

### CLIMATE : WINDS AND RAINFALL.

The prevailing wind in Europe is the south-west Anti-trade. This wind becomes laden with moisture in passing over the Atlantic, and the moisture is then carried over the continent, and deposited in the form of rain or snow whenever the temperature of the wind is sufficiently reduced to bring about condensation. Europe has few, if any, tracts which, through lack of rain, are hopeless deserts, though there are parts, like the South-East of Russia, the plains of the Danube, and the central plateau of Spain, where the rainfall is very slight. This occurs because the districts are far removed from the ocean, or are partly cut off from the westerly rain-bearing winds.

Mountain ranges have a great influence on the rainfall of countries, because they force the moisture-bearing winds, which they intercept, to rise, and, rising, the air expands and cools till the moisture is condensed and falls as rain on the mountain slopes. When the rain has fallen the wind will pass on, and no more rain will fall, unless a further chill causes more of the moisture it may still contain to be condensed, or until it has been able to obtain a fresh supply of moisture by passing over the sea, lakes, rivers, or marshes. This explains why the southern and western slopes of mountain ranges in Europe are more rainy than districts lying north and east of them.

Throughout the Mediterranean region the summers tend to be dry, and in the south the total rainfall is generally slight. The rain that falls in this region is mainly due to the condensation of vapour brought by cyclones from the Atlantic. The prevailing winds over the North Atlantic are the south-west Anti-trades and the north-east Trades. The former blow north of the belt of high pressure which occurs about  $30^{\circ}$  N. lat., and the latter to the south. These winds, however, somewhat shift their positions with the seasons, and in our summers blow further north than in our winters. Consequently, in our summer the Trade winds prevail over the North Atlantic just south of the latitude of the Mediterranean, and cyclones reaching that sea from the south-west at that season have passed over a smaller extent of ocean than in the winter, and so contain less vapour. The heat in summer also allows more vapour to remain uncondensed than in winter. In North Africa the Atlas range condenses some moisture, but the greater part of the coastal belt is too far south and too little exposed to rain-bearing winds to receive an adequate rainfall.