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## I. Papers on Education in England and Scotland.

### 1. DEFICIENCIES OF ENGLISH EDUCATION.

Dr. Froude, the historian, was installed Rector of St. Andrew's University on the 19th ult., on which occasion he delivered a long address on education. In introducing his subject, he said :—

"I am addressing the successors of that remote generation of students whom Knox 'called round him' in the yard of this very college, 'and exhorted them,' as James Melville tells us, 'to know God and stand by the good cause, and use their time well.' It will be happy for me if I, too, can read a few words out of the same lesson book ; for to make us know our duty and do it, to make us upright in act and true in thought and word, is the aim of all instruction which deserves the name. It has become a cant now-a-days to make a parade of noble intentions ; but when we pass beyond the verbal propositions our guides fail us, and we are left to grope our way to guess it as we can."

### SCOTCH MORAL AND MENTAL FURNITURE AND STOCK-IN-TRADE.

He proceeded : "We will consider the stock-in-trade the moral and mental furniture upon which you will start upon your journey. In the first place, you are Scots ; you come of a fine stock, and much will be expected of you. If we except the Athenians and the Jews, no people so few in numbers have scored so deep a mark in the world's history as you have done. No people have a juster right to be proud of their blood. It is

not for nothing that you here and we in England come, both of us of our respective races ; we inherit honourable traditions and memories ; we inherit qualities inherent in our home and blood, which have been earned for us, no thanks to ourselves, by twenty generations of ancestors ; our fortunes are now linked together for good and evil, never more to be divided. It takes many generations to breed high qualities of either mind or body ; but you have them ; they are a fine capital to commence business with, and *noblesse oblige*. Passing to the second portion of their equipment, education, there was, he said, no occasion to tell a Scotchman to value it. On this, too, they had set an example which England was beginning to imitate. In the form of their education there was little to be desired. It was fair all round to poor and rich alike. They had broken down the enormous barrier of expense, which makes the highest education in England the appendage of the wealthy. Whether the subjects to which the best years of boyhood and youth continued to be given were the best in themselves, were questions all the world was busy with."

### WHAT IS MEANT BY AN EDUCATED MAN.

"I have long thought," he said, "that to educate successfully you should first ascertain clearly what you mean by an educated man. Now, our ancestors, whatever their other shortcomings, understood what they meant well. In their education they knew what they wanted to produce, and they suited their means to their ends. They set out with the principle that every child should be taught his duty to God and man. The majority of people had to live by bodily labour ; therefore, every boy was as early as convenient set to labour. Besides this, you had in Scotland, established by Knox, your parish schools, where he was taught to read, and if he showed special talent, was trained for the ministry. But neither Knox nor any one in those days thought of what we call enlarging the mind. A boy was taught reading, that he might read the Bible and learn to fear God and be ashamed to do wrong. The essential thing was that every one that was willing to work should be enabled to maintain himself and his family in independence. If you require much you must produce much. If you produce little you must require little."

### STUDENTS AT THE UNIVERSITIES NOW AND IN TIMES PAST.

"Those whose studies added nothing to the material wealth of

the world were taught to be content to be poor. The thirty thousand students who gathered out of Europe to Paris to listen to Abelard did not travel in carriages, and brought no portmanteaus with them. They carried their wardrobes on their backs—walked from Paris to Padua, from Padua to Salamanca, and begged their way along the roads. The laws of mendicancy were suspended in favour of scholars wandering in pursuit of knowledge. At college the scholar's fare was the hardest, his lodging was the barest. If rich in mind, he was expected to be poor in body; and so deeply was this theory grafted into English feeling, that earls and dukes, when they began to frequent universities, shared the common simplicity. The furniture of a noble earl's room at an English university at present may cost, including the pictures of opera-dancers and race-horses, perhaps £500. When the magnificent Earl of Essex was sent to Cambridge in Elizabeth's time, his guardians provided him with a deal table, covered with green baize, a truckle bed, half a dozen chairs, and a wash-hand basin. The cost was £5. The scholar was held in high honour, but his contributions to the commonwealth were not appreciable in money. He went without what he could not produce that he might keep his independence and self-respect unharmed. Neither scholarship nor science starved under this treatment; more noble souls have been smothered in luxury than were ever killed by hunger. A young man going to Oxford learns the same things which were taught there centuries ago; but, unlike the old scholars, he learns no lessons of poverty along with it. In his three years' course he will have tasted luxuries unknown to him at home, and contracted habits of self-indulgence, which make subsequent hardship unbearable; while his antiquated knowledge has fallen out of the market. There is no demand for him; he is not sustained by the respect of the world, which finds him ignorant of everything in which it is interested. He is called educated; yet, if circumstances throw him on his own resources, he cannot earn a sixpence. An Oxford education fits a man well for the trade of a gentleman. I do not know for what other trade it does fit him as at present constituted. More than one man who has taken high honours there, who has learnt faithfully all that the University undertakes to teach him, has been seen in these late years breaking stones in Australia. That was all which he was found to be fit for when brought in connection with the realities of things."

#### THREE WAYS OF LIVING:—WORKING—BEGGING—STEALING.

"There are but three ways of living, by working, by begging, or by stealing. Those who do not work, are doing one of the other two. The practical necessities must take precedence of the intellectual. A tree must be rooted in the soil before it can bear flowers or fruit. A man must learn to stand upright upon his feet, to respect himself, to be independent of charity or accident. It is on this basis only that any superstructure of intellectual cultivation worth having can possibly be built. The old apprenticeship therefore, was, in my opinion, an excellent system. The Ten Commandments and a handicraft made a wholesome equipment to commence life with. The apprentice plan broke down—partly because it was abused for purposes of tyranny, partly because employers did not care to be burdened with boys whose labour was unprofitable, partly because it opened no road for unexceptionably clever lads to rise into higher positions. Yet the original necessities remain unchanged. The Ten Commandments are as obligatory as ever, and practical ability—the being able to do something, and not merely to answer questions—must still be the backbone of the education of every boy who has to earn his bread. Add knowledge afterwards as much as you will, but let it be knowledge which will lead to the doing better each particular work which a boy is practicing, and every fraction of it will thus be useful to him; and if he has it in him to rise, there is no fear but he will find an opportunity. Take the most unskilled labour of all—that of the peasant in the field. The peasant's business is to make the earth grow food; the elementary rules of his art the simplest, and the rude practice of the easiest; yet between the worst agriculture and the best lies agricultural chemistry, the application of machinery, the laws of the economy of force, and the most curious problems of the physiology. Each step of knowledge gained in these things can be immediately applied and realized. Each point of the science which the labourer masters will make him not only a wiser man, but a better workman, and will either lift him to a higher position, or make him more intelligent and more valuable if he remains where he is. He may go far, or he may stop short; but, whichever he do, what he has gained will be real gain, and become part and parcel of himself. It sounds like mockery to talk thus of the possible prospects of the toil-worn drudge who drags his limbs at the day's end to his straw pallet, sleeps heavily and wakes only to renew the weary round. I am but computing the systems of education, from each of which the expected results may be equally extravagant. The

millions must ever be condemned to toil or the race will cease to exist."

#### THE DUTY OF THE HOUR.

What I insist upon is, generally, that in a country like ours, where each child that is born among us finds every acre of land appropriated, a universal "Not yours" set upon the rich things with which he is surrounded, and a government which, unlike those of old Greece or modern China, does not permit superfluous babies to be strangled; such a child, I say, has a right to demand such teaching as shall enable him to live with honesty, and take such a place in society as belongs to the faculties which he has brought with him. It is right which was recognized in one shape or another by our ancestors. It must be recognized now and always, if we are not to become a mutinous rabble. And it ought to be the guiding principle of all education, high and low. We have not to look any longer to this island only. There is an abiding place now for Englishmen and Scots wherever our flag is flying. The boy that is kindly nurtured and wisely taught, and assisted to make his way in life, does not forget his father and his mother. He is proud of his family, and jealous for the honour of the name that he bears. If the million lads that swarm in our towns and villages are so trained that at home, or in the Colonies, they can provide for themselves, without passing first through a painful interval of suffering, they will be loyal wherever they may be, good citizens at home, and still Englishmen and Scots on the Canadian Lakes, or in New Zealand. It was not so that we colonized America, and we are reaping now the reward of our carelessness. We sent America our convicts. We sent America our Pilgrim fathers, flinging them out as worse than felons. We said to the Irish cottier, "You are a burden upon the rates; go find a home elsewhere." Had we offered him a home in the enormous territories that belong to us, we might have sent him to places where he would have been not a burden, but a blessing. Loyalty, love of kindred, love of country, we know not what we are doing when we trifle with feelings the most precious and beautiful that belong to us—most beautiful, most endearing, most hard to be obliterated; yet feelings which, when they are obliterated, cannot change to neutrality and cold friendship. Americans still, in spite of themselves, speak of England as home. They tell us they must be our brothers or our enemies, and which of the two they will ultimately be is still uncertain.

#### UNIVERSITY EDUCATION.

I knew a student once from whose tongue dropped the sublimest of sentiments, who was never weary of discoursing on beauty and truth, and lofty motives; yet he was running all the while into debt, squandering the money on idle luxuries which his father was sparing out of a narrow income to give him a college education; dreaming of martyrdom and unable to sacrifice a single pleasure! University education in England was devoted to spiritual culture, and assumed its present character in consequence; but, as I told you before, it taught originally the accompanying necessary lesson of poverty. And if a university persists in teaching nothing but what it calls the humanities, it is bound to insist also on rough clothing, hard beds, and common food. For myself, I admire that ancient rule of the Jews that every man, no matter of what grade or calling, shall learn some handicraft; that the man of intellect, while, like St. Paul, he is teaching the world, yet, like St. Paul, may be burdensome to no one. A man was not considered entitled to live if he could not keep himself from starving. Surely those university men who had taken honours, breaking stones on an Australian road, were sorry spectacles; and still more sorry and disgraceful is the outcry coming by every mail from our colonies, "Send us no more of what you call educated men, send us smiths, masons, carpenters, day labourers." It hurts no intellect to be able to make a floor, hammer, or a horseshoe; and if you can do either of these you have nothing to fear from fortune.

#### THE ETERNITY OF TRUTH.

To anyone who holds what are called advanced views on serious subjects, I recommend a patient reticence, and the reflection that, after all, he may possibly be wrong. Whether we are Radicals or Conservatives, we require to be often reminded that truth or falsehood, justice and injustice, are no creatures of our own belief. We cannot make true things false, or false things true, by choosing to think them so. We cannot vote right into wrong, or wrong into right. The eternal truths and rights of things exist, fortunately, independent of our thoughts or wishes, fixed as mathematics, inherent in the nature of man and the world. They are no more to be trifled with than gravitation. If we discover and obey them, it is well with us; but that is all we can do. You can no more make a social regulation work well which is not just, than you can make water run up hill. I tell you, therefore, who take up with plausibilities, not to trust your weight too far upon them, and not to

condemn others for having misgivings which at the bottom of your own minds, if you look so deep, you will find that you share yourselves with them. You who believe that you have hold of newer and wider truths, show it as you may and must show it, unless you are misled by your own dreams, in leading wider, simpler, and nobler lives. Assert your own freedom if you will, but assert it modestly and quietly, respecting others as you wish to be respected yourselves. Only, and especially, I would say this—be honest with yourselves whatever the temptation; say nothing to others that you do not think, and play no tricks with your own minds. Of all the evil spirits abroad at this hour in the world, humbug is the most dangerous.

"This above all—to your ownself be true,  
And it will follow, as the night the day,  
You cannot then be false to any man."

## 2. SCIENTIFIC EDUCATION IN ENGLAND.

(REPORT OF A SELECT COMMITTEE OF THE HOUSE OF COMMONS, 1868.)

On the 15th of July, 1868, the House of Commons ordered the printing of a blue-book of 480 pages, containing the report of a Select Committee to inquire into the provisions for giving instruction in Theoretical and Applied Science to the industrial classes. The Committee had called before it witnesses representing the "Department of Science and Art," the "Committee of Council on Education," the "Government Colleges of Science and Naval Architecture," several of the Universities and Colleges in England, Scotland and Ireland, and a great number of humbler schools, as well as of the great staple industries of the principal manufacturing towns and districts. Out of the immense mass of information thus collected, a few points may be gleaned as of interest or importance here in Canada.

The "Science and Art Department" is a noble effort on the part of the British Government to diffuse practical knowledge and training among working men. It aids some 300 schools, scattered all over the Kingdom, and on the fair and enlightened principle of paying for "results," as ascertained by rigorous examination of the pupils. Its funds are not squandered at the asking of political influence, but given as the earnings of the hard and profitable work of the teacher and pupil. Fourteen thousand pupils attend the schools, which are in great part evening schools, accessible to actual working people. For this work the Department paid, in the year ending March, 1868, £144,158; but of this only £13,500 were in direct payments to teachers, the remainder being for buildings, books, museums, examinations, &c. The subjects taught were such as mathematics, chemistry, natural philosophy, botany, zoology, physiology, geology, mechanics, navigation, mining, metallurgy, civil engineering, drawing, painting and modelling.

One curious point in the evidence on this subject bears on the difficulty of procuring good teachers. The reason is that "the demand for anybody who appears above the horizon with any scientific knowledge applicable to industry is so great that few of these people, comparatively speaking, turn into teachers. The witnesses examined ably maintain the practical value to the country of all the subjects above named, and distinctly state that they do not consider "technical instruction" in science schools, as including the teaching of trades. These can better be learned in the work-shop. The business of the science school is thus stated in the words of Lord Rosse's commission on the Science School of Dublin: "We do not consider that the practical applications of science to industry or the arts themselves, should be undertaken by the college of science, as the special part of its teaching; its aim should rather be to impart a general and thorough knowledge of those branches of science which may be so applied, leaving it to the student subsequently to specialise his knowledge, and turn his attention in the direction he may find most suitable; but practical subjects, when capable of being rendered illustrative of scientific principles, should, in all cases, be introduced into the course of instruction." Exception is, however, made in favour of such subjects as engineering, mining, and navigation, which can be practically taught in schools. The object is not directly the work, but "the intelligence of the man in his work." Small aids are given under judicious conditions to localities erecting suitable buildings for science schools, and any teacher, who for two years has "passed" thirty students a year, is allowed a free trip to London, at the expense of the Department, "that he may visit the schools and museums in London and see what is going on."

