

19. On Climates Suitable for the Production of Wine

In that most interesting and valuable recent work of *Alexander Von Humboldt*, entitled *Cosmos*, we find some remarks upon the climates best suited to the growth of grapes, which may be usefully noticed by our colonial wine makers. He says he has seen –

In no part of the world, not even in the Canary Islands, in Spain, or in the South of France, more magnificent fruit, especially grapes, than at Astrachan, near the shores of the Caspian, in lat. 46° 21'. With a mean annual temperature of about 9 cent. the mean summer temperature rises to 21° 2 cent. (48° Fah.) which is that of Bordeaux; while not only there, but also still more to the south, at Kislar at the mouth of the Terek (in the latitude of Avignon and Rimini) the thermometer sometimes falls in winter to –25° or –30° cent. (–13° to –22° F.)

Ireland, Guernsey, and Jersey, the Peninsula of Brittany, the coast of Normandy, and that of the south of England, all present by the mildness of their winters and by the temperature and clouded skies of their summers, the most striking contrast in the continental climate of the interior of Eastern Europe. In the north-eastern part of Ireland, in lat. 54° 56', under the same parallel as Königsberg, the myrtle flourishes as luxuriantly as in Portugal.

The mean temperature of the month of August, in Hungary, is 21° cent. (69° 8 F.); in Dublin, which is situated on the same isothermal line (or line of equal mean *annual* temperature) of 9 $\frac{1}{2}$ ° cent. (49° 2 F.), it is barely 16° cent. (60° 8 F.); the mean winter temperature of the two stations being 2° 4 cent. (27° 7 F.) at Bude, and 4° 3 cent. (39° 8 F.) at Dublin.

The winter temperature of Dublin is 2° cent. (3° 6 F.) higher than that of Milan, Pavia, Padua, and of the whole of Lombardy, although they enjoy, in the mean of the whole year, a temperature of at least 12° 7 cent. (54° 8 F.), being nearly as mild as London, and milder than Paris. Even in the Feroe islands, in lat. 62°, under the favouring influences of the sea and of westerly winds, the inland waters never freeze. On the lovely coast of Devonshire, where Salcombe Bay has been called, on account of its mild climate, the Montpellier of the North, the *Agave Mexicana* has been seen to

blossom in the open air, and orange-trees trained against espaliers, and only alightly protected by mais, have borne fruit.

There, and at Penzance and Gosport, as well as at Cherbourg in Normandy, the mean winter temperature is above $5^{\circ}5$ cent. ($41^{\circ}8$ F.), that is only $1^{\circ}3$ cent. ($2^{\circ}4$ F.) lower than that of Montpellier and Florence. Hence, he adds, we perceive in what a variety of ways the same mean annual temperature may be distributed in the different seasons of the year, and the important influence of this distribution, whether considered in reference to vegetation, to agriculture, to the ripening of fruits, or to the comfort and well being of man.

If, in countries where the myrtle grows wild, and the snow does not continue on the ground during winter, the temperature of summer and autumn is barely sufficient to ripen apples thoroughly – and if the vine (*to produce drinkable wine*) *avoids islands and in almost all cases proximity to coasts,*—the reason is by no means exclusively the low summer temperature of such situations, shown by the thermometer suspended in the shade; it is also to be sought in a difference which has been hitherto but little considered, although known to be most actively influential in other classes of phenomena (for example in the bursting into flame of a mixture of hydrogen und chlorine). I mean *the difference between direct and diffused light*, is that which prevails when the sky is clear, and when it is veiled by cloud or mist. I long since attempted to call the attention of physicists and vegetable physiologists to this difference, and to the heat, unmeasured by thermometers, which is locally developed in the vegetable cells by the *action of direct light*.

