Climatological Table-Summary of the Records of Temperature, Rainfall, and Sunshine for March 1966-continued

| Station |  | $\begin{aligned} & \text { Height } \\ & \text { of } \\ & \text { Station } \\ & \text { Above } \\ & \text { M.S.L. } \end{aligned}$ | Air Temperatures in Degrees (Fahrenheit) |  |  |  |  |  |  |  | Rainfall in Inches |  |  |  |  | Bright Sunshine |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Means of |  | Mean of $A$ and B |  | Absolute Maximum and Minimum |  |  |  | Total Fall | No. of RaysDay |  | $\underset{\text { Fall }}{\text { Maximum }}$ |  |  |
|  |  |  | $\underset{\text { Max. }}{\text { A }}$ | $\underset{\text { Min. }}{\text { B }}$ |  |  | Maximum | Date | Minimum | Date |  |  |  | Amount | Date |  |
|  |  | Ft. | ${ }^{\circ} \mathrm{F}$. | ${ }^{\circ} \mathrm{F}$. | ${ }^{\circ} \mathrm{F}$. |  | ${ }^{\circ} \mathrm{F}$. |  | ${ }^{\circ} \mathrm{F}$. |  | In. |  |  | In. |  | Hrs. |
| Cromwell |  | 720 | $73 \cdot 7$ | $49 \cdot 2$ | $61 \cdot 4$ | $+3 \cdot 0$ | $84 \cdot 0$ | 18 | $37 \cdot 7$ | 6 | 1.83 | 9 | $+0 \cdot 3$ | $0 \cdot 64$ | 29 |  |
| Ophir |  | 1,000 | $71 \cdot 9$ | $42 \cdot 7$ | $57 \cdot 3$ | +2.0 | $82 \cdot 7$ | 18 | $30 \cdot 3$ | 13 | 1.53 | 6 | $0 \cdot 0$ | 0.69 | 2 |  |
| Moa Creek |  | 1,400 | $70 \cdot 1$ | $41 \cdot 8$ | $56 \cdot 0$ | $+3 \cdot 4$ | $81 \cdot 1$ | 18 | $29 \cdot 0$ | 13 | $1 \cdot 20$ | 8 | $-0 \cdot 1$ | 0.69 | 2 |  |
| Earnscleugh |  | 500 | $73 \cdot 2$ | $43 \cdot 2$ | $58 \cdot 2$ | +1.8 | $88 \cdot 0$ | 17 | $31 \cdot 5$ | 13 | $1 \cdot 50$ | 8 | $+0 \cdot 1$ | 0.52 | 29 |  |
| Alexandra |  | 461 | $72 \cdot 2$ | $49 \cdot 4$ | $60 \cdot 8$ | $+2.9$ | $83 \cdot 1$ | 17 | 38-1 | 12 | $1 \cdot 08$ | 8 | $-0 \cdot 1$ | $0 \cdot 42$ | 2 | 206 |
| Roxburgh Hydro |  | 350 | $70 \cdot 0$ | $47 \cdot 1$ | $58 \cdot 6$ | $+0 \cdot 9$ | $82 \cdot 5$ | 1 | $33 \cdot 9$ | 13 | $2 \cdot 30$ | 12 | +0.5 | $1 \cdot 17$ | 2 |  |
| Moa Flat, West Otago |  | 1,345 | $64 \cdot 5$ | $45 \cdot 9$ | $55 \cdot 2$ | $+3 \cdot 0$ | $77 \cdot 4$ | 1 | $36 \cdot 4$ | 13 | $2 \cdot 94$ | 16 | $+0 \cdot 2$ | $0 \cdot 80$ | 26 |  |
| Lake Mahinerangi |  | 1,300 | $64 \cdot 0$ | $46 \cdot 8$ | $55 \cdot 4$ |  | $78 \cdot 0$ | 24 | 34.0 | 6 | $3 \cdot 25$ | 12 | $-0.2$ | 1.08 | 2 |  |
| Tapanui . |  | 740 | $68 \cdot 0$ | $48 \cdot 8$ | $58 \cdot 4$ | $+3 \cdot 6$ | $81 \cdot 5$ | 1 | $35 \cdot 2$ | 13 | $2 \cdot 81$ | 16 | -0.5 | 0.56 | 2 |  |
| Rankleburn Forest |  | 835 | $64 \cdot 1$ | $47 \cdot 1$ | $55 \cdot 6$ | +1.8 | $77 \cdot 2$ | 18 | $36 \cdot 0$ | 6 | $3 \cdot 84$ | 18 |  | 1.07 | 2 |  |
| Otautau |  | 180 | $64 \cdot 9$ | $47 \cdot 4$ | $56 \cdot 2$ | $+1.7$ | $79 \cdot 5$ | 18 | 33.8 | 13 | $4 \cdot 23$ | 14 | $+0 \cdot 2$ | $1 \cdot 50$ | 25 | 119 |
| Gore |  | 230 | $66 \cdot 7$ | $49 \cdot 0$ | $57 \cdot 8$ | $+2 \cdot 1$ | $80 \cdot 0$ | 17 | $37 \cdot 0$ | 6 | $3 \cdot 27$ | 16 | $+0 \cdot 1$ | 0.94 | 26 | 126 |
| Winton |  | 150 | $66 \cdot 0$ | $47 \cdot 3$ | $56 \cdot 6$ |  | $79 \cdot 0$ | 17 | 36.1 | 13 | $3 \cdot 16$ | 18 |  | 0.84 | 26 | 131 |
| Pebbly Hills |  | 138 | $67 \cdot 0$ | $47 \cdot 8$ | 57.4 | +2.5 | $80 \cdot 0$ | 1,24 | $34 \cdot 0$ | 13 | $3 \cdot 07$ | 19 | $-0.8$ | 1.08 | 26 |  |
| Invercargill Airport |  | 1 | $63 \cdot 8$ | $47 \cdot 0$ | $55 \cdot 4$ | $+1 \cdot 6$ | $75 \cdot 6$ | 17 | $35 \cdot 0$ | 6 | $3 \cdot 46$ | 19 | $-0.8$ | $0 \cdot 87$ | 25 | 128 |
| Milton .- |  | 60 | $65 \cdot 7$ | $47 \cdot 8$ | $56 \cdot 8$ |  | $78 \cdot 8$ | 17, 18 | $34 \cdot 3$ | 6 | $3 \cdot 23$ | 12 | $+0.7$ | $1 \cdot 37$ | 2 |  |
| Balclutha |  | 20 | $65 \cdot 3$ | $49 \cdot 2$ | $57 \cdot 2$ |  | $79 \cdot 8$ | 18 | $35 \cdot 6$ | 6 | $2 \cdot 05$ | 12 |  | 0.99 | 2 | 118 |
| Rarotonga |  | 15 | $83 \cdot 9$ | $71 \cdot 5$ | $77 \cdot 7$ | $-0.5$ | 87.8 | 16 | $61 \cdot 2$ | 9 | $3 \cdot 58$ | 15 | $-6 \cdot 3$ | $1 \cdot 15$ | 25 | 205 |
| Raoul Island |  | 126 | $77 \cdot 7$ | $68 \cdot 2$ | $73 \cdot 0$ | $+1.8$ | $82 \cdot 6$ | 3 | $61 \cdot 8$ | 30 | $8 \cdot 16$ | 20 | $+3 \cdot 0$ | $2 \cdot 17$ | 15 | 132 |
| Chatham Islands. |  | 157 | $60 \cdot 9$ | $49 \cdot 6$ | $55 \cdot 2$ | $-1.7$ | $70 \cdot 2$ | 3 | $40 \cdot 6$ | 21 | 1.97 | 10 | $-0.6$ | 0.58 | 3 | 124 |
| Campbell Island |  | 49 | $51 \cdot 6$ | $42 \cdot 6$ | $47 \cdot 1$ |  | $58 \cdot 0$ | 24 | $30 \cdot 8$ | 22 | $3 \cdot 52$ | 25 |  | 0.75 | 9 | 49 |
| Scott Base, Antarctica |  | 45 |  |  | $9 \cdot 3$ |  | $24 \cdot 3$ |  | $-18 \cdot 4$ |  |  |  |  |  |  | . |

