

THE CLIMATE



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ANTONI CASTEJON | BARRIOS METEOROLOGIST

The *Paisos Catalans* are in the north-east of the Iberian Peninsula, between latitudes 38° N and 43° N, in the southern strip of the temperate zone, where the temperate and subtropical circulation belts meet. As in other regions surrounding the Mediterranean, the climate of the *Paisos Catalans* is characterized by its marked irregularity, with hot, dry summers, mild winters and maximum rainfall in spring and autumn. But their size, the varied nature of the land and the distance from the sea of the

inland regions are important factors which lead to the existence of climatic differences that affect large areas. Broadly speaking, the Pyrenees and the isolation of the Central Depression regarding the sea are the principal elements behind this variety.

Rain, snow and hail are all to be found in the *Paisos Catalans*. Naturally, rain is the most frequent of the three, while snow appears in winter in the higher mountain regions. Hail falls more infrequently, and is usually accompanied by rain. Although it

is of little importance quantitatively, it can have frighteningly devastating effects on crops. Because the land is so varied, rainfall also varies enormously, from the maximums of the High Pyrenees, to the minimums of the arid plains of the Segre valley. Normally, July is the driest month of the year, while the highest rainfall is recorded in autumn and at the end of summer. This irregular and sometimes violent rainfall can be explained by the geographical situation of the *Paisos Catalans* and the fact that they are flanked by a



closed, warm sea. The Iberian Peninsula acts as a small continent which cools rapidly in the autumn as a result of irradiation, while the surface waters of the Mediterranean maintain the high temperatures accumulated during the summer. This supplies water vapour to the air masses and thus contributes to the formation of rainclouds. If, on top of this, factors such as a depression situated over the south-east of the peninsula add to the instability, the easterly air-flow over the coast can lead to an increase in rainfall. However, this situation can become explosive if, as a result of the excessive undulation of the air-stream separating the polar front from the subtropical air mass, a large bubble of very cold air breaks away from the global circulation and becomes completely isolated within a mass of warm air. Then, the enormous difference in temperature between the two air masses pushes the warm, humid air upwards, while the cold air, turning round it, is forced downwards. These vertical movements encourage the formation of cumulus-type clouds, which in a short time can release hundreds of litres of water over a relatively small area and turn dry river beds into considerable torrents which are liable to break their banks.

One of the basic elements of the climate is the air temperature, since it plays an important part in the distribution of animal and plant life around the world. It also affects mankind, condensation processes and aridity. For most of the year, tem-

peratures in the Catalan coastal areas are very mild, due to the proximity of the closed-in Mediterranean, which acts as a thermal regulator. In fact, the surface temperature of the water in summer varies between 20° and 25° Centigrade, and can reach 27° in August in the Balearics. In winter on the other hand, it is very unlikely to go below 13° C. This has an important effect on the mean annual air temperature. Also, the proximity of the African continent means that its weather patterns are felt here, particularly in the Baix Segura region, where temperatures of over 43° C have been recorded in summer and the winters are exceptionally mild, with minimums rarely falling below 6° C or 7° C. On the other hand, the inland regions are partially or totally excluded from the maritime influences and subsequently show much larger seasonal temperature variations, depending on their distance from the sea. In Lleida and Vic, for example, summer temperatures often go above 40° C, while in winter they can go below —10° C. This sort of winter temperature is also typical of the mountain regions, especially in the Pyrenees, although here we have to take into account other factors, such as the altitude and, in particular, the orientation, there being clear differences between the sunny and the shaded slopes. In fact, there is considerable contrast between the north-east and south-east faces.

As we have seen, the surface winds play an important part in the rainfall of a given geographical area and in temperature distribution. Therefore, the climate's char-

acteristics depend on the frequency with which the different winds blow. No one wind affects all of the *Paisos Catalans* though there are some which are closely connected with more than one region. For example, the *tramuntana* is typical of the Empordà and Minorca, and the *mestral*, of the Baix Ebre, and no-one can deny that they are one of the distinguishing characteristics of the people and the landscape in the places they pass through. Since the *tramuntana* is a descending wind, which has lost its humidity in its passage over high ground, it often leads to increased evaporation and adds to the effects of the dry weather. Without doubt, it also contributes to the relatively low rainfall in the areas it visits.

In the flatter regions, the sea winds are generally wet and rainy, while, on the other hand, the continental winds rarely contain any water vapour. In the *Paisos Catalans*, the winds from the north and the north-east are responsible for bringing cold air, and those from the south and south-west bring warm air. During the summer, the daytime sea-breezes cool the atmosphere, and in winter they have the opposite effect.

In the hilly regions, the influence of the wind on the weather depends on the geographical conditions. When the wind hits a mountain range, it is forced to rise, and this sometimes results in heavy rainfall. According to the orientation of the range, the wind can change its original direction and modify the temperature in accordance with the lie of the land. ●