LATE RETURNS AND CORRECTIONS-continued

| Station | HeightofStationAboveM.S.L. | Air Temperatures in Degrees (Celsius) |  |  |  |  |  |  |  | Rainfall in Millimetres |  |  |  |  | $\begin{aligned} & \text { Bright } \\ & \text { Sun- } \\ & \text { shine } \end{aligned}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Means of |  | Mean of A ${ }_{\mathbf{B}}^{\text {and }}$ | Difference $\xrightarrow{\text { From }}$ | Absolute Maximum and Minimum |  |  |  | Total | $\begin{gathered} \text { No. } \\ \text { of } \\ \text { Rain } \\ \text { Days } \end{gathered}$ | Difference From Normal | $\underset{\text { Fall }}{\text { Maximum }}$ |  |  |
|  |  | $\underset{\text { Max. }}{\mathbf{A}}$ | $\underset{\text { Min. }}{\substack{\text { Bin. }}}$ |  |  | Maximum | Date | Minimum | Date |  |  |  | Date Amount | Date |  |
|  | Metres | ${ }^{\circ} \mathrm{C}$ | ${ }^{\circ} \mathrm{C}$ | ${ }^{\circ} \mathrm{C}$ | ${ }^{\circ} \mathrm{C}$ | ${ }^{\circ} \mathrm{C}$ |  | ${ }^{\circ} \mathrm{C}$ |  | mm |  | mm | mm |  | Hrs |
| Chateau, Mount Ruapehu, | 1,119 | 12.2 | 3.7 | 8.0 | $+0.0$ | 16.0 | 2 | -4.0 | 27 | 281 | $\ldots$ | $+57$ |  |  |  |
| Tauherenikau, Alloa, April 1979 | 43 | 18.9 | 8.5 | 13.7 | +0.6 | 22.9 | 3 | 0.3 | 27 | 37 | 10 | -42 | 21 | 11 |  |
| Makaretu, April 1979 | 335 | 17.8 | 7.0 | 12.4 | $-0.1$ | 22.4 | 6 | -2.4 | 27 | 33 | 15 |  | 8 | 30 |  |
| Wharite Peak, March 1979 | 914 | 15.6 | 9.3 | 12.5 | $+2.0$ | 20.9 | 8 | 2.9 | 1 | 427 | . | $+280$ | 77 | 20 |  |
| Wharite Peak, April 1979 | 914 | 11.0 | 6.0 | 8.5 | +0.5 | 15.5 | 4 | 0.0 | 14 | 79 | $\cdots$ | -71 | 28 | 11 |  |
| Turoa, Mount Ruapehu, March 1979 | 1,628 | .. | 7.4 |  | . . | . | $\cdots$ | -1.6 | 31 | 246 | $\cdots$ | . . | $\cdots$ |  | . |
| Turoa, Mount Ruapehu, April 1979 | 1,628 | 7.8 | 2.5 | 5.2 | $\ldots$ | 12.0 | 19 | $-2.5$ | 27 | 253 | 17 | $\ldots$ | 62 | 11 | . |
| Springs Junction, April 1979 | 421 | 14.1 | 4.8 | 9.5 |  | 19.3 | 2 | -2.4 | 14 | 187 | 18 | -4 | 27 | 25 |  |
| Franz Josef, April 1979 . . | 122 | 16.1 | 7.0 | 11.6 | $-0.1$ | 20.0 | 5 | 0.0 | 26 | 614 | 17 | $+213$ | 108 | 7 |  |
| Puysegur Point, April 1979 | 43 | 14.6 | 8.6 | 11.6 |  | 20.5 | 4 | 4.5 | 13 | 242 | 27 | +29 | 59 | 16 |  |
| Craigieburn Forest, April $1979$ | 914 | 13.9 | 3.7 | 8.8 | $+0.5$ | 18.3 | 22 | -3.3 | 26 | 92 | 15 | -30 | 47 | 24 |  |
| Lake Coleridge, April 1979 | 364 | 16.7 |  |  |  | 21.3 | 5 |  |  | 35 | 13 | -41 | 14 | 24 |  |
| Ashley Forest, April 1979 . | 107 | 17.2 | 7.5 | 12.4 | +0.3 | 23.5 | 5 | 1.0 | 27 | 10 | 6 | -64 | 2 | 8 | 188 |
| Christchurch, April 1979 | 7 | 17.9 | 7.0 | 12.5 | $+0.3$ | 25.0 | 22 | 0.2 | 26 | 11 | 8 | -47 | 2 | 29 |  |
| Moa Creek, April 1979 | 427 | 15.9 | 1.1 | 8.5 | +-0.2 | 20.6 | 5 | $-6.5$ | 14 | 39 |  | +11 |  |  |  |
| Alexandra, April 1979 | 141 | 17.5 | 4.8 | 11.2 | $+0.5$ | 24.1 | 5 | $-2.5$ | 14 | 34 | 15 | +6 | 13 | 27 | 169 |
| Winton, April 1979 | 44 | 16.6 | 5.5 | 11.1 | +0.5 | 22.4 | 21 | -1.4 | 27 | 128 | 17 | +54 | 37 | 11 | 130 |
| Tautuku, April 1979 | 61 | 15.7 | 7.3 | 11.5 |  | 22.6 | 4 | 2.3 | 27 | 127 |  |  | 24 | 11 |  |
| Rarotonga Airport, April 1979 | 7 | 28.4 | 22.5 | 25.5 | +0.4 | 30.1 | 3 | 19.2 | 22 | 207 | 20 | $+24$ | 50 | 25 | 123 |
| Campbell Island, February 1979 | 15 | 10.9 | 6.6 | 8.8 | -0.4 | 13.5 | 16 | 3.5 | 9 | 125 | 25 | +11 | 23 | 14 | 77 |
| Campbell Island, March 1979 | 15 | 10.7 | 6.5 | 8.6 | $+0.1$ | 12.9 | 22 | 2.3 | 29 | 106 | 23 | -24 | 23 | 3 | 60 |
| Nandi Airport, Fiji, April 1979 | 15 | 30.8 | 21.1 | 26.0 | +0.0 | 32.8 | 1 | 17.8 | 22 | 146 | 13 | . | 36 | 19 | 197 |
| Totokoitu, Rarotonga, April 1979 | 9 | 27.9 | 22.3 | 25.1 | . | 30.7 | 3 | 19.8 | 22 | 313 | 19 | . | 80 | 25 |  |

