

changes of place and all the evils which necessarily arise out of these changes. Inconvenience might indeed arise if men-servants could leave their places at a month's notice: but in the case of women servants there could be no such inconvenience, and the change would be for them and for their employers an unmixed good. However, this change in the conditions of hiring is only one of several things needed to improve the social comfort and elevate the moral condition of your servants. If employers of farm labor are really anxious to check that evil which is said to prevail to so great an extent amongst the farm servants of Cumberland and Westmorland, they must provide them with amusements less corrupting than fairs and "merrie nights," allow them more seasonable opportunities for honourable courtship than the midnight hour, and give them greater facilities for marrying and making homes and firesides of their own. Now that the intimate intercourse between masters and servants, which once was, has ceased to be; now that young men and women hired to live in farm houses no longer spend their leisure time in the company or presence of the master and mistress of the household; now that there is no restraint upon the rude conduct, no check upon loose and profane talk, nothing to interest or instruct, nothing to elevate or refine the servants in our farm houses, it is doubtful whether the present system of hiring into the house is good for either master or servants.

Observations on the Physical Geology of the Western Districts of Canada.

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(Continued from page 45.)

Strata traced Westwards.—The various members of the series of rocks already described, are also exposed in tracing the escarpment running parallel to the shores of the lake, from Niagara to Flamboro'. The strata lie nearly horizontally from east to west, but dipping slightly to the eastward, the dip of the lower sandstone bed (called by the quarrymen the Gray Band,) which rests immediately on the red marl, being at the rate of twenty-two inches per mile. An extensive observation of the section thus exposed will shew the remarkable manner in which certain of the beds thin out and die away as you follow them westwards; while others not to be discovered at the Niagara River are intercalated in the series, and as they are traced in a north-west direction attain to a great thickness, still retaining their distinctive characters. Thus the great deposit of dark shale, which at the Falls shows a thickness of eighty or ninety feet, is represented at Flamboro' by a bed of only five feet

thick; while the encrinal and cherty limestone, which at Flamboro' occupy a most prominent place in the group, die out gradually and are scarcely to be detected at the Falls.* This same encrinal limestone, which at Flamboro is only about twenty feet thick, is observed to attain a thickness of one hundred feet in Eramosa, Nassagawea and Caledon. This limestone, as well as the underlying Clinton limestone, is everywhere well adapted to form an excellent and durable building material, and is likewise of good quality for burning into lime. It forms wherever it crops out a bold escarpment (which may be called the Niagara ridge) owing to its solid and apparently unstratified character. This escarpment is distinctly traced from West Flamboro' eastward into Nelson, where it takes a sweeping turn to the north, and maintains a nearly straight course in that direction until it reaches Owen Sound, near Sydenham village. The dark bituminous limestone which forms the upper member of the group follows the same course, which, however, is not so distinctly marked, owing to its being stratified in thinner beds, and occupies throughout from the Niagara River to Owen Sound, a breadth of country varying from eighteen to twenty or twenty-two miles.

The red marl which forms the base of our series of rocks is supposed to be about 614 feet thick. The bore which yields the mineral water at St. Catherines pierces it for a depth of nearly four hundred and seventy feet without passing through it, and the level at which the bore commences is one hundred feet below its upper surface. It seems geographically to come to an abrupt termination at the west bank of the creek at Oakville, and is there succeeded by the Lorraine Shales, or Hudson River Group—an older formation consisting of alternate very thin beds of limestone and shale, which extend from this point along the north side of Lake Ontario to the River Rouge in the township of Pickering, immediately adjoining Scarboro'. A good section of this formation is exposed on the east bank of the Don at Toronto. A bore which was executed under my directions at the Toronto Station of the Great Western Railway, penetra

* This phenomenon, which is not peculiar to the Silurian or any other system, though nowhere perhaps more strikingly apparent than in this locality, may, I conceive, be accounted for in three ways: Either, 1st That in the wide and deep ocean in which these deposits were made, certain of them never reached the deeper portions, but subsided along its shores; Or, 2nd. It may have been caused by certain portions being too shallow or even upraised above the surface of the water. Or, 3rdly. After the deposition of the stratum, it may have been uplifted so near to the surface of the sea, as to have been worn away by the waves, and thus have allowed a succeeding deposit to come directly upon one of preceding date.