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THE
JOURNAL OF EDUCATION

FOR LOWER CANADA

EDITED BY THE HONORABLE P. J. O. CHAUVEAU SUPERINTENDENT OF EDUCATION FOR LOWER CANADA
AND BY JAMES PHELAN ESQUIRE
OF THE DEPARTMENT OF EDUCATION ASSISTANT EDITOR

SEVENTH VOLUME

1863

MONTREAL, LOWER CANADA
PUBLISHED BY THE DEPARTMENT OF EDUCATION.

From E. Sénécal's Caloric Printing-Presses 4 St. Vincent Street.

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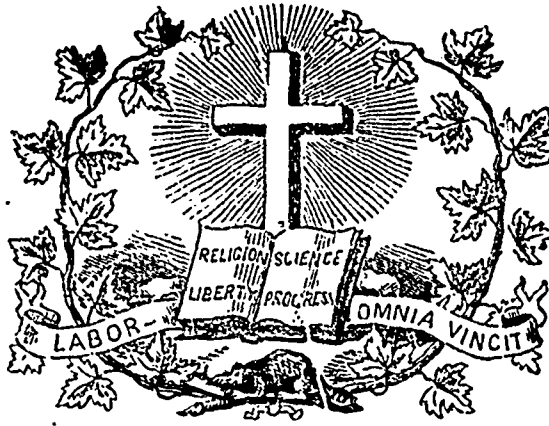
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JOURNAL OF EDUCATION.

Volume VII.

Montreal (Lower Canada), January, 1863.

No. 1.

SUMMARY.—**Education:** The Educational Department of the International Exhibition.—**Hard work.**—**OFFICIAL NOTICES:** Erection of School Municipalities.—**Appointments:** Examiners.—**School Commissioners and Trustees.**—**Donations to the Library of the Department.**—**EDITORIAL:** To our readers.—**Canada in 1863.**—**Reopening of the classes at the Laval University.**—**Inauguration of a monument to the memory of the late Rector.**—**District of St. Francis Teachers Convention.**—**Extracts from the Reports of Inspectors of Schools.** (continued).—**NOTICES OF BOOKS AND PUBLICATIONS:** Édouard;—*Les Soirées Canadiennes.*—*La littérature canadienne de 1850 à 1860.*—*Le dictionnaire classique universel.*—*La littérature nouvelle de 1850 à 1860.*—*Les Soirées Canadiennes.*—*Sadlier: Old and New, or Taste versus Fashion.*—**The student's History of France.**—**Hunt's Manual of Mineralogy and Geology.**—**MONTHLY SUMMARY.**—**Educational Intelligence.**—**Literary Intelligence.**—**Scientific Intelligence.**—**Miscellaneous Intelligence.**—**OFFICIAL DOCUMENTS.**—**Table of the Distribution of the Supplementary Aid to Poor Municipalities for 1862.**—**ADVERTISEMENT:**—*The Scientific American.*

of the Exhibition, it was sought to direct the attention of teachers in a systematic way to the various material helps of which their work was susceptible; and to afford means for the discussion of methods, and for friendly conference on the principles of teaching. The entire experiment was a most successful one. The lamented Prince Consort, who opened the Exhibition publicly, took great interest in its purpose and contents; and teachers and persons interested in education, from all parts of Great Britain, examined the collection with great care, and found important advantages in studying it. A considerable number of eminent foreigners, specially sent for the purpose by their respective governments, visited the Exhibition, and took part in the conferences which were held in connection with it. The Council of the Society of Arts invited the Government to establish a permanent educational exhibition, and offered to transfer to it a considerable number of the specimens then at St. Martin's Hall. This offer was accepted, and the principal object of the Society's Exhibition became the nucleus of the very complete and systematic collection which now occupies the large room on the ground floor of the South Kensington Museum.

EDUCATION.

The Educational Department of the International Exhibition.

The Official Reports of the Secretary, and the Jury, of Class XXIX. (*Educational Works and Appliances*) were issued last month, but did not reach our hands in time for notice in our last number. The general features of this department of the Exhibition, so far as related to the objects exhibited, were described in our number for July. The Jury, in making their awards, had, however, not merely before them the task of examining and deciding upon the merits of these objects; but, in the presence of the various collections of teaching apparatus from different parts of Europe, it became necessary that they should obtain some definitive information relating to the systems of instruction which prevailed in each country from which the collections had been obtained. Hence a large amount of valuable facts and statistics, relating to the condition of education generally, both at home and abroad, grew up under their hands, and has been collected and embodied in these Reports, a brief summary of which we now propose to lay before our readers.

An Educational Department is altogether a new feature in exhibitions of this kind. It did not exist in the former Universal Exhibition of 1851, nor in the French or American Exhibitions of 1855 and 1856. The first Educational Exhibition, properly so called, in this country, was that in St. Martin's Hall, which remained open to the public during the months of July and August, in the year 1854. It was set on foot by the Society of Arts, and was mainly organized and arranged by Mr. Harry Chester, the Chairman of the Council for that year, and by the Rev. M. Mitchell, both of whom have rendered important services as Jurors in connection with the present Exhibition. The object of that Exhibition was to bring together a collection of the materials employed in teaching, and of the visible results of instruction, from different countries; and to offer to teachers and school-managers an opportunity of comparing them. By means of public lectures and conversational meetings, which were held daily during the whole period

An Educational Exhibition, even under the most favourable circumstances, must mainly illustrate processes rather than results. It can display the structure and fittings suited for places of instruction, and can show what are the expedients, literary, pictorial, or mechanical, by which instruction may be facilitated; but even this it can do but very imperfectly. The higher education of a country—that of its universities and professional schools—is, to a great extent, incapable of being exhibited, or visibly illustrated. As we descend lower in the scale of instruction, the importance of educational "appliances" becomes relatively greater; and hence the equipment of a primary school, and especially of an infant school, is necessarily more elaborate, and furnishes much material for an exhibition,—not because it is more interesting and important, but because here the senses have to be educated, and simple manual arts have to be learned, while the power to exercise thought, and to contemplate pure truth, is yet comparatively undeveloped.