If (says Humboldt) we form a thermic scale of different kinds of cultivation, beginning with that which requires the hottest climate, and proceeding successively from vanilla, cacao, spices, and cocoa-nuts, to pine-apples, sugar-cane, coffee, fruit-bearing date-trees, cotton, citrons, olives, sweet chestnuts, and vines producing drinkable wine, an exact consideration of their various limits, both on plains and on the declivities of mountains, will teach that, in this respect, other climatic relations than those of mean annual temperature must be sought. Taking only one example, the cultivation of the vine, – the production of *drinkable wine* requires not only a mean annual temperature of above $9\frac{1}{2}^{\circ}$ cent, (or $[49^{\circ}]$ F.) but also a winter temperature of above $0^{\circ}5$ cent., ($32^{\circ}8$ F.) followed by a mean summer temperature of at least 18° cent ($64^{\circ}4$ F.). At Bordeaux, in the valley of the Garonne, in latitude

44°50, the mean temperature of the year, – the winter, the summer, and the autumn, are respectively 13°8, 6°2, 21°7, and 14°4 cent., (56°8, 43°2, 71°0, and 58°0 F.). On plains in the vicinity of the Baltic, in latitude $52\frac{1}{2}$, where a wine is produced, which though it is used, can scarcely be called drinkable, these numbers are respectively 8°6 – 0°7, 17°6, and 18°6 cent. (47°5, 30°8, 63°7, and 47°5).

If it should appear strange, that these great differences in the influence of climate in the production of wine, do not show themselves still more markedly in the indications of thermometers, it should be remembered that an instrument suspended in the shade, and carefully protected from the direct rays of the sun, and from nocturnal radiation, cannot show, at all seasons of the year, and during all the periodical changes of temperature, the true heat of the surface of the ground, which receives the whole effects of the sun's rays.

The following table exhibits in a descending scale the capability of different places in Europe for the production of wine; in which the author observes, „a comparison of Cherbourg and Dublin with places in the interior of Europe shows that, with but little difference of temperature, so far as the indications of the thermometer in the shade are concerned, the question of the maturity or immaturity of fruit is determined by the habitual serenity or cloudiness of the sky.“

<i>place.</i>	Latitud e.	Elevati on.	Mea n of the Yea r.	Wint er.	Sprin g.	Summ er.	Autum n.	Number of Years' observatio ns.
		Eng. ft	F.	F.	F.	F.	F.	
Bordeaux	44°50	25°6	57° 0	43°0	56°1	71°0	58°0	10
Strasbourg	48°35	479°6	49° 6	34°2	50°0	64°6	50°0	35
Heidelberg	49°24	333°5	49° 4	34°0	50°0	64°2	49°8	20
Manheim	49°29	300°5	50° 6	34°9	50°8	67°1	49°6	12

Würzburg	49°48	562°7	50° 2	35°0	50°4	65°7	49°4	27
Frankfort	50°07	383°7	49° 4	33°3	50°6	64°4	49°4	19
Berlin	52°31	102°3	47° 7	31°0	46°7	63°5	47°5	22
Cherbourg	49.39		52. 1	41.4	50.8	61.7	54.3	3
Dublin 	53.23		49. 1	40.2	47.1	59.6	49.7	13

The great accordance in the distribution of the annual temperature throughout the different seasons of the year in the valleys of the Rhine and the Main, tends to confirm the accuracy of the observations. The months of December, January, and February, are taken as winter months, as is both the usual and the most advantageous arrangement in the meteorological tables.

When we compare the qualities of the wines of Franconia and Berlin, and the mean summer and autumn temperatures at Würzburg and Berlin, we are almost surprised to find that the temperatures differ only 1° or 2° of the cent. thermometer, or about 2° of F. The influence of late May frosts in the flowering season of the vine, after a winter of correspondingly lower temperature, is an element of no less importance than the late season of the ripening of the grapes, and the influence of *direct, not diffused*, solar light, unobscured by clouds.

From the above extracts, our winemakers may learn, that if, as in many cases occurs, their wine is anything but *drinkable*, it is not the fault of the climate of new South Wales.