

rarely visible in the sandstone casts. Most of the specimens are distinctly carinate along the median line of the glabella.

"It is possible that there may be a median tubercle on the neck segment, but none of our specimens have this part sufficiently well preserved to show it.

"The following are the dimensions of a specimen of the average size: Length of head, five lines; length of glabella, three and one-fourth lines; greatest width of glabella, two lines; width of glabella at front, one and one-fourth lines; distance of eye from side of glabella, two lines.

"Dedicated to the late Prof. C. B. Adams, State geologist of Vermont.

"*Formation and locality.*—Highgate, Vermont, in the Potsdam group, about a mile east of the Highgate Springs."

On assembling a large number of specimens of the head of this species from limestone, arenaceous and argillaceous shale, and arenaceous limestone, we find that it is even more variable than as described by Mr. Billings and that it includes the form given by Mr. Billings as *C. arenosus*.

On plate xxvi figures of the head are given to show variations.

The frontal limb, between the glabella and margin, varies in breadth and, in the smaller heads, is very narrow; the frontal rim also varies very much in thickness and breadth. In specimens from a purplish-colored limestone, the maceration of the test, prior to mineralization, appears to have gone so far that nearly all the outlines of the glabella, frontal limb, and rim were lost by the compression accompanying the consolidation of the sediment.

In the collections of the Museum of Comparative Zoölogy, Cambridge, Massachusetts, there is a matrix of a nearly entire individual of this species 18^{mm} in length, from Parker's quarry, and the U. S. Geological Survey collection includes the greater part of a specimen 40^{mm} long. From these we obtain a description of the thorax, pygidium, and free cheeks of the head in addition to Mr. Billings's description.

The free cheeks are narrow and terminate posteriorly in sharp spines that reach back even with the fifth segment of the thorax.

Thorax with sixteen segments, narrowing gradually to the tenth segment and then more abruptly to the pygidium; axial lobe about three-fifths the width of one of the pleural lobes; segments narrow, rounded on the axial lobe, and flattened on the pleural lobes; the pleural lobe is flattened about one-half the distance from the axial lobe to its outer margin and then bent downward, and each segment directed slightly backward; pleural groove broad, well defined, and extending nearly to the end of the segment.

Pygidium small; axial lobe short, obconical, and marked by two or more rings; lateral lobes showing the pleural grooves corresponding to the axial rings.

Surface finely granulose under a strong magnifier (Tolles's $\frac{3}{4}$ -inch triplet).