

CLIMATOLOGICAL TABLE—Summary of the Records of Temperature, Rainfall, and Sunshine for December 1977—continued
LATE RETURNS AND CORRECTIONS—continued

Station	Height of Station Above M.S.L.	Air Temperatures in Degrees (Celsius)								Rainfall in Millimetres					Bright Sunshine
		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	
Otiake Farm, November 1977	183	18.9	5.6	12.3	..	28.5	27	-1.2	2	33	5	..	13	12	..
Tara Hills, Omarama, November 1977	488	18.7	4.2	11.5	-0.4	28.2	27	-3.2	2	16	9	-32	6	12	223
Lake Hawea, November 1977	350	..	..	..	..	..	..	..	..	42	..	-29	17	12	..
Cherry Farm Hospital, November 1977	6	16.4	5.8	11.1	-0.8	26.0	27	-0.1	2	40	10	-18	9	16	..
Taieri, Invermay, November 1977	30	16.6	5.5	11.1	..	23.8	27	-0.4	2	48	12	..	12	16	..
Moa Creek, November 1977	427	17.8	1.7	9.8	-1.0	26.6	27	-5.0	2	23	..	-15	..	..	..
Alexandra, November 1977	141	19.1	6.2	12.7	-1.1	28.0	27	-0.8	7	16	13	-17	6	12	218
Roxburgh Power Station, November 1977	110	18.9	5.4	12.2	-1.1	26.0	27	0.0	2	27	8	-19	9	12	..
Gore D.S.I.R., November 1977	123	15.6	6.1	10.9	-0.7	23.2	12	0.4	2	50	17	..	10	5	158
Tiwai Point, Bluff, November 1977	5	14.6	7.3	11.0	-1.0	20.2	12	1.5	2	89	17	..	15	28	..
Rarotonga Airport, November 1977	7	26.8	21.2	24.0	+0.0	28.5	6	16.2	2	39	9	-113	21	6	222
Waitangi, Chatham Islands, November 1977	44	13.8	8.5	11.2	-0.4	17.2	22	3.9	9	70	17	+9	16	15	201
Nandi Airport, Fiji, November 1977	15	31.2	20.7	26.0	+0.0	33.6	19	15.1	7	14	6	..	4	27	243
Totokoitu, Rarotonga, October 1977	9	25.4	19.6	22.5	..	27.9	21	16.8	11	223	13	..	87	16	..
Totokoitu, Rarotonga, November 1977	9	26.1	20.5	23.3	..	28.4	11	16.7	2	59	9	..	36	10	..

The "normal" refers to the present site of the instruments. Standard period for normals is 1941-1970. No normals are available for stations with only short records.

*Indicates that the sunshine recorder is not located at the station but is in the near vicinity.

A rain day is a day with rainfall equal to or greater than 0.1 mm.

Where the extremes of temperature and rainfall have occurred more than once during the month, the date of the first occurrence is given.

NOTES ON THE WEATHER FOR DECEMBER 1977

General—Winds were predominantly westerly over New Zealand in December. However, although the mean temperature and total sunshine recorded during the month reflected the predominantly westerly wind flow, the total rainfall did not. This was because most of the rainfall was associated with three or four major troughs of low pressure moving over the country, and the rainfall was not evenly distributed throughout the month.

Low temperatures in many areas retarded crop growth. In most places the rainfall was adequate for good pasture growth, except in parts of South Canterbury and North Otago.

Rainfall—Over the country as a whole the December rainfall was a little above normal. However, in Northland, parts of Taranaki, South Westland, Fiordland, the Kaikoura coast, South Canterbury and North and Central Otago it was drier than normal though these areas generally had at least half their normal rainfall. In the remainder of the country the excess of rainfall above the normal exceeded 50 percent in only a few places, notable amongst them being in the vicinity of Gisborne (80 percent above) and Dunedin (130 percent above).

Temperatures—Apart from Poverty Bay and some east coast areas of the South Island temperatures were below normal over the whole country. The largest departures from normal were in Northland, Auckland, Waikato, Taranaki, Manawatu, Wellington, Buller and parts of Westland. In some parts of these regions the mean temperature was below normal by at least 1.0°C, and in some cases by more than 1.5°C.

Sunshine—Over the North Island the duration of bright sunshine was within 10 percent of the average value, except in the east of Northland where it was above normal by more than 20 percent. In the South Island the majority of the east coast had 10 to 20 percent more sunshine than usual, some stations in coastal Otago having 45 to 55 hours more than normal.

WEATHER SEQUENCE

The anticyclone which had become nearly stationary over New Zealand at the end of November, persisted until the 2nd of the month. The weather was fine over the whole of the country, with warm temperatures on the east coast of both the North and South Islands. A small depression had formed to the north of the country on the afternoon of the 2nd, and a cold front associated with a depression to the south of the country was moving towards the South Island.

Early on the 3rd the anticyclone had moved east away from New Zealand, and the depression to the north was moving slowly southeast. The cold front approaching the South Island moved slowly onto Southland. A small depression formed on the cold front in the North Tasman Sea but dissipated rapidly. Late on the 4th the depression to the north had moved away from the North Island and the cold front continued to cross the South Island. Showers, heavy in some places, were reported in Fiordland and Westland, and isolated showers were reported over most of the country as the front crossed both Islands.

On the 6th another cold front moved onto the South Island from the Tasman Sea and brought rain to the West Coast. A trough of low pressure near Tasmania was moving slowly towards New Zealand, with high pressures over the Australian continent. As the cold front, and later the trough of low pressure, moved across New Zealand on the 7th, 8th and 9th, most areas of the country reported rain, sometimes heavy on the West Coast. The anticyclone moved eastwards to pass to the north of the country on the 11th, and a depression with associated cold front moved quickly onto central New Zealand by the afternoon of the same day. Very heavy rain was recorded in Westland, Buller, Nelson, Marlborough and Wellington as the system crossed the country.

Early on the 12th another depression had moved on to the South Island bringing more heavy rain to Westland. The situation became complex on the 13th with a slow moving depression over the North Island, and ridges of high pressure to the south of the country extending from the Tasman Sea and from near the Chatham Islands. As the depression crossed the country on the 14th and 15th heavy rain was reported in Waikato, Hawke's Bay, Poverty Bay and Wairarapa. Temperatures were cold in most of the North Island during this period.

By the 16th the ridge of high pressure in the Tasman Sea had weakened and another trough of low pressure had moved east onto the South Island. There was a strong westerly flow onto the country with pressures high to the north and low to the south of New Zealand from the 17th to the 20th. Disturbances in this flow brought heavy rain to the West Coast, and lighter falls to many areas west of the ranges. Temperatures were very warm in Hawke's Bay and Canterbury. On the 21st an anticyclone had moved from the Tasman Sea onto New Zealand and this persisted until the 28th, when it started to move away to the east. Some areas of the North Island had showers during this period as a small depression formed on a nearly stationary front to the north of the country on