Castor, where the water has cut a deep channel through the rock. Four or five acres further west the Castor river crosses the ledge. The river flows eastward across the rocks and has cut a channel through them of ten or twelve feet in depth, the lower beds of rock are solid limestone and the upper limestone and shale in alternate layers of five or six inches, which form the top of the Trenton. About a mile to the westward there is another exposure of Trenton rock on the south side of the Castor river. They are tilted up at a very high angle, dipping to the north, the southern edge in some places almost vertical. Still further westward at Louck's mills the rock is exposed in the river, there is a break or fault here and the rock seems to dip under the drift on the south side of the river to the south and on the north side to the north, the rock exposure continues up the stream past Duncanville and is here probably Utica. To the north the Hudson river formation is exposed, presenting first grey sandstone, weathering brown and holding *Ambonychia radiata*, further north black bituminous shale is found overlaid by sandstone and a considerable area of red shales, the red shales weather to red clay and are probably the source of the bands of red clay already mentioned which has been carried to the east and south of the red shale. There are no indications of minerals in the townships, but on the northern border of Russell in sinking a well a vein of iron pyrites was found. There are no mineral springs in the township of Russell, but there is one in the township of Cambridge, on lot 18 in 5th concession, in the bottom of a deep gully. It comes up through the clay, and is slightly salt, but has never been analysed. The spring is in a level dell, and on digging to clear out the outlet it was found to be a mixture of leaves, sticks and clay. The deer had come here for ages to drink and had tramped all together. If the drift was removed from the two townships the general appearance would be a great central depression from east to west, and along the centre of that depression the rocks broken and tilted up as if pushed up from below. How has this depression been formed? If it had been scooped out by glacial action there would be boulders left behind, but we do not find any here. Then after the rocks were broken up the clay was deposited filling up all the inequalities in the rocks, making all level except where some of the