

the fissures of rocky bluffs; or, in the case of animals, the times of the first appearance of common birds and the changes in their plumage, the ravages of noxious insects, the habits and metamorphoses of insects; the distribution of peculiar forms, such as the cray-fish or the mole, the nesting of birds, the habits of fishes, etc. All of these are subjects in which even the young may be led to take an intelligent interest.

And if we pass to higher grades, would it not be easy to show that the changes which are now going on every where around us, by the action of water, and ice, and frost, and air, by winds and waves, and tides and currents, have similarly been going on through indefinite periods of the past; and that though the effects, in a limited period, may seem altogether insignificant, in time they become very appreciable and are the means by which the whole earth has been to a large extent fashioned and fitted for its purpose as the abode of man. Seeing for example how water transports and at the same time wears and sorts the materials subjected to its action, how the banks and beds of streams are composed of rolled pebbles of sand or clay according to the varying velocity of the current, how these same materials are deposited in the successive and alternating layers as the results of changes in the channel or the effects of freshets, and how, at times, various objects, as metallic implements, drifted logs and leaves, shells, or even the bones of animals may become embedded in such deposits, the student of nature will probably find no difficulty in seeing that much of the material constituting the earthy banks of streams and rivers are of precisely the same character, arranged in the same way, and often holding the same sort of relics, though these, like the intervalles of the St. John, and that on which Fredericton rests, are now very rarely, if ever, reached by running water. Thus he will learn that large as some of our rivers may even now seem to be, they formerly flowed in far wider channels and were subject to overflows of which we can hardly estimate the magnitude. Then going still farther back, from the intervalles to the hillsides, and looking at the rocks laid bare by the course of some stream or by the opening of a quarry, he may see that these, too, are composed of rounded pebbles or of sand, hardened and compacted, it is true, but yet unmistakable in their character, and when long exposed to the weather, crumbling back again into their original condition. He thus finds that the hills, too, are largely made of water-formed rocks, and accordingly point to some former past condition of the surface widely different from that with which he is familiar now. In these, too, if he search with sufficient diligence, he may find relics which he will not doubt are relics of former living beings, it may be a stranded leaf, or a log, or a shell, and if these differ, as they probably will, in details of form and structure from those with which he is acquainted, he will be naturally led, as others have been before him, to the inference that the population of the world has changed, and that various kinds of plants and animals which were once abundant on its surface have now disappeared. Knowing, too, something of the kinds of animals which naturally frequent fresh and salt waters respectively—common snails and insects for example as compared with oysters and clams and whales, and finding, as he may do in many parts of the

province, rocks filled with remains of salt water forms, corals and shells and crustaceans, he will accept the conclusion as inevitable that these too once lived in the sea, and that old ocean once rolled over the spot where they now lie buried, though that spot may be scores of miles from the present sea coast, and hundreds of thousands of feet above its present level."

But some one may be disposed to say, "Where is the time to be had for all this sort of thing?" Now, in answer to this, if you will look carefully at what I have said, you will see that it makes no drain at all on ordinary school time. It is work to be done not in the schools, but outside of it, work in the open fields, in the flower decked woods, by the running brooks, and around the borders of lakes and rivers, work which will be done in any case so far as the visiting of these is concerned, but which it is only proposed shall be done intelligently. So far as the school itself is concerned no more time need there be consumed than what is needed for an occasional comparison of results, the correction of wrong conclusions and the suggestion of new directions for effort. Indeed such work may be made to assist rather than to interfere with the prosecution of other school work. For example, what better or more suggestive topic can be given for a school essay or literary composition than that of the description of the natural features of a landscape? What better illustrations can be given of geometrical forms and mathematical symmetry than are afforded by the crystals of familiar substances, of ice and snow, of sugar, salt and alum? What better means of developing the artistic talent and of encouraging a taste for drawing than are afforded by the natural models of trees and shrubs and flowers? What better methods, as I have already said, of interesting pupils in the facts of physical geography than by pointing out their illustrations in the local features of the district in which it is taught? Or what more forcible comments on the facts of history—modern history at least—than are suggested by the names of familiar places or the occurrence of old landmarks, the marks of former struggles for supremacy, the relics it may be, like the scattered arrow heads and stone axes often found scattered over the fields or turned up by the plough, of the former occupation of the country by peoples or races now extinct. To sum the whole matter up, in the words of an old friend and distinguished teacher, who himself did no small part in bringing about the result to which he refers: "The studies of the school, occupying the child with widely different though indispensable tasks, have, until within a few years, failed to provide the young mind thirsting for a knowledge of nature with any opportunity of useful communion with her works. But thanks to the wiser views of our contemporaries, the doors of the academy and the high school are thrown open to admit the odorous breath of flowers, and the melody of birds and the free air and sunshine of the teeming vocal beautiful world, and it is found that the clear refreshing atmosphere, instead of dwarfing the plants of classical and mathematical learning, only nourishes them to a healthier and more vigorous development."

EVERY school in the Dominion should have in it as first essentials the entire Bible, the British flag and an unabridged dictionary.—*J. Robb in Toronto Educational Journal.*