Very varied results have attended the establishment of Science Schools; some have been ephemeral and of little value, others in the highest degree successful, and some of the largest and wealthiest manufacturing places have shown the utmost indifference to these schools, while others of less note have put forth the most energetic efforts in their behalf. Birmingham, it seems, is one of the former class, and the remark of one of the witnesses, "so much the worse

for Birmingham." is curiously illustrated in the appendix by a list of some scores of kinds of "Brummagon" goods which have, within the last few years, been wholly driven from the foreign and Colonial markets by the competition of the better educated artisans of France, Germany and America.

Dr. Lyon Playfair brings out some curious points. One of these, in which he corroborates the statements of a previous witness, is that the iron girders for the Kensington Museum itself had been imported from Belgium, the manufacturers in that country bringing "more science" to their aid, and so selling cheaper than those of England.

The Science Schools of Switzerland are spoken of as "typical system." They have "the best Elementary Schools," finishing "on half time work," and "special industrial schools, where students may be educated in the sciences bearing on their professions." Scotland takes the lead in Great Britain in science education in the Universities. "The four Scotch Universities, for very many years, have given much more science instruction than the Universities of England, and the effect has been that they have got a great hold of the population." "There are more university students, in proportion to the population, in Scotland than in any other part of the world; there is one university student for every 866 of the Scotch population, while there is only one university student for every 5,445 of the population of England, and one to every 2,894 of the population of Ireland, so that it will be seen that in Scotland we have got much more hold on the people on account mainly of our teaching subjects which relate to their future vocations in life." In connection with this it is stated that a chair of Civil Engineering has recently been established, a sum of £6,000 having been given by Sir David Baxter, and a like sum by the government. An engineering workshop is also to be established, and government has spent £40,000 on the magnificent industrial museum connected with the university. The government have further offered to double the size of the museum if the City Corporation undertakes to widen the street leading to it. The old Chair of Agriculture has also been put on an efficient footing. The Laboratories of Practical Chemistry in London, Manchester, and Edinburgh, are, it appears, too small to accommodate the students desiring access to them, and Dr. Playfair would "like to see the government give aid to two or three good laboratories throughout the country." Prussia has lately built two, one in Berlin and one in Bonn, at a cost of £50,000 each.

The school of mines in Jermyn street, London, an outgrowth of the geological survey of the United Kingdom is the leading institution of that class in Great Britain. It has lectures on geology, palæontology, natural philosophy, chemistry, mineralogy, metallurgy, and mechanical drawing. It has 89 students, of whom only 18 take the whole course; and it also delivers popular lectures and lectures to working men. Its comparatively small number of students is attributed to apathy on the part of the mining people, to want of an educational head to the institution, to the too limited character of the course, its not being near the mining districts, and other causes. The students actually educated are said to have been eminently and usefully. The cost of the school for teaching purposes is only £2,400 annually; and it is the opinion of the witnesses examined that extension in various directions is required to bring out the full utility of the institution. More especially it requires more commodious rooms, the services of tutors, and additional professorships. Professor Huxley, however, claims that it cannot be regarded as a failure, its success being really great, in training highly useful young men, and when tested with relation to the means employed.

Prof. Huxley's examination brought out incidentally some strong opinions in regard to the neglect of science education, in the older Universities, and more especially Oxford and Cambridge. He regards their courses of study as the reverse of the proper order, which according to him would be science first, and literature afterwards. He does not think that these Universities as at present constituted, will ever do any good with scientific education. The Professors of science are able, but no adequate encouragements are given, and the atmosphere of the Universities and their modes of study are uncongenial to science. He does not hesitate to say "I think that the spirit of the teaching at our older Universities is opposed to the spirit of scientific thought." Every scientific man knows that there is some truth in this, in so far as college education is supposed to be a process of "reading" without the study of facts and things, and from the remnants of the old prejudice that education should be limited to training, merely in the sense of intellectual gymnastics, without reference to any practical results. Still Prof. Huxley is, as he himself admits, rather "revolutionary" in his ideas on this subject.

Prof. Huxley bears willing testimony to the value of the science teaching in the schools, already mentioned under the "Depart-

ment of Science of Art." He has for several years been an examiner in Physiology and Zoology, and states:—"I may say that there is now a very considerable amount of sound physiological knowledge displayed by the people who send up their answers to these examinations. I believe that this is a very great step, but it would be a pity that we should remain satisfied with this commencement, for I conceive that there is a great and almost unlimited improvement possible in science teaching, and that, with regard to both of the subjects which I have mentioned as being the great objects of science teaching, that is to say, science on the one hand as knowledge, and on the other hand as educational discipline. The chief conditions of that improvement is the development of the teaching power of the instructors. A great majority of the teachers now teach very much from books, because they do not understand that getting up books is by no means a good method of bringing about a knowledge of science. The consequence is that even the best of the teaching shows more or fewer of the defects of book teaching." The teachers require themselves to be taught the true character of the natural sciences as results of observation, experiment and comparison, rather than of "reading up," as the cant of the class-room phrases it.

The University of London has introduced with great success the degrees of Bachelor and Doctor of Science. Edinburgh has set the example of giving degrees in Agriculture, Engineering and Veterinary Science. Dr. Carpenter adds his testimony to that of Prof. Huxley as to the education of men in schools, and even colleges in which the Natural Sciences are not taught, leaving the mind in a state perfectly helpless in relation to the study of objects and phenomena. This effect of "book knowledge," without applied science, is one well worthy of consideration, and to which too little attention has been given.

Owen's College, Manchester, is one of the newer institutions affiliated to the University of London, and much employed in science teaching. It was founded by John Owens, a merchant of Manchester, who bequeathed to it nearly £100,000. Its students, at first few, have risen to 173. It has also 324 students in evening classes, intended for the benefit of those who must work during the day. Since the foundation of the College, £20,000 has been left to it in benefactions of various kinds, chiefly for founding scholarships and building the laboratory. An endowment is being subscribed to establish a Chair of Engineering in this College, and this by members of the Engineering profession itself, who have given nearly £10,000 to this object already. It is "considered desirable to raise a fund of £200,000 to extend the buildings of the College." Government has promised to give a sum equal to the subscription, and £60,000 has been already raised, with the hope that it will be increased to £100,000. It may be remarked here that the British Government have displayed equal liberality in the case of the University of Glasgow, having given £120,000 to its building fund, the people subscribing with a generosity which does them the utmost credit, £150,000, so that the Government, which had promised to give a sum equal to that which the people might raise, was obliged to hold its hand on reaching the sum above stated.

Professor Jenkin, of the Institute of Civil Engineers, give in his evidence some details as to the *Ecole des Ponts et Chaussees* at Paris. The students have to enter the Polytechnic School after an examination so rigorous that few men could pass it "who could not also be competent to take honors at Cambridge." There are about 900 candidates for 150 received. They remain in the school two years, receiving a severe training in higher mathematics and physics. They then pass by a further examination into the "*Ecole des Ponts et Chaussees*," where they must study not only all the branches of ordinary engineering, but maritime works, architecture, telegraphy, photography, &c. This is merely a specimen of French schools of applied science. The "*Ecole des Mines*" is rather of the most important, and the "*Ecole Centrale*," a school of arts and manufactures, has no fewer than 490 students. In France the graduates of these schools are received into public employments, so that a great competition is at once established.

A large amount of testimony of an important character was obtained from manufacturers and merchants. One of these gentlemen, extensively engaged in the Birmingham hardware trade, testifies very strongly to the good effects of the general diffusion of elementary education in the United States of America, where he had travelled extensively, and the manufacturers of which he proves to be successful competitors with those of Birmingham, even in the markets of India and China. His description of the difference between the American and English artisan, whether or not it be accepted as true in the particular case, is a graphic and accurate picture of the contrast between the educated and the uneducated workman. The subject is the relative facilities for improving and adapting articles of trade to special circumstances and wants. "The Englishman has not got the ductility of mind and the readi-

ness of apprehension for a new thing which is required; he is unwilling to change the methods which he has been used to, and if he does change them, he makes demands of price, by trade rules, which oppose the change of the article. An American understands everything you say to him as well as a man from a college in England would; he helps the employer by his own acuteness and intelligence. On the one hand, I have a man who readily assists me on the road I am going, knowing some things which I do not know myself; and on the other hand, I have a man who stops me on the road, who puts his own ignorance in the way of my knowledge, exhausting me by the efforts I am forced to make to get past him, while he stands before me in the middle of the path."

It is to be observed, also, that this witness, who is the chairman of the Chamber of Commerce, at Birmingham, and evidently a thoughtful and observant man, regards the diffusion of a sound elementary education in America as equivalent to scientific education, inasmuch as it produces habits of observation, reading, and thought, which lead to the acquisition of knowledge of science. It thus supplies the want of direct scientific teaching. He also traces by conclusive evidence the decadence of many branches of manufacture in Birmingham to the competition of more highly educated minds in America and the Continent of Europe. We who stand in presence of the active and educated mind of the United States, should profit by this lesson, else it will be "so much the worse" for Canada.

The mine of educational knowledge in this report could scarcely be exhausted in a dozen such articles as the present, but the lesson which it teaches as to the necessity of scientific education, both for the artisan and the higher classes, may readily be gathered from the extracts which have been given; and in conclusion we may quote the following summary of the recommendations of the report, which are necessarily limited to that department of the subject specially referred to the committee, namely, "the scientific education of the workingman." Parliament, they say, should be urged without delay—(1) "To organize secondary education," that is, technical education of a practical character. (2) "To recognize instruction in natural science as an indispensable element in such education." (3) "To provide for the central, general and local administration of existing funds, with due regard to the wants and capabilities of each branch of industry." (4) "To press forward further measures for primary education." They also recommend the extension of higher schools and colleges of science, and the granting of degrees in science in the older universities.

The appointment of this Committee is itself an evidence that thinking men in England have become stirred with the conviction of the necessity of still further efforts in science education in that country. The present report will strengthen this conviction, and indicate the means of carrying it into practical effect. May we not hope that some effects of this movement will extend to this country, and stir up even the somewhat sluggish public opinion of Canada to appreciate the necessity of that higher scientific culture, without which we shall aim in vain at the attainment of an honourable and prosperous nationality.

We are asked how this may be best done, the answer is furnished by this report. Supposing that we have or can obtain good elementary and higher schools and colleges, we may introduce in the cities evening classes in science for artisans, the teachers paid, in part at least, according to results. Our Commissioners of Schools are competent to do this, especially if they could have some special aid from Government. Science teaching should also be introduced to a greater extent than at present into our high schools and academies,—in the latter it might specially refer to agriculture, and a reward might be held out to the teacher, by giving a fixed sum for each pupil who could pass the required examinations, while other aids could be given to the more able and successful in apparatus and other appliances. Lastly, we might have special schools of science attached to our universities, and fitted to carry such instruction to that high level of scientific attainment and practical application reached in the polytechnic institutions, schools of mines and engineering and scientific colleges of more advanced countries. All this would cost some money, but if Canadian mind is to be cultivated as one of the great resources of the country, the money must be found and the more the better. Our Universities and other institutions already can supply many of the men required, and already possess large means in collections and apparatus waiting to be utilized, and by means of which the cost of scientific education might be much reduced. All that is needed is an energetic movement on the part of the government and people.

D., in *Montreal Gazette*.

### 3. TECHNICAL EDUCATION.

The following remarks by the *Pall Mall Gazette* are worth atten-

tion on this side of the Atlantic as well as the other. The provisions for technical education among us are woefully deficient:—

“People who are not in abject bondage to the superstition about letting things alone may profitably study Mr. Scott Russell’s account of certain foreign institutions. We will take, for example, the case of Wurtemberg, with a population equal to about half London, or one-twelfth of England. The provision for technical education includes the following institutions, of some of which Mr. Scott Russell gives a full account. There is, in the first place, the Polytechnic University, with courses for engineers, architects, chemists, and commercial men of all kinds, besides a course of general scientific education. It has one of the finest buildings in Stuttgart, fifty-one professors and teachers, and numerous laboratories, museums, modelling rooms, and workshops, a botanical garden, and an astronomical observatory. Secondly, there is a very remarkable school for the building trades, with courses adapted for all classes of workmen down to the humblest. Its president is the most distinguished architect in the country, and under him are twenty-eight professors and masters. The course of instruction includes German, French, history, arithmetic, geometry, algebra, drawing of all kinds, mechanics, the theory of building, of warming and ventilation, the construction of roads and bridges, the history of architecture and other subjects. The attendance includes 700 pupils, amongst whom are 475 actual builders. Besides this there is a college of agriculture and forestry, a veterinary college, and a school of art workmen, to say nothing of the *real schulen* and the elementary industrial schools. If England were as well provided with technical schools, we should have 4,675 masters teaching over 90,000 children in the various departments of trade and manufacture. Another remarkable institution of the same kind is the Technical University, of Zurich, to which Mr. Matthew Arnold has recently called attention. The teaching body consists of thirty-one professors, ten assistant professors, and sixteen teachers, who deliver between them one hundred and forty-five courses of lectures upon different subjects. They are divided into courses of architecture, civil engineering, mechanical chemistry, agriculture, and forestry; a course ‘for men of science, professors and teachers,’ and ‘a general course of philosophy, statesmanship, literature, art, and political economy.’ The university has a fine building, with an observatory, laboratories, museums of engineering, machinery, and architecture, zoological, entomological, antiquarian, and geological collections, and a botanical garden. It is attended by nearly six hundred pupils, of whom the majority are attracted from all the civilized countries in the world. Mr. Scott Russell notices, as an example of its practical working, a young relation of his own, whose training has been turned to good account in England by introducing him to positions of responsibility and importance, for which more experienced Englishmen are unfitted.”