Hence it happens that the attention of the Jury has been principally called to the means of primary and popular instruction rather than to the education of the upper classes.

In most of the countries of continental Europe, the government has charged itself as much with the supervision of the higher, as with that of the lower instruction. The inquiries of the Jury have necessarily made them acquainted with some facts and statistics respecting this supervision, and the extent to which it is carried; and these facts they have embodied in their Report, from which we make the following interesting extracts:—

STATISTICS OF PUBLIC INSTRUCTION.

AUSTRIA.—The Jury record their sense of the great utility of the facts embodied in the Introduction to the Austrian Catalogue, and of the skill and judgment which Professor J. Arenstein has shown

in compiling and arranging them. They regard his statements under the head "Intellectual Culture" as a most important contribution to the statistics of education in Europe, and especially as a concise view of the remarkable progress which has been made in the Austrian Empire during the last fourteen years. From that document it appears that, with a population of 35,795,000, Austria possesses 29,972 public primary schools, among which are included 824 higher elementary schools and civic schools. The number of salaried teachers and assistant teachers amounted to 39,825, exclusive of teachers of religion, and the number of children in attendance was 3,909,000, of whom 2,723,400 frequented the public primary schools. School attendance is compulsory from the sixth to the twelfth year; and if, on leaving the elementary schools, a child does not enter a higher school, he must attend a Sunday school until he is fifteen years of age. All text-books and reading books are prescribed by the Government, which also distributes them at cost price; poor children receive the necessary books gratuitously. All the teachers of elementary schools are appointed by the Government, and are under its supervision and inspection. They can be dismissed only with the consent of the Government, and a retiring pension and allowance for their widows and orphans is secured to them by the law. The charges for maintaining elementary schools are borne jointly by the public exchequer and the municipalities. Of the *Gymnasien*, or middle schools, there are in Austria 240, with 2464 teachers in ordinary, and 493 extraordinary teachers, and a total number of 51,121 pupils. These institutions aim at a high and severe course of training in the vernacular language, in Greek, in mathematics, in philosophy, and in modern languages, and are intended to prepare students for the universities, of which there are eight in the empire, equipped with a staff of 1037 teachers, and attended by 8030 students. The *Realschulen*, or Practical schools, are institutions which specially aim at preparing the pupil for practical life: chemistry, drawing, physics, architecture, and engineering here take the place of the classics, and of more abstract studies. There are in all thirty-two of these establishments, conducted by 384 teachers, and numbering 9939 pupils. Besides these, there are many technical schools and institutes for special professional or industrial instruction, but all are alike organized and controlled by the State. The guidance of each elementary school is confided to the ecclesiastical minister, and to an inspector selected from the members of the municipality. For the purpose of higher inspection, all elementary schools are divided into districts, in which an ecclesiastical dean surveys the instruction, and the imperial district-officer the external order and economical administration of the schools. Next in succession come diocesan school-authorities and vice-governors, having school-counsellors as professional officials; the Ministry, and the Court offices of Hungary, Croatia, Slavonia, and Transylvania, constitute the central direction of the complete organization of elementary schools. The normal or training schools are controlled by the State; the teachers in the *Gymnasien* and in the *Realschulen* must give evidence of their competency before a board of examination, and the university professors are nominated by the Emperor.

The Imperial Government of Austria, and the Governments of Belgium and of Norway, have enriched the Exhibition with complete collections of the books, maps, models, and apparatus used in the schools under their superintendence. The Jury have felt justified in awarding Medals to the departments by which this task has been so honourably and efficiently performed. They think that such collective exhibitions, arranged on a systematic plan, possess a great advantage over others, in which, individual publishers or producers of school material group their respective objects in separate compartments. The Belgian collection had the advantage of Professor Braun's personal superintendence, and bore marks of most careful and judicious selection and arrangement.

FRANCE.—In France, where the population at the last return amounted to 36,039,364, the law recognises the right of all indigent children to free instruction. For them, and for the mass of the people generally, it provides in every commune a primary school. There are in all 39,600 of these for boys, and 25,500 for girls, making a total of 65,100 schools. Of these, 50,100 are public schools, and are entirely maintained by the State. The remaining 15,000 are private schools, but are under the inspection of the Government, and receive aid from its funds. The number of children under instruction in them amounts to 3,850,000, of whom 2,600,000 pay some proportion of the expense, and 1,250,000 are free scholars.

The total expense of maintaining this apparatus is about £1,700,000. The sum is made up partly by contributions of the communes and of the parents of the children, and partly of the subsidies furnished by the departments and by the State itself. Thus the sala-

ries of the teachers and the rent of school-houses are by law regarded as charges obligatory on the communes, or small districts, to which the schools properly belong. The maintenance of normal or training schools, and the cost of periodical examinations, is chargeable on the departments, while the Imperial Treasury defrays the cost of inspection and of the central administration. Besides these obligatory and necessary charges, which amount in all to £1,197,000, there is a large *facultative*, or optional, expenditure; one portion of which—that for the establishment of infant schools, for the repair and improvement of buildings, and for the purchase of books and rewards—being voluntarily incurred by the communes; that for normal schools for young women, for special building grants, for rewards and relief to teachers, for books, and for other purposes, being borne by the departments and by the State. This extraordinary expenditure varies slightly from year to year, but is probably nearly stationary at £503,300, the amount which it reached in 1856. The proportions in which these charges were borne will be seen in the following statement, extracted from a recent report:—

"The communes not only bore a charge of £874,200, but voluntarily undertook a burden of £396,000. Families and private persons contributed, in school fees, board, and donations, about £423,900. The departments bore a charge of £210,920: of this, the obligations of the law imposed on them £164,040; they voluntarily taxed themselves for £46,880. Finally, the State directly contributed about £206,800—nearly the same amount as the departments. Of the whole cost of public primary instruction, it thus appears that parish taxation (as we should say) contributes somewhat less than nine-seventeenths, county taxation about two-seventeenths, the consolidated fund about two-seventeenths, and school fees and private benevolence somewhat more than four-seventeenths. Taxation, obligatory and voluntary, produced altogether nearly £1,295,000, that is to say, it produced more than three fourths of the whole amount expended."

