

thing for practical use, and that which admits of easy accomplishments.

II.—EDUCATION DIRECTED TOWARDS THE PURSUITS AND OCCUPATIONS OF A PEOPLE.

On this subject, Dr. Playfair gives the following striking illustration. He goes on to say :—

“The great advantage of directing education towards the pursuits and occupations of the people, instead of wasting it on dismal verbalism, is that, while it elevates the individual it at the same time gives security for the future prosperity of the nation. There are instances of nations rich in natural resources of industry, yet poor from the want of knowledge how to apply them; and there are opposite examples of nations utterly devoid of industrial advantages, but constituted of an educated people who use their science as a compensation for their lack of raw material. Spain is an example of the first class, and Holland of the second. Spain, indeed, is wonderfully instructive, and her story is well told by Buckle, for you see her rise in glory or fall in shame, just as there are conditions of intellectual activity or torpor among her inhabitants. Sometimes animated with life, Spain seeks a high position among nations; at other times she is in a death-like torpor. She is an apt illustration of that sentence: ‘He that wandereth out of the way of understanding, shall remain in the congregation of the dead.’ The Jews brought into Spain their habits of industry, and later, the Moors introduced the experience and science of their time; and they took root even in a country devastated by wars between Christians and Mahommedans. But Spain committed two great national crimes—the expulsion of the Jews at one time, and of the residue of the Moors at another. The last crime of 1609, by which 1,000,000 of Moriscos were thrust forth from the kingdom, was avenged by suddenly depriving Spain of the accumulated industrial experience and science of centuries. After that act, education was only allowed so far as it did not interfere with ecclesiastical fears, and the country fell into a state of abject misery and dejection. A century after, the Duke de St. Simon, then French ambassador at Madrid, declared that science in Spain is a crime, and ignorance a virtue. During the next century, there was a period of three generations when foreign science and experience were imported by the Spanish kings, and the country began to rise again to some condition of education and prosperity. But in the last half-century it has relapsed, ecclesiastical power having again assumed its old sway, and Spain has returned to a position of obscurity, from which, let us hope, she may emerge by her late revolution. For this nation has everything in the richest profusion to make it great and prosperous. Washed both by the Atlantic and Mediterranean, with noble harbours, she might command an extensive commerce both with Europe and America. Few countries have such riches in the natural resources of industry. A rich soil and almost tropical luxuriance of vegetation might make her a great food-exporting nation. Iron and coal, copper, quicksilver and lead abound in profusion, but these do not create industries, unless the people possess knowledge to apply them. When that knowledge prevailed, Spain was indeed among the most advanced of industrial nations. Not only her metallurgic industries, but her cotton, woollen and silk manufactures were unequalled; her shipbuilding also was the admiration of other nations. But all have decayed because science withers among an uneducated people, and without science nations cannot thrive. Turn to Holland, once a mere province of Spain. She has nothing but a maritime position to give her any natural advantage. Not so bad, indeed, as Voltaire’s statement, that she is a land formed from the sand brought up on the sounding-leads of English sailors, though she is actually created from the debris of Swiss and German mountains brought down by the Rhine. Hence within her lands are no sources of mineral wealth; but she has compensated for its absence by an admirable education of her people. For my own country, I have no ambition higher than to get schools approaching in excellence to those of Holland. And so this mud-produced country, fenced round by dykes to prevent the ocean from sweeping it away, is thriving, prosperous and happy, while her old mistress—Spain—is degraded and miserable, unable in all Europe until lately to find a King who would undertake to govern her ignorant people.”

III.—THE NEW SUBJECTS OF AGRICULTURE, COMMERCIAL INSTRUCTION, MECHANICS, DRAWING, PRACTICAL SCIENCE AND NATURAL HISTORY.

1. I may remark that one great object of the new School Act was to make our Public Schools more directly and effectively subservient to the interests of agriculture, manufactures and mechanics.