#### 4. IMPROVEMENTS IN HARROW SCHOOL EDUCATION.

Some account of the “modern” department at Harrow School, the intended establishment of which was announced lately, is given in a circular which Dr. Butler has sent to the parents of boys at the school. Dr. Butler says:—“The principal subjects of instruction on the ‘modern side’ will be Mathematics, French, German, Latin, History, English Literature, and Physical Science. The requirements of boys not intended for the universities will be specially kept in view, including the case of those who are candidates for Woolwich or the Indian civil service. It is hoped that this provision may obviate the supposed necessity for removing boys to a private tutor’s precisely at an age when the influences of public school life are most powerful and most salutary. Except for purposes of instruction, there will be no distinction whatever between boys on the modern side and boys on the classical side.”

#### 5. THE SCOTTISH SCHOOLS.

We reprint from the London *Spectator* a just and appreciative article on the Duke of ARGYLE’S Scottish School Bill. The question of Common School education has lately, in this Province, commanded the attention of all classes of the people. To those who, in the cities as well as in the rural districts of the Province, have the management of our common schools, we especially commend this comprehensive sketch of the past and the proposed future system of Scottish education. It would seem that in a country not remarkably noted for religious breadth and toleration, there has long existed under a most rigid ecclesiastical regime a latitude of which even Roman Catholic parents have been willing to avail themselves on behalf of their children. The social standing of the old Scotch parish school, as presented by the *Spectator*, is specially worthy of note. The following is the article:—

“Scotland has again stolen a march on England in the matter of

education. She is to have her bill this year, and that bill, were it strengthened by one single clause needed only by the Irish colonies of her great towns, would almost fulfil the dreams of English educational reformers. Were a child’s absence from school without the master’s consent to render the father or other guardian liable to a small fine, the Scottish system, as improved by the new measures, would be almost ideally perfect, would need, in fact, nothing except a little more money for the masters, and a few hundred small bursaries in the Universities to aid the very poor. Scotland has already a school in every parish, maintained under compulsion by the “heritors,” or owners of land producing more than a hundred a year. Her tithe, in fact, to use the English phraseology, goes to support the Church and the school; John Knox, unlike most divines of the present day, having held that ignorance was a deadly enemy of true religion, and the school-master a diffuser of “light” as well as the preacher. The people have ever since held that opinion, and being besides democrats of the true kind, who hold that every occupation is honorable in its own degree, they attend these schools without raising imbecile difficulties about caste, and position and wealth. “In Scotland,” says the Duke of Argyle in the admirable speech with which he introduced his bill, “the universal custom is that children of very different classes should be educated together in the parish school, the children of the poorest labourer sitting beside the children of the farmer who employs him; the children of the clergyman, and in some cases those of the landed gentry, sitting also on the same bench, learning under the same master the same branches of instruction.” Wherefore in Scotland democracy does not take the form of class hatred. The masters are generally competent, the profession is considered very honourable, it is possible for a labourer’s son to get to the University, and keep himself there, and consequently, as an American manufacturer testified to the House of Commons. “We do not much favour Scotch Immigrants. They rise too quickly.” The faults of the scheme as it exists are rather deficiencies than errors. Only one school is provided for each parish, and a parish is sometimes a city. The school buildings are often bad. The schoolmaster is too often supposed to have a property in his place, so that it is difficult to dismiss him for incompetence, or even for habitual drunkenness. The State aid is only given to the poor children in each aided school, a distinction opposed to the Scotch dislike of distinctions in childhood, and chiefly to the rich districts, the grant being regulated by the amount of voluntary contributions. All these things require remedies, and they are to be remedied, not by and by, when the rich have time to attend to the matter, as in the case of similar grievances in England, but now, this year, in this session of Parliament. Under the plan proposed by the Duke of Argyle, and accepted, we believe, by the representatives of Scotland, a local Board of ten members will be created, of whom one will be a paid chairman appointed by the State, two members selected by the Crown, two elected by the conveners of counties, *i. e.*, practically by the heritors who pay the tithe, two by the boroughs, two by the Universities, and one by the general body of schoolmasters through “their recognized institution.” The Scotch have an idea that when they intend to do a thing too much chatter is undesirable, and consequently this Board is entrusted with extraordinary powers—powers, in fact, almost of a legislative character. It can take up the report of one of the inspectors, declare such a parish, or part of a parish, in any city or county, insufficiently provided with schools, and order that a rate be made and schools established at once, a proceeding which, as the Duke said, would make the hair of an English squire stand on end, he perhaps in his secret soul dreading and hating the education even more than the tax. The Scotch, however, are less terrified, thinking, maybe, that education, on the whole, tends to increase rent, and that a ploughman who can read is, even with increased wages, cheaper than a lout who does not even know how to walk. Then the Board is to have complete, “indeed, arbitrary,” powers of dismissal, which it will have no temptation to use unless set in motion by the parish, and power to order that the school buildings be rendered adequate to the wants of the population, and fit for the reception of the children. And finally, “some recognition” is to be given to the higher education in the parish schools, a large proportion of boys going from thence to the Universities, and the paid pupil-teachers are to be allowed to count their attendance in the Universities instead of attendance in the normal schools, a corrective, we may remark among other things, for the grand defect of the class, their tendency to priggish self-conceit. Supported, as it will be by the people, that scheme should work well. It displays none of that fear of given power to its agents, which is the besetting weakness of English legislation, and none of that wretched timidity about compulsion which happens every English statesman, except, indeed, when he is about to propose a tax. Then, indeed, he is stern enough, for in his view it is quite just and expedient to “make the taxpayer support the Services, but

very unjust to make him support schoolmasters for the education of his children. The Scotchman, however, either leaves the citizen alone, or makes him do what the majority deem it expedient he should do; and the bill, worked in the same spirit of fearlessness, will in three years bring the primary education of Scotland very nearly up to the level of its wants. But what, we shall be asked, becomes of the religious difficulty all this while? Is a child in religious Scotland to be taught compound addition by a person who, for aught that appears, may not be a firm believer in prevalent grace? or grammar, by one who has doubts whether it is not possible for persons who are not Presbyterians to be saved? Well, in the first, there is no substantial difference of religion in Scotland. Under three different names, five-sixths of the people are Presbyterians, absolutely agreed as to doctrine, discipline, and ecclesiastical governments, and differing only as to the interpretation of Christ's order about the things to be rendered unto God and Cæsar. "We have full confidence," says the Duke, "that the ratepayers will conduct their religious instruction very much as it is now conducted. There is practically no difference between the schools of any denomination. Parents, as was proved to us over and over again, do not care one half-penny to what religious bodies schools may happen to belong, but send their children to the best master, whether it is an Established Church school, a Free Church, or a United Presbyterian. In England every trumpety little sect would see the country relapse into barbarism, or rather remain in it, sooner than surrender its privilege of teaching that the value of  $A + B$  in theology differs radically from the value of  $B + A$ ; but the Scotch, really believing their creed, do not think heresy can be caught, like scarlet fever, by physical proximity to heretics, and, as the Duke says, look rather to capacity than orthodoxy. All that is needed for them is to let them absolutely alone, "to forbid any inspector to take any cognizance of religious instruction, unless the managers of the schools desire such cognizance to be taken," and to enforce a strict conscience clause. About this latter, there will be little trouble. In the Highlands, and great towns there are plenty of Catholic children, but the Protestants, pitying their inevitable destiny in the next world, placably leaves them alone in this. In Scotland, says the Duke of Argyle, "it has always been the custom in a Presbyterian school to allow Roman Catholics the advantage of secular instruction, without forcing on them religious teaching. It has been the universal practice, except, as I am informed, but I hope incorrectly, with the one exception of the Episcopalian schools, where, I am told, all children are required to go through instruction in the Church Catechism," and where that oppression will be given up when it is found to cost money. Subject to this clause, some of the denominational schools will still be aided for a time, but after a date to be fixed in the bill, all aid to such schools will cease, and education throughout Scotland will be left, as far as taxation is concerned, to the parochial schools, as improved by the operation of this measure. The managers in each parish will then decide how far religious instruction shall be an element in the curriculum, and secure their view by electing a schoolmaster who accepts it, and who, if he can teach, will be liked by the people, whatever his special view about Cæsar's rights. It is entirely useless to hope that a measure as vigorous and as sensible as this may yet be introduced in England? We greatly fear so, greatly dread that the *Telegraph*, which pronounces this bill "too revolutionary, too full of compulsion, and too Scotch," correctly gauges the intelligence of our population. The priests, and the parsons, and the ministers would resist so reasonable a bill till they died; and the churchwardens, and deacons, and pew-holders, and communicants would help them all alike, declaring light evil, unless it came from their favourite rush-light. Whether the people who are meanwhile left to grope in the dark care quite so much about it, may be doubtful, but the opposition of their superiors will hardly be overcome, and if it were, a greater difficulty still remains behind. The Scotch scheme has for its basis the kindly respect felt by all classes for each other, a respect which forbids the farmer's son from insulting the labourer's, by a refusal to learn at the same desk. Rather than let her sons associate with children of a lower grade, even in learning their letters, the genuine, high-principled, high-spirited British mother would consent to eat them. We must wait in this country, and do what we can, and, perhaps, in a century or two, we shall reach the level to which the Scotch now stand.—*Montreal Gazette*.

## II. Papers on Practical Education.

### 1. ENCOURAGEMENT—ITS WISDOM IN SCHOOLS.

It is now admitted by the most successful educators, that any evidence of progress in studies or improvement in habits, should

be strongly encouraged, though the student may not even approximate to the highest standard in either. Everything has its beginning, and every beginner is not and cannot be perfect. In the first days of school life, the approbative faculties cannot be appealed to, too strongly. To punish, or to threaten to punish, a beginner for not accomplishing the first work assigned to him, or for a failure to do it perfectly, is to ignore experience and to forget the uncertain days of childhood. The instructor who should insist upon completeness in these first uncertain steps, may not be surprised if he should change the hopeful into the hopeless, and transform the school-room into a prison. If led aright (properly encouraged), children will desire to learn, and all the sunshine and enthusiasm of childhood may be enhanced by the pleasant labour of acquiring knowledge. It is easy to say, "well done," as the youth girds himself for his first achievements in school, though he may not exhibit the breadth and fulness of the master.

Parents may help the teacher to cast a delightful glow over all connected with the school, and school life, and perhaps in no way so much as to go with the scholar and sustain him until he has learned his place, become acquainted with his classmates, and feels at ease amid the new wonders of the school-room. The teacher will take as much interest in a pupil, who has thus been introduced to his notice, as in the straggler, who comes without an attendant, and for whom no one seems to care or think. It is not satisfactory or reasonable to say that parents have *no time*, for if he puts a colt in training, or plans a house to be built by another, he will *find time* to see how the training progresses, or how the foundations of the house are being laid. Let the dinner suffer, or call of courtesy, or the house, or the shop, rather than permit the youth to go unattended to begin his intellectual labour.

In after days when the reasoning faculties are more mature, caution must accompany encouragement. To say *well done* always when the work has been improperly or slovenly done, is to injure the character. To repress insolence, boldness or laziness, and energize the character, to add clearness to the sight and positiveness to the understanding, may require a rigid seriousness, and sometimes an *iron rule*. To meet the world well, and act a manly part in spite of discouragements and disappointments, an acquaintance with discipline must be known, and love of obedience felt. A desire to encourage, however, must always be uppermost in the mind of the teacher, and all proper efforts of young students should always have radiantly overshadowing them, the recollection of approval from teachers and parents. There is then no weariness in well doing. To feel that none appreciate or approve, to labour with the constant impression that however much is done, there will be none to recognize it, to have fellowship always with frowns and bitterness, has been the hard lot of *too many*, some of whom have lost pride and hope and gone down. Some noble natures have toiled on, and at last the world has thrust the "laurel crown" into their languid hands. "The dew is dried from off its leaves," and they look upon it distrustingly. The approval and praise has come too late to do them any good. Many an outcast, we fear, can say, that at the critical time, when the good was being overcome and displaced by evil influences, there was no one to take them by the hand and hold them in place, or by a kind word or smile assure them they were remembered and sought after. Under ordinary circumstances the teacher may strengthen the purpose, and soften the heart by kindness and encouragement, or harden by neglect and frowns.—*Prof. Griffith in Michigan Teacher*.

### 2. DUTIES OF TEACHERS.

A correspondent, several of whose letters have already appeared in the columns of the *Planet*, and which have been approvingly copied in the *Journal of Education*, again writes us as follows:—

"In my last communication I gave some ideas respecting the "Style" of the teacher, and why it should be strictly attended to. I shall now consider some of the other duties of teachers.

The first, and by no means the least important duty, is to consider if he has the true spirit of the teacher. There are some who make teaching a mere stepping stone to something else; probably they never think of the responsibility resting on them, but merely occupy the time in order to get means to advance themselves, heedless of the duty they owe to their pupils and patrons. They appear to be almost devoid of principle on this point; self appears to be the ruling feature in their character. Such persons will never benefit the schools in which they are employed; their mind is not occupied with their public employment, but all their energies are devoted to some private pursuits. Every person pretending to teach should consider very faithfully whether he is willing to devote all his energies to the benefitting of his pupils, if his object is to enlighten others, if he has a really heartfelt desire for the advancement of education, and if he is ready and willing to labour in all

ways to attain such a noble object. If any person can go into the school-room with this object in view, and this determination in his mind, he may rest assured that if he has the qualifications of which I have treated before, and that success will attend his efforts. All his communications with the people among whom he may be residing should tend towards enlisting their sympathy in the educational cause, in waking up the minds of both old and young to the responsibility under which they are laid to improve every opportunity. It is his duty to study the disposition and inclination of the mind in his district, and devise some means by which to draw it into the proper channel. He should aim at leaving the people more enlightened than he found them.