There is an intimate connection between this provision for primary instruction, and the authority which regulates both: the secondary schools and the university itself. Each of the sixteen academies of France, which form the constituent members of the university, has a district embracing several departments; and the rectors of these academies are charged with the oversight of the normal schools, and of the methods of teaching and course of study for the elementary schools themselves. Attached to every rector is an Inspector *d'Académie*, whose function included not only the supervision of the secondary schools, which is his immediate business, but also that of the primary schools. It is to these functionaries that the primary inspector makes his report, and by his representations the prefect, in dealing with the primary teachers, is mainly guided. There is thus a remarkable symmetry and unity in the entire scheme of national education. For the University, with its sixteen affiliated colleges or academies, which furnish advanced instruction, the sixty-three Lyceums, and 244 commercial Colleges, which are the resort of the middle classes, and the 65,000 Primary Schools, are all alike inspected, and aided by the State, and are all subject to the control of the Imperial Council of Public Instruction. This body is presided over by the minister, and is empowered to discuss laws and decrees on public education, to regulate the programmes of study, the methods and the books to be adopted in public schools, and to hear and judge the appeals of teachers who may have been dismissed by the Department Council.

HOLLAND.—The Jury consider it a subject for regret that Holland, in which for many years a wise and comprehensive scheme of public instruction has been at work with the happiest results, has been very inadequately represented in the Educational Department of the Exhibition. In that country it is remarkable that the movement in favour of national education originated as far back as 1784, not with the Government, but with a voluntary society—"The Society for the Public Good." The Government subsequently adopted its plans and organization. A very efficient system of inspection was set on foot by the law of 1806; and during a long period it is probable that Holland was nearly, if not without exception, the best educated community in Europe. Yet this result was produced rather by the vigorous action of local authorities—the provincial and commercial administrations—than by any centralized power. The State confided to them the task of furnishing the necessary means of instruction, and of securing a provision for the teacher; but it did not compel the attendance of the children—it established no minimum of salary for the schoolmaster; it did not even exact from the commune the establishment of a school at all. Yet under this system, the proportion of children at school to the inhabitants reached the high average of 1 to 8.3; the position

of the Dutch schoolmaster became, in point of salary, as well as social estimation, superior to that of his class in every other country, and the "general result was a popular education which, for extent and solidity combined, has probably never been equalled." Some modifications of the general plan have resulted from the legislation of 1857. It is now obligatory on each commune to establish a primary school. Normal schools are sustained by the State, and certificates of morality and of capacity to teach are demanded of every teacher, public or private. It is from Holland that the pupil-teacher system, which has effected so much in England, was originally introduced. With a population of 3,298,137 inhabitants, distributed among eleven provinces, Holland has eleven provincial and ninety-two district inspectors; 2,478 primary schools, with a staff of 2409 principal masters, 1597 under-masters, 642 pupil-teachers, and 134 school-mistresses and female assistants. In the day and evening schools there are 322,767 scholars. There are also 914 private schools, giving instruction to 83,562 scholars; and 784 infant schools, receiving 49,783 young children. These totals do not include the number of children in boarding-schools, Sunday-schools, or work-schools. In 1857, the Dutch provinces contributed of the total expense of primary instruction the sum of 4380L.; the State, about 2120L.; the rest being defrayed by the communes.

Prussia.—Throughout Germany the legal period of instruction is variously fixed in the several states, but is generally about eight years. But between certain ages, all the children of both sexes are required to be at school. The degree in which this legislation is actually enforced may be gathered from the fact that in Prussia in the year 1856, the total number of children of school age amounted to 2,943,251, of whom 2,758,472 were in the public elementary schools, and 70,220 were attending licensed private elementary schools.

Nearly the whole cost of the elementary education is defrayed out of the annual income of the community. It is obtained from three sources: (1) The school fees paid by the children; (2) A local rate; (3) The general taxation of the country. Of these three sources, it is the second which bears nearly the whole weight of the burden. For it is universally understood that the children are only to pay what they can, and that the general budget is only to be appealed to after the strictest proof of incapacity on the part of the district. It is not at the option of a commune whether it will have and maintain a school or not, or what number of masters it will have in its school. Every commune is bound to find schoolroom and teaching for all the children of school age who belong to it. Although the mode of assessing the local rate varies in different countries, the general principle holds good throughout the States of the Zollverein.

As to the nature of the instruction imparted in these primary schools, it may be remarked that the curriculum has been gradually simplified of late years, and is now confined to the humblest elementary subjects.

"The ambition of the past generation," says Mr. Pattison, "was to teach as great a variety of matter as possible; now the schools are strictly confined to elementary teaching, reading, writing, the four rules of arithmetic, and singing. The only addition to this allowed in the village one-class school, is one hour per week for drawing, limited to geometrical figure tracing; and the singing may be enlarged to the execution of liturgical chants, if approved by the local inspector. Three hours per week, also, may be allotted to natural phenomena.

"Compensation for what is thus lost in extent is sought by greater perfection in the handling. The elementary school is not to communicate knowledge, but to qualify the child to perform certain simple operations. The instruction must be thorough, but it must be elementary. The master's business is not to talk, or even question, but to make the scholars practise. It is not enough that the child learns how; it must show that it knows how, by the facility with which it performs. A child at school must be treated like an apprentice, who learns his trade simply by being set to work at it.

