

C. CLIMATE AND METEOROLOGY.

(Being extracts from article in "New Zealand Official Year-book.")

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The climate of New Zealand is to be considered in relation to four main features—(1) Its position, stretching for nearly a thousand miles southward of latitude 34° S. ; (2) its insular condition, situated as it is in the widest ocean of the world from which no part of the country is distant more than seventy-five miles ; (3) its physical features, mountain-chains running mostly north and south and affording different aspects ; and (4) the weather-changes to which these parts of the earth are subject.

SUNSHINE.

The latitudes in which the chief cities of New Zealand lie in the Southern Hemisphere correspond with the cities in the North from which the possible amount of sunshine may be gauged. Auckland's latitude corresponds to that of Cape Passaro in the south of Sicily ; Wellington to Naples ; and Dunedin to Venice. The following table gives the period during which the sun is above the true horizon on the days of midsummer and midwinter :—

Possible Sunshine on the				At Auckland.	At Wellington.	At Dunedin.
				Hr. min.	Hr. min.	Hr. min.
Longest day	..	..	..	14 40	15 10	15 46
Shortest day	..	..	..	9 38	9 13	8 39

The actual hours of bright sunshine recorded in Wellington average nearly six hours per day throughout the year, and few indeed are the days when a brilliant sun does not at some time or other score a definite trace upon the recording-chart. Other districts much more protected from cloud-formation, as Nelson, in the Tasman Gulf ; Napier, on the east coast of the North Island ; and Lincoln, near Christchurch, on the east coast of the South Island, have higher records. Some of the west coast districts, on the other hand, record less bright sunshine ; but Wellington, the capital city, is in the middle position, and affords a good mean both for the sunshine and the rainfall of the whole Dominion. Wellington is also in a critical position with regard to atmospheric disturbances, Cook Strait being usually the dividing-line between the cyclonic storms and westerly lows, generally partaking of the changes due to both. The actual results are as follows :—

Hours of Sunshine.

Year.	Gisborne.	Napier.	Moumahaki.	Wellington.	Lincoln.	Nelson.
	Hr. min.	Hr. min.	Hr. min.	Hr. min.	Hr. min.	Hr. min.
1907	1939 20	2610 35	1897 34	1853 53	2133 53	.. ..
1908	2259 20	2806 42	2001 40	2009 3	2185 11	.. ..
1909	1965 40	2203 20	1856 17	2223 31	2112 9	2562 58
1910	2293 4	2530 47	1869 15	2157 3	2083 42	2571 34
1911	2147 20	2406 56	1692 25	2276 37	2326 0	2506 56
Average ..	2120 57*	2511 40*	1864 15*	2104 01*	2168 11*	2547 09†

* For five years. † For three years.

These results bear comparison with some of the most favoured regions of the world, where, in order to produce the best results, sunshine and shower hold sway in turn. For instance, over the northern parts of the British Isles the annual average of bright sunshine is 1,200 hours, or 27 per cent. of the possible ; and in the south it is 1,600 hours, or 36 per cent. ; while Italy has averaged from 2,000 to 2,400 hours, or from 45 to 54 per cent. of the possible.

TEMPERATURE.

Latitude, insolation, proximity of the ocean, and the height of a locality are the determining factors with regard to temperature. The oceanic influences are recognized as the dominant feature with regard to both summer heat and winter cold, upon both of which they exercise a moderating effect. The west coast of the South Island especially is open to the prevailing westerly winds, and it is more humid and equable than the eastern coastal districts, which at times present an almost Continental type with considerable range of temperature. In the cities of Auckland and Wellington frosts on the grass are of rare occurrence, though further south and inland they are often experienced. Showing the influence of the ocean in moderating temperature, we may contrast the records of a Continental city with the capital city of Wellington.

Temperatures (Degrees Fahrenheit).

Mean.	Wellington. Lat. 41° 16" S.	Mean.	Vienna. Lat. 48° 12" N.
January, maximum	.. .. 69·4	August, maximum	.. .. 91·2
July, minimum	.. .. 42·1	January, minimum	.. .. 10·2
Mean annual range	.. .. 27·3	Mean annual range	.. .. 81·0