

reckoned from the time when the latest of the *Saxicava* or *Macoma* sands* began to be deposited on the Leda clay at the present sea level, then the first of the Torryburn fresh-water deposits must be relegated to the latter part of the Champlain epoch. It seems, however, more correct to regard the Terrace period as overlapping the Champlain, and therefore to consider the local deposits of Torryburn Valley as beginning in the middle of the Terrace period.

In the Torryburn Valley there are three depressions which were once occupied by ponds of water. Of these hollows, the southern one was shallow and was soon silted up; another, the eastern, was through the greater part of the Recent period occupied by a shallow lakelet, but finally became dry. The third or central depression of the valley was much deeper than the others; it still holds the reduced waters of a lake, which once rose to its rocky brim, and is known as **LAWLOR'S LAKE**.

The geology and physical history of these basins is of much interest in connection with the fresh-water deposits, and will be described in a future article, but the following observations are confined to a description of the fresh-water deposits only.

In the process of building the E. & N. A. (now the Intercolonial) Railway, a heavy rock-cutting was made at the Western end of Lawlor's Lake, and about 13 feet in depth of its waters were drawn off. By this means the beds of shell-marl which underlie the waters of the lake were exposed to view, and attracted the attention of certain members of this society. Samples of the marl containing fresh-water shells were sent to the museum of Comparative Zoology at Cambridge and the peculiar varieties of a species of *Valvata* occurring in them, attracted the attention of Prof. Alpheus Hyatt of Boston, who visited the Lake in 1877 for the purpose of examining the marl. At his request I undertook to study the geology of the deposit, in connection with his proposed work on the biology of the mollusca which inhabit its waters and are found in the marl beds.

To investigate certain doubtful points which had come up, I found it necessary to make more careful examinations than I at first contemplated, and in the summer of 1880 and 1881, made collec-

* *Macoma groenlandica* is a small, lenticular, bivalve mollusc about the size of the human thumb-nail, a variety of which, *Macoma fusca*, is now quite plentiful along the sandy beaches of the Bay of Fundy.