

the western part of this Province, yet the rocks which have been discovered by Mr. Murray in the Western Peninsula, have a thickness exceeding 1000 yards, and are unquestionably of earlier date than the true coal measures, and must be considered as members of the upper Silurian group. They constitute the substratum of the whole Province west of the Credit. If coal is found in the western Province, it will be found above these rocks. These rocks seem, however, everywhere to be covered immediately by the Drift, so that the probability of finding true coal, is remote in the extreme. Brown Coal, similar to that which has been recently discovered in Vermont, may yet be found in Canada.

A glance at the layers of rocks at the Garrison Common beach, each layer apparently distinguished by some peculiarity in its fossil remains—some containing corals in abundance, others the remains of marine vegetables, others especially rich in bivalve shells, and others beautifully ripplemarked,—will probably convey a better idea of the time which elapsed during the deposition of five feet in thickness, exposed there, than any calculation based upon examples, from other localities. If we assume that other stratified rocks have required an equal period of time to attain the same thickness (five feet) by slow deposition at the bottom of seas; our conceptions become still more defined of the immensity of that period which divides the Drift from Loraine Shales, when we remember that the thickness of the rock we have been contemplating is less than the one five thousandth part of the rocks of that unrepresented epoch, which existed between the respective periods of their creation.

Having thus given a very slight sketch of the position and comparative age of the Loraine Shales, I shall now confine my remarks to the narrow stripe of Shale and Sandstone which is exposed on the lake beach at the Garrison Common. For the space of a few feet, the section exposed during the summer of 1852, was quite perpendicular, and very clearly defined. The action of the waves very quickly destroys the face of the rocks, and rounds the edges of the exposed masses of Shale. At the present season, the water covers the layers, marked No. 14 and 15 in the subjoined list, and when the least wind is blowing, it is quite impossible to prosecute any examination with comfort, owing to the spray which arises from the dash of the waves against the rocks. In the summer months, in calm weather, there is a space of two or three feet between the foot of the rocks and the waters. About fifteen feet from the cliff, a very uniform row of large boulders of gneiss, washed from the drift,

lines the shore for many hundred yards. These boulders it must be remembered, have no connection whatever with the stratified rocks, they belong exclusively to the Drift, and a walk along the banks will reveal many of their kindred, ready, almost, to fall out of the yellow clay in which they are embedded into the waters of the lake below.

Order and thickness of rocks on the Lake Beach, at the Garrison Common.

	Feet.	Inches.
Drift with Boulders.....	16	0
1 Hard Yellow Sandstone.....	0	9
2 Do Do.....	0	1
3 Thin layers of blue shale.....	0	2
4 Hard Calcareous Sandstone... ..	0	1½
5 Thin layers of blue shale.....	0	1½
6 Hard yellow calcareous sandstone	0	1
Loraine 7 Blue shale.....	0	4
8 Sandstone.....	0	3
Shales. 9 Layers of Shale.....	0	4
10 Sandstone.....	0	1
11 Layers of Shale.....	0	3
12 Sandstone.....	0	5
13 Shale.....	0	4
14 Sandstone.....	0	4
15 Lake Stone, Shale, Ripple marked	0	8

The fossil remains found in these layers of rock are exceedingly numerous, and are not confined to any one of the subkingdoms into which animals are divided by Zoologists. We find, indeed, the three kingdoms, Mollusca (snails, oysters), Articulata (crabs, worms), and Radiata (corals); and it is a question which has excited much discussion, whether the representatives of the first sub-kingdom, vertebrata (beasts and birds), have been found in the Lower Silurian rocks. For the honour of Canada it is earnestly to be hoped that the discoveries and speculations of Mr. Hunt, Chemist to the Provincial Geological Survey, cautiously advanced in the last Geological Report, may be thoroughly borne out and confirmed by future investigations. It will then be established that the leading types of animal structure have had their representatives throughout all ages of the world's history since the earliest period of created life. The following table extracted from Hall's Palaeontology affords a very good view of the extent and diversity of animal life in the ancient and extensive Lower Silurian Seas, of which the Loraine Shales formed perhaps the latest deposit.

TABLE SHOWING the Number of Species of Animals and Plants peculiar to each formation, and also the Number common to several formations. (Hall's Palaeontology of New York.)

CLASS OR ORDER.	Genera.	Species.	Restricted to the						Common to the										
			Pot-dam Sandstone.	Calcif. Sandstone.	Chazy Limestone.	Birdseye Limestone.	Black River Limestone.	Trenton Limestone.	Utica Slate.	Hudson Riv. group or Loraine Shales.	Pot-dam and succeeding strata. Calcareous and succeeding Strata.	Chazy and Black River	succeeding Strata. Birdseye, Black Riv. and Trenton Limestone, and Hudson River group.	Birdseye and Black River	Black River and Trenton.	Trenton, Utica Slate and Hudson River group.	Trenton Limestone and Utica Slate.	Trenton Limestone and Hudson River.	Utica Slate and Hudson Riv. group, or Loraine Shales.
Plantae, - - - - -	4	14	1	3	-	-	4	1	5	-	-	-	-	-	-	-	-	-	-
Incertae Sedes - - - -	2	4	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-
Zoophyta - - - - -	19	50	-	7	1	3	19	3	13	-	-	1	-	1?	-	-	-	-	-
Crimoidea - - - - -	15	77	-	3	-	-	7	-	3	-	-	-	-	-	-	-	-	11?	-
Brachiopoda - - - - -	77	110	2	1	10	-	51	-	5	-	-	-	-	-	3	-	1	31?	-
Acephala - - - - -	12	49	-	1	1	-	26	1	13	-	-	-	-	-	-	-	-	41?	2?
Gasteropoda - - - - -	17	71	-	2	13	9	28	-	6	-	1	-	-	1	-	-	-	41?	-
Cephalopoda - - - - -	11	68	-	1	4	2	40	2	5	-	-	-	-	1?	-	-	-	1?	-
Crustacea - - - - -	14	33	-	-	7	4	13	1	3	-	-	-	-	-	3	-	-	1	1
Total - - - - -	95	381	3	13	45	19	13	188	8	54	0	1	1	1	3	6	2	20	3

We will now proceed to examine the fossil remains, which a few walks to the cliff at the Garrison Common, have afforded us