

or *Dicellosephalus*, and even more so in the cheek, fig. 1c of pl. xviii, if it cut the posterior margin at the angle x, as it does in all known cases in the smaller specimens, figs. 1h and 1i. Comparing this with the direction of the stages of growth shown on figs. 1e and 1g, where another generic group is suggested by its *Paradoxides*-like course, the contrast is very striking.

It is stated on p. 34, Monographs United States Geological Survey, vol. viii, that in adult specimens of *O. Gilberti* and *O. Vermontana* the course of the facial suture is almost directly backward from the eye to the margin. This statement was based on the published figures of the two species. I now have before me the type specimens of *O. Gilberti*, and I fail to find a trace of the facial suture showing on any one of them, and their course is not mentioned by either Mr. Meek or Dr. White, the artist evidently having indicated in the drawings his personal views of where they should be placed.

In well-preserved specimens of *O. Thompsoni* the suture back of the eye extends outward to the pleural angle, as in *O. Gilberti*.

Mode of development.—The normal development of a trilobite from the earliest embryonic condition with which we are acquainted to the adult form is marked by the disappearance of the embryonic characters, one by one, as the individual increases in size and assumes more and more the features of the fully developed animal, all of which usually takes place, except in size and surface ornamentations, when it is quite small. The retaining of an embryonic feature after the individual has passed in size, or in any other character, the stage at which it usually disappears in the regular course of the development of the species is an exceedingly rare occurrence, and is unknown to our knowledge, except in the increase in size of the body in certain species, so that in their course of development certain individuals are in fact larger than those of the same species having a greater number of segments in the thorax and being consequently more advanced in development. M. Barrande has shown this to be the case in the development of *Arctusina Konincki*, *Proetus decorus*, and *P. venustus* (Syst. Sil. Bohême, i, p. 268, 1852), and we have observed it in *Triarthrus Becki*, where the relative size, proportional to the development, is very marked; e. g., an individual with thirteen segments in the thorax is 24^{mm} in length, and one with sixteen segments but 16.5^{mm} long, while the fully grown example of sixteen segments reaches a length of 53^{mm}, and some with thirteen segments are but 7^{mm} in length (Trans. Albany Inst., x; Fossils of the Utica Slate, p. 29, 1879).

This peculiarity of growth is shown, in the species mentioned, only by the thorax, for, if we take the head alone, there is little or nothing to prove that its size is not proportional to the stage of development; but in *Olenellus Gilberti* the head proves this to be otherwise, and there may be added to the statement that, in certain species, the size is not proportional to the number of liberated segments in the thorax;