

by their contents to have come from the upper Alpine valleys above the lakes. Such moraines often repose on an older stratified alluvium, made up of rounded and worn pebbles of precisely the same rocks as those forming the moraines, but not derived from them, being small in size, never angular, polished, or striated, and the whole having evidently come from a great distance. These older alluvial strata must, according to M. de Mortillet, be of pre-glacial date, and could not have been carried past the sites of the lakes, unless each basin had previously been filled and levelled up with mud, sand, and gravel, so that the river channel was continuous from the upper to the lower extremity of each basin.

Professor Ramsay, after acquiring an intimate knowledge of the glacial phenomena of the British Isles, had taught, many years before, that small tarns and shallow rock-basins, such as we see in many mountain regions, owe their origin to glaciers which erode the softer rocks, leaving the harder ones standing out in relief and comparatively unabraded. Following up this idea after he had visited Switzerland, and without any communication with M. de Mortillet or cognisance of his views, he suggested in 1859 that the lake-basins were not of pre-glacial date, but had been scooped out by ice during the glacial period, the excavation having for the most part been effected in miocene sandstone, provincially called, on account of its softness, 'molasse.' By this theory he dispensed with the necessity of filling up pre-existing cavities with stratified alluvium, in the manner proposed by M. de Mortillet.

I will now explain to what extent I agree with, and on what points I feel compelled to differ from, the two distinguished geologists above cited. 1st. It is no doubt true, as Professor Ramsay remarks, that heavy masses of ice, creeping for ages over a surface of dry land (whether this comprise hills,