CLIMATOLOGICAL TABLE—*Summary of the Records of Temperature, Rainfall, and Sunshine for October 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	
	Metres	°C	°C	°C	°C	°C		°C		mm		mm	mm		Hrs
Roxburgh Power Station, September 1977	110	12.1	1.9	7.0	−2.0	21.0	28	−3.0	11	35	11	+7	10	29	..
Rarotonga Airport, September 1977	7	25.4	18.7	22.1	+0.0	27.9	17	13.0	17	268	14	+159	131	2	175
Campbell Island, February 1977	15	12.1	7.0	9.6	+0.4	13.5	6	2.4	28	85	22	−29	13	6	80
Campbell Island, March 1977	15	10.8	6.6	8.7	+0.2	12.8	4	1.0	1	108	23	−22	18	12	28

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 is given.

NOTES ON THE WEATHER FOR OCTOBER 1977

General—Pressures were lower than normal over the whole of New Zealand during October, and for the first month since April this year they were below normal to the south of the country. There was a predominance of winds from a westerly quarter during the month. Except for parts of the South Island this was a cool dry month over most of the country, with above normal sunshine in many places.

The worst flooding for many years occurred in Southland on the 29th and 30th, when three rivers in the region breached their banks. The towns of Dipton and Waikaia were isolated and families were evacuated. Many roads and bridges were impassable due to flooding and damage. More than 70 mm of rain was recorded at Dipton in 48 hours during this period.

Most farmers throughout New Zealand reported slow grass growth, and areas in the east of the North Island experienced a shortage of feed, with stock condition not as good as usual.

Rainfall—The only areas with above normal rainfall for the month were parts of Bay of Plenty, Nelson, Marlborough, and Otago, and most of Southland and Fiordland. Many parts of Poverty Bay, Hawke's Bay, Wairarapa, and South Canterbury, recorded monthly totals of less than 50 percent of normal. At Eastwood Hill station, Poverty Bay, only 24 percent of the normal total was recorded. The largest departures above normal were in Southland where heavy rain fell on the 29th and 30th. The station at Manapouri was above normal by more than 100 percent, other stations in the Southland region were above by 60 to 70 percent.

Temperatures—Mean temperatures were below normal in the North Island by about ½°C and in some places by as much as 1°C. In the South Island temperatures were above normal in Marlborough, South Canterbury, Otago and Southland by nearly ½°C.

On the 28th and 29th many places on the east coast of New Zealand experienced very warm temperatures. The highest recorded was 31.0°C at Musselburgh, Dunedin, on the 28th and was the warmest October day recorded since records began in 1865. Gisborne recorded a maximum of 30.8°C on the 29th; this was also the highest for October since readings started there in 1939.

Sunshine—Most of the country had sunshine hours near or above normal for the month. Some stations in Canterbury were above normal by 40 to 50 hours, Christchurch having their highest October sunshine since 1949. At New Plymouth the total for the month was nearly 50 hours above normal.

WEATHER SEQUENCE

The cold front that had been passing over New Zealand at the end of September continued to move north and early on the 1st was lying across Northland. Later on the same day an anticyclone moved rapidly onto the country from the Tasman Sea. A wave depression formed on a stationary front lying east/west to the north of the North Island and had moved quickly onto the country early on the 2nd. Heavy rain was recorded over most of the northern half of the North Island and Buller. Temperatures were cold east of the ranges in the North Island. On the 3rd the depression had moved southeast towards the Chatham Islands and a ridge of high pressure extended onto the South Island.

A small depression near Tasmania moved slowly southeast on the 3rd and the cold front associated with this depression passed onto the South Island early on the 4th. As the front passed northwards over New Zealand heavy rain was recorded in Fiordland and lighter showers over the whole country. Temperatures were cold on the east coast of both Islands. Pressures were high to the north and south of the country on the 5th, and low to the south of Tasmania. An anticyclone moved across New Zealand on the 5th and 6th and a depression moved to the south of the South Island.

On the 7th a depression formed in the central Tasman Sea and moved slowly eastwards to be centred just west of the country on the 7th. As a cold front and the depression moved across central New Zealand heavy rain was reported in Wellington, Nelson, and parts of Marlborough. By the 9th the depression had moved northeast clear of the country, and an anticyclone had become established in the Tasman Sea, extending a ridge of high pressure onto New Zealand. Fine weather persisted for two days, apart from a few isolated showers in both Islands. Late on the 10th a trough of low pressure moved onto the South Island and moved quickly north. Heavy showers were reported in Westland and isolated lighter falls in areas of both Islands. An anticyclone in the mid Tasman Sea extended a ridge of high pressure onto New Zealand from the 11th until the 14th, with one weak cold front passing rapidly across the country on the 13th, bringing a few showers to both Islands and slightly cooler temperatures to the North Island.

Pressures were low to the south and northeast of New Zealand on the 15th, and a trough of low pressure crossed northwards over the country on the 15th and 16th. Heavy rain was recorded in Fiordland and Westland, the only areas without rain being the east coast of the South Island, Nelson and Marlborough. On the 18th a cold front associated with a depression to the south of New Zealand moved onto the South Island, heavy rain being recorded in Fiordland and Westland. Milford Sound had a total fall of more than 110 mm in 48 hours. A strong westerly airflow onto the South Island on the 19th brought warm temperatures to Canterbury, Otago and Southland. Small disturbances in this airflow caused showery conditions in areas west of the ranges in the South Island, and parts of the North Island.

By the 20th a small depression had formed in the north Tasman Sea and had begun to move southeast. This depression with associated cold front passed over New Zealand on the 21st bringing isolated rain to both Islands, with heavy falls in Fiordland and Westland. Temperatures were very warm in Otago. A ridge of high pressure extended onto New Zealand from an anticyclone centred near Tasmania on the 22nd, and pressures were very low to the south of the country. A strong southwest airflow between these two systems contained numerous disturbances, and heavy rain was recorded on the West Coast, more than 130 mm in 24 hours at Milford Sound. The only areas without rain were Poverty Bay and parts of Hawke's Bay. Temperatures were cold in Otago and Southland.

The strong westerly airflow had weakened by the 26th with an anticyclone covering most of the Tasman Sea and extending onto New Zealand. Most of the country had three days fine weather with very warm temperatures in Canterbury, Otago and Southland on the 27th and 28th.

Early on the 29th a wave depression formed on a front in the south Tasman Sea and moved east towards the South Island. A warm front ahead of this depression brought heavy rain to Fiordland and Southland as it crossed the country, and on the 30th further heavy falls were recorded as the depression moved over the South Island. Milford Sound recorded more than 260 mm in 48 hours, and more than 140 mm was measured at West Arm, Manapouri during the same period. Flooding caused by the three main rivers overflowing in Southland killed stock, destroyed crops and damaged roads and bridges. Temperatures were very warm in Poverty Bay and Hawke's Bay.

After the passage of the depression pressures were high to the north and low to the south of New Zealand. On the 30th and 31st a strong southwest airflow covered the country and disturbances in this flow brought showers, heavy at times, to many parts of both the North and South Islands.

(N.Z. Met. S. Pub. 107) J. S. HICKMAN, Director.