2. In my first special report on “a system of Public Elementary Education for Upper Canada,” laid before the Legislature in 1846, I stated the institutions necessary for these purposes; and in the

concluding remarks of my last two annual reports, I have expressed strong convictions on the subject. When we consider the network of railroads which are intersecting, as well as extending from one end to the other of our country, the various important manufactures which are springing up in our cities, towns and villages, and the mines which are beginning to be worked, and which admit of indefinite development, provision should undoubtedly be made for educating our own mechanical and civil engineers, and chief workers in mechanics and mines; but I here speak of the more elementary part of the work of practical education, which should be given in the ordinary Public Schools.

3. It must be admitted that though the general organization of our Public School System is much approved, and although the schools themselves have improved; yet that the knowledge acquired in them is very meagre—extending for practical purposes very little, and in many cases not at all, beyond what have been termed the three R’s—Reading, Writing and Arithmetic, and that rather elementary. If the system of schools cannot be greatly improved, what is taught in the schools should be greatly advanced and extended, I entirely agree with the Hon. Mr. Carling, Commissioner of Agriculture, who, in a late able report, remarks :—

“Notwithstanding the great advancement we have made within a period comparatively short, I have a growing conviction that something more is required to give our education a more decidedly practical character, especially in reference to the agricultural and mechanical classes of the community, which comprise the great bulk of the population, and constitute the principal means of our wealth and prosperity. What now appears to be more specially needed in carrying forward this great work is, in addition to the ordinary instruction in Common Schools, the introduction of the elementary instruction in what may be termed the foundation principles of agricultural and mechanical science.”

4. These views, to a limited extent, have been successfully acted upon in our Normal and Model Schools, but I propose to carry them into more certain and general operation, by the additional Lectureship in the Normal School, which has been established for the special purpose of preparing teachers to teach the subjects indicated in the Public and High Schools, and to make the teaching of them a part of the programme of instruction in our Public Schools. We have, already, in the Educational Museum the specimens of models necessary for a school of both the fine and some of the mechanical arts; and I trust there will soon be supplemented Schools of mechanical and civil engineering, if not of architecture, as also of manufactures and agriculture. But what I have said relates to the elementary education which may be imparted on these subjects in the Public and High Schools.

IV.—THE WAY IN WHICH THIS INSTRUCTION SHOULD BE GIVEN.

1. As to the only way in which instruction in these subjects should be given, we quote the following strikingly forcible language of Dr. Lyon Playfair on the subject. He says :—

“The pupil must be brought in face of the facts through experiment and demonstration. He should pull the plant to pieces, and see how it is constructed. He must vex the electric cylinder till it yields him its sparks. He must apply with his own hand the magnet to the needle. He must see water broken up into its constituent parts, and witness the violence with which its elements unite. Unless he is brought into actual contact with the facts, and taught to observe and bring them into relation with the science evolved from them, it were better that instruction in science should be left alone. For one of the first lessons he must learn from science is not to trust in authority, but to demand proof for each asseveration. All this is true education, for it draws out faculties of observation, connects observed facts with the conceptions deduced from them in the course of ages, gives discipline and courage to thought, and teaches a knowledge of scientific method which will serve a life time. Nor can such education be begun too early. The whole yearnings of a child are for the natural phenomena around, until they are smothered by the ignorance of the parent. He is a young Linneus roaming over the fields in search of flowers. He is a young conchologist or mineralogist gathering shells or pebbles on the sea shore. He is an ornithologist, and goes bird nesting; an ichthyologist, and catches fish. Glorious education in nature, all this, if the teacher knew how to direct and utilize it. The present system is truly ignoble, for it sends the working man into the world in gross ignorance of everything that he has to do in it. The utilitarian system is noble in so far as it treats him as an intelligent being who ought to understand the nature of his occupation, and the principles involved in it. If you bring up a ploughman in utter ignorance of everything relating to the food of plants, of every mechanical principle of farm implements, of the weather to which he is exposed, of the sun that shines upon him, and makes the plants to grow, of the rain which, while it drenches him, refreshes the crops around,