, 7 days a week, and is accurate to within 1 degree of the U. S. Weather Bureau recording thermometer.

The weather bureau's minimum thermometer shows low temperature for a given period by means of an indicator in the temperature column that remains at the lowest temperature registered. Duration of low temperature is not recorded. The thermograph record is more useful in many cases because it shows the duration of freezing temperature.

On September 11, 1965, both the minimum and the thermograph recorded a low of 30 degrees, and on September 24 both instruments recorded a low of 31 degrees. Although both were recorded as "frosts," most of our corn was still green.

Our recording thermometer records show that on both September 11 and 24 the temperature was below freezing only 10 to 15 minutes. A killing frost of 8 hours duration was recorded September 25, and freezing temperatures of 24-hour duration were recorded on September 26. So the useful length of growing season for 1965 could be considered as 14 days longer than the time between "last frost" in spring and "first frost" in fall. See figure 4.

Table 6. Dates of spring and fall frosts and length of frost-free periods, 1916-65

Year	Latest in spring			Earliest in fall			No. of days below 32°	Days between frosts
	Month	Date	Degrees	Month	Date	Degrees		
1916	June	5	31	Sept.	2	29	9	89
1917	June	15	30	Aug.	29	31	1	75
1918	May	23	28	Sept.	4	22	21	104
1919	May	22	30	Sept.	26	32	1	127
1920	June	3	28	Sept.	27	30	2	116
1921	June	4	30	Oct.	1	30	14	119
1922	Apr.	30	30	Sept.	11	30	4	134
1923	May	19	32	Sept.	9	28	6	113
1924	June	7	28	Aug.	17	30	1	71
1925	June	10	30	Sept.	12	29	3	94
10-year average	May	29		Sept.	11			104.2
1926	June	26	32	Sept.	12	30	8	78
1927	May	18	32	Sept.	25	32	2	130
1928	June	3	24	Sept.	23	31	5	112
1929	June	3	25	Sept.	5	30	9	94
1930	May	30	30	Sept.	6	32	3	98
1931	May	23	29	Sept.	24	30	2	124
1932	May	17	30	Sept.	16	30	4	122
1933	May	10	22	Sept.	21	28	3	134
1934	May	23	31	Aug.	20	31	2	89
1935	May	24	32	Sept.	1	29	7	100
10-year average	May	27		Sept.	13			108.1
1936	June	4	31	Sept.	17	29	3	105
1937	June	9	31	Sept.	12	32	5	95
1938	May	24	27	Sept.	20	29	3	119
1939	May	17	32	Sept.	20	31	6	126
1940	June	20	31	Aug.	23	29	1	64
1941	May	23	27	Aug.	27	29	2	96
1942	June	14	31	Sept.	20	30	10	98
1943	June	5	32	Sept.	11	29	5	98
1944	May	9	29	Sept.	7	30	3	121
1945	June	6	29	Sept.	16	30	5	102
10-year average	June	1		Sept.	11			102.4
1946	June	4	32	Sept.	2	28	6	90
1947	June	12	32	Sept.	16	31	8	96
1948	May	25	31	Sept.	23	32	2	121
1949	June	7	31	Sept.	15	30	3	100
1950	May	17	32	Sept.	23	31	2	129
1951	June	4	29	Sept.	24	29	4	112
1952	June	1	29	Sept.	16	32	6	107
1953	June	7	31	Sept.	13	30	2	98
1954	May	26	32	Sept.	22	29	1	119
1955	May	17	29	Sept.	11	26	4	117
10-year average	May	31		Sept.	16			108.9
1956	June	1	28	Sept.	7	28	6	98
1957	May	18	31	Sept.	20	27	4	125
1958	June	14	31	Sept.	27	31	2	105
1959	May	22	29	Sept.	15	32	3	116
1960	May	12	30	Sept.	29	28	2	140
1961	May	26	27	Sept.	4	30	5	101
1962	June	2	30	Sept.	20	26	3	110
1963	May	23	25	Sept.	13	29	2	113
1964	June	4	29	Sept.	12	30	4	104
1965	May	29	27	Sept.	25	30	4	119
10-year average	May	27		Sept.	17			113.1

Average date of last frost in spring is May 29 (range is from April 30 to June 26). Average date of first frost in fall is September 14 (range is from August 17 to October 1). Average length of frost-free period is 107.3 days. Data is based on temperature of 32° F. or below.