A second and very important duty is self-culture. "No man is obliged to learn and know everything: this can neither be sought nor attained, because it is utterly impossible; yet all persons are under a strong obligation to improve their own understanding, otherwise it will become a barren desert, or a forest overgrown with the weeds, tares, and brambles of vice, which is the daughter of ignorance. Skill in the sciences is indeed the business and profession of but a small portion of mankind; but there are many others placed in such an exalted rank in the world, that they have many large opportunities to cultivate their reason, and beautify and enrich their minds with various knowledge." This is the case with the teacher. If he properly divides his time he can visit in his district, converse in his boarding house, and then have sufficient time to cultivate his own mind; but many suppose that when a certificate is once secured, it will be an easy matter to review their studies and pass another examination with the same success. Probably they may, but to perform their duty properly in the school-room, they should still study and extend their information, so that they may shed new light on the subjects they teach. The interests of the country demand of him to improve, the requirements of the district demand it, his own interests demand it, and he is held responsible for any wilful neglect.

A very imperative duty is to look after the interests of his pupils, as well out of the school-room as in it. I know that in making this statement, I tread on contested ground. But I think the reason of opposition to this statement rests with teachers themselves. They do not set just such an example as they should; they do not evince that interest that springs from the command, "Thou shalt love thy neighbour as thyself," and the result is that their advice is not respected very highly by the community in which they may reside. The duty of endeavouring to lead others in the right path has been advocated so forcibly from the clerical desk, that I need not say anything on the matter, only that it is particularly the duty of the teacher to guide the youthful mind rightly. If he ascertains that some of his pupils are inculcating any bad habit, he can use some parable to illustrate the result of it, and this may have a most salutary effect in checking the evil. It is neither necessary nor desirable to arraign the pupil before the school and check him for his misconduct, as some teachers do, and thus run the risk of doing incalculable injury to him. (I have reference to the conduct outside the school). By conversing privately with the pupil and kindly showing him his error, will generally produce the desired effect; but to speak in an authoritative tone, commanding him to give up the practice of any evil, will generally raise unpleasant feelings in the mind of both the pupil and parent. There are many teachers who set some improper examples before their pupils; they do not consider that they are casting a stumbling block in their way, which may ruin them forever; for this they are responsible.

As I have not space to consider all the duties of teachers, I will only take up one more, viz. :—It is the duty of the teacher to guide the study of the pupil. Upon this point I find most deplorable deficiency. The pupil is allowed to guide himself in studying as long as he has the assigned lesson. In many cases this course impairs the mind, which becomes enfeebled, and in many cases injured for life. A desperate effort has to be made to grasp the ideas, and it is only a strong mind that can grasp them uninjured. Very few teachers are careful to lead the pupils to think for themselves; they do not educate them; they aim at giving knowledge, but they should remember that a man may possess a good deal of information without being educated, but no man can be educated without possessing knowledge. Let any experienced teacher go into the majority of our country schools, and he will soon find that original thought is not cultivated. There are a number of teachers said to have the natural ability to impart knowledge, but my firm conviction is that they are men of good sense, and take the natural way of teaching, causing the pupils to be independent thinkers. When once original thought has been impressed on the pupil's mind, he will discover truth for himself, judgment will become strong, and reason will be accurate. There are pupils ruined by some teachers; if they were more careful they might lay in those youthful minds the foundation of future greatness and eminence.—*Chatham Planet*.

### 3. WHAT EDUCATION IS NEEDED.

In this age, more than any preceding one, the question of Education is occupying the attention of thoughtful men. In Great Britain, particularly, there has been a great waking up, and various have been the schemes submitted, and the suggestions offered for a more thorough and efficient means of educating the masses. The country under existing systems has produced a large number of very able men—scholars of world-wide reputation; yet no doubt is felt but under improved systems much more might be done. Not perhaps that scholars more learned might be turned out but that a larger number might be, and men more decidedly practical. In truth this is the great want of systems of instruction both in the old country and in this. That an acquaintance with the classic languages and the mythologies of antiquity should be maintained is right enough; but should they be maintained at the expense of ignoring other subjects that have a more intimate relationship with life? Day after day our boys and girls are kept poring over old, unfashioned books, conning lists of names, and a host of unmeaning things, that are never once required when the duties of active life are entered upon. Like Dickens' schoolmaster the great aim seems to be to fill the mind with facts—hard, dry, double and twisted facts; and thus to train, by a species of mental athleteism for all the toils that are to come. How much better it would be were a scheme devised that would educate the intellect, and at the same time provide a practical knowledge of the arts of life. That this can be done there is no reason to doubt. Year after year it is becoming more patent that such a result is attainable, and if we only look around us we can perceive it. By the Americans, more than any other people, the subject has received serious consideration. In several of their colleges and schools changes are already in progress, and are attended with the most marked success. We have only to allude to their commercial colleges as an illustration. The mode of instruction in those institutions is of a decidedly practical turn, and its adaptability to the wants of business men is acknowledged on every hand. A further exemplification of the system is noticeable in the curriculum of the Michigan university, where a more extended application of it has been adopted; whereby a course of model instruction—*model* in its true significance—young men are fitted to engage in industrial pursuits just as soon as their course is completed. Now why cannot some plan like this be adopted in our universities and schools? Why should our youth be allowed to grope along as was the fashion in the middle ages, when a much better system is ready for adoption? By all means let us give them an education, but let it be one in accord with the spirit of our age; let us provide for them such a course of instruction as will leave them free to find their sphere, and finding it to fill it.—*St. Thomas Home Journal*.

### 4. GOOD AND BAD HANDWRITING.

I have heard illegible writing justified as a mark of genius. That of course is a very flattering theory. I wish I could think it true. But, like most of these flattering theories about disagreeable eccentricities, it has one fatal fault. It is inconsistent with notorious facts. Men of genius do not, I believe, as a rule scribble. They write legibly. Thackeray, we all know, was a beautiful penman. He prided himself on his writing. He could write the Lord's Prayer in a legible hand on a bit of paper not bigger than a sixpence. I never heard that Charles Dickens had a contribution returned because it was illegible. "Douglas Jerrold's copy was almost as good as copperplate," and my friend, who, in his own graphic style, is sketching the career of "Christopher Kenrick" in these pages in a masculine, clear, and flexible hand, tells me that one of Jerrold's friends, "Shirley Brooks, writes plainly, and with very little revision." Lord Lytton's manuscript is written in a careless scrawl but it is not illegible, though from interlineations and corrections, perhaps now and then puzzling to printers; and Mr. Disraeli writes in a large and angular running hand, legible enough if not particularly elegant. And most of our leading politicians are excellent penmen. Mr. Gladstone seems to write as he generally speaks, in a hasty impetuous manner. But with all his haste and impetuosity, his writing is perfectly legible. It is an Oxford hand. Lord Derby writes, what I may perhaps call an aristocratic hand at once elegant and legible. Lord Russell writes a ladylike hand. It is like everything else about the Earl, small, and occasionally puzzling, but not inelegant. Mr. Bright's letters are as distinctly and regularly formed as this print. Lord Stanley's despatches are as legible as large pica. You may run and read them. Every character is fully formed; every "i" is dotted, every "t" crossed. You will find no sign of haste or sloveliness in his MS. I might go on in this style through a dozen more names. But it is not necessary. I have cited enough cases to prove my point,



that illegible handwriting is not a mark of genius, or even of superior intelligence. I know, on the other hand, that there are many men of genius who write and have written execrably. Sir John Bowring is one of these. It is said that Lord Palmerston once sent back an important despatch of Sir John's to China with a request that it might be copied in a readable handwriting; and Lord Cowley, our late Ambassador at the court of France, wrote so hastily and so illegibly that Lord Granville, I believe, once asked his lordship to keep the originals of his despatches for his own information, and send copies to the Foreign Office. "Lord Lytton, who moved a clause to the Reform Bill that nobody should have a vote who could not write a legible hand, writes so illegibly that the clerks at the table could not read the resolution which he handed in;" and Christopher Kenrick adds, that "Tom Taylor writes as if he had wool at the head of his pen." And these men are the types, I fear, of a far larger class than the first set of politicians and authors whom I have enumerated.—*Gentleman's Magazine*.

### III. Papers on Natural History.

#### 1. FLOWERS AND SCHOOL-ROOM MUSEUM.

We chanced to see the other day a very charming little addendum to a country school-room, which is worthy of note. The room was new, the walls pleasantly toned, the low skirting wainscot of native woods, left of its natural colour and simply oiled; but, best of all, before both of the south windows which flanked position of the mistress were two wide trays, of rustic finish, in which were grouped a geranium or two, a few starting jonquils and hyacinths, a variety of wood-mosses and ivys which clambered up on either side the windows and skirted them with a fairy hanging of green.

Could a prettier lesson or worthier one—which should teach at once regard for any love of flowers—be taught by any pictures in the school botanics?

The furnace heat of the day left a gentle temperature for the night, and all that was needed to guard against frost was a screening bit of muslin upon a Saturday night, or a little replenishment of the furnace fires. Even this might be avoided by an adoption of the warden cases. So then, the thing is every way feasible. And what unction might not an adroit teacher give to the first lesson in botany, with scores of eyes beaming upon the little leaflets which turn so eagerly to the sunshine, or upon the bulb lifting its green spears day after day and unfolding, by degrees, some wonderful pile of blossoms?

What now if we were to add to this in country school-rooms, some assemblage under glazed cases, of all the insects which haunt the neighbourhood—the beetles, the butterflies, the moths—all in their different stage of transformation, and all these to contribute decorative features, familiarizing the little ones with their appearance?

Then the minerals of the neighbourhood might have other cases, and the teacher challenge the pupils to bring in new types of their own finding, with some little reward for the eager and quick-sighted ones who should furnish a positively new specimen.

Still another cabinet might have its array of native woods, distinguishable by form of twig, or colour of bark, or shape of leaves, all of which might then be taught by the best and surest kind of object-lessons.

Nor would this style of teaching and properly within doors; the yard might have its appointment of varied shrubberies, with every species should be named and billeted, so that a miniature arbor-tum should grow up around the school-room, and become a source of healthy pride to both pupils and mistress.

Will some of those elderly gentlemen who believe only in the old measure of ugliness and the "Rule of Three," give us their objections to the palliatives of teaching we suggest?—*Hearth and Home*.

#### 2. THE BIRDS OF CANADA.

Mr. J. J. G. Terrill, of the Deaf and Dumb Institution, has issued a chart of the various Canadian birds. It is exceedingly well got up, and is alike creditable to Mr. Terrill's industry and knowledge of this most interesting study. We cannot do better than quote a notice of this chart from the pen of Mr. Thos. McIlwraith, a gentleman who has given a great many years of careful study to this branch of Natural History, and is entitled, perhaps, more than any other man in Canada to speak authoritatively on this subject. He says:—"To all lovers of birds it is matter of regret that so little is being done in our various educational institutes to direct the attention of the rising generation to the study of that branch of Natural History embracing the various feathered tribes which people our western woods and fields. Were we to ask one of the advanced

scholars in any of our country schools to enumerate the different species of birds with which he is acquainted, we might expect to hear mention made of the 'chicken hawk,' which means any of the eight or ten different hawks which visit the poultry yard. The blackbird, a name applied to four different birds; the grey bird, which is represented by some seven or eight different individuals of the sparrow family. The blue jay, robin, blue bird, and some of the more observant might add the chickadee and the woodpecker, but in a good many instances the list would end here. It is not at all creditable to us, that in a country so rich in ornithological specimens, so little is generally known of the haunts, lives and habits of our birds; and we cannot too soon begin to interest our young people in that elevating and interesting study.

"Mr. Terrill, of the Deaf and Dumb Institute here, has taken a step in the right direction, in getting up a chart which shows at a glance the most recent system of classification of birds as adopted by the Smithsonian Institute, Washington, and now generally used by ornithologists. The chart, beside giving the orders, sub-orders, families, sub-families, &c., has a full list of all the birds which have been observed in western Canada, with both their technical and common names. It is designed chiefly for the use of schools, but will also be valuable to private individuals wishing to be better acquainted with our feathered friends. Let us hope that the chart may have a wide circulation, and be the means of creating among our young people a taste for the study of this most attractive of all the branches of Natural History."—*Hamilton Spectator*.

### IV. Papers on Agriculture.

#### 1. INSECTS INJURIOUS TO THE FARMER.

Every year is bringing out new facts and a greater acquaintance with the habits of insects than formerly. It is interesting to know that a large number of the students have entered upon this hitherto almost unknown study. In consequence of the almost universal ignorance of insects, the farmer and gardener have hitherto been liable to great injury to their crops from their depredations. Even the enemies of insects and the friend of the farmer were indiscriminately persecuted and destroyed. Nobody knew the curculio a few years since, while thousands who had orchards bored to death by the borer did not know the cause of the mischief. The lady-bug on the turnip plants was supposed to be eating up the leaves of the plant, when it was busy eating up the insects that ate the leaves. Even now a wasp's nest, which is entirely out of the way of harm, is persecuted as a most undesirable companion of man, while the whole family may be busy in killing the insects that eat up his crops. It is said that some species of wasps will attack the gad fly, the sheep bot, or the flesh fly so injurious to cattle. It is true, it is not pleasant mowing into a big hornet's nest and getting the worst of it, but when they seek a home under the eaves of your dwellings they are generally harmless; and some species, at least, will do much to relieve the house and garden of various injurious insects.

Probably every insect in the world has some enemy, and it may often be of service to know this fact, in order that we may protect the one and destroy the other. It was but a few weeks since we met a man who owned a large orchard, and yet never saw an apple borer. Such ignorance in an orchardist where this insect abounds, is unpardonable at the present day.