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.

## WEATHER NOTES FOR MAY 1979

General-During May pressures were near normal over New Zealand and higher than usual to the south of the country. Northwest winds were slightly more frequent than usual over the north of the country, and there was a greater frequency of south-west winds in the south. Throughout most of New Zealand, May was a wet, cloudy month with cooler temperatures than normal.

Heavy hail in eastern areas of Bay of Plenty on the 15 th damaged fruit crops, and smashed windows in some buildings at Thornton. It was reported that in some areas the hail accumulated into drifts 15 cm in depth.
Grass growth in most districts was good at the beginning of the month but cooler temperatures later slowed growth. Although the ground was very wet in most areas, stock condition was reported to be good.

Rainfall-The only areas with rainfall below normal for the month were Northland, Auckland, parts of Bay of Plenty, Poverty Bay, Hawke's Bay, inland Wairarapa, and Nelson. Some localities in Hawke's Bay and Nelson were below normal by more than 50 percent. The wettest areas were parts of Canterbury, Otago, and Southland, where more than double the usual monthly totals were recorded.

At New Plymouth widespread flooding occurred on the 13th when a severe thunderstorm in the morning was followed by torrential rain in the early evening. Between 6 p.m. and 7 p.m. nearly 41 mm were recorded.
On the 14th cars and buses were stranded on the Te Anau-Milford Road when the Southland region experienced heavy rain and snow. Between 30 and 45 cm of snow were reported to be lying on the road which was blocked by fallen trees. At Invercargill 48 mm of rain were recorded in 48 hours up to 9 a.m. on the 16 th, and flooding closed the airport. The heaviest falls were between 9 a.m. and 5 p.m. in the 14th. Some stations in Southland recorded between 50 and 100 mm in the 48 hour period.

Temperatures-Apart from Northland, Nelson, and parts of Auckland, Bay of Plenty, Taranaki, Manawatu, and Wairarapa, temperatures were generally below normal by almost $\frac{1}{2}^{\circ} \mathrm{C}$. The first 2 weeks of the month were slightly warmer than usual, but from the 17th to 24th daytime maximum temperatures were below normal by $5^{\circ} \mathrm{C}$ or more in eastern districts of the North and South Islands.

Sunshine--The only districts with above normal sunshine hours were on the West Coast and parts of Northland and Bay of Plenty. Some areas in the northern half of the North Island were slightly below normal. The greatest departures were in the Wellington and Southland regions. At Kelburn, Wellington, only 84 hours were recorded and this is the lowest May total since 1942 ( 67 hours). Invercargill had 59 hours sunshine this being only 63 percent of their normal sunshine for the month.

## WEATHER SEQUENCE

At the beginning of May a ridge of high pressure extended onto New Zealand from an anticyclone in the Tasman Sea. By the morning of the 2 nd an anticyclone had become established over the country, and this persisted until the morning of the 4th. Some areas in both Islands had isolated showers, but the weather was mainly fine and warm in most districts. On the 4th a cold front moved onto the South Island bringing heavy rain to Fiordland and later to Westland as it moved northwards. Some parts of the West Coast had more than 150 mm of rain in 24 hours.

A depression formed to the west of the country on the 5th and moved slowly eastwards across the South Island. The situation became complex on the 6th when another depression also moved from the Tasman Sea onto the country. By the 7th pressures were low in the central Tasman Sea, and the cold fronts associated with the complex system moving over New Zealand brought heavy rain to many areas. The heaviest falls were in Canterbury, Marlborough, and Westland, where some areas had 24 hour falls

