Exhibition of Volcanic Dust from Omaha, Nebraska

J. E. Todd

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4. Taking a general view of the formations, there seems to be a slight anticlinal axis, trending in a northeasterly direction. North of this a broad depression in which, as said before, the firmer cretaceous rocks sink below the Big Sioux. In the vicinity of the red quartzite the cretaceous beds rise again to prominence. In this basin considerable thickness of lignite is reported in the vicinity of Centerville, S. D. Water has prevented an opening of the beds which are said to be 4 or 5 feet thick and within 100 feet of the surface.

5. It is an interesting fact that the cretaceous clays and chalkstone are usually attended by Mentzelia ornata, Shepherdia argentea and Schrankia uncinata. In fact the last has often disclosed to me the cretaceous character of a slope, which otherwise might have passed unnoticed.

EXHIBITION OF VOLCANIC DUST FROM OMAHA, NEBRASKA.

BY PROF. J. E. TODD.

This material was from a stratum of whitish aspect, about 18 inches in thickness, found in the bluffs facing the Missouri river about 7½ miles north of Omaha. It has the same general characteristics as the volcanic dust which has been found in quantity along the Republican, in southern Nebraska, also in Knox, Cumming and Seward counties in the same State. This statement is made on the authority of J. S. Diller of the United States Geological survey, who has examined samples from all these localities microscopically. This differs in being stained with oxide of iron, and the sharp angular grains are coated with carbonate of lime. Like the rest it contains with the finely pulverized glass, a few rounded grains of quartz and angular grains of feldspar less than .02 of a millimeter in diameter. The dust is such as is carried through the air from volcanoes. The sand grains and occasional diatoms indicate its deposition in still water.

The following is a section of the bluff containing the volcanic dust stratum:

Twenty-five to thirty feet—Loess, exposed as much more on slope above.

Seven feet—Stratified yellow clayey loam, with many calcareous concretions.

One and one-half feet—Volcanic dust, stained with iron oxide.

Five feet—Yellow clayey loam, slightly stratified.

One-half foot—Fine gray sand.

Twenty feet—Coarse sand and pebbles obliquely stratified.

Fifteen feet—Unknown, probably in part blue till. Level of the Missouri river.

This locality is the most eastern exposure of the volcanic dust stratum which is found scattered over most of Nebraska. Diligent search has as yet failed to discover it on the Iowa side of the Missouri.