The lepidopterous insects are among the most destructive orders. They are the larva, or caterpillar of the beautiful butterflies, or moths so abundant everywhere. What is a most beautiful object is the enemy of man in the shape of a caterpillar which eats the leaves of plants, and then hatches out as a butterfly, which will soon lay a great number of eggs to be hatched out into these same disgusting caterpillars. Thus we would let a butterfly go as harmless, but which in reality is the repository of a large number of destructive agents in the shape of worms and caterpillars which we would hasten to crush beneath our feet.

It is a noticeable and encouraging fact, that greater attention is given every year to the habits of insects by intelligent farmers themselves. This habit of inquiry and investigation should be encouraged. There is scarcely anything too trivial to go unnoticed in the animal kingdom. A single fact may serve to unfold a great principle. It is true that there may sometimes be found immense swarms of insects at certain seasons of the year, which the hand of man cannot destroy, but he may even in such cases evade the depredations, if he but study their habits. Early sowing of wheat has saved us in great measure from the ravages of the wheat-midge. We know better now than to soak onion seed with the hope of destroying the onion fly; and so just as far as we become acquainted with their habits shall we be able to withstand their ravages.—*Maine Farmer*.

## 2. TENDENCY OF FARMERS' SONS TO LEAVE THE FARM.

At the last annual meeting of the New York State Agricultural Society, Gen. Patrick made the following remarks in regard to the growing aversion among farmers' sons to farm work:—"Only a few of our children are following our footsteps. The old folks are left alone. With failing health and increasing years many are compelled to sell out the homestead and live in a village, where it is possible to live alone. Our young men are showing a great aversion to honest toil. Often, if they remain on the farm, they are more interested in fast horses than in training steers. Others engage in trifling, undignified occupations, such as selling maps, books, patent rights, or even clothes-pins. They are attracted by genteel ways and habits. At the best they seek commercial adventures, and through this means, sudden and great riches. Can they not read their fate by the wrecks of thousands in the city of New York who attempted the same thing. For able-bodied, strong young men to quit the farm and engage in such trifling pursuits as have been named, or to attempt, where thousands fail, in a city occupation, they should be ashamed. Whenever labour in any country is considered dishonorable, the doom of that nation is sealed. Until the idea prevails that labour is honorable there can be no bright hope before us. When we find a country divided into small estates, and each proprietor labours with his own hands, we have a happy people. Under small homesteads grew up those people before which the world trembled when they buckled on their swords—the ancient Romans. Look at the large plantations of the South, with degraded labourers, and you need not ask the result. Countries are cultivated, not according to their fertility, but according to their liberty. Agriculture is the basis of the happiness of a State, and it is the most honourable as well as the most ancient of all professions."

## 3. WHY LAND IS PLOUGHED.

I have fully conceded that deep ploughing is not everywhere requisite. Now let me show where and why it is needed.

1. It has been abundantly demonstrated that roots of plants are often found at a distance of several feet from the stem. Any of us may have seen that this is as true of Indian corn as of Canada thistles. With a microscope and due patience the roots of wheat may be traced from four to six feet. Of course these roots seek nourishment and find it. Nature, in the broad view, makes no abortive, at least no wanton effort. Roots wander in search of food not otherwise to be found.

2. Our subsoils are generally compact and repellant. Wherever a ditcher would naturally use a pick, there few roots can make their way except very slowly and by wasting effort. Few or no cereals or edible roots can feed and flourish on the penetration of such subsoils. And while our sands and looser gravels are more easily traversed, they seldom contain the plant-food whereof the roots are in search. They either remain unpenetrated, or the effort is unrewarded by any gain of nutrition of the plant.

3. Our summers and autumns are often persistently hot and dry. The continuously torrid suns, which this year destroyed half the later crops of Europe, are here encountered as often as every third year. Drought is one of the most frequent causes of the failure of our crops. Our ancestors mainly migrated hither from the British Isles, from Holland, and the coast of Northern and Western Europe, where humidity is the rule, protracted drought the exception. Sixteen inches of soil in our climate is hardly equal, as an antidote to drought, to six inches in Ireland and Holland. And yet the best farmers of those countries agreed in commending deeper ploughing.

4. What we advocate is not the burying of the vegetable mould or natural surface sod under several inches of cold, lifeless clay, sand or gravel. If the subsoil is not to be enriched, it may better remain a subsoil. But that does not prove that it ought to be lifted, stirred, aerated, pulverized. The right thing to do is to enrich, as well as mellow and aerate, the entire soil to the depth of fully eighteen inches, though twelve may answer as a beginning. Use a Michigan or a subsoil plough, if you will, and keep the various strata where nature placed them. But give your plants, like your cattle, a chance to reach food and drink it all times. Let down the bars that would keep them from the life giving springs.

5. Plants look to the soil for (1) anchorage; (2) moisture; (3) most of their food. If they cannot find these more certainly in 12 to 18 inches of soil than 6, then reason is a fool, mathematics a conjectural science, and a farmer should prefer a balance in bank to his credit of \$600 to one of \$1,000.

6. We are told that the roots prefer to run near the surface, loving the warmth of the sun. Let them run there, then: we do not hinder them. Make the soil rich as well as deep, and let them run near the surface for warmth and descend for moisture, or both, as

they shall see fit. We proffer them freedom of choice. If a wet season attracts them to the surface, a dry one must constrain them to dive for moisture. It is our duty so to provide that they may flourish, however wayward the season.

7. I have a steep hillside, which I choose to cultivate, the soil being warm and kind. Plough this six inches deep, and the first hard shower sweeps its soil by cart-loads into the brook below, where it is useless. Plough it twice as deep, and not a peck of soil will be flooded off in a lifetime.

8. In a wet season deep ploughing does, at the worst, no harm. In a dry season it doubles the crop.

9. Unless a small army is more effective than a large one, an empty pocket-book better than a full one, a lean crop preferable to a large one, then a deep soil must be more productive than a shallow one.—*Horace Greeley.*

## 4. LEAVING THE FARM—ITS EVIL EFFECTS.

We copy the following excellent article from the *Montreal Gazette*.

It portrays, in strong language, the evil effects of a too common practice among us of our Canadian farmers' sons leaving the farm and seeking employment in various ill requited, but, as they term it, "more genteel" callings. The results are, as might be expected, and as are fairly and justly put in the following article:—

We have for many years been aware of the fact that there is a very common desire felt amongst the young men of our agricultural districts, the sons of farmers, to leave the cheery, healthful occupations of the farm and seek for wealth in the close confinement of the store or the shop. We have not thought heretofore that it was any part of our duty to interfere in this bent of our young men, though we could not help regretting it; for we have hourly examples before us where the pallid cheek and hollowed chest are sad signs of disappointed hopes and health sacrificed in an ill-chosen profession. At the present moment we feel particularly called upon to warn our youth that there is not room in trade for the numbers who annually engage in it; and that of those who have made it the pursuit of life, not one in a hundred have achieved success. And even to begin life, we are sorry to have it to state as a fact that for every situation which becomes vacant there are ten applicants; which simply means that out of every ten who find employment, nine are doomed to disappointment after weeks or months of canvassing with all its dreary details of hope to-day and despair to-morrow—the hat-in-hand interview with the merchant already harassed with previous applications; the coldly polite answer; sometimes the brusque refusal.

There is no more vital move in the career of any man than the choice of a profession. On a good choice a man's whole happiness depends, yet we see, as a general belief, or general infatuation, that trade and commerce are supposed to be the only sure roads to wealth and consideration. They do lead that way, but the roads are hard, rough, and most devious. Nothing in the whole world is less certain than commercial success. It has been said in our city, by men in London and New York, everywhere, that out of any one hundred merchants we may take from a directory, it will be found that the majority have been at least once bankrupt. But even one prize in many blanks is not in the reach of many to throw for, since none can enter upon business without some capital. This must be made first and then exposed to the contingency of total loss ere a bare beginning is made. The young man of sterling worth, whose merit is recognized by his employers, is frequently rewarded by a share in an old established business and makes a fortune, because his industry and steadiness have stood him in place of capital. We need not allude to these instances; every young aspirant who leaves his father's home has heard of such cases, and hopes such a career may be his own, but he forgets that his fortune may be, and generally is, a seat on a high stool—incessant labour—bending over the desk from morn till night, and a salary, sometimes liberal enough, quite as often the reverse, and this for all his life's toil. Let us not be supposed to paint things worse than they really are. Our young, unemployed, anxious looking friends will confirm our testimony as to the difficulty of obtaining even a chance to set foot on the first round of the ladder which they think leads to fortune. Scrape the successive layers of paint from the doors where men show their names and peculiar trades, like geological deposits, they will prove that the occupations have been but temporary, that failure has obliterated name after name. With your penknife you may develop the successive strata of evil fortune, and with every disinterred name be sure there is a tale of hope, anxiety, industry, care, misfortune, perhaps despair. If proof is asked for our third category, there is not the occupier of a

three-legged stool in Montreal who could not endorse our statement.

It is not our duty, nor is it our intention, to throw cold water on the hopes of the eager young men who, with honest ambition, seek to open their way to fortune in the cities of our Dominion. Could we suggest no better employment for our brave young men, we should sorrowfully be silent and hope for the best; but it is our plain duty to warn those who still rush towards the city, that every avenue to employment is overcrowded—that there is no room for those who seek situations—that competition reduces wages to starving point; and that, to avoid all this, nine out of every ten who dream of a mercantile life ought to stay at home, where the soil they stand upon offers employment for all, and a grateful return to every man who will consent in honesty to labour it. We have said enough to warn the sons of our farmers from rashly committing themselves to the uncertainties of city life. We know that in the luxuries, the excitements and amusements of a large town, which are apparently within the reach of all, there is a power of attraction which no wise saws or kindly warning will counteract. The enthusiasm and self-reliance of youth see none but WHITTINGTONS; but our ideas may find a response in the hearts of many fathers, and to them we would suggest that, in place of encouraging the erratic ideas of their children, they should endeavour to attach them to their homes by every means possible. Let the successful farmer, above all things, try to make his home not only a home of comfort, but a home of beauty and taste, of which his children may be proud. In fact, we look upon this as of incalculable importance to the youth of our country. So far, it has been with us the age of rough cultivation, of rude log houses—an age in which all our exertions were turned to getting rid of the old forest, which revenged its death by a legacy of ugly stumps. Brought up amid these coarse though honourable toils, the refinement of life were forgotten, and, with city life alone, could the young men associate any thing which breathed of gentle pursuits. And though the evidences of such refinement might only show themselves in neat boots and gloved hands, yet these mean much, and give a caste to the wearers in the eyes of country lads which they feel, though they care little to confess, that such are some of the inducements to leave their fathers' roofs. To use a very distasteful, or rather low expression, the life of a young man in town, at his desk, is looked upon by our farmers as more "genteel" than holding the plough or driving the grain to mill. But the Canadian landholder has emerged, or is emerging, from this chrysalis state. The huge black pile of logs have long disappeared, and, with them, the roughness of our farming. Fair fields, well fenced and clean, large barns, and good houses, denote comfort and abundance; let the men who have made these glad properties add beauty to utility, elegance to abundance, and the senseless idea of city superiority will vanish. Our young men, like the young men of England, will be proud of their country homes, and their country pursuits will be quite as elevating as any city occupation, either in the office or at the counter.

But do our young men reflect upon the chances of a merchant's life, with all its incidents, as compared with that of the farmer? We know that merchants must make money, if at all, by encountering constant risks. He insures his property indeed against wreck and fire, but the trust he puts in ships is as nothing to the trust which he must put in his customers. To them he delivers up, with no real security, every farthing of his means, on their prudence and honesty alone relying for his returns. Against their imprudence and misfortune there is no assurance. Thus his life is one of anxiety at all times, and in seasons of commercial derangement he breathes nothing but killing care. Such a life is not for every man, and therefore few who try it succeed, least of all will they find it an easy road to travel who enter upon it merely in the idea that its labours are easy, and that its labourers are in a more gentlemanly employment than those who in a care free industry cultivate their own broad acres; for most surely the risks which bad harvests may sometimes bring are nothing in comparison with those which try the merchant's courage at all times.

We do not wish to draw comparisons between the advantages and disadvantages of the various industries by which men may seek to achieve fortune. Our only aim is to warn, ere it be too late, that for the present, at least, the market is overstocked, and that those who now crowd into cities to seek situations, will find as their first lesson, what these ominous words mean. On the other hand, land is abundant, the returns from land, by God's blessing sure, and the occupation most manly—most honourable.

Let not those whose education is of that superior degree which ought to elevate them above the common herd imagine that a country life affords no scope for their acquisitions. No greater mistake could be made. Nowhere in the world is education more sure of its proper reward than in this our new country. The educated and thinking man will find every advantage in the proper management

of crops and stock, while his knowledge and intellectual attainments will surely place him in the front rank of his fellow-men—opening the way to him to every office of trust and honour which his country, or his country, can lay before his ambition.

As we said before, far be it from us to discourage the praiseworthy ambition of any of our ingenuous youth. We warn only of a doubtful career, while we point out a sure one, one which in proud independence in all ages has enabled the husbandman to boast that he and the like of him are the bone and sinew of the land.—*Montreal Gazette*.

