

IV. A FOSSILBEARING SLAB OF SANDSTONE FROM THE AGATE SPRING QUARRIES OF WESTERN NEBRASKA EXHIBITED IN THE CARNEGIE MUSEUM.

BY O. A. PETERSON.

(PLATE V.)

Before the field-party, sent out from the Carnegie Museum in 1908, closed its work at the Agate Spring Fossil Quarries of Sioux County, Nebraska, it was decided to take up a section of the layer containing bones at Quarry No. 1. This section, which weighed when boxed nearly two tons, was sent in to the Carnegie Museum, and has recently been prepared and placed on exhibition in the Gallery of Mammalian Paleontology. The object of placing this section on exhibition is to permanently preserve a representation of the fossil-layer as it was when found. These quarries are not inexhaustible, and the day is not far distant when they will no longer yield fossil bones. A section showing the material in place, as it appeared to the collector while at work, will not only prove interesting to the casual visitor, but be instructive to the student.

This important field was first opened by a party from the Carnegie Museum in 1904. Quarry No. 1, from which the present section (See Plate V) was taken, was opened in 1905. An area of over 25 x 100 feet, or about 7 x 30 meters, was uncovered and blocks large and small were taken out and transported to the Museum from time to time. Since 1908 other parties have excavated equal, if not greater, areas, and have taken out an equal or greater amount of fossil remains.

As may be seen from a close inspection of Plate V, the bones literally formed a solid pavement. The skeletons were usually more or less disarticulated. One sees, for instance, an articulated neck of *Diceratherium cooki* with the lower jaws in their natural position, while the cranium is removed. A pelvis of the same species, with the right ilium broken and the sacrum slightly disturbed, but still lying within the pelvic cavity, may be seen. A short distance from this is a series of posterior dorsals and three lumbar nearly artic-

ulated. This series is thrust in between two layers of disarticulated bones, one above and one below. Whether these three layers represent three independent deposits separated in time, or one grand catastrophe, it is difficult to judge. The rounded edges and greater wear shown by the bones near the bottom of the layer may indicate longer exposure. The bone-bearing stratum in the quarries, as observed by the writer during his work, attained a thickness of from three to twenty inches (8 to 50 cm.). Some of the material, especially towards the bottom of the layer, appears worn and rounded

