

arches backward from side to side, although very shallow at the center, and it leaves a prominent ridge on each side between it and the posterior marginal sulcus; the anterior grooves are short and scarcely more than pits just back of the main body of the hypostoma. This hypostoma differs from that of *O. (M.) kjerulfi* and *O. (M.) asaphoides* in being narrower anteriorly, more elongate, and with a smooth instead of spinose posterior margin.

Thorax with eighteen segments.* Axial lobe convex; the center of each segment bears a short, strong, curved spine, the base of which reaches longitudinally across the segment. Pleural lobes flattened, about three-fifths of the distance from the axial lobe to the outer edge, and then gently curving to the ends of the remaining falcate portion of the pleuræ. The narrow, median pleural grooves extend outward to the beginning of the curvature of the broad falcate extremity of the pleura. Pygidium small, transverse, almost quadrangular in outline.

None of the examples show the details of structure with sufficient clearness to describe them.

The surface of the head and thoracic segments is ornamented with the peculiar, inosculating, fine, raised fretwork that, as far as known, is confined to the genus *Olenellus*.

Dimensions.—*O. bröggeri* and *O. thompsoni* are the two largest species of the genus yet described. Fragments of *O. bröggeri* now before me indicate a length of 24 centimeters. One head has a length of 8 centimeters. A bed of greenish argillaceous shale 6 inches in thickness is almost entirely formed of fragments of large shells.

The associated fauna includes some well-known *Olenellus* fauna species and others not heretofore described. As known now it embraces fourteen genera, twenty-three species, and six varieties.

FORMATION AND LOCALITIES.—Lower Cambrian. The best specimens were secured in a reddish-brown argillaceous shale, in a railroad cut, about 1 mile west of Manuel's Brook Bridge, on Conception Bay, Newfoundland. It was also found in the limestones beneath Topsail Head and on Brigus Head, on the same bay; at the base of the Manuel's Brook section, where it ranges through 80 feet of strata, and in the decomposed limestone 400 yards west of the brook, in a railroad cut. Stratigraphically its position is 300 feet beneath the *Paradoxides* zone in the Manuel's Brook section.

Comparison.—The great occipital spine, small "pleural" spine, broad falcate extension of the pleuræ, and short, transverse pygidium distinguish *O. bröggeri* from *O. kjerulfi* and *O. mickwitzia* of Europe. With the exception of the form of the pleuræ the same characters separate it from *O. asaphoides*, *O. thompsoni*, *O. (M.) vermontana*, and *O. gilberti*. The head of *O. iddingsi* is quite distinct.

* A note made in the field records eighteen segments in the only entire specimen found. Owing to fragile, decomposed rock the pygidium and five segments of this specimen were ground to powder in transporting the large slab which contained it over the rough roads to St. John's.