## 5. WHERE ENGLAND BUYS HER WHEAT.

The following interesting statement in the trade returns for 1867-68, which indicates how very small a proportion of the grain that is bought for the British market comes from these Provinces or the States. Of wheat we read as follows:—

	1867.	1868.
From Russia, cwts.....	14,025,236	10,053,617
From Denmark.....	418,012	654,419
From Prussia.....	5,572,263	4,584,742
From Schleswig, &c.....	127,222	45,412
From Mecklenburg.....	651,884	647,205
From Hanse Towns.....	700,935	756,654
From France.....	597,405	56,414
From Illyria, &c.....	542,635	1,004,701
From Turkey.....	2,446,638	3,049,088
From Egypt.....	1,451,774	3,219,536
From United States.....	4,188,013	5,908,149
From Chili.....	1,946,227	1,309,575
From British North America.....	683,127	557,443
From other countries.....	1,294,198	792,813
Total.....cwts.	34,645,569	32,639,768

Imports of other grains are set down thus:—

	1867.	1868.
Barley.....cwts.	5,683,721	7,476,224
Oats.....	9,407,136	8,112,563
Peas.....	1,586,129	1,116,246
Beans.....	1,982,615	2,647,390
Indian corn.....	8,540,429	11,472,226

In flour this continent does better in proportion, as shown by the following figures:—

From Hanse Towns.....cwts.	444,710	615,756
From France.....	1,234,742	632,359
From United States.....	722,976	676,192
From British North America.....	121,503	192,850
From other countries.....	1,069,038	975,865
Total.....	3,592,969	3,093,022

## V. Biographical Sketches.

### 1. EDMUND RITCHIE, ESQ.

Mr. Ritchie was born at Haverfordwest, England, in 1807, and came to Canada in 1829, first settled in Montreal, and soon after connecting himself in business there with the well-known firm of Messrs. Bridge & Penn, who at that time secured the greater part of the Upper Canada trade through Mr. Ritchie's exertions. In 1829 Mr. Ritchie came to Hamilton, and went into business with his brother, who now resides in Simcoe, and in 1830 was appointed Postmaster of this city, the Post Office Department of Canada then being under Imperial control, and managed by Postmaster-General Stayner. In addition to his duties as Postmaster, Mr. Ritchie held the temporary appointment of Commissioner under the Rebellion Losses Act, and was also a Director of the Gore Bank for many years.

Mr. Ritchie, until within the past few years, was a man of wonderful business activity, and only yielded under failing health. Long residents of the city will remember how diligently, and with what zeal, he managed the Post Office, first in the small frame building now used as a paint shop, afterwards in the building at the corner of James and Rebecca streets, and lastly in the spacious edifice where it is now located. A residence of forty years made him familiar to most of the residents in Hamilton, and no man stood higher in public esteem. He had seen the place rise from a

mere hamlet into a prosperous city, and was therefore naturally very closely identified with its progress. His business connections were brief, for on his appointment to the Post Office, he retired from the firm of which he was a partner, and thus for nearly thirty-nine years he officiated as Postmaster, and was one of the few left of those who held appointments under the Imperial Government. —*Spectator*.

## 2. LORD VICOUNT GOUGH.

Lord Gough died on Tuesday, the 2nd inst. The son of a Limerick squire, he fought his way up to a viscountcy, a baton, and a fortune, by virtue of every quality of a good soldier. Good general he was not; he rather despised strategy, threw away the lives of too many men, and had a sort of Homeric fancy for fighting with his own hand. But General Havelock, no mean judge, said he was the bravest man who ever lived, a man with a lust for danger; he excited the warmest attachment in his soldiers, and his simple strategy succeeded almost as well as Suwarrow's. He never lost a battle—for Chillianwallah, though a terrible business, was not lost; and at Gugerat, where, for the first time in his life, he took advice and let artillery have fair play. He destroyed the most dangerous enemy, save Hyder, we ever encountered in India. The victory was due in no slight degree to the reckless daring with which he inspired all under his command, and England has good cause to say, "Peace to the brave!"—*Spectator*.

## VI. Miscellaneous.

### 1. THE ROBINS HAVE COME BACK AGAIN.

There's a call upon the housetop, an answer from the plain,  
There's a warble in the sunshine, a twitter in the rain,  
And through my heart, at sound of these,

There comes a nameless thrill,  
As sweet as odor to the rose,  
Or verdure to the hill;

And all these joyous mornings,  
My heart pours forth this strain:  
"God bless the dear old robins,  
Who have come back again."

For they bring a thought of summer, of dreamy, luscious days,  
Of kingcups in the meadow, making a golden haze;

A longing for the clover blooms,  
For roses all aglow,  
For fragrant blossoms, where the bees  
With droning murmurs go:

I dream of all the beauties  
Of summer's golden reign,  
And sing: "God keep the robins,  
Who have come back again."

### 2. CANADIAN LITERARY ITEMS.

Dr. Tache is compiling the materials for a history of the Hurons of Canada.

The Rev. Mr. Casgrain is preparing a work on the earlier days of the New World, in connection, especially, with Cartier and Champlain's voyages of discovery.

Another R. C. clergyman, the Rev. Mr. Verrault, will shortly bring out a history of the war of 1775, enriched with documents hitherto unpublished.

It is also stated that Mr. Alfred Garneau is preparing a fourth edition of his late father's *History of Canada*, which will contain a good deal of new matter; that Mr. Joseph Tasse is completing a series of notes on the Ottawas, the celebrated tribe which once followed Pontiac, the greatest Indian in history, in his many attacks under the French flag upon the old English colonies; and to conclude, that Mr. J. O. Dion is putting on the finishing touches to a history of Chambly, which will comprise the annals of the stately old fort on the left bank of the Richelieu, erected in accordance with instructions from the celebrated Cardinal of that name, in order to protect the then nascent French colony from the attacks of the Iroquois and other tribes under English domination, who

lived in the Mohawk valley and along the littoral of Lake Champlain.

It will be perceived from the above that many of our ablest *litterateurs* are earnestly striving to illustrate the earlier annals of the country, and that some of them are treading on ground never attempted before. The contributions of the French Canadian writers to the continent are in truth already very voluminous and compare most favorably, in style and treatment, with any similar works ever produced in the United States, where, as a very general rule, the *litterati* do not take that interest in the legendary, or well authenticated past, which is displayed by the large and growing school of Canadian writers. Viewed in this light it is greatly to be regretted that the publication of the Abbe Failon's *Histoire de la Colonie Francaise en Canada* has been suspended. It was the result, we have been told, of twenty years' labour, founded on researches made in the archives of the French department of Marine and the almost equally rich muniments of the Sulpician Seminary, and although somewhat tintured with a natural, perhaps pardonable, bias in favour of the latter institution, as against the pretensions of the rival Seminary of Quebec, yet threw a vast flood of light upon the discoveries, the customs, the manners and morals, and the great sacrifices of the earlier inhabitants of the colony. Unfortunately for the success, or rather publication of his great work, originally designed, we believe, to cover ten volumes, each of three or four hundred pages, the Abbe reflected in rather severe terms upon the intriguing, harsh, disposition evinced on many public occasions by Francois de Laval, the first Roman Catholic Bishop of the Colony and founder of the Quebec Seminary. We say unfortunately, because the gentlemen of that Seminary naturally resented the language applied to, and took exception to the theories propounded against the Bishop, and made such representations to the Sulpicians that they directed the laborious, painstaking Abbe, who is a member of their order, to suspend its publication. We have no desire to interfere in a quarrel, based on one side upon historic facts, deduced from historical documents, and on the other, upon the natural feelings of gratitude and esteem which the Quebec Seminarists still so strongly feel for their founder, but we cannot but express our regret at the untimely close of what promised to be the fullest and most satisfactory history of the colony under French domination.

It is also to be regretted that the magnificent collection of "Ana," records and other *memoirs pour servir a l'histoire* so industriously compiled by the late Commandeur Jacques Viger, the joint Stow and Isaac D'Israeli of Canada, have not as yet been put to press. He devoted a lifetime to their compilation in the true spirit of an antiquarian and when the pen finally fell from his hand at an almost patriarchal age, had collected no less than twenty or thirty large portfolios of an exceedingly varied and valuable character. These materials may be compared, in their present inchoate shape to the blocks and beams of a stately architectural conception. But although the architect has had them before his eyes for many a year, the foundations for their reception have not yet been thrown up and the dust of ages will probably accumulate upon them before the old Commandeur's valuable legacy, which he fondly called "My Sabretache" has been put to its intended use.

It may be that the Rev. Mr. Verreault's History of the War of 1775, alluded to in the foregoing notes, is founded upon a portion of the Viger collection; and if so it will relate to the invasion of "les Bostonnais" or American occupation of Montreal under Montgomery, a subject which has been very indifferently treated by past writers on Canadian history. If so we will gladly make the *amende* and give honour to whom honour is due, feeling satisfied that if the Sabretache, or a portion of its contents, has fallen into the competent hands of the able Principal of the Jacques Cartier Normal School, it will receive the enlarged, scholarly treatment intrinsically due to its merits.

Still another work of signal ability, in the literary, as well as the historical and legendry sense, disappeared from the firmament three or four years ago. We allude to *Les Soirees Canadiennes*, a serial designed to give effect to Charles Nodier's happy saying, "*Hatons nous de raconter les legendes de notre pays avant qu'il soit oublier.*" A host of writers responded to the publisher's call when the prospectus of *Les Soirees* originally appeared, and for several years the series of papers published under that title, equalled in originality and purity of diction the more famous, because more widely disseminated, Sagas of other still more northern climes. If it were possible to revive and continue these serials, Canada would soon possess one of the finest collections of historical and other legends which ever passed through the press of any country upon this continent. Justice will never be done them, they will never be widely appreciated, until they are reproduced by some skilful, kindly hand, into what McGee so correctly and so poetically termed "the all-conquering English tongue."—*Montreal Gazette*.

VII. Monthly Report on Meteorology of the Province of Ontario.

I. ABSTRACT OF MONTHLY METEOROLOGICAL RESULTS, compiled from the Returns of the daily observations at ten Grammar School Stations, for FEBRUARY, 1869.

OBSERVERS: -Barrie-H. B. Spotton, Esq., M.A.; Belleville-A. Burdon, Esq.; Cornwall-J. L. Bradbury, Esq., M.A.; Goderich-James Preston, Esq.; Hamilton-A. Macallum, Esq., M.A.; Pembroke-J. W. Connor, Esq., B.A.; Peterborough-Ivan O'Beirne, Esq.; Simcoe-James W. Wadsworth, Esq., M.A.; Stratford-C. J. Macgregor, Esq., M.A.; Windsor-J. Johnston, Esq., B.A.

Table with columns: STATION, ELEVATION, BAROMETER AT TEMPERATURE OF 32° FAHRENHEIT, TEMPERATURE OF THE AIR, MONTHLY MEANS, DAILY RANGE, HIGHEST, LOWEST, WARMEST DAY, COLDEST DAY, TENSION OF VAPOUR.

Table with columns: STATION, HUMIDITY OF AIR, WINDS, NUMBER OF OBSERVATIONS, ESTIMATED VELOCITY OF WIND, AMOUNT OF CLOUDINESS, RAIN, SNOW, AURORAS, WHEN OBSERVED.

REMARKS. - On 10th, dense fog. 14th, 19th, 23rd, 27th, very heavy storms of snow and wind. 18th, large lunar halo. 24th, very sudden and violent storm of wind and snow arose at 3 P.M., lasting about half an hour. Wind storms, 4th, 14th, 19th, 23rd, 24th, 27th. Snow 2nd, 3rd, 4th, 10th, 14th, 15th, 16th, 18th, 19th, 20th, 21st, 22nd, 23rd, 24th, 26th, 27th. Rain 13th, 14th, 15th, 18th. BELLEVILLE. - Snow 2nd, 3rd, 4th, 8th, 9th, 15th, 18th, 21st, 22nd, 23rd, 24th, 25th, 26th, 27th. In the backwoods the depth of the snow, according to report, is from four to five feet. CORNWALL. - Wind storm on 23rd. Snow 3rd, 4th, 10th, 11th, 13th, 15th, 16th, 17th, 18th, 19th, 20th, 23rd, 24th, 25th, 26th, 27th. GODERICH. - On 12th, very rapid thaw. 15th, storm of rain, freezing as it fell, leaving a coating of ice three-quarters of an inch thick; the ice moved out from the shore and broke up; at 7 A.M. dry and wet.

bulb thermometers indicated same temperature. 19th, large lunar halo. On 23rd, 24th and 26th, heavy snow storms, followed by heavy wind storm from W and NW; about two feet of snow fell during these days. Wind storms, 4th, 14th, 19th, 26th, 27th. Fog, 15th. Snow, 2nd, 3rd, 4th, 8th, 10th, 16th, 17th, 18th, 21st, 22nd, 23rd, 24th, 25th, 26th, 27th. Rain, 9th, 13th, 15th.

HAMILTON.—The observer has included in his record of depth of snow, six inches of hail which fell during one storm on 14th, when the hail flew in clouds like snow all day, the wind being high; on the following day trees covered with thin ice. Wind storms, 2nd, 3rd, 6th, 11th, 15th, 16th, 17th, 18th, 19th, 23rd, 24th, 26th. Snow, 2nd, 3rd, 8th, 16th, 19th, 22nd, 23rd, 25th, 26th. Rain, 13th, 17th.

PEMBROKE.—On 5th, remarkable light, probably auroral, in sky, about 6.40 P.M.; there were two luminous patches, one a few points S of E, at altitude 30°-70°, the other to NW and near zenith; both pointed towards NW, the latter more so than the other; the former sank below horizon and faded away, while the other increased. 8th, large shooting star of a pale green color seen at 7.10 P.M. to N.W, its course being for about 70°-30° altitude. Hail, 12th and 15th. Wind storms, 4th and 5th, 13th, 18th, 19th, 23rd, 24th (squall), 27th. Fog, 7th. Streak of mist on opposite bank of the Ottawa, 24th and 25th. Snow, 3rd, 4th, 6th, 8th-10th, 13th-21st, 23rd-27th. Month remarkable for large amount of snow, but the fall was much heavier in the direction of Ottawa than at the station. Unusually small depth of snow (about six inches) reported on Lake Temiscaming. To the north, however, as on the Black River, the fall has been much greater, and some lumbering firms have been obliged to suspend operations from the depth of snow.

PETERBOROUGH.—On 12th and 15th, hail. 22nd, lunar halo at 9 P.M. 24th, wind in morning NNE, while low clouds were moving rapidly from SW; solar halo at 1 P.M. Fog, 9th. Snow, 2nd-4th, 11th, 13th-19th, 21st, 23rd-27th. Rain, 13th, 16th.