"By concentration of teaching, as it is called, is meant that the various matters thus learnt in the people's schools group themselves round a common point, like circles which have a common centre. The centre is the child, and his vocation in life. Not that the elementary school is to undertake to prepare for different trades and industrial callings; far from it. The attempt made to introduce such branches, under the name "Knowledge of common things," is a violation of this concentration. Industrial training belongs to special schools. The elementary school is to confine itself to that elementary skill which every citizen needs, whatever his future calling may be. What the child has to learn is not so many distinct subjects, but the connected use of the organs of speech, sound, sight, hand, &c., with which Nature has furnished

him. The extent of what he has to acquire is determined by his own position in the world. This excludes at once the fatal ambition of the old school, to give an intellectual training; to develop the powers of thought by formal exercise of them. This may be the work of higher schools or universities, but must never be attempted by the elementary school.

"The matters taught in the Prussian schools, and the distribution of time among them, in a one-class village school, teaching twenty-six hours per week, would be as follows:—

Religion.....	6 hours.
Reading and writing....	12 "
Ciphering.....	5 "
Singing.....	3 "
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This confined notion of teaching, it is important to observe, does not prevail in a country which is in the first stage of educational experience, but it is the result to which it has recurred, after a long practical experiment in another direction. Mr. Pattison concludes, from his own observation, that the reform in the direction of simplification and concentration is one to which an experience strictly educational has naturally led; that it is not a barren deduction from abstract theory, but a practical reform forced on the school by the unfavourable results of an opposite method.

"The whole school-time from seven to fourteen," it is urged, "at the rate of (say) twenty hours per week, is not more than enough to secure to children the mastery over the general instruments of future cultivation, the organs of speech and song, the material of language, the relations of number, the pen and the pencil. The child is not to be taught to know (*wissen*), but to be able to do (*können*). Elementary education is not knowledge (*Wissenshaft*), but capacities (*Fertigkeiten*). The subjects which have been turned out of the Prussian school have been so, not because they were useless, or unfit for the child to learn, but because it has other things to acquire first. It may be highly desirable that children should have industrial training, as one urges, or artistic training, as another wishes; that they should learn instrumental music, or physical sciences; but average boys and girls cannot learn these things without sacrificing the elementary skill which must be acquired in childhood, and cannot be properly acquired later. The efforts to restrict the elementary school to the acquisition of this skill have not been efforts to keep down the education of the masses, but to place it on the only solid foundation. The duties of the elementary school are not arbitrarily defined; they define themselves as soon as it is understood that schooling is to end at fourteen. There is this difference between the elementary school for the children of the labourer, artisan, &c., and for those of the burger, viz., that the one leaves schools at fourteen, and the other does not. The one, therefore, must give all his time to obtaining a sure possession of the elementary capacities. The other can spare some of his time for the acquisition of knowledge before fourteen, because he will continue to practise reading, writing, &c., long after fourteen."

Such is, in effect, the theory adopted by the authorities, to whom the superintendence of primary instruction in Prussia is entrusted. It may well be doubted whether regulations conceived in so repressive and exclusive a spirit are not calculated to defeat their own purpose. "Capacities," after all, are far better developed in the effort to encounter intellectual difficulties, and to grasp new knowledge, than by treating laboriously a dull round of exercises within the limited area thus jealously guarded. In the highest sense of the word, the most practical education is that which calls forth mental power and resource in the highest degree. There is nothing in the position of a child, even of the humblest rural school, which makes geography, or history, or elementary science, unsuitable for him. The rudiments of these things, if honestly taught as rudiments, cannot fail to enrich him, and to qualify him for a more happy and useful life. Provided that the teaching is sound and thorough as far as it goes, there is no reason for excluding from the primary school any branch of instruction whatever.

Normal Training on the Continent.—It will readily be anticipated that the training of teachers corresponds in each country to the notions of elementary instruction which prevail in it. Thus, in Holland, where the average standard of public education is high, and where much is expected from the teacher, and a comparatively high remuneration is attached to his office, the examination for a certificate of competency is much higher than in France or Germany, though much lower than in our own country. School methods and organization, and aptitude to teach, occupy more space in the Dutch examination than in any other. Besides, however, a

general certificate of competency to enter upon the profession, the teacher has to pass a competitive examination, if he desires a mastership in a public school. The conditions of admission into the training college in France are very simple; the course of instruction extends over three years; and of the extent and nature of this course, Mr. Arnold, who visited some of the most efficient of the normal schools, speaks as follows:—

"At Bordeaux," he says, "the class of the third year, consisting of thirteen students, was receiving a mathematical lecture when I visited the institution. They do not go far in mathematics; no student in the institution was advanced as high as quadratic equations; no student was reading Euclid; they were taught, however, the elements of practical geometry. The object is to teach them what is needed for a primary school; the programme of the normal collegian exactly corresponds to the programme of the primary school; the student is not allowed to pass, at the end of his first year, from the obligatory matters of primary instruction, to the facultative, unless he has given proof of his thorough knowledge of the former, and not of his knowledge of them merely, but also of his skill to teach them. The teaching of method;—it is on this that circular after circular of the minister insists; it is on this that the reports of the commissioners who superintend normal schools perpetually dilate; it is to this that principals and lecturers address all their efforts. Practising schools are annexed to each training college, and in them the French students pass a great deal of their time—much more in proportion to that spent in the lecture room, than ours. And with what success? Undoubtedly, a knowledge of method is of the highest importance to the schoolmaster; "*Donner c'est acquérir*," says a French poet, most truly; to teach is to learn; and to give a man, therefore, the power of teaching well, is to give him the power of learning much. Undoubtedly, too, the attention to method in the French training schools has resulted in the establishment of improved modes of teaching particular subjects; the teaching of arithmetic, for instance, and the teaching of reading, have been facilitated and simplified. Yet I doubt whether in all his zeal for method, in this exclusive thought for the bare needs of the primary school, in this jealous apprehension lest the normal college pupil should become more of a student than a schoolmaster, the range of study has not been made unduly meagre, and a risk incurred of developing the student's mental power so insufficiently, that he will be thoroughly effective neither as student nor schoolmaster."

