

great numbers of these loose rocks can be seen, one of which measures 20 feet by 15 feet and is 4 feet out of the ground.

Among channels of more recent date but which are now closed except at periods of high water on the river, two at least may be mentioned. East from Coulonge village a depression in the surface extends to the Ottawa at the north west angle of Calumet Island. The eastern portion of the depression to the west of the river is known as the Grand Marais or Big marsh; and while at ordinary stages of water in the Ottawa much of this is comparatively dry, in the spring it becomes a regular water-course cutting off the great point which extends south-west from Coulonge village to La Passe.

Further east below Ottawa at the mouth of the Nation river a depression also occurs forming the bay in front of the village of Papineauville, and separating that place from what is known as the Presqu'île. This latter is a long ridge or tongue of gravel and sand which extends east from the mouth of the North Nation River for about six miles. At high water stages the current passes over the narrow barrier at the west end of the Presqu'île Bay and flows directly past the village. It is quite possible that close investigation in the Ottawa basin would disclose other channels which are now partly filled.

In this paper it has been the intention to indicate only the most prominent of these old channels. That the submergence of the whole basin has been sufficient to cause the waters of James Bay to unite with those of the Ottawa basin is indicated by the presence of well defined terraces and clay deposits at elevations greater than the present height of land north of Lake Temiscaming. It is probably due to this great spread of inland or ocean waters over this area that the sands and gravels which have been so instrumental in choking up the ancient valley of the river are so widely distributed. That these upper level deposits of clay and sand have not yielded organic remains is only negative evidence against this theory. On similar grounds much of the typical marine clay of the Ottawa and St. Lawrence basins would not be of marine origin since in the whole stretch north and west of Ottawa city they yield marine fossils only in very rare cases.