SIMCOE.—On 14th, very destructive ice storm, destroying many trees in the neighborhood. Fog on 9th. Snow, 2nd, 3rd, 4th, 15th-19th, 22nd-27th. Rain, 3rd, 9th, 13th, 14th, 15th. Early part of month warm and pleasant. Month noted for cloudiness.

STRATFORD.—On 15th, crew seen. 22nd, large lunar halo at 7.30 P.M. Wind storms, 2nd, 3rd, 4th, 13th, 14th, 19th, 24th, 27th. Fogs, 8th, 9th, 10th. Snow, 2nd, 3rd, 14th-19th, 21st-26th. Rain, 13th, 14th.

WINDSOR.—On 4th, meteor from W towards N. 16th, large lunar halo. 20th, lunar halo. Wind storms, 23rd, 24th. Fogs, 9th, 10th, 13th. Snow, 2nd, 3rd, 15th, 17th, 18th, 21st-26th. Rain, 3rd, 13th, 14th, 15th, 17th.

2. AN ATMOSPHERIC PHENOMENON.

The people in this section of country were startled on Friday morning last, shortly after 8 o'clock, by a loud report resembling the discharge of a cannon or the explosion of gunpowder in rock. In Galt windows and doors rattled and the vibration continued for about twenty seconds. Many people describe the noise as heard inside their houses as resembling the sound of an empty box thrown on the floor. An impression was abroad that we had been visited by a slight shock of an earthquake, but as no quiver of the earth was really felt there is no doubt that the commotion is attributable to atmospheric causes. The same phenomenon was observed over a considerable extent of country:—at Vienna, a small village west of Port Burwell; throughout the Township of Burford; in the Town of Paris and South and north Dumfries; throughout Waterloo, Guelph and Eramosa Townships. In the Town of Guelph the *Mercury* says that "about the hour named a brilliant meteor suddenly emerged from a cloud overhead and exploded in large fragments and coruscations, and that a loud report followed the explosion." This, we think, explains the mystery. In all particulars the description is similar to that given of aerolites or meteoric stones, whose origin and source are as yet undiscovered. It has been remarked that aerolites which fall during the day are projected from small clouds, and the bursting of them is always accompanied by a loud explosion, which is modified of course by increase of distance. About 12 years ago a fireball was observed to pass over this section of country in the evening, which exploded and threw out beautiful coruscations, but, doubtless from its great distance, did not produce such a loud report and its attendant concussion. The connection between aerolites and fireballs, and likewise shooting stars, is now considered beyond doubt—investigation going to proving them to possess like properties. In the case to which we allude, seen 12 years ago, the meteor was followed by a train of light extending along the greater part of the horizon. As the meteor of Friday last visited us in the morning light no such peculiarity was visible.—*Dumfries Reformer*.

3. TORONTO METEOROLOGICAL REPORT FOR 1868.

The meteorological report published by Prof. Kingston, of University College, for the year 1868, shows the past year to have been, on the whole, both warmer and colder than the average taken for the previous twenty-eight years. There is, of course, a variation in the monthly comparisons, some having registered colder weather, and others warmer, than the corresponding months in the average table. The warmest month throughout the year was July; the mean temperature of which was 75.80. The mean average

temperature of July in the preceding twenty-eight years was only 67.08. The coldest month was February, the mean temperature of which was 17.18; while the mean average temperature of January, which was the average coldest month in the preceding twenty-eight years, was 23.08. July of last year was the warmest month on record; but the year 1857 furnishes a registered colder month than last February, for in January, 1857, the mean temperature was as low as 12.75.

The warmest day last year was July 14th, when the mean temperature was registered at 84.50. To most people who remember the heat of last July, this will appear very low, but it must be remembered that these figures represent the mean of the whole day, and are not the registration of the thermometer at any particular moment. The coldest day of last year was February the 22nd, the mean temperature of which was 2.38 below zero. The coldest day on record was January the 22nd, 1857, when the mean temperature was extraordinary low, being 14.38 below zero.

The highest temperature that was reached last year was on July 13th, when the thermometer showed 93.4 in the shade; but this was some degrees below August 24th, 1854, when the mercury rose to 99.2.

The day on which the coldest weather was registered last year was March the 3rd; the registration being 15.6 below zero. This, though intensely cold, was nearly 11 degrees higher than the coldest point reached in 1859, when, on January 26th, the mercury fell to 26.5 below zero. The following table will show these figures in a concise form, and prove a useful reference:—

TEMPERATURE.

	1868.	Average of 28 years.	Extreme.
Mean temperature of year .....	43.33	44.16	46.36 in '46
Warmest month .....	July	July	July, 1868
Mean temperature of the warmest month .....	75.80	67.08	75.80
Coldest month .....	February	January	Jan., 1857
Mean temperature of the coldest month .....	17.18	23.08	12.75
Warmest day .....	July 14		July 14, '68
Mean temperature of the warmest day .....	84.50	77.59	84.50
Coldest day .....	Feb. 22		{ Feb. 6, '55 Jan. 22, '57
Mean temperature of the coldest day .....	-2.38	-1.29	-14.38
Date of the highest temperature .....	July 13		Aug. 24, '54
Highest temperature .....	93.4	90.9	99.2
Date of the lowest temperature .....	March 3		Jan. 26, '59
Lowest temperature .....	-15.6	-12.3	-26.5
Range of the year .....	109.0	103.2	118.2

The table of relative humidity places this year at 76, one less than that of the average of the past 26 years.

In 1851, the registration, however, was 82—the highest on record; and in 1858, 73 the lowest. The greatest mean monthly humidity was shown in December, when 83 was registered; and the least in July, when it reached only 69. The following table, which is one of the most interesting in the report, is a comparison between some of the meteorological results for 1868, and the corresponding results in former years:—

RAIN.

	1868.	Avg'e of 28 yrs.	Extremes.	
Total depth of rain in inches .....	26.408	29.581	43.55 in 1843	19.04 in 1867
Number of days rain fell .....	103	109	130 in 1861	80 in 1841
Month the greatest depth of rain fell .....	May	Sept.	Sept. 1843	Sept. 1848
Greatest depth of rain in 1 month .....	7.670	3.661	9.760	3.115
Month in which the days of rain were most frequent .....	May, Sept.	Oct.	Oct. 1864	May, 1841
Greatest number of rainy days in 1 month .....	16	13	22	11
Day greatest amount rain fell .....	Nov. 17		Sept. 14, '43	Sept. 14, '48
Greatest amount of rain in 1 day .....	2.230	2.037	3.455	1,000
Hour of heaviest rain .....	{ Sept. 8 11 to 12 p.m.			
Greatest amount of rain in 1 hour .....	0.715			

Even more interesting than the record of rain is that which tells of the snow which fell during the past year. By this table it will

be seen that although there have been harder winters in every respect than those which came within the limits of 1868, yet, that the average of the past year is considerably greater than that of the last 25 years. It will also be remarked that the number of days in 1868 in which snow fell is 82—only five short of the year 1859, which is the heaviest on record.

## SNOW.

	1868.	Avg'e of 25 yrs.	Extremes.	
Total depth in year in inches.....	78.7	64.8	110.5 in '67	28.4 in '51
Number of days which snow fell.....	82	60	87 in 1859	33 in 1848
Month in which greatest depth snow fell.....	Feb.	Feb.	Feb., 1846	Dec., 1851
Greatest depth of snow in one month.....	32.8	17.8	46.1	10.7
Month which the days of snow most frequent.....	Jan.	Jan.	Dec., 1859	Feb. 1848
Greatest number days of snow in one month.....	21	13	23	8
Days in which greatest amount of snow fell.....	Feb 24	.....	Feb. 5, '63	Jan. 10, '57
Greatest fall snow in one day.....	12.0	8.7	16.0	5.5

## 4. THE LATE SNOW FALL AND ITS EFFECTS.

We are now approaching the end of one of the most extraordinary winters that Canada has ever seen. It has been remarkable, first, for the almost entire absence of severe cold, and secondly, for the unprecedented quantity of snow which has fallen. Of course the people of Canada are pretty well inured to snow storms; a fall of snow which in England would be considered something wonderful, and would serve to put an end to all travel for the time being, would here be regarded as a mere nothing, and would not materially affect our great lines of railway. But for such storms as we have had during the past few weeks, such huge mountains of snow piled up in our streets, for these we certainly were not prepared. The average snow-fall in Canada during the past twenty years was 79.50 inches; in 1861, which was noted for its unusual snow-fall, it amounted to 99.58 inches; while this winter, between the 17th of October, 1868, and the 23rd instant, the total snow-fall was 165.86 inches, or more than double that of 1867-8. It is somewhat remarkable that while in the Province of Quebec an unusual quantity of snow has fallen, in the neighbouring Province of Ontario there has been, comparatively speaking, scarcely any. The storms seem to have swept across the counties of Carleton, Dundas and Stormont, to have raged with violence in Vandreuil, then crossing the St. Lawrence to have passed across the open country towards Sherbrooke. People who have not left the city during the winter have but a faint conception of the depth of the snow-fall in the country. They know, indeed, that it has been unprecedented within their memories. In many instances the snow has been piled up to the height of 20 or 25 feet, and in the course of a few hours trains have been brought to a stand-still in consequence, locomotives and snow-ploughs have had to be procured from distant stations, and after a passage had been partially forced through, gangs of men, in some instances consisting of several hundreds, had to be employed and kept at work for hours before a train could move. All this time, it must be remembered, that the snow had been continually falling, not in thin showers and small particles as in England, but in dense flakes, while the wind has drifted it in some places to so great a height as to be level with the tops of the station houses! But it is not alone with snow-banks that the railway officials have had to wage unceasing war; in some cases ice and snow together have become packed and frozen hard upon the track, so that no snow-plough could be used, and a way had to be cut with iron shovels. Then, from the effects of the severe frosts, the machinery and axles of locomotives have constantly been breaking and getting out of order, and were it not that the management have a very extensive rolling stock at command, and that all persons connected with the line have worked with unflinching zeal and energy, the Grand Trunk Railway must, for the time being, have been closed for traffic altogether. We have been at some pains to ascertain what has been the amount of the actual loss and additional expenditure involved. Of course, the principal item of loss has been the decrease in traffic receipts, consequent upon the interruption of travel. The receipts during the past two months have probably been at least \$250,000 less than they would have been had these terrible snow-storms not occurred! The additional expenditure in the Engineer's department, for extra labour, etc., alone, we may safely set down at \$15,000. The loss incurred in the

traffic departments of the Eastern and Western divisions, taken together, will not be less than \$30,000, while \$15,000 will scarcely cover the expense attendant upon clearing the track, thousands of extra hands having necessarily been employed for this purpose. Here, then, we have a total loss of \$310,000, which may be fairly attributed to the late great snow-storms.—*Montreal Daily News*.

## 5. THE STORM AND THE TRAINS.

Upon referring to the records of the Toronto Observatory, we find that up to the end of February of this year, more snow has fallen than during any winter in the present decade, notwithstanding that a great storm in February, 1868, cut us off from mail communication with Montreal for several consecutive days. Although no long interruption to railway traffic has occurred this winter, through the blocking up of the roads by snow, the Grand Trunk has suffered largely from the many small delays to which trains have been subjected, especially on the eastern section of the road. The Great Western and Northern Railways have met with but little inconvenience in this respect. On Tuesday we had a day of almost vernal beauty, and many persons began to look forward to an early opening of the season. They soon, however, found these hopes dispelled, when upon rising from their slumbers yesterday morning, they found one of the most severe storms of the season in progress. All day and until late at night the snow continued to come down thick and fast, while old Boreas added his cold breath to the general discomfort of those few persons whose business required their appearance in the streets. The stores were almost entirely deserted of customers, and the bustle usually attendant upon the arrival at and departure of guests from the various hotels was lacking in consequence of nearly all the trains being delayed. The train from Montreal, due here at one o'clock yesterday morning, arrived about eight a.m., but none has arrived since, so completely is the road blocked up. In some places east of this city the snow is from 10 to 20 feet deep. A train left Montreal yesterday morning, but had not proceeded far when it came to a complete standstill. Under these circumstances, the train which usually leaves here for the east at 5:20 p.m., was not dispatched last evening. The train on the western portion of the Grand Trunk was also some hours late yesterday; and even the Great Western, due here at about four o'clock in the evening, was nearly eight hours late. This was, however, partly owing to an accident which occurred near Princeton on the previous day.

## VIII. Educational Intelligence.

—SCHOOL CONVENTIONS EAST—SUMMARY STATEMENT BY THE REV. DR. RYERSON OF THE PROCEEDINGS OF COUNTY SCHOOL CONVENTIONS EAST OF TORONTO.—All the counties were reached, and meetings held in them, except the United Counties of Prescott and Russell, of which L'Original is the county town. The state of the roads prevented me from getting to L'Original; and two days before the appointed day of the Convention, I telegraphed there the impossibility of reaching it. The state of the roads also prevented me from reaching Perth and Renfrew on the days first appointed; but I appointed other days. Held a large convention in the county of Lanark, at Perth, but the notice was not sufficiently circulated to enable me to hold a public meeting in the village of Renfrew; but in place of it, I held one, which was largely attended, in the village of Arnprior.

The proposed Grammar School Bill, with the additions stated in my previous communication, was universally approved. I shall, therefore, not refer to it again, but confine my statement to what relates to the proposed Common School Bill.

The Conventions at Port Hope, Peterborough, Napanee and Alexandria, by the vote of a majority, desired Local Superintendents to be appointed and paid, as now, by the Municipal Councils. The majority at the meetings held in Napanee and Alexandria desired Township Superintendents—the gentlemen filling these offices strongly contending for it, as they did at several other meetings, though several Townships Superintendents, at various meetings, advocated County Superintendents in their place. The majority at all the other County Conventions voted for County Superintendents, qualified, appointed and paid, as recommended by the Legislative Assembly.

