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A Science Service Feature

? WHY THE WEATHER ?

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FLOODS FAVORED IN WINTER

The impervious condition of frozen soil favors flood formation from less precipitation in winter than in summer. Furthermore, the accumulation of snow, followed by heavy rains with a sudden thaw may release into a drainage basin as large a quantity of water as can be precipitated at one time even in the heaviest downpours of summer. The worst floods suffered by Paris, France, for example, have come in mid-winter, the winters of 1909-10 and 1925-26 being the most notable of this century. Other factors favoring winter floods are the low rate of evaporation and the relatively small interception of rain by the bare trees.

There is an important difference, however, between the annual rainfall regime of France and that of most of eastern North America. France has more precipitation in winter than in summer, while we generally have more in summer than in winter. This is fortunate for us, for winter floods are much less likely to occur. In the cold upper reaches of the Mississippi and Missouri rivers, in fact, not only is the winter precipitation generally moderate, but also the snow does not usually melt much in winter nor does the cold let go its grip on the rivers. The Ohio River is different, however, for both winter precipitation and winter temperatures are higher. Heavy snows fall on the western slopes of the Alleghenies and accumulate in the cooler periods. Then when a heavy flow of warm air from the Gulf of Mexico comes northward and is rapidly driven against this mountain wall heavy precipitation and concurrent melting quickly put the Ohio River up to a flood stage. Ice gorges or dams locally make very high water, and when they break they release a wave of destruction down stream. While the building of numerous dams across the Ohio can stay some of the flow, they cannot dispose of such enormous quantities of flood water.

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