

sinus extends from the front margin about half way to the beak; elsewhere the valve is gently convex or nearly flat.

"Ventral valve acutely conical, with a flat triangular area which is perpendicular to the plane of the lateral margin, its base half the width of the whole shell. In the apex of this valve there is a minute circular aperture, and in one specimen a dark line extends from it down the middle of the area, which appears to represent the foraminal groove of this genus; but in two other specimens of the ventral valve, with the area well preserved, there is no indication of a groove. Surface with very fine concentric striae.

"Width of dorsal valve, about one line: length, about eight-ninths of a line. The height of the ventral valve is about one line.

"The form of this species is very like that of *A. subconica* (Kutorga), but that species is twice the size of this and has the area distinctly grooved."

The groove on the area, of which Mr. Billings speaks, is variable; in some specimens it can be scarcely determined and in others it is quite distinct. As far as the size is concerned, we have specimens from 2^{mm} in diameter up to 5^{mm}. The variation in the height of the ventral valve is also considerable.

The relations of the species to *Acrotreta subconica* Kutorga (Über die Brachiopoden-Familie der Siphonotretææ. Verhandl. der russisch. kais. min. Gesellschaft, 1848, p. 275, pl. vii, figs. 7a-c) are strong, and, except the greater elevation of the ventral valve, there are no marked differences. Without a direct comparison of specimens, I do not think it best to identify the American form with the Russian, although, from its having such a great geologic range, it was probably widely distributed in the Cambrian seas.

In the Paleontology of the Eureka District, pages 17 and 18, I have given the range of this species as then known. We now have to add that it occurs at a horizon 4,000 feet below the lowest horizon there and is associated with species of *Olenellus* just above the great series of Cambrian quartzites. The shell is more robust and larger than the average specimens of the Upper Cambrian, but specimens from the Upper Cambrian beds on the Gallatin River are nearly as large, and the form of the exterior of the valves and their interior muscular markings are essentially the same; the differences are so slight that I do not hesitate to place them under one species. More favorable conditions of habitat and food would produce the variation in size; also, the change liable to occur in a species living through so long a period of time as the accumulation of 3,000 feet of limestone would require.

The associated species are *Kutorgina pannula*, *Acrothele subsidua*, *Orthisina* sp.?, and trilobitic remains.

Formation and locality.—Middle Cambrian. East side of anticlinal, in limestone just above quartzite, Pioche, Nevada.