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A Science Service Feature

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? WHY THE WEATHER ?

Dr. Charles F. Brooks,  
Secretary, American Meteorological Society,  
tells about:

OCEAN TEMPERATURES

The ocean is the great conservative element in climate. The farther a place is from it, or the more completely shut off by mountains from the moderating influence of its surface, the drier and more extreme is the climate.

The ocean surface temperature can change but slowly. On clear days a large proportion of the sunlight is reflected from it, and about one-half the remainder is required to prevent a fall in temperature resulting from the considerable amount of evaporation from the surface. The remainder, averaging only about one-quarter of the light that fell upon it, penetrates and spreads its heating influence through a layer hundreds of feet thick. Water requires more heat to raise its temperature than does almost any other substance, so that the whole effect of strong sunlight is not sufficient to raise the surface temperature of the ocean more than about 2 degrees in a day.

At night when a surface layer gets cooler than the water below it sinks because it is denser, and warmer water takes its place. Thus cooling at night is slow. Naturally the winds from the ocean are usually cool in relation to the hot land in summer, and warm in relation to the cold land in winter, and at all seasons, and especially in winter, the ocean wind is a humid wind.

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(Tomorrow: California's Coastal Climate)

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Science Service,  
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