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A Science Service Feature

? WHY THE WEATHER ?

Dr. Charles F. Brooks,
Secretary, American Meteorological Society,
discusses:

CALIFORNIA'S COASTAL CLIMATE

The temperate climate for which our Pacific Coast is noted is largely owing to the Japan Current drift from which the prevailing winds blow. On approaching the continent this drift water spreads northward and southward, the dividing zone being usually at about the latitude of San Francisco. The northward branch, though slightly cooler than the southern one is warm as compared with the average temperature for its latitude. Therefore, it has a moderating influence on the climate of the adjacent land. The mountainous coast against which the moist, prevailing westerly winds blow is usually not warm enough to prevent rainfall due to cooling by expansion as the air rises over the mountains or stagnant cold air.

The influence of the southward branch of the drift, which becomes the California Current, is a cooling one, resulting in much less rainfall than farther north. The air when blown landward from its surface becomes warmer over the land and thus it is able to retain all its water vapor and still be eager for more. Where high mountains stand in the way, however, the great expansional cooling is more than a match for the land's heating, so much rain and snow are there precipitated.

In the winter, when the land is receiving its minimum of the sun's heat and has become colder than the slowly cooling ocean, the effect of the cool current which then is warmer than the land may be like that of the warm drift farther north. Thus, in winter, California receives rains and snows like those of other regions farther north, while in summer the warmth of the land extends the relatively dry conditions normal to southern California into Oregon and Washington.

(Tomorrow: Florida's Winter Weather)

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