

we know to be Middle Cambrian and below the Potsdam fauna. The reference of the species to the Quebec group shows the confusion then prevailing as to the paleontologic characters of a group named, but not existing, as defined by its authors, in nature.

The head and pygidium are of the same type as *O. Marcoui* and *O. Wahsatchensis*.

The differences between the head of this species and that of *O. Wahsatchensis* are not of specific value, and, except that the latter species shows in the pygidium strong pleural grooves, I would unite them as one species. This character is slightly shown in some of the pygidia of *O. quadriceps*, and it is not improbable that the specimens in the shales develop these grooves much more distinctly, owing to the crushing of the test and consequent deepening of all the original depressions. A good series of specimens may yet prove the two species to be identical.

*Formation and localities.*—Middle Cambrian. Ute Peak, Wasatch Range, Utah, and on the east slope of Prospect Peak, Eureka district, Nevada, 4,000 feet below the typical Potsdam fauna, with *Olenellus Gilberti*, &c. A head apparently identical occurs 2,000 feet higher in the section. The other locality, on the west side of the Eureka district, is an outlier of limestone, the stratigraphic relations of which are not known.

#### OLENOIDES WAHSATCHENSIS II. & W.

Plate xxix, figs. 2, 2a.

*Dikellocephalus Wahsatchensis* Hall & Whitfield, 1877. Geol. Expl. Fortieth Par., vol. iv, p. 241, pl. i, fig. 35.

*Dikellocephalus ? gothicus* Hall & Whitfield, 1877. Geol. Expl. Fortieth Par., vol. iv, p. 242, pl. i, fig. 36.

*Original description of the head.*—"Glabella elongate-quadrangular, with parallel lateral margins and slightly-rounded front; height and width about as four to three; very depressed convex, and marked by two pairs of transverse furrows, which do not quite meet in the center, dividing the glabella into three nearly equal portions. Occipital furrow narrow, not strongly defined; ring narrow, distinct, and bearing a slender spine on the center; dorsal furrows narrow and poorly defined.

"Fixed cheeks wide and flattened; ocular ridges faintly marked, rising opposite the anterior furrow of the glabella, and directed slightly backward to the eye-lobe. Frontal limb very short and wide, the marginal rim regularly arcuate, narrow, and prominent, closely cutting the front of the glabella. Facial sutures not fully determined, but are distinct on the anterior margin, cutting the rim with a strong outward curvature, and again recurving to the eye, leaving the limb nearly two-thirds as wide at its widest point as the glabella."

The associated pygidium is described as another species; but, from the character of the head and pygidium of *O. quadriceps* and *O. Marcoui*,