

WALCOTT.]

istics of *Paradoxides* are changing into those of *Olenellus*, the head and the first 14 segments being in all particulars the type of *Olenellus*, and the pygidium and 10 posterior segments more the type of *Paradoxides*; the fifteenth segment represents the telson of *Olenellus Thompsoni*.

Under remarks on the genus *Olenellus*, the relationships to that genus are mentioned, and we will next consider the body of *Mesonacis* back of the fourteenth segment.

The fifteenth segment fits snugly up against the fourteenth; the axial lobe is strong and supports the base of a long, slender spine that, as now preserved, extends back to the pygidium; the base of the spine originates on the dorsal surface of the segment and also extends back so as to include the posterior margin, and causes the latter to curve back towards the center; the lateral pleuræ of the segment are short, and in their structure are diminutive representatives of the large pleuræ of the segments anterior to the fifteenth.

The succeeding eleven posterior segments appear as though formed of a more delicate test than the anterior portions of the body, as they are much more flattened and compressed than the latter and the pleural grooves are almost obsolete. The pygidium is also small and delicate.

The body back of the spine-bearing segment appears as though belonging to a different animal, and looks more like that of a Remopleuride than either *Olenellus* or *Paradoxides*, but, on a close examination, the pygidium is found to be much like that of *Paradoxides rugulosus*, and the free pleuræ bend back as in that species. (Compare fig. 1b of plate xxiv with fig. 2 of same plate.)

Comparison with other genera and species.—The form of the head is similar to that of *Olenellus Thompsoni*, except that in the less compressed examples it is not proportionally as broad; this may be also said of the entire body. The genal spines are more slender and the frontal glabellar lobe is closer to the anterior margin.

Among the described species of the genus *Olenellus* some specimens of the head of *O. Gilberti* approach very closely to that of *Mesonacis Vermontana*, and I was surprised when I found that the former did not prove to be generically or specifically related to the latter.

We do not find among the American species of *Paradoxides* forms to compare with either *Olenellus* or *Mesonacis*, except in the outline of the posterior margin, as mentioned under the genus *Olenellus*. Europe gives one from Sweden, *P. Kjerulfi*,¹ the head of which shows other features common to *Olenellus* and *Mesonacis*, as mentioned under the description of the former genus.

In the contour of the adult form of the head, *P. spinosus*, *P. Sacheri*,²

¹ Öfversigt k. Svensk. Vet.-Akad. Förhand. N:o 6, p. 790, Tab. xvi, figs. 1, 2. Stockholm, 1871.

² Syst. Sil. Bohême, vol. i, 1852.