LATE RETURNS

| Whatawhata, Feb 1966 | 340 | $75 \cdot 6$ | $60 \cdot 1$ | $67 \cdot 8$ | $+3 \cdot 2$ | $80 \cdot 2$ | 19 | $50 \cdot 2$ | 6 | $6 \cdot 66$ | 14 | $+2 \cdot 4$ | $1 \cdot 79$ | 28 | 152 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Waipiata, Feb 1966 | 1,550 | $72 \cdot 8$ | $38 \cdot 8$ | $55 \cdot 8$ | $-2 \cdot 0$ | $85 \cdot 0$ | 18 | $2.9 \cdot 0$ | 27 | 1.06 | 7 | $-0.8$ | $0 \cdot 29$ | 23 | 167 |
| Moa Creek, Feb 1966 | 1,400 | $74 \cdot 9$ | $49 \cdot 1$ | $62 \cdot 0$ | $+5 \cdot 2$ | $83 \cdot 8$ | 13 | $33 \cdot 3$ | 1 | 1.01 | 6 | $-0.7$ | $0 \cdot 35$ | 19 | . . |
| Rukuhia, Feb 1966 | 215 | . . | . . | . . | . . | . . | . | . . | . . | 6.25 | 12 | $+2 \cdot 9$ | 1.97 | 28 | . |
| Errata Bromley, Feb 1966.. |  | $\ldots$ |  |  | . | $\cdots$ | . | $\cdots$ | . | $2 \cdot 07$ | .. | . . | . . | . . | $\cdots$ |

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.
*Sunshine recorder is not located at the station but is in the near vicinity.

