

areas the faunas of the Cambrian and the Lower Silurian (Ordovician) systems are intermingled; but the same is more or less true of all the great divisions of the entire geologic series from above the great Archean break to the Quaternary.

§ 3. A good illustration of the mixing of the Upper Cambrian and the Lower Silurian (Ordovician) faunas is shown in the Eureka section of Nevada, in the fauna described by M. Barrande from the environs of Hof, in Bavaria, and still better in the Tremadoc of Great Britain; but all this mixing, at the boundary line, does not prevent the recognition of the first and second faunas, as such, either above or below the horizon where the great change in the faunas took place.

REVIEW OF THE STRATA AND FAUNAS REFERRED TO THE MIDDLE CAMBRIAN OR GEORGIA HORIZON.

§ 4. I have long been of the opinion that the paleontologist should become personally acquainted with the strata containing the faunas he is to study, and, as far as it is practicable, collect the fossils or superintend their collection in order to learn their exact stratigraphic relations to the geologic section and their relative position to each other in the section; but, in the study of the enormous thickness of strata in the Rocky Mountain Paleozoic, it has often been impracticable to carry out the work in the degree of detail that is desirable. I have, however, studied in the field most of the sections mentioned in this article, and know from which horizons the collections were obtained, and therefore with considerable confidence express conclusions that differ from those reached by geologists and paleontologists who have arrived at their results through the accounts of the observations and collections of others or from stratigraphic or paleontologic data considered without giving due weight to the importance of combining them.

§ 5. While not desiring, at this time, to enter into a general discussion of the stratigraphy and paleontology of the Cambrian System as a whole, it appears desirable to present sufficient evidence to show that the Potsdam and Georgia horizons are well-defined stratigraphic divisions and distinguished by large and distinct faunas in the same geographic area and geologic sections.

§ 6. The stratigraphy of the Cambrian System of North America has not been well known up to a comparatively recent date, and the extent and the character of its organic record are not yet appreciated. Dana's Manual of Geology, edition of 1881, p. 163, places the Cambrian as a subdivision of the Lower Silurian, as follows:

I. Primordial or Cambrian Period. (2)

1. Acadian Epoch (2a). Shale and sandstone at St. John, New Brunswick, the St. John group of Matthew and Logan, the Acadian group of Dawson; beds at St. John's and elsewhere, in Newfoundland; clay-slate and silicious slate of Braintree, Mass.; Ocoee conglomerate and slates of East Tennessee and North Carolina.