The meagre and unambitious course of training which Mr. Arnold thus describes, is fully paralleled in the curriculum of the *Schullehrerseminarien*, or normal seminaries, of Prussia. Though the course of instruction lasts three years, it is mainly limited to the subjects taught in elementary schools. The first year is occupied in bringing the pupil within the scope of the influence of the place, and making him feel what it is he is wanted to be and to become; in the second year he goes over again more thoroughly the ground he has already travelled at school; in the third he is practised in the model school, and has lessons in school management. He is required to learn by heart large portions of the Holy Scriptures, and summaries of Christian doctrine and Biblical history; he has much discipline in reading and intonation, and is elaborately drilled in the contents of the school reading-books, at which he has to work until he thoroughly understands them, and makes them his own. Written exercises, involving paraphrase and reproduction of such elementary books, are often given, and within these limits he is to acquire the power of understanding and using his own language, "so far as it is requisite for the elementary master, and without any theoretical lessons of etymology, prosody, lexicology, &c." General history is considered useless in the seminary; the instruction is confined to German history, with especial regard to that of Prussia, and the history of the province. Such knowledge of nature, and of physical philosophy generally, as is permitted to be taught, intended to bear exclusively on practical life, on gardening, agriculture, industry, and trade; and although in the third year some knowledge of mechanics may be given, it is expressly stipulated in the government regulations that it shall always be treated in an experimental way, and without mathematical formulae. For leave to go into the higher parts of arithmetic—proportion, decimals, extraction of roots, or for application in the school, but for their own improvement, special application is to be made to the provincial government. Drawing is not allowed to go beyond introductory lessons in the linear representation of simple objects, and even music is only cultivated in the seminary for moral and church objects. The art is never to be regarded as its own end. In short, the great aim of the existing system in the Prussian normal colleges appears to be to repress anything like intellectual ambition on the part of the young candidates, and to inspire them with

a sufficiently modest and humble view of the office for which they are destined. It will surprise many who have been accustomed to regard Germany as the birthplace of abstract speculations, and the home of dreamers and theorists, to learn that systematic *pädagogik*, or any attempt to construct a science of education, is utterly discouraged in the German seminaries. Even in a popular form, the theory of teaching is not to be lectured upon or discussed; in its place may be taught, indeed, the "art of school management," but these lessons are to be kept in strict connection with the experience obtained from day to day in the practising school. In fact, the whole tenor of the official documents by which the authorities of the normal schools are directed by the government as to their own duties and functions, is a sustained protest against any course which would give a technical or scientific character to the normal training.

Before concluding this notice of the state of education in the principal states of Europe, it may be interesting to mention here, in passing, a fact stated in a memoir published some time ago by Mr. Robert, the secretary of the jury, showing the extent to which the principle of compulsory education is now acted upon in various countries. It appears that "the principle of compulsory education is applied, either directly by means of penalties imposed upon parents, or indirectly by various legal disabilities, which apply to all who have not attended school, in the following countries: the Kingdoms of Prussia, Saxony, Hanover, and Wurtemberg; the Grand Duchies of Baden, Saxe-Weimar, Saxe-Cobour-Gotha, and Hesse Darmstadt; the Duchies of Nassau and Brunswick; the Austrian Empire, Bavaria, Denmark, Sweden, and Norway, Portugal, the Ottoman Empire, the Swiss Confederation, in all the Cantons, except Geneva, Schweiz, Uri, and Unterwalden, in the New England States, and in the Mauritius.—*Educational Times*."

(To be continued.)

Hard work.

No teacher can succeed in school without hard work. Our neighbor, Farmer Holdantrive, laughs at us when we speak of hard work in the school-room, and thinks we have a very insufficient idea of the meaning of the phrase we use. He would like to know what possible connection there can be between sitting in an arm chair all day, hearing the boys and girls say their lessons, and hard work. He thinks it would be a good thing for the schoolmaster if he had to "stir his stumps" a little; it would prevent him from contracting bad habits, laziness, in particular. He wonders that all teachers are not distinguished for obesity; for the inactive lives they lead, are, in his opinion, favorable to the cultivation of aldermanic proportions.

It were hardly necessary to controvert Farmer Holdantrive's position, if it were not apparent that many teachers sympathize with his views, and give him considerable grounds for the formation of his opinion. Those who adopt the teacher's profession because it is a lazy and inactive one in their estimation, might as well have chosen the calling of a soldier because it is a safe one; if he does not fight, he will be perfectly safe; and if the teacher does not do anything but draw his salary, he will have an easy time of it—until he is removed for incompetence. We need not tell the earnest and faithful teacher that teaching is hard work; he feels it in his bones and his brains.

We took occasion the other day to tell our honest agricultural friend that we personally knew how to "hold and drive;" that we had followed the plough, holding and driving, for days and weeks together; and that we had been more fatigued after a day of hard work in the school-room, than we ever had been after the severest toil on the farm. He was incredulous, and we attempted to show him that the mind tires as well as the body; that the labor required to concentrate the thoughts of a class was more wearing than that of holding a plough, or mowing in a meadow full of hassocks. We were not very successful with our neighbor Holdantrive; his prejudices were stronger than his common sense. We should be content to leave him in the mire of his own shortsightedness if he did not think it a "mortal shame" to pay the teacher twenty-five dollars a month, during the winter season, when there is "nothin on airth a man can do besides teach school." He thinks his "deestrick could get a man for ten dollars a month and board him round, and good pay at that."