The majority present at the Conventions held in Picton, Napanee,

Brockville and Alexandria, voted against the 10th and 11th clauses of the Bill—the former fixing the minimum salaries of teachers; the latter permitting the establishment of Township Boards of School Trustees at the request of a majority of school sections in a township. The Conventions at Napanee and Brockville also voted against the 13th clause of the Bill, giving trustees the same power to provide a teacher's residence that they now have to provide school accommodations. The Conventions at Brockville and Alexandria also voted against the 26th clause, which provides summer vacations in all public schools from the 15th July to the 15th of August, inclusive.

With these exceptions, the county Conventions approved of all of the provisions of the proposed Bill. The two, and almost the only provisions of the Bill much debated, are those which relate to the appointment and payment of County Superintendents—chiefly the former—and the minimum salaries of teachers. On these two points the minorities of the meetings were considerable, and as it has never been my wish and policy to have school laws enacted and the system established, only by common consent, I purpose to submit recommendations on the two points referred to, which I trust will secure for the School Bill proposed, the cordial support of all parties.

—SCHOOL EXAMINATIONS IN NORTH HASTINGS.—For the information of the friends of education, and also for the encouragement of the pupils of the Common Schools of North Hastings we give an outline of the proceedings of the recent competitive examinations for the Members, and the Warden's prizes. At Rawdon, the spacious Town Hall was crowded to excess, indeed so much so, as to inconvenience the competitors, and detract in some measure from the pleasures of the examination. But notwithstanding these drawbacks, the chairman, Frederick Sine, Esq., with much good management kept all in the best order until the close of the examination. It is with much pleasure that we are enabled to state that the Schools of Rawdon were more fully represented on this, than on any former occasion, the competition more lively, and the progress of the pupils in every way satisfactory, and creditable to the Teachers. A. F. Wood, Esq., the Warden, and Mr. C. K. Fuller, of Huntingdon, Teacher, were the judges selected by the Teachers. At the close of the examination, A. F. Wood, Esq., Dr. Boulter, M. P. P., and the Local Superintendent addressed the pupils and their friends. The examination for Stirling village was held in the Common School room, the pupils attended in force, and competed for the prizes with great animation and spirit. Dr. Boulter, M. P. P., and A. F. Wood, Esq., acted as judges, very kindly assisted by the principal of the Grammar School. At the conclusion of the examination, the pupils were addressed by Dr. Boulter and A. F. Wood, Esq. The examination for Huntingdon Township was held at the Town Hall, Moira, it was well attended by the pupils and their parents, and the utmost order and decorum maintained throughout the proceedings. In this Township more schools were represented than at former similar examinations, and the competition was most spiritedly and amicably kept up until the close of the examination, when the prizes were distributed, and addresses to the pupils and their friends, made by M. P. P., Thos. Wills, Esq., and Henry Ostrom, Esq., who acted as judges, after which the pupils and their friends separated, highly pleased with the exercises of the day. The examination for Hungerford Township was held in the splendid new School House at Tweed, which (large as it is,) was well filled in the afternoon with inhabitants of Tweed and of the Township. The competition in this Township was kept up throughout, in the most spirited and amicable spirit. The progress exhibited by the pupils reflects great credit upon their Teachers. After the distribution of the prizes, addresses were made by James Reid, Esq., chairman, Henry Ostrom, Esq., and B. Henry, Esq., who acted as judges, and by the Local Superintendent, complimenting the pupils and their Teachers upon the results of the examination. The village of Bridgewater examination was held in the spacious and well furnished School House of Bridgewater. The attendance of the parents was small, but the pupils entered upon the examination with great spirit, and proved to the satisfaction of all present, that they are well and thoroughly taught. The Rev. Mr. Cullen, Chas. Flint, Esq., Carr, Esq., kindly acted as judges, and after the distribution of the prizes, the pupils and their friends were addressed by the Rev. Mr. Cullen, M. P. P., Chas. Flint, Esq., and others. The pupils of the school agreeably surprised the visitors by singing several appropriate pieces,

accompanied by Miss J. Higgingbotham on the melodeon. The Elziver examination was held at the School House, Bridgewater. The attendance of parents and friends was not numerous. Mr. Tuttle, Teacher, of Bridgewater, and Mr. Humphreys, were appointed judges. We have great pleasure in stating that the pupils of this Township acquitted themselves very creditably, and exhibited a marked improvement in the branches in which they were examined. At the close, the pupils and audience were addressed by M. P. P., James Reid, Esq., and the Superintendent. The Madoc pupils and their friends met in large numbers at the Wesleyan Church, Hazard's Corners; nearly every school in the Township was represented. The judges, selected by the Teachers, were A. Smallfield, Esq., Mr. James Allen, Teacher, Elziver, and Dr. Loomis. The competition in every branch was well maintained throughout the whole of the examination; the pupils proving themselves to be carefully and systematically taught. At the close of the examination addresses were made by M. P. P., the judges and the Local Superintendent. The examination of the village of Madoc was held at the Town Hall, and as there are a boy's and girl's school in the village the competition between the schools was maintained by both with much spirit. The judges selected were the Rev. Mr. Wishart, Rev. Mr. Mockridge, and A. Smallfield Esq. Those who remember the former examination in the same branches must have been most favourably impressed with the improvement which the village schools of Madoc exhibited. With scholars far older, the former examination was a complete failure, the present one was very creditable. The boys' school laboured under a great disadvantage, viz.: A recent change of Teacher. At the conclusion of the examination the judges addressed the pupils and their friends. From the commencement of the examinations at Rawdon until the close, a continued succession of snow storms rendered the cross roads almost impassable, and interfered very materially with the attendance of parents and friends. The examinations at Marmora and Tudor were obliged to be postponed; they will however be held at an early date in the spring. Comparing these examinations with those of former occasions in similar branches, we find that the pupils of Rawdon and Hungerford maintained the high reputation they had gained, and that those of Huntingdon, Madoc and Elziver are decidedly in advance of all their former efforts, teachers and pupils evidently aiming at the attainment of a higher standard. The Common School of Stirling, from being connected with the Grammar School, does not, for obvious reasons, present a fair comparison with the Common Schools of the Townships, the advanced scholars being systematically drafted to the Grammar School; but with all disadvantages, the Teacher, Mr. Sines, maintained, through his scholars, his high reputation as a Teacher. It is to be regretted that there were not more prizes, the number of competitors in many places exceeding fifty in each branch, and the competition so closely maintained that very great difficulty existed in deciding to whom the prize should be awarded. In most Townships it would have afforded the Judges great pleasure to have given six or eight prizes in each class, as many of the pupils elicited warm commendations from them though failing to obtain the prize. At each of the Townships and Villages votes of thanks were passed by the inhabitants to the donors of the prizes—M. P. P., Dr. Boulter, M. P. P., and the Warden of the County, A. F. Wood, Esq.—*Com. to Belleville Intelligencer.*

—KNOX COLLEGE.—The session of 1868-9 of Knox College was closed on Monday in presence of a large audience. After devotional exercises of singing and prayer, the Principal gave a short sketch of the state of the college as to numbers, amounting to nearly seventy, and of arrangements that had been made and carried out to supply the place of Dr. Burns—whose department is Church History, and who has been absent some months in Scotland, but who, the Principal remarked, has been showing, in the course of that time, in more ways than one, the interest he cherishes in that institution; also of the Rev. Mr. Ure, of Goderich, who had been taken ill at an early period, and compelled to withdraw from his duties. He then announced the subject of his lecture to be the Relation of Systematic Theology to the work of the pulpit. The lecture was an able one—appropriate in its subject, clear in its language, forcible in its reasonings and every position laid down was supported by the authority of the divine word.

—EDUCATION OF THE CHILDREN OF THE ENGLISH POOR.—There was a long and interesting discussion in the House on Friday evening on this



subject. It was brought forward by Mr. Melly, who moved for a select Committee to enquire into primary education in our large towns. Confining his observations to Liverpool, Manchester and Birmingham, he stated that in the last named city out of 98,000 children of school age only 47,000 were at school, although there were 10,000 places vacant in the schools provided for the working classes. There were from 25,000 to 30,000 children running idle in the streets. In Manchester, out of 76,000 children of school age, less than one-half were at school, and 25,000 were living the life of the streets. The state of matters at Birmingham was equally bad, for out of 78,000 children nearly 39,000 were in the streets. The question for Government and the nation to consider was not, he said, "What shall we do with these children?" but "What shall they do with us?" This he answered by drawing a fearful picture of the amount of crime and pauperism in these vast centres of population, and by referring to the increase which had taken place in the local taxation thereby occasioned. He declared that the only effective way of dealing with the gigantic evil would be the establishment of a system of national unsectarian education, supported by rates and including a provision for the compulsory attendance of scholars. Mr. Dixon supplemented Mr. Melly's statistics so far as Birmingham was concerned, and concurred with the hon. gentlemen as regards the remedy; as did also Mr. Fawcett, who is, however, of opinion that there is no need of inquiry, and that the Government should, with the least possible delay, introduce a comprehensive measure of national education. In the course of the discussion which arose, Mr. Mundella supplied some valuable information as to the state of education on the continent, and the working and results of compulsory education there. He had, he said, gone through Saxony, where he was an employer of labour, and he had never, in the city, in the fields, or in the mountains there, met a child ten years of age who could not read and write with facility. Mr. Rumble, then Secretary of Legation at Berne, had furnished the House last year with a remarkable return of the state of matters in Switzerland. That gentleman in that report said that hardly a child in the Confederation was incapable of reading and writing with facility, unless physically and mentally incapable; and this Mr. Rumble attributed to compulsory education, and further showed that, although only thirty years had elapsed since the present system of education was established, compulsion was no longer necessary. Mr. Mundella said the same remark applied to Saxony, and he contrasted the state of things he had described in Germany and Switzerland with what was to be seen in some villages in England. In one of these places near Nottingham, he said that he found that out of 750 children of school age less than 50 were at school. He also gave the statistics of 12,000 persons employed in labour, from which it appeared that not 50 per cent. could write at all. Other members referred to the deplorable ignorance of other places; and Mr. Forster, on the part of the Government, said they would, under the authority of the Privy Council, institute an inquiry into the educational condition of Liverpool, Leeds, Manchester and Birmingham. Upon this assurance Mr. Melly withdrew his motion.

## IX. Departmental Notices.

### ADMISSION OF GIRLS TO GRAMMAR SCHOOLS.

*Ordered*,—That the regulation in Section 11, No. 4, of the Grammar School Regulations be amended so as to read as follows:—

4. To afford every possible facility for learning French, girls may, at the option of the Trustees, be admitted to any Grammar School on passing the preliminary and final examinations required for the admission of boys. Girls thus admitted will take French and the English subjects of the classical course for boys, but in order to be returned or recognized as Grammar School Pupils, they must be engaged in one of the two prescribed Programmes of Studies for the Grammar Schools.

Adopted by the Council of Public Instruction on 8th March,

1869, and approved by His Excellency the Lieutenant-Governor in Council, as communicated to the Chief Superintendent of Education on the 2nd April, 1869.

### SUNDAY SCHOOL BOOKS AND REQUISITES.

Application having been frequently made to the Department for the supply from its Depository of Sunday School Library and Prize Books, Maps and other requisites, it is deemed advisable to insert the following information on the subject.

1. The Department has no authority to grant the one hundred per cent. upon any remittance for Library or Prize Books, Maps or Requisites, except on such as are received from Municipal or Public School Corporations in Upper Canada. Books, Maps and other Requisites suitable for Sunday Schools, or for Library or other similar Associations, can however, on receipt of the necessary amount, be supplied from the Depository at the net prices, that is about twenty-five or thirty per cent. less than the usual current retail prices.

2. The admirable books published in England by the Society for Promoting Christian Knowledge, and by the London Religious Tract Society, are furnished from the Societies' catalogues at currency for sterling prices (i. e. a shilling sterling book is furnished for twenty cents Canadian currency, and so on in proportion.) These two catalogues will, as far as possible, be furnished to parties applying for them. Books suitable for Sunday Schools are received from the other large religious societies, Presbyterian and Methodists, and from the various extensive publishers in Britain and the United States, but the list would be too extensive to publish separately.

3. On receiving the necessary instructions, a suitable selection can be made at the Department, subject to the approval of the parties sending the order. Any books, maps, &c., not desired which may be sent from the Depository, will be exchanged for others, if returned promptly and in good order.

### FOUR KINDS OF LIBRARIES WHICH MAY BE ESTABLISHED UNDER THE DEPARTMENTAL REGULATIONS.

"The Public School Libraries are becoming the crown and glory of the Institutions of the Province."—LORD ELGIN.

"Had I the power I would scatter Libraries over the whole land, as the sower sows his seed."—HORACE MANN.

Under the regulations of the Department, each County Council can establish *four classes* of libraries in their Municipality, as follows. City, Town, Village, and Township Councils can establish the first three classes, and School Trustees either of the first and third classes.

1. An ordinary *Common School Library* in each school house for the use of the children and rate-payers.

2. A *General Public Lending Library*, available to all the rate payers of the Municipality.

3. A *Professional Library* of books on teaching, school organization, language and kindred subjects, available to teachers alone.

4. A Library in any *Public Institution*, under the control of the Municipality, for the use of the inmates, or in the *County Jail*, for the use of the prisoners.

We cannot too strongly urge upon School Trustees, the importance and even the necessity of providing, (especially during the autumn and winter months,) suitable reading books for the pupils in their school, either as prizes or in libraries. Having given the pupils a taste for reading and general knowledge, they should provide some agreeable and practical means of gratifying it.

### TABLET READING LESSONS.

The new Tablet Reading Lessons, consisting of thirty-three large sheets, can be obtained at the Depository at 75 cts. per set; at \$1.00, free of postage; or \$4.50, mounted on cardboard. The 100 per cent. is allowed on these lessons when ordered with maps and apparatus, &c.