

for April, May, and June, and a less average than 2in. in July, August, and September, all other conditions being favourable, fruit of the best quality can be raised, and wine of the greatest body and excellence can be made. The humidity of the atmosphere in some countries, the dryness of the air in others, will, of course, materially change the proportion of rainfall required for or injurious to the grape.

“With regard to the necessity of attention to the most advantageous climatic conditions, it is enough to remark that, where these are favourable, good crops of fruit are the rule, and that, too, even in the absence of experience in cultivation; but in unfavourable locations the application of the highest attainments in the art and science of grape-culture, so far as relates to pruning manipulations or culture and management of soil, will not insure success. Grape-culture has now reached a point from which but little further progress can be made without a close recognition of the requirements of the plant, in connection with local climatic conditions, the most important being that of freedom from heavy dews, freedom from those cryptogamic diseases—mildew and rot. The topographical configuration of a locality is of far more importance than its geographical formation. Where the atmospheric conditions are favourable, satisfactory results may be obtained even from poor soils, but in ungenial climates the very best soils will not guarantee success.

“There are only a few countries where the grape will in favourable seasons grow to perfection, and there is no country in the world where all kinds of grapes would succeed. Species found in the lower latitudes will not flourish if removed further north; the natives of higher altitudes will not endure the southern heat; the Scuppernong cannot ripen north of Virginia; the Fox grape of the north will scarcely grow in the lower regions of Carolina and Georgia; a vine which produces delicious grapes in Missouri may become very inferior in the most favoured localities of New Hampshire.

“Thus the climate, the mean temperature as well as the extremes, the length of the growing season, the relative amount of rain, the ameliorating influence of lakes and large rivers, the altitude as well as the soil, have an almost incredible influence on various varieties of grapes; and a judicious choice of locations adapted to the grape, and of varieties adapted to our location, its climate and soil, is therefore of the first importance.

“No one grape is suited to all localities, neither is there any one locality which is suited to all grapes.

“Notwithstanding that over fifteen hundred varieties are cultivated in Europe, yet the number of kinds especially adapted to the different localities is very limited for each of them, and we seldom find more than three or four varieties to form the main bulk of the vineyards of the different sections, each province, county, or township even, having its own special favourites. This question of adaptability to soil and local climate is one of the greatest importance, and should be closely studied by the intelligent grape-grower, if he would make its culture a success. No existing variety, and probably none that will ever be produced, is well adapted to general cultivation in more than a limited portion of this vast country. This limitation is not determined by isothermal lines. Success or failure of a variety depends not only on degrees of heat and cold, not only on earliness or lateness of seasons, however important factors these may also be, but on numerous causes, some of which we cannot, so far, sufficiently understand and explain. We need but remember that the grapes we cultivate in the United States have originated from one or the other of several distinct species, or from crosses between some of their varieties, and that each of those native species is found growing wild in certain limited portions of our country, and not at all in others. Thus the *wild* *Labrusca* is a stranger to the Lower Mississippi Valley and westward. By observing what species grows in a locality, we may safely assume that cultivated varieties of the same species will thrive best in that locality or its vicinity under otherwise proper conditions. Where the native species does not exist, its cultivated varieties may for a time promise excellent success; but in many localities this promise will probably, sooner or later, end in disappointment. This has been our sad experience even with the Concord, which is generally considered the most reliable, healthy, and hardy American grape.

“On the other hand, this proposition seems to conflict with the fact that American vines of different species have been successfully transplanted even to Europe. But it would be a great mistake to believe that they would succeed in all parts of that continent. It was found, on the contrary, that there also some of our varieties which succeed well in one portion of France, for instance, entirely failed in others; and this only proves that we may find in far-off foreign lands localities which exactly correspond in soil, climate, &c., with certain localities in our own country; and, where this is the case, well and good; but where these are different the results are unsatisfactory. In evidence we quote from the report of the Commission, composed of some of the best French authorities, to the International Phylloxera Congress, in Bordeaux (October, 1882). After giving a detailed report of their observations in the principal vineyards of France where American vines have been planted, they say, ‘But they [these resisting American vines] do by no means succeed equally well in all locations. The nature of the terrain and the climate must be taken into serious consideration. But was it not one of the great difficulties with the French vines to know which variety suited such or such soil or aspect? How many failures were the consequence of bad selection! It is, of course, the same with American vines, coming from widely different conditions of temperature, humidity, and altitude.’”

Mongonui, Auckland, and Napier have means of temperature within those named in the above extract as being requisite, and Taranaki, Wanganui, Wellington, and Nelson are slightly below. This, however, is neither conclusive that the former are, as a whole, suitable, nor the latter unsuitable, in that the suitability of districts cannot be defined by isothermal lines, and the data recorded at signal-stations are not always a guide to what may be the temperature of a district quite close at hand, but whose topography may influence the temperature very materially. For instance, the signal-station at Auckland is in the most exposed position, and stands on a narrow isthmus, on