The influence of our friend in the rural districts is decidedly unhealthy. He is the foster-father of, and the practical sponsor for, at least nine-tenths of the incompetent teachers in the State. When his oldest boy arrives at the mature age of eighteen he will

set him to teaching school, whether he has any peculiar qualifications for the work or not. It is an easy and profitable way to spend the winter; it pays better than shoe-making or chopping wood, and in his view is not half so hard work. He is a man of influence in the "deestrick," and has no trouble in procuring the appointment of the hopeful youth. Farmer H. is an honest man, as the world goes, and we hold him in high respect for his industry, enterprise, and general good character; but for the one act of making that boy a schoolmaster, we shall have a personal grudge against him. We look upon his flogging precisely as the regular physician looks upon the quack. He is bringing our high calling into disrepute. Both father and son are conspiring against our profession. They are not only *...*ing its usefulness in the community by cheating the pupils out of the labors of a competent teacher, but they are keeping ambitious men out of our ranks by bringing the work down to the level of the clown and ignoramus. If they keep the standard down, they also keep the wages down. Zephaniah Holdantrive is an expensive teacher at ten dollars a month; it is more than he is worth. We intend to suggest to our agricultural friend the propriety of paying teachers in his vicinity by the job, as he does his choppers and mowers! If results in the school-room could be weighed or measured, how much would young Zephaniah receive for his winter's work?

This heresy of easy work and good pay has done the teachers of this country an incalculable injury. Besides introducing into the calling a host of incompetent persons, by keeping the standard of men and results at a low point, it has robbed many capable and well-meaning teachers of a large portion of their vitality. The stupid fallacy that teaching is simply keeping order and hearing lessons has not yet been driven from our midst. There are hundreds of teachers in this State, male and female, who do nothing more than these; who pass as regularly and systematically through the old and exploded forms, as though they were not old, and had never exploded. A system or a method is not bad because it is old, nor good because it is new; but the old-fashioned routine of teaching by reciting only the words of the text-books, we take it, is no longer considered a vital method.

We are expected to teach principles in these modern times, as well as facts and methods. It would not be very hard work for Zephaniah to tell all he knows about the principles of long division, or a method in fractions, interest, discount, or proportion; it would not be very hard work for any one, even, who perfectly comprehends these himself, merely to state these principles, and to do so with clearness and simplicity; but, after all, the class do not understand them. There is something lacking. The hard work has not been done. The vital connection between the teacher and the taught has not been made.

Count Gurowski, in his slashing "Diary," declares that McDowell is an abler soldier than McClellan, Fremont, or half a dozen others. Gurowski, himself an elderly man, and a soldier from the battle-fields of Europe, has good judgment and keen discrimination; therefore what he says of McDowell is at least worth considering. At the court-martial an eminent military man is reported to have testified that this general's staff complained of over-work; and the witness had known McDowell to be out all night in the rain and cold, superintending the disposition of army stores. If ever a general, in the estimation of the people, made a signal failure in the camp, on the march, and in the field, McDowell is the man. The first battle of Bull Run, all military men agree, was well planned, but it was an utter defeat—the most disgraceful of the whole war. Pope spoke well of him; Scott believed in him; Gurowski extravagantly lauds him. But a dying hero—dying so nobly and so gloriously that his flowing blood sanctified his words—accused him of treason; the soldiers will not fight under him. His corps was swept as with a whirlwind by the rebels at Manassas; but the same men fought like demons under Hooker at Antietam.

In our humble opinion, McDowell would not have succeeded as a teacher. There would have been no vital connection between him and his pupils, as there was none between him and his soldiers. He did not do that in soldiering, which in teaching constitutes the hard work. McDowell did not fail because he failed to secure the affections of the men, but because he failed to secure their confidence in his military ability. Gen. Williams was not personally popular among his men, but they fought with desperation under him till he fell, at Baton Rouge. We remember a schoolmaster whom none, or hardly any, of his pupils liked, but they made astonishing progress under his tuition.

The best and surest road to the confidence of a school, is through the respect and affection of the pupils, and the instances in which it is reached through any other avenues are remarkable exceptions,

and therefore unsafe guides. Scholars know what work is, and they do not confide in a man or a woman who is indolent or sparing of the vital energy. Nothing but skill and hard work can create and keep up an interest in school.

Hard work is not merely "flying round," tipping things over, stirring up scholars with hard blows or larger words, nor scolding, fretting, snarling, hollowing, or anything of that sort. It is simply giving the whole mind and heart to the business before you. It is concentrating all the faculties upon the attainment of the purpose in view. It may be done even while the hands are still and the voice is not heard. It may be only the look that assures the struggling scholar that there is a true friend near him who will rejoice in his success or pity his failure. It is that anxiety of the mind which labors and racks the frame when the superficial observer thinks all is at rest. The true teacher is hard at work all the time, while in school—and often when away from it—whether he speaks or is silent, whether he is in motion or at rest. He is in a constant struggle, and he could not, if he would, conceal the fact from his pupils.

Let us consider for a moment the mildest case that can be suggested of what we have called hard work—but which, perhaps, were better called mental activity. Suppose you have before you a single class of twenty scholars, all attending to the same studies. You open your school, and require them to learn their geography lesson, and to be ready at a given time. There is nothing for your hands or your voice to do for half an hour. You have a very dear friend in the army or in California, whose last letter you have not answered. You have not read the President's message, and have the paper containing it in your pocket. The last installment of Wilkie Collins' new novel is on your desk. There is a lady or a gentleman teacher in the next room or on the next floor whom you desire to visit. You write your letter, read your newspaper or your novel, visit your friend, or do something else in no manner connected with your school duties, or sit listlessly at your desk wondering what your landlady will have for dinner, or where you shall go after school; and though your class may not know what you are doing, or what you are thinking about, they do know you are not thinking about them, or their lesson. They do not feel that there is one before them who sympathizes with them in their struggle to conquer the difficult task they have undertaken. They do feel as the paroled prisoners at Annapolis, or the convalescents at Camp Misery feel, that no one cares for them. They know that they are not in the mind of their teacher. The chances are that you will use some abusive language when you hear that recitation; but abuse yourself, not them. You are more guilty than they.

