

Silurian (Ordovician) of New York (Amer. Jour. Sci., 3d ser., vol. xxiii, p. 213, 1882).

§ 113. The Trilobita, with 14 genera and 45 species, so far outranks all the other orders that without the latter the stratigraphic position of the Middle Cambrian could be readily determined, although the Spongiæ, Brachiopoda, and Pteropoda present a facies distinct from that of the same classes in the Lower and Upper Cambrian.

§ 114. The Agnostidæ is represented in the Lower Cambrian of America by 2 genera and 10 species: *Agnostus*, 8 species; *Microdiscus*, 2 species. In the Middle Cambrian, by *Agnostus*, 3 species, and *Microdiscus*, 4 species. Several species of *Agnostus* occur in the Upper Cambrian, 10 or more; and *Microdiscus* is represented by the curious *Pemphigaspis bullata* of the Wisconsin Potsdam sandstone (Sixteenth Rep. N. Y. State Cab. Nat. Hist., p. 221, pl. 5A, figs. 3, 4, and 5, 1863).

*Agnostus interstrictus* belongs to the widely-distributed *A. pisiformis* type, of which *A. Acadicus* is the representative in the St. John series of New Brunswick, and *A. Josepha* in the Wisconsin Potsdam sandstone. *A. nobilis* is not unlike *A. parilis* of the Wisconsin Potsdam sandstone. (Sixteenth Rep. N. Y. State Cab. Nat. Hist., p. 179, pl. x, figs. 24 and 25, 1863).

In *Microdiscus* there is a slight advance on the typical form of *Agnostus* with two segments, and I think the genus should be included in the family Agnostidæ. The 4 species of *Microdiscus* have a somewhat similar appearance, and differ from the Lower Cambrian (St. John) species *M. Dawsoni* and *M. pulchellus* (= *M. punctatus*, U. S. Geol. Survey, Bull. No. 10, p. 24, pl. ii, figs. 1, 1a-c), the former having a highly ornamented surface and the latter a strong nuchal spine.

§ 115. The genera of the Olenidæ of the American Middle Cambrian fauna known at present are: *Mesonacis*, 1 species; *Olenellus*, 4 species; *Olenoides*, 8 species; and *Bathynotus*, 1 species. The genus *Mesonacis* is the connecting link between *Paradoxides* of the Lower Cambrian and *Olenellus* of the Middle Cambrian; in the development of *Olenellus*, the genetic relation of that genus to *Paradoxides* is shown more clearly. *Mesonacis* is confined to one locality, as far as we now know, and its value in stratigraphic geology is thus limited.

The two genera *Olenellus* and *Olenoides* have a wide geographic range and occur together in most localities. *Olenellus* is more limited in vertical range, having been found through about 500 feet of strata, while *Olenoides* extends up 1,200 feet or more in the Highland Range section of Nevada, and probably, into the Upper Cambrian horizon. The genus *Olenellus*, wherever found in a well-defined section, is characteristic of a horizon far below that of the typical Upper Cambrian or Potsdam horizon of North America. Its relations to other genera are discussed under the remarks on the remarkable species *O. Gilberti*.

*Olenoides*, with its 8 species, is nearly as characteristic of the