

CLIMATOLOGICAL TABLE—Summary of the Records of Temperature, Rainfall, and Sunshine for October 1970—continued

Station	Height of Station Above M.S.L.	Air Temperatures in Degrees (Fahrenheit)							Rainfall in Inches				Bright Sunshine Hrs.		
		Means of		Mean of A and B	Difference From Normal	Absolute Maximum and Minimum				Total Fall	No. of Rain Days	Difference From Normal		Maximum Fall	
		A Max.	B Min.			Maximum	Date	Minimum	Date					Amount	Date
Ft.	°F.	°F.	°F.	°F.	°F.	°F.	In.	In.	Hrs.						
Borland Saddle ..	3,250	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Queenstown ..	1,080	62.1	41.8	52.0	+1.3	71.4	6	33.4	10	1.11	13	-1.9	0.39	7	175
Queenstown Aerodrome ..	1,154	60.4	40.2	50.3	..	68.4	6	30.0	1	0.68	8	..	0.23	7	..
Mid Dome ..	1,268	61.0	38.9	50.0	+0.3	73.9	6	28.9	1	1.52	16	-1.8	0.30	5	..
Cromwell ..	698	64.4	42.4	53.4	+0.7	75.4	6	30.6	1	0.37	8	-1.0	0.12	16	..
Ophir ..	1,000	62.8	38.1	50.4	+0.1	71.3	6	25.0	10	0.16	1	-1.4	0.16	16	..
Moa Creek ..	1,400	63.0	37.2	50.1	+2.1	70.0	23	24.0	10	0.32	5	-1.1	0.13	11	..
Earnsclough ..	500	65.8	39.7	52.3	+1.2	77.8	21	29.0	10	0.19	4	-1.1	0.08	7	..
Alexandra ..	461	64.6	41.4	53.0	+0.2	74.8	6	30.6	10	0.18	8	-1.0	0.04	11, 23	200
Roxburgh (Power Stn.) ..	360	63.9	41.8	52.8	-0.2	74.3	23	29.5	1	1.02	15	-0.8	0.38	5	..
Moa Flat, West Otago ..	1,345	58.8	39.4	49.1	+0.8	71.0	6	31.8	1	0.89	12	-1.6	0.26	5	..
Mahinerangi Dam ..	1,300	57.0	38.5	47.5	..	69.8	23	30.0	18	2.24	17	-1.1	0.36	29	..
Tapanui ..	740	60.3	42.0	51.2	+1.0	72.6	23	32.9	1	1.38	19	-1.5	0.33	7	..
Rankleburn Forest ..	835	59.0	40.4	49.7	+0.5	73.4	6	32.4	1	2.28	19	..	0.46	10	..
Taieri Mouth ..	50	58.7	41.8	50.2	..	70.4	23	35.2	18	2.05	14	..	0.48	7	..
Otautau ..	180	..	39.8	..	..	..	..	29.0	1	3.74	17	+0.4	0.61	9	188
Winton ..	145	61.0	41.5	51.2	+0.3	74.1	23	33.0	1	2.66	17	..	0.39	7	182
Gore ..	235	61.4	42.3	51.8	+0.4	76.0	23	33.5	1	2.95	17	+0.3	0.73	10	177
Hokonui Forest ..	150	60.9	41.4	51.2	+0.5	73.0	23	31.0	1	3.43	19	+0.3	0.57	9	..
Invercargill Airport ..	1	58.8	40.6	49.7	0.0	73.4	6	31.8	26	3.54	18	+0.1	0.96	10	181
Tiwai Point, Bluff ..	15	57.8	44.1	51.0	..	71.0	23	36.2	4	3.68	17	..	0.42	22	..
Milton ..	60	61.0	41.2	51.1	+0.4	75.9	6	31.3	27	1.85	14	..	0.42	7	..
Finegand, Balclutha ..	20	61.0	41.0	51.0	..	74.2	6	31.8	1	1.92	12	..	0.54	7	184
Rarotonga, Cook Islands ..	15	79.0	70.5	74.8	+1.4	83.5	21	66.9	11	5.19	20	+0.5	1.15	21	142
Raoul Island ..	126	68.9	59.6	64.2	+0.6	69.8	10	34.0	19	2.66	12	-0.8	0.66	16	164
Chatham Islands ..	157	54.0	42.8	48.4	-1.8	61.1	24	32.0	12	2.20	17	+0.3	0.41	30	166
Campbell Island ..	49	47.5	38.3	42.9	..	53.1	30	29.9	10	7.37	29	..	1.01	23	66
Scott Base, Antarctica ..	58	..	..	0.0	+9.8	19.8	7	-21.1	1	..	..	..	..	..	..
Lake Vanda, Antarctica ..	510	19.4	-2.2	8.6	..	31.8	14	-27.6	1	..	..	..	..	..	..