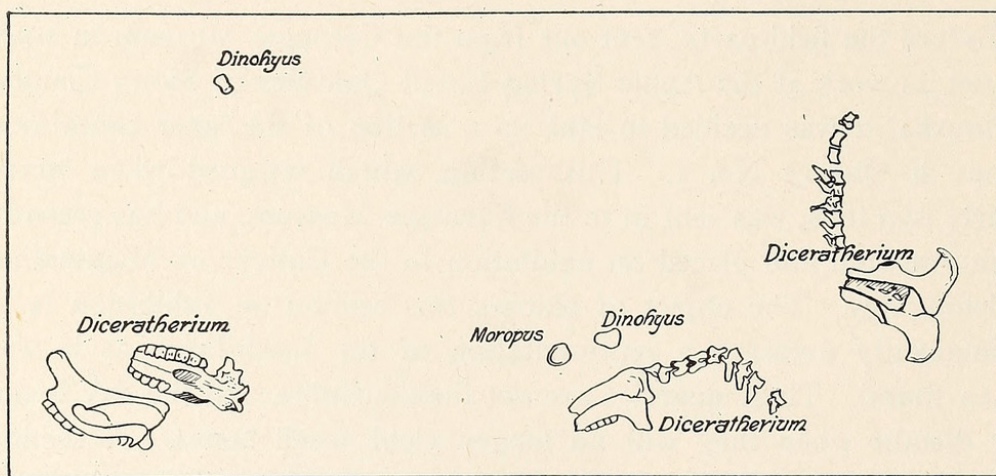
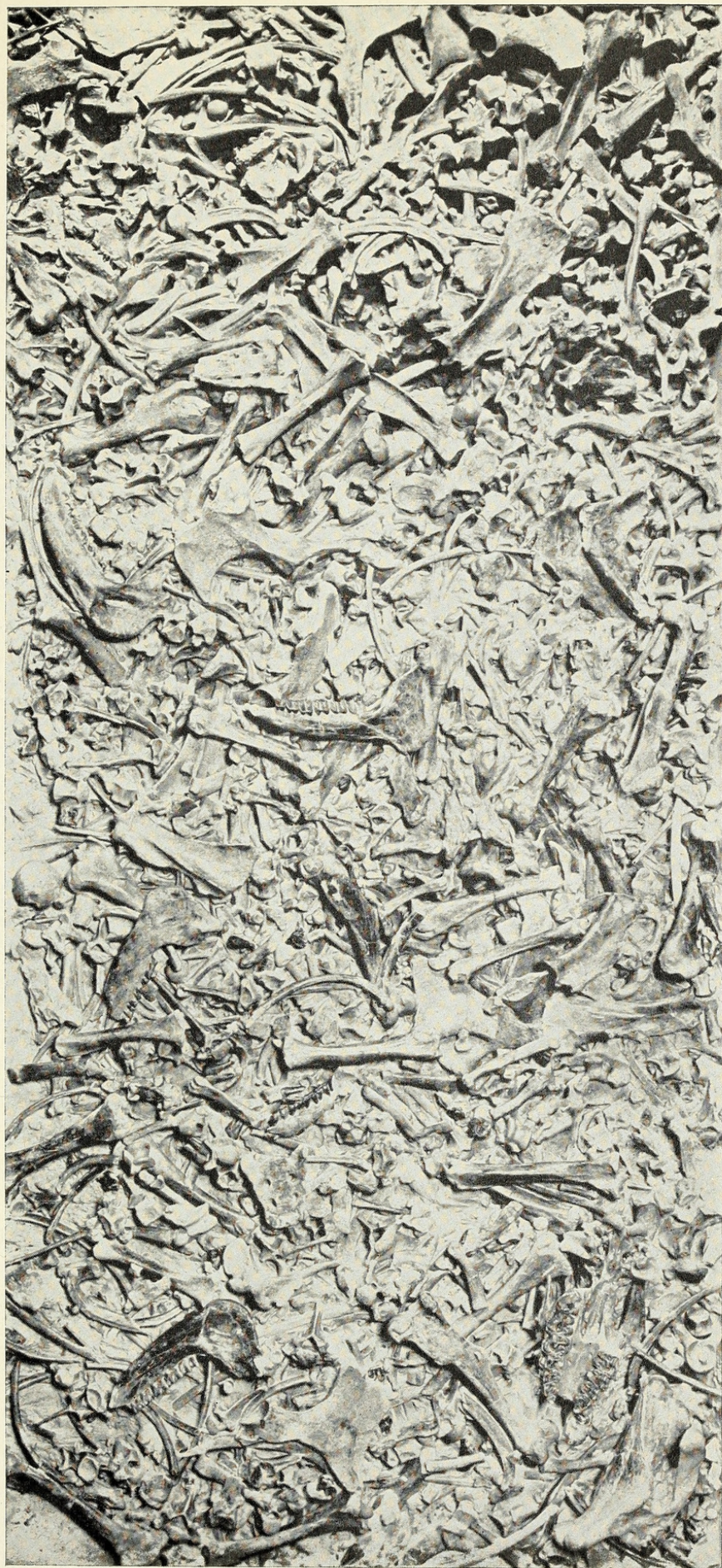


FIG. 1. Diagram showing the location of some of the more important specimens contained in the slab represented on Plate V.

by the elements, while the greater portion—especially where the layer was thickest—is unworn, and in one case a skeleton was found in a nearly perfectly articulated position. During the early work done in these quarries it very soon became evident to the writer that the thinner the bone-layer the more imperfect and disarticulated were the bones. The thicker bone-layer was therefore selected for excavation, because the bones, though sometimes crushed, were usually unworn and more portions of skeletons partially articulated were more frequently found. The lithological condition and the color of these heavier layers also differ from what is to be seen in the thinner portions. In the latter the sand was usually quite pure and the color of the bones often dark blue; while in the former, or the heavier portions, the sediment contained less sand, more lime, is lighter in color, and the fossils are usually much lighter both in weight and color, the color being usually a cream-yellow.



Slab showing a thick deposit of bones as they occurred in the Agate Spring Fossil Quarry discovered and opened for the Carnegie Museum in Sioux County, Nebraska, by Mr. O. A. Paterson, in 1904.

The shallow portions of the bone-layer of these quarries have the appearance of the sediments of swifter flowing channels, while the heavier beds would represent deeper or more sluggish movement of the stream.¹

CARNEGIE MUSEUM,

September 7, 1922.

¹ See diagram of one of the Agate Spring Fossil Quarries in *Memoirs Carnegie Museum*, Vol. IV, 1909, p. 75.



Peterson, Olof August. 1923. "A fossil-bearing slab of sandstone from the Agate Spring quarries of western Nebraska exhibited in the Carnegie Museum." *Annals of the Carnegie Museum* 15(1), 91–93.

<https://doi.org/10.5962/p.330957>.

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