

the river ; but its greatness is also shown by the character of the water, filled with a light sand brought from the disintegrating rocks among the mountains, by the strange geological mixture found in the gravel and pebbles below its bed, and by the annual summer floods which come in their greatest violence when other rivers are on the decline.

The chief tributaries of the Missouri are the Yellowstone, the Platte, the Kaw or Kansas, and the Osage—the two latter being prairie streams of irregular supply, and the two former, like the upper river, deriving most of their water from the mountains. Each of these rivers has its own characteristics and produces its distinctive freshets. The Yellowstone unites with the upper river to cause the summer flood ; the Platte usually pours out its water a little earlier in the spring ; while the freshets of the Kaw and the Osage are of less regular occurrence, and dependent largely on local rains. A combination of these freshets, the waters from the melting snows among the mountains being supplemented by heavy rains in the lower countries, has produced the great floods which occur at long but irregular intervals, the last of which took place in 1844. This flood, the only great flood of which we have accurate information, submerged the entire bottom land below the mouth of the Kaw, and has been regarded by the settlers as an event too terrible to occur a second time ; but Indian traditions mention other floods of similar character, one of which, occurring towards the end of the eighteenth century, probably in 1785, is said to have considerably exceeded that of 1844.

In many matters of topography the Missouri resembles the Upper Mississippi, while it is substantially identical in these respects with the lower river. Its course lies through a low alluvial deposit of bottom land enclosed on each side by bluffs. The distance between these bluffs varies from a mile and a half to 15 miles or more, the bluffs being generally highest, most rugged, and containing the greatest quantity of rock, when they approach most nearly together. For about 500 miles from the mouth of the river, or nearly to the southern boundary of the State of Nebraska, the bottom land, except where artificially cleared or where its width is very great, is covered with a heavy growth of timber, the cotton-wood being the most common tree, while the sycamore, black walnut, and several varieties of oak and elm also abound ; farther north