

*Palæontological characters.*—The Utica formation along the whole line of its outcrop in Canada may be said to be for the most part highly fossiliferous. This is especially true of the lower and middle portions of this terrane, *i.e.*, of those portions which are more calcareous than the upper series of strata. In the "Palæontology of Ontario," 1874, by Prof. A. H. Nicholson, that writer describes and records *eleven* species of fossils as constituting the fauna of this period in Cambro-Silurian times. In 1882, when the writer joined the Geological Survey staff, there were then exhibited in the cases of the museum some twelve species of fossils representing the then known fauna of the Utica.

By dint of collecting and gathering together the material which was in the possession of the Geological Survey of Canada, determining the same, and of losing no opportunity of collecting himself wherever the Utica formation was known or seen, the writer has been able to bring together an assemblage of upwards of sixty forms which marks a special horizon in Ordovician times and differentiates itself from the Trenton and Hudson River terranes. The fossils which are found entombed in the shales and limestones of this formation are often exceedingly well preserved, and being very abundant afford an excellent opportunity of studying the fragments or separate portions of individuals which are usually seen along the divisional planes of stratification in such vast numbers.

Just as the lithological characters of the Utica show a decided resemblance and similarity to the underlying Trenton and overlying Hudson River, so also the fossil remains of the Utica towards the base of that terrane show a decided affinity and close relationship to the Trenton *facies*, and towards the summit to the newer Hudson River fossils. In fact, we find that just as there are passage beds, or transitional strata, between the Trenton and Utica, and also between the Utica and Hudson River, so also do we find a number of species of fossils which pass upwards or are common to the three formations.

The following table has been prepared to show the