

CATLINITE.

BY A. R. FULTON.

THE region embracing Northwestern Iowa and Southwestern Minnesota is not remarkable for many exposures of rock strata. It possesses, however, some features of considerable geological interest. Except in the extreme northwest corner of the State, the only exposures of rock in place along any of the streams in Northwestern Iowa, are of the Cretaceous age. Geologically, this is the newest stratified rock formation, and in its natural position rests immediately below the drift. In that region it consists of sandstones and shale, which are very soft and friable. And here appears a very interesting fact in geology. It is that this most recent of stratified rock formations lies, to all appearances, in this region, directly upon the oldest—the Azoic. The Cretaceous exposures extend up along the Big Sioux river to a point very near the northwest corner of Iowa, where suddenly appears, what Dr. White has denominated Sioux Quartzite—a formation whose geological position is naturally more than two thousand feet below the Cretaceous! All the other formations in the geological scale are entirely wanting. The old earth and the new are here brought together, with all the formations which should represent the intervening ages eliminated by some strange catastrophe not recorded in any book that man has written.

This quartzite, as before stated, first makes its appearance at the extreme northwest corner of Iowa, causing at this point a fall in the Big Sioux river. Ten miles up the valley, toward the northwest we come to a series of cascades or falls, where the river, within a distance of half a mile, has a descent of about sixty feet. These falls are caused by a bold outcrop of the same formation. Its thickness here has been estimated at three hundred feet—the estimate being made from actual measurement of the falls and the dip of the strata.

Other exposures of the same metamorphic rock are seen as far east as New Ulm, in the valley of the Minnesota river. The most interesting exposure, however, is on a small tributary of the Big Sioux river, in Pipestone county, Minnesota. Here, enclosed in quartzite, is found the famous pipestone, called by mineralogists *Catlinite*, so named from the fact that its location and the Indian traditions connected with it were first fully described by Mr. Catlin, the celebrated traveler, author and artist. This vein of metamorphic clay, for such it is, lies between layers of quartzite, and is about a foot in thickness. It is the opinion of geologists that it was originally a bed of clay between accumulations of sand, and that the same metamorphic action which transformed the sand into quartzite also converted the clay into this *Catlinite*, or pipestone. Its color is red, like that of the quartzite. No traces of fossils are found in either, for they are part of a world that existed before its matter had undergone the metamorphosis, which resulted in this oldest rock formation, and before any living creature could exist upon the planet. Here we behold the remains of that dead and long buried primeval world, exhumed by some one of nature's forces, that in later times God's intelligent creatures might have some conception of its condition when "the earth was without form and void." While the quartzite enclosing the *Catlinite* is exceedingly hard, the latter, when first quarried, is easily cut and fashioned into any desired shape.

And now as to the Indian tradition connected with this peculiar formation and the locality where it is found. From time immemorial the Indians had used it for making pipes, and the necessity for procuring the article for that purpose was so generally recognized among the different tribes and nations that this particular locality was always sacred to peace. Whatever enmity might exist among different tribes, at this place all possessed a right of asylum, and the faith which bound them to the observance of this law was never violated. To this place, sacred to peace—

"Down the rivers, o'er the prairies,
Came the warriors of the nations,

Came the Delawares and Mohawks,
 Came the Choctaws and Camanches,
 Came the Shoshonees and Blackfeet,
 Came the Pawnees and Omahas,
 Came the Mandans and Dacotahs,
 Came the Hurons and Ojibways,
 All the warriors drawn together
 By the signal of the Peace-Pipe,
 To the mountains of the prairie,
 To the great Red Pipestone Quarry."

MY SCHOOLS AND SCHOLARS. No. IV.

PHILIP SPENCER'S TRAGIC DEATH AT THE YARD-ARM OF THE U. S. BRIG "SOMERS," BY ORDER OF U. S. NAVY CAPT. S. MACKENZIE.

PHILIP SPENCER was the youngest of three brothers, sons of John C. Spencer, born in Canandaigua, N. Y., in 1823. Indeed, he was the youngest child, and petted by his mother and by the family, who removed at length to Albany, N. Y.; and, under the administration of President Tyler, J. C. Spencer, resided as Secretary of War, at Washington, D. C. While there, the awful tragedy of the hanging at sea of Philip Spencer, "a youth of nineteen," who was hung at the yard-arm of the United States' brig "Somers," transpired! It was done—trial and hanging—before dinner, by order of Captain Seidell Mackenzie, on Saturday, the 26th of November, A. D. 1842; and then all hands were piped down to their mid-day meal! Little dinner was eaten, I trow, after such a tragic death of a midshipman!

But, who was Philip Spencer? A native of Canandaigua, N. Y. High born and high bred; son of an eminent lawyer, John C. Spencer, and grandson of Chief Justice Ambrose Spencer, of New York; his mother, a woman of quality and high position in society. Thus summarily cut off, for only meditating mutiny and piracy! No avert act—only imaginary mutiny and piracy! Who ever heard of such an arbitrary tragedy? Had he assaulted the Captain with a sword,

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