## Notes on the Weather for March 1966

General: March was warmer than usual, with an unusually high frequency of northerly to easterly winds. The two main wet periods were at the beginning and end of the month. Between these two periods many areas experienced two or three weeks of settled weather, which proved useful for harvesting. Generally pasture growth was reported to be very good, as in previous months.

Rainfall: Rainfall was mainly about 50 per cent above average in northern districts of the North Island and in eastern districts of both islands. In southern districts of the North Island, in the Marlborough Sounds and in western and most inland districts of the South Island rainfall was below average, mainly by 25 to 50 per cent.

Temperatures: Temperatures were mainly above average by 1-3 degrees, highest departures being in Taranaki and in some inland districts of the South Island. New Plymouth had its warmest March since 1938. However, in Gisborne and Hawke's Bay temperatures were only about average.

Sunshine: Sunshine was above average by 30-70 hours in western districts of the North Island from Auckland to Wellington, largest surpluses being in Manawatu and Waikato. Elsewhere sunshine was fairly close to the average value. However, in Gisborne sunshine was down by 30-50 hours; while over the coastal areas of Canterbury, Otago, and Southland from Ashburton southward it was down by $20^{-} 30$ hours.

Weather Sequence: At the beginning of the month a complex depression was centred over Northland. It had already caused considerable rain over the North Island, which continued, now affecting also Nelson, Marlborough and North Canterbury. One centre moved southward along the west coast of the North Island and through Cook Strait. At the same time a trough of low pressure crossed the South Island; and the 2 nd and 3 rd were wet days in nearly all districts. Another centre developed on the following day over Northland, and the rain was then restricted mainly to northern districts of the North Island together with Gisborne and Hawke's Bay.

The weather cleared over the North Island on the 5 th as an anticyclone over the Tasman Sea extended on to New Zealand and eastward to the Chatham Islands. However, on this and the following day the depression which had developed over Northland remained active while moving away, with some rain in eastern Northland. A trough of low pressure crossed the country on the 7 th with rain in western districts of both islands and also in central
districts of the North Island and Otago and Southland. On the following day south-westerlies prevailed with scattered light showers. On the 9 th a depression passed close to Southland and the associated trough of low pressure brought rain to the southern half of the South Isiand. South-westerlies prevailed again during the next two days with showers in many districts. From the 12 th to the 16 th an anticyclone covered the Tasman Sea and New Zealand and extended to the east. However, the weather was showery at first around Auckland in the easterlies; and showers were also reported on most days in Fiordland or the Southland-Otago coast.
By the 17 th the belt of high pressure still covered most of the country but the weather deteriorated in Northland with the approach of a depression from the north. During the next two days the rain spread southward, affecting especially Coromandel and Bay of Plenty. On the 20 th the depression commenced to move away to the east of North Cape, and in the easterlies the rain spread also to Hawke's Bay. On the following day, as the depression lost intensity, the rain became very scattered, affecting mainly Northland and some of the eastern North Island ranges. The anticyclone was now centred to the east of the South Island and during the next three days it moved away very slowly while depressions appeared over the North and South Tasman Sea. These were days of warm and predominantly fair weather. However, the West Coast received some rain; and thunderstorms were reported at times in the North Island ranges and in the Wairarapa, with one or two heavy downpours in the latter area.
The northernmost depression remained almost stationary on the 25 th and 26 th but a trough of low pressure gradually spread rain over the greater part of the South Island. Somewhat similar conditions persisted during the next two days as the depression moved slowly southward, but some rain was reported in Bay of Plenty. Heavier and general rain was experienced on the 29 th and $30 t h$ as one small depression from the North Tasman Sea crossed the Auckland Peninsula and another centre crossed the South Island. The rain was particularly heavy in south Westland, and some considerable falls were also reported in other parts of the West Coast and the Alps, in Nelson, and in the Taranaki-TaumarunuiRotorua area. On the last day of the month the northernmost of the two depressions lay to the east, and a trough of low pressure crossed the country. Rain was restricted mainly to western and northern districts of both islands.
J. F. GABITES, Director.

