preserving embryonic characters, show, in the position of the eye and the run of the facial suture to the posterior margin, features common to the genus Paradoxides. The eyes of *P. rugulosus* Corda and the group of Paradoxides from the St. John Group of New Brunswick approach the glabella at their anterior end, as also *P. Kjerulfi* Linnarsson, but the posterior end is distant from the glabella, as seen in the typical forms of the genus. In the normal adult of all species of Olenellus and Mesonacis known to me the eye is drawn in close towards the glabella at both ends and the suture curves out to cut the posterior margin at the pleural angle, as in Paradoxides, whether that angle be preserved or absorbed in the straightening of the margin.

Although Mesonacis is found at the same horizon as Olenellus, I regard it as showing the transition from Paradoxides to Olenellus. A Paradoxides-like form first takes the characters of Olenellus in a degree by having a spine originate on the fifteenth segment; then the body was shortened by the absorption of the pygidium and eleven posterior segments, until the elongate telson of O. Thompsoni is the only representative of the parts lost in the transition.

Prof. Whitfield in mentioning the telson says: "There is not the slightest evidence of any lateral lobe or expansion, or anything analogous to this part as seen on other genera, and the median ridge shown upon the specimen figured, as above referred to, does not always exist. On one specimen the fourteenth axial ring looks almost as if it might have formed an anterior lobe or ring of the telson; but in others it is seen to be distinctly separate and articulated, as are the forward axial rings to each other. This feature of the pygidium is so distinctive among all other trilobites that it alone would serve as a generic distinction, and if the condensation of parts indicates development of organization this form would appear to be below even the Paradoxides, and should precede it in age."

From our present knowledge of these forms we reverse the application made above and regard the telson as representing the condensed parts, and the form as higher in organization and succeeding Paradoxides in time.

Mr. Ford considers the relationship between Olenellus and Paradoxides one of genetic character (Amer. Jour. Sci., 3d ser., vol. xxii, p. 257, 1881), and that Olenellus is a later and higher form than Paradoxides.

We assent to this, and add that Olenellus is the representative of the group of Paradoxides of the Lower Cambrian in the Middle Cambrian, and expresses, in one of its species at least, the decadence of that branch of the type. The example is O. Gilberti, where, in the retention and great development of the embryonic stages of growth by adult individuals, we have an example of the loss of power in the larger number of the individuals of a species to develop to the adult form. In other words, it is an instance of retrogression towards the earlier forms of the family to which it belongs.

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