Teachers do not often have to wait for lessons; but if you do, keep your mind on that geography lesson all the time. Study those faces. If you are really in earnest and want a perfect lesson, your children will know it. The magnetism of your eye will enter their souls and inspire them with courage. They will be in earnest. If you see an idler, remonstrate, but do not use more than ten words. Your earnestness, seen in your face, will be a hundred times more effective than a homily on the value of time. Your lesson will be all you can reasonably expect.

This is what we mean by hard work on a small scale. When the teacher, inspired by that noble zeal from which alone the highest results must come, hears one class, explains, illustrates, and interests all while he maintains his magic influence over each individual of one, two, three, or half a dozen other classes studying in their seats, he does hard work on a large scale—on a magnificent scale. His faculties are all strained to their utmost tension. Zephaniah does not know what hard work in school means.

There is no royal road in teaching. After skill and hard work have done their best, there is still something left undone. The field must be ploughed, and cross-ploughed. What he has done to-day he may have to do again to-morrow. He must repeat again and again. He should not seek for any expedients that will save him from hard work—there are none. Let him work on in faith and hope, and by-and-by, even Farmer Holdantrive will find out what hard work in the school-room means.—*Massachusetts Teacher.*

W. T. A.

OFFICIAL NOTICES.

ERLECTIONS, &c., OF SCHOOL MUNICIPALITIES.

His Excellency the Governor General in Council, on January 5, 1863, was pleased to detach from the School Municipality of Grenville, in the county of Argenteuil, the first four concessions of said munici-

pality, from lot No. 1 to lot No. 16 inclusive, and to erect them into a separate school municipality under the name of the *School Municipality of Grenville No. Two*.

APPOINTMENTS.

EXAMINERS.

His Excellency the Governor General in Council, on January 5, 1863, was pleased to appoint the Rev. Pierre Patry, curé, Rev. François Xavier Paradis, Priest, Vincelas Taché, Esquire, and Pierre Desjardins, Esquire, M. D., to be Members of the Board of Examiners of Kamouraska.

SCHOOL COMMISSIONERS.

His Excellency the Governor General in Council, on December 11, 1862, was pleased to approve of the following appointments of School Commissioners, viz:—

County of Bonaventure.—Ristigouche: Messrs. George Calder, David Nelson, Michael Ryan, George Dickson and William K. Downes.

Same County.—Matapédia: Messrs. John Wheeler, James England, James Adams, Maurice Blaquière and Henry Lodge.

County of Laval.—Bas du Bord de l'Eau de St. Martin: Messrs. Antoine Brien and Louis Lapierre dit Mercant.

County of Islet.—St. Jean-Port-Joly: Mr. Germain Caron.

His Excellency the Governor General in Council, on January 5, 1863, was pleased to approve of the following appointments of School Commissioners:

County of Argenteuil.—Grenville No. Two: Rev. Frédéric S. Nève, Messrs. Robert Wilson, Robert Morrison, Alexandre Beauchamp and David Williamson.

SCHOOL TRUSTEES.

His Excellency the Governor General in Council, on December 11, 1862, was pleased to approve of the following appointments of Dissenting School Trustees:

County of St. Johns.—St. Johns: Messrs. James Bessett and Virgil Titus.

DONATIONS TO THE LIBRARY OF THE EDUCATIONAL DEPARTMENT.

The Superintendent of Education acknowledges with thanks the following donations:

From Mr. G. W. Lawler, Three Rivers: "Philosophy of Health, or health and cure without drugs," by L. B. Coles, M. D., 1 vol.

JOURNAL OF EDUCATION.

MONTREAL (LOWER CANADA), JANUARY, 1863.

TO OUR READERS.

In entering upon a New Year we must, according to a time-honored custom, wish our readers in general and the subscribers to this Journal in particular, all the prosperity and happiness possible. May we venture to hope that the hidden destinies of 1863 are not pregnant with events disastrous as those which have overtaken and blasted the prosperity of our once happy neighbors? We pray indeed that the present year shall not see the dark tide of war breaking upon our shores and deluging the peaceful hearths of our people with its countless horrors; but should it please an all-wise Providence to permit so great a calamity, we fully trust that History shall never blush to record our deeds along with those of our fathers. "The pomp and circumstance of glorious war" may not be without its

seductive charms to minds fond of excitement and adventure, yet the true field of our ambition must be, for a long time to come, the conquest of the wilderness, and the settlement and development of the fine country which is ever ready to reward the industry and intelligence of her sons and adopted citizens.

CANADA IN 1863.

By the following article, taken from the London *Illustrated News*, it will be seen that our transatlantic friends are not indifferent to our welfare:

The relationship between the British and Irish people, and the natives of Canada and the other British American Provinces is closer than that of cousinship; and, although there is one circumscribed and isolated element of the Canadian population with whom we can claim only a very slight community of lineage, yet one of the happy effects of the Anglo-French alliance has been to knit these Norman-French Canadians closer to us than would have been possible during the reign of narrower sentiments between the two great Western nations.

If of late our politicians have done scant justice to the Canadians—if, with professional onesidedness, they have diverted the public mind from the sense of its close intellectual and spiritual union with the people of the great colony to irritating discussions on the comparatively superficial question of military defence and the mutual value of the Imperial connection, now is a fitting time to remedy their onesidedness. The jubilation or the mourning over the "bursting of the Republican bubble" must not be permitted to cast into the shade the fact that there is another virtually Republican organization in North America, which shows no signs of dissolution. The spectacle of a numerous and happy self-governing population, with no aristocracy, no State Church, and whose motto is still Peace, Industry and Education for all, did not vanish from the world in the smoke of the batteries which bombarded Fort Sumpter. While Canada has judiciously adopted all the strong points of the American system, down even to a decimal currency, she has wisely retained the virtues inherited by her from the British Constitution. There liberty and individual development are not submerged either by an intemperate craving for equality, by the tyranny of the majority, or the edict of an irresponsible and absolute Executive.