LATE RETURNS

Woodhill Forest, Sept. 1970	100	61.6	49.2	55.4	+2.0	67.1	10	35.4	22	7.00	22	+3.1	2.19	30	..
Otutira, Sept. 1970	1,900	53.8	42.4	48.1	..	60.8	3	32.0	27	10.23	21	..	2.48	30	..
Mohaka Forest, Aug. 1970	938	54.9	40.9	47.9	..	63.6	4	27.0	26	9.16	15	+4.6	2.61	13	..
Moa Creek, Sept. 1970	1,400	53.0	30.1	41.6	..	63.0	10	13.0	25	3.00	10	+2.1	0.88	16	..

ERRATUM—

Avalon, Lower Hutt, Aug. 1970	50	55.5	..	49.0	..	63.2	13	..	..	..	..	..	..	..	..
Avalon, Lower Hutt, Sept. 1970	50	..	45.9	51.8	..	..	..	34.6	27	..	..	..	..	..	..
Riwaka, Motueka, Sept. 1970	25	..	..	..	..	..	..	..	..	..	..	..	..	..	183
Whangarei, Sept. 1970	95	..	..	56.1	..	..	..	..	..	..	..	..	..	..	..

The "normal" refers to the present site of the instruments. The standard periods for normals are: for temperature 1931-60, for rainfall 1921-50, and for sunshine 1935-60. No normals are available for stations with only short records.

\*The sunshine recorder is not located at the station but is in the near vicinity.

NOTES ON THE WEATHER FOR OCTOBER 1970

**General**—October was the third successive month with low sunshine, and for the greater part of the country it was also the fifth successive month of comparatively warm weather. In northern districts of the North Island the lack of sun caused poor growth and low dairy production. Elsewhere the effect of weather on farming varied considerably. Conditions were too wet in some districts, such as parts of Wairarapa; and too dry in others, such as Otago and northern Hawke's Bay.

A small local tornado caused some damage on the 17th at Point England, an eastern suburb of Auckland.

**Rainfall**—Rainfall was below normal in the South Island except in Nelson, on the West Coast, and in southern Southland. It was also below normal in the southern half of the North Island, except in northern Wairarapa. The greater part of Canterbury and Otago besides most of Gisborne and parts of Hawke's Bay received less than half the normal value.

The only considerable area with rainfall more than 50 percent above normal extended from just north of Auckland City to Hokianga Harbour but did not include the east coast of Northland. In this area and in Coromandel and Bay of Plenty two-thirds of the total rainfall fell from the 27th to the 31st, in northerlies. In Bay of Plenty rainfalls for 28-31 October were as high as 11 in., with many falls of 4-7 in. on the 29th. Flooding was reported in the Whakatane River and the Kaituna River and also in parts of Northland and Coromandel.

Flooding in the Waikato River early in the month was mainly the result of heavy rain at the end of September.

**Temperatures**—Temperatures were above normal or close to it over the whole country. Departures exceeded 2°F (1°C) in Hawke's Bay, Gisborne, most of Bay of Plenty, and around Auckland City.

**Sunshine**—Sunshine was below average over the greater part of the country, mainly by 30-40 hours. Westport and Greymouth had their lowest October sunshine on record.

**Weather Sequence**—At the beginning of the month a depression was centred to the east and a small centre was also crossing the South Island. Rain was confined mainly to the North Island with Nelson and Marlborough. Considerable falls were reported from the central North Island. By the 2nd a depression was far to the east of East Cape, and south-easterlies brought rain to some eastern and central districts of the North Island.

During the 3rd and 4th an anticyclone was centred to the north while pressures were low to the south, and a trough of low pressure crossed the country from west to east, with rain on the West Coast and in some western districts of the North Island. Somewhat similar conditions persisted in north-westerlies on the following day. Further rain in western districts accompanied the passage of another trough on the 6th and 7th but on this occasion rain extended also to the Southern Lakes District and parts of Southland and Otago.

Pressures remained high to the north and they were also very low far to the south. During the 8th and 9th another trough of low pressure crossed the country, this time followed by south-westerlies, with scattered areas of rain. Yet another trough of low pressure affected the country during the next 2 days. It was associated with a deepening depression off the Otago coast and brought rain mainly