BRACHIOPODA.

§ 103. Nine genera and 24 species from the Middle Cambrian, and 6 genera, with 12 species (Matthew), from the Lower Cambrian of America, show a total of 10 genera and 36 species for this class, from below the Upper Cambrian (Potsdam of America, Olenus Zone of Europe).

§ 104. The family Lingulidæ is represented by 1 genus and 2 species, each of which presents the high fissured area of the genus Lingulella and also its delicately sculptured surface; and *L. Ella* affords a glimpse of the muscular scars of the interior of the dorsal (?) valve that places the genus near the genera Obolella and Lingula.

§ 105. The Obolidæ has the largest development of the Middle Cambrian families of the Brachiopoda, and includes 5 genera and 12 species, viz: Kutorgina, 4 species; Iphidea, 1 species; Acrotreta, 1 species; Acrothele, 1 species; Obolella, 5 species. The genera Obolella and Kutorgina represent the Obolidæ proper, and the 3 remaining genera the Siphonotretidæ, if we may use the latter as a subfamily. Obolella first appears as *O. maculata* Hicks in the Paradoxides horizon (Lower Cambrian) of Wales, and reaches its greatest development in the Middle Cambrian horizon of America, from which 5 well-defined species have been recognized. From the Upper Cambrian we at present know of but 2 species that will be retained in the genus. The characters of the genus are well shown by the figures on plates ix and x. The genera Acrotreta, Iphidea, and Acrothele belong to a natural group having a conical ventral valve perforate at the apex, with more or less of a false area and a depressed dorsal valve. Acrothele is considered by its author as most nearly related to the genera Obolella and Acrotreta, but, from the information we now have, I would place it nearer to the latter and still nearer to the genus Schizambon (Monographs United States Geological Survey, vol. viii, p. 69).

The genus Kutorgina has a wide geographic distribution and a vertical range from the Lower Cambrian of Sweden and New Brunswick up through the Middle Cambrian, where it reaches its greatest development as now known, into the Upper Cambrian of Nevada and Montana, on the western side of the American continent. It is not certain that the genus may not be divided, as the type *K. cingulata* is a large calcareous shell and the other species are smaller and horny or corneo-calcareous. We find traces of the muscular scars on the interior of the valves of the *K. cingulata*, but not of the other species.

§ 106. The Strophomenidæ has 2 genera and 8 species, 4 of which are not yet described. The generic reference to Orthisina is doubtful in most instances, as the condition of the specimens is too imperfect to give the characters of the interior of the valves. *O. festinata* appears to be a true Orthisina, and the others are considered as provisionally referred to the genus. The 1 species referred to Orthis is apparently not an Orthisina, but, at the same time, its surface char-