

SCIENCE

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MSS. intended for publication and books, etc., intended for review should be sent to Professor J. McKeen Cattell, Garrison-on-Hudson, N. Y.

THE PLEISTOCENE HISTORY OF THE MISSOURI RIVER¹

ASSUMING that one whom you may honor by election to this position of vice-president is expected to bring forward something concerning his special line of research, I have chosen the theme presented as my subject. It has been my lot to study more or less for the last forty years the relations of the Missouri River to the Pleistocene Ice.

This paper proposes to set forth some facts, some of them not widely known, with theories for their explanation, and to interweave the theories with sufficient speculation to form a consistent and not improbable story.

My personal examination covers only from the mouth of the Missouri to Bismarck, N. D., consequently I speak less intelligently of the region farther north.

The Missouri is not an old river geologically speaking. It has reached maturity over most of its course, but that is the result of the softness of the rocks over which it flows, rather than of the length of time it has occupied its present course. Nor is the degree of maturity proportionate to the softness of the rocks. For example, through the Dakotas it is in very early maturity, the flood plains are narrow and the trough is narrow and has steep sides, though the rocks are very soft, while in its lower course the breadth of its trough is quite strictly proportional to the softness of the rocks forming the bed of the present

¹ Address of the vice-president and chairman of Section E, Geology and Geography, American Association for the Advancement of Science, Atlanta, December 29, 1913.