

shales, but, on each side of the great "lentile," deposition contacts were seen and no evidence of the presence of faults was observed. If this is actually the case, we have nearly ten thousand feet of strata that we know to be of Cambrian age by its contained fauna. Of this, I refer 4,500 feet to the Middle Cambrian or Georgia Formation, or 1 to 7, inclusive, of the Georgia section.

§ 22. The typical Georgia fauna, *Kutorgina cingulata*, *K. Labradorica*, *Olenellus*, *Mesonacis*, *Bathynotus*, *Ptychoparia Adamsi*, and *Protypus senectus*, is found in the upper portion of the great limestone series, in the sandy and argillaceous shales resting on it, and in the masses of interbedded calciferous sandrock which Prof. Marcou referred to the Potsdam. (See § 15.) How far this fauna extends up into the shales we do not know. One species, *Ptychoparia Adamsi*, is represented in the great "lentile" of the Georgia section; but I have drawn the provisional upper line of the Georgia Formation at the base of the "lentile," as it is here that we meet with a decided change in the fauna, and the deposit is unlike that found below. It will probably be found that the limestone conglomerate, east of Swanton, occurs at about the same relative horizon as the "lentile" of the Georgia section.

§ 23. In the group of sections, taken across New Hampshire and Vermont, by Prof. C. H. Hitchcock (Bull. Amer. Mus. Nat. Hist., vol. i, pls. 16 and 17, 1884) we find the Georgia series called Potsdam and Cambrian; and, in section XI, pl. 17, the Georgia shales (Cambrian of section) are represented as resting conformably on the magnesian limestones (Potsdam of section), in the town of Milton. This is the same as we found it in the Georgia section a few miles to the north; and the great "lentile" (8 and 9 of the Georgia section) corresponds in position to the mass of Cambro-Silurian limestone of Professor Hitchcock's section XI, except that it is represented as let into the shales by faulting. The Highgate section of Hitchcock, No. XIII, shows a fault between the limestone and the shales, but my section crossed where the succession was unbroken.

§ 24. The fauna of the Georgia shales is referred to the Lower Potsdam by Professors Whitfield and Hitchcock in the text accompanying the sections, but, as is shown in this paper, there is very little reason for longer retaining that name.

§ 25. The great mass of argillites, east of the railroad track, in the Georgia section, is placed under the Cambrian by Professor Hitchcock, and the reference may be correct; but, as yet, we have no recognized Cambrian fossils from it.

STRATIGRAPHIC RELATIONS OF THE GEORGIA TO THE POTSDAM SERIES.

§ 26. Across Lake Champlain from Vermont in New York the typical Potsdam sandstone rests against the Archean of the Adirondack Mountains. At the Au Sable Chasm there have been found *Lingulepis*