Table 7. Snowfall in inches by winter seasons, 1915-16 through 1964-65

Winter of	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	Total
1915-16	----	0	.5	3.9	15.9	4.6	12.5	5.0	.7	43.1
1916-17	----	5.0	2.0	8.5	4.5	13.5	11.5	8.0	----	53.0
1917-18	----	12.6	1.1	4.1	1.8	.3	.1	.1	----	20.1
1918-19	----	2.0	2.0	22.2	4.0	14.0	3.5	2.0	T	49.7
1919-20	----	7.5	21.2	6.0	11.3	5.7	10.4	2.0	----	64.1
1920-21	T	T	4.2	9.5	5.7	9.5	9.5	2.4	T	40.8
1921-22	----	T	8.0	12.2	4.4	34.9	5.0	1.0	----	65.5
1922-23	----	T	2.0	12.5	12.6	4.0	7.5	.1	.1	38.8
1923-24	T	T	2.0	8.0	6.9	5.9	2.6	2.5	2.0	29.9
1924-25	----	----	8.7	5.2	3.5	8.2	1.7	4.0	----	31.3
1925-26	----	5.5	.7	4.8	8.6	7.5	10.9	T	T	38.0
1926-27	----	3.0	10.0	8.0	8.5	15.6	----	.5	----	45.6
1927-28	----	----	16.7	12.5	6.0	.7	11.0	11.5	----	58.4
1928-29	----	----	T	8.7	15.5	1.5	6.7	T	1.0	33.4
1929-30	----	----	3.0	12.5	6.7	16.2	6.5	----	----	44.9
1930-31	----	2.5	1.2	3.7	2.7	1.7	9.0	T	----	20.8
1931-32	----	----	8.2	7.2	13.0	9.7	8.2	6.0	----	52.3
1932-33	----	6.0	6.7	6.7	12.5	8.0	.7	6.0	----	46.6
1933-34	----	12.0	15.0	23.0	5.2	4.7	8.2	4.5	----	72.6
1934-35	----	T	.7	17.2	23.5	1.7	12.2	2.5	----	57.8
1935-36	----	T	9.7	6.1	10.7	11.6	10.8	T	----	48.9
1936-37	----	1.4	13.2	26.5	21.6	17.6	1.3	4.1	----	85.7
1937-38	----	T	8.0	9.5	7.0	6.5	4.0	----	----	35.0
1938-39	----	----	14.0	8.0	11.5	23.0	12.0	T	----	68.5
1939-40	----	.5	----	3.0	4.5	16.7	7.2	----	----	31.9
1940-41	----	----	23.7	3.5	14.5	3.2	10.2	----	----	55.1
1941-42	----	.5	.2	7.0	2.2	4.2	6.0	1.5	4.0	25.6
1942-43	----	13.0	2.7	13.7	8.0	12.2	15.5	T	----	65.1
1943-44	----	----	9.0	.7	.7	3.5	10.7	T	.5	25.1
1944-45	----	----	8.0	3.0	5.5	10.0	.7	10.5	T	37.7
1945-46	----	----	6.2	17.0	12.8	2.7	6.0	----	----	44.7
1946-47	----	T	3.2	18.0	5.5	4.2	3.7	8.0	----	42.6
1947-48	----	----	19.0	5.7	13.7	8.5	7.5	----	----	54.4
1948-49	----	----	6.5	14.0	11.2	7.7	.5	.5	----	40.4
1949-50	----	T	7.0	5.0	25.0	1.0	12.0	29.5	7.0	86.5
1950-51	----	----	9.5	11.0	7.0	16.0	31.5	T	----	75.0
1951-52	----	7.5	2.0	15.5	11.5	1.0	11.5	2.0	----	51.0
1952-53	----	T	5.0	7.0	14.5	6.0	5.0	5.5	----	37.0
1953-54	----	----	11.0	16.5	18.0	8.5	13.0	4.5	9.0	80.5
1954-55	----	----	5.5	2.5	13.0	26.0	16.0	1.0	----	64.0
1955-56	----	6.5	16.5	12.2	10.5	6.5	12.0	9.0	----	73.2
1956-57	----	----	3.5	14.5	3.5	15.0	16.0	7.5	----	60.0
1957-58	----	T	6.0	4.5	8.0	.5	5.0	.5	----	24.5
1958-59	----	.5	3.5	9.0	3.5	5.0	4.0	T	.5	26.0
1959-60	----	1.0	10.0	5.0	11.5	1.5	1.0	3.5	----	33.5
1960-61	----	----	9.3	4.5	3.5	3.0	.5	27.0	2.0	49.8
1961-62	----	----	1.6	12.4	10.1	11.9	7.9	8.0	----	51.9
1962-63	----	.5	2.0	6.1	1.4	7.4	22.7	1.5	.5	42.1
1963-64	----	----	1.2	9.8	5.6	5.0	9.3	7.2	----	38.1
1964-65	----	T	6.0	14.9	7.6	6.6	30.9	1.5	----	67.5
50-year average		1.8	6.7	9.5	9.1	8.4	8.6	3.8	.6	48.5

T: Trace of precipitation less than .01 inch.

SNOWFALL

Snowfall during each of the winter seasons in the 50-year period is shown in table 7. December had the greatest average monthly snowfall, while January ranks a close second. Highest snowfall for a single month was 34.9 inches, recorded in February 1922.

Average annual snowfall was 48.5 inches, with three-fourths of it occurring from December through

March. Greatest snowfall in a winter season was 86.5 inches, recorded in 1949-50. The least snowfall in any one season occurred in 1917-18 when only 20.1 inches fell.

Our winter snowfall is generally welcome if its distribution is fairly equal. Because of its insulating value it provides valuable protection to overwintering crops and to water and sewer lines, and furnishes a source of soil moisture.