

happens that the stiff and more coherent masses of clay are broken down and mix with the softer material, the whole mass of clay, sand and mud being tumultuously and irresistibly moved forward and downward into the basin of the river.

According to Mr. R. F. Stupart, Director of the Meteorological Office, Toronto, (see accompanying table,) the average rainfall at Ottawa for the five months commencing June and ending in October, for the past nineteen years, was 14.62 inches. The rainfall during the summer of 1903 for a similar period was 19.44 inches. This abnormal precipitation doubtless contributed in no small measure to the catastrophe.

Sir William Logan, commenting on the cause of the Maskinongé landslip, was of the opinion that it was induced by "pressure on an inclined plane assisted by water;" and though he was not able to determine the nature of the subsoil, he believed, from a survey of the surrounding country, that it consists of Silurian limestone, the dip of which is, where visible, in the direction of the river.

At no point, so far as our examinations extended, did the Lièvre landslide reach the underlying solid rock surface, the gliding plane being in every case composed of the underlying impervious clay or hard-pan. This very smooth and striated surface, as shown in the accompanying illustration (Plate IV), was visible at several points along the base of the hills, as also on the western side of the wooded knolls situated near the river and which were not affected by the movement.

The motion must have been primarily determined by the presence of rather contiguous and extensive sheets of the super-saturated or semi-liquid clay; for it is obvious that no very steep gradient existed throughout the entire distance. In fact, the observations made seemed to warrant the belief, that the gliding plane was only steep in very close proximity to the rocky hills, while a short distance away, it was more or less undulating with only a gentle pitch outwards and downwards to the river. The original level of the plain, at this point, averages about 25 feet above the river, while the river itself is only about 20 feet in depth. Much of the debris which eventually reached the river was material once situated about 20 feet below the original