It is the peculiar moral advantage of the Canadians that neither they nor their fathers have ever received in the course of their education an anti-European bias. In the United States, to be a true American signifies something antagonistic to Europe. Hence flow "Monroe doctrines," "manifest destinies," and the chronic liability to panic concerning "European influence on the American continent." Happily for him, a Canadian grows up in ignorance of this pernicious prejudice. No moral gulf separates him from the most cultivated portion of his species—a gulf which only a few Americans in after life ever bridge over. Hence the difference of the historical curriculum in the common schools of the two countries. In the United States the only history popularly taught is that of the early settlement of America, in a vague and imperfect manner, followed by the history of the United States since the Declaration of Independence, told with over-minute and pragmatic detail. The French and British Canadians of the rising generation are taught respectively, and often cumulatively, the history of civilization in France and the British Isles. Run your eye over the list of school-books recommended and supplied by the Canadian Departments of Education, and you discover at a glance that the British, Irish, and Canadian school children receive instruction from the same text-books. The effect of the different bias of the youthful twig is seen in the inclination of the full-grown tree. The Canadian has a true conception of himself and his country. He regards himself as part of a highly-cultivated European race, and his country as a theatre for the development of European civilization. The Canadian knows nothing of the factions of "Americanism" which is the mainspring of American politics. The practical results of the two theories were made manifest during the Crimean War. When in the United States it was dangerous to express sympathy with the Allies, and wholesale invective against the cause of "the independence of Europe" was the only language tolerated in the popular press and on the platform, in Canada both sections of the population vied with each other in manifestations of sympathy with the mother countries of Europe. Nowhere was the spirit of the Anglo-French alliance so thoroughly caught and

carried out. Permission was sought to raise troops, the British and French national airs were played in succession whenever public musical performances took place; the intertwined flags of England and France were thrown out to the breeze from the windows of the citizens, and the Legislatures appropriated moneys to the relief of the wounded and the families of the fallen in the armies of both the allied nations.

These sentiments of good will are fully reciprocated in Europe. Even the German Governments do their utmost to turn the stream of emigration towards Canada. But nowhere are they reciprocated so strongly as in Britain herself. And with good reason. The native of North Britain, on arriving in Canada, finds that his countrymen are as much at home as in Scotland; that in the fair competition of life his countrymen have won far more than the average share of prizes in every department of human exertion.

To the native of South Britain Canada offers by far the friendliest and pleasantest asylum on the American Continent. Many of the most valuable English settlers in Canada have experienced the buffetings which too often fall to the share of the Englishman in the States, and have sought in Canada, not so much the means of subsistence, as a place where they can obtain a livelihood without, at the same time, sacrificing their self-respect and nationality. Even the Irish in Canada declare they enjoy more advantages there than their countrymen do who have settled south of the St. Lawrence and the Great Lakes. It is not easy to find a political question in which the British Tory, the English Radical, and the Irish Nationalist agree; but in praise of Canada there is no difference between Sir Francis Head, Sir Allan McNab, William Lyon Mackenzie, Smith O'Brien, and D'Arcy McGee. Indeed, these political differences, so embittered at home, disappear in the cosmopolitan arena of Canadian politics, and their partisans find themselves co-operating as members of the same Canadian party, perhaps as colleagues in the same Cabinet.

Canada is working out the great problem of self-government under conditions specially favorable, and such as can hardly be equalled elsewhere. She will continue to attract the attention of the political philosopher, who is aware that her ship of State is freighted with some of the highest aspirations of the human race. May those aspirations never be shipwrecked, until at least another barque as fair and solid be ready to receive her precious cargo?

Happy is the feast at which there is no skeleton! Canada is terrestrial, and already feels the growing pressure of a serious domestic difficulty. The time may come when she may ask for a return of that sympathy she has on several occasions, and at no time more than at present, lavished on ourselves. The question of representation by population excites an antagonism between Upper and Lower Canada which threatens, or may at any moment threaten, the very existence of the present Legislative Union of the two provinces, and renders the official tenure of every Canadian Ministry unstable and precarious. The question is in abeyance for the present, owing to the spell which the American war exercises over all minds, but it will burst forth with redoubled strength the moment that the result of that great contest becomes visible. We can only wish her well over the throes of the impending crisis, hoping that the question of representation will be settled in a manner favorable to her interests. Repose and progress in civilisation.

We learn with pleasure that Montreal has established herself as the second port of export on the Atlantic seaboard—that is, ahead of Boston and Philadelphia—and trust that such increased facilities for storing and loading will be furnished by British or Canadian capital as will enable her to lessen the distance between her commercial totals and those of New York. In the spirited efforts of the province to draw an increased proportion of the carrying trade of the West through her own canals and down the St. Lawrence, and away from the longer, narrower, and more expensive route of the Erie Canal and the Hudson, our sympathies are all enlisted on her side. We look for a large yield from the newly discovered Acton mines, already illustrated in these pages, and for the development of her vast stores of mineral wealth. Can we, for a New Year's welcome, add aught to what we have already said? Well, we wish her line of steamships immunity from accidents during 1863, and we are confident that at the forthcoming International Exhibition at Paris she will win as many rewards of merit as on the previous displays of '51, '55, and '62.

Laval University.—Reopening of the Classes.—Monument to the First Rector.

The reopening of the Laval University after the Christmas holidays was marked by a coremony of more than usual interest. The fête

of the population of Quebec assembled in the large hall to witness the proceedings; and among the distinguished persons present we notice the names of Mgr. the Bishop of Tloa, ministers and ex-ministers of the Crown, members of Parliament, clergymen and professional men. The Professors in their robes having taken their places on the platform, the proceedings were opened by the Rector, who at the close of his discourse proclaimed the names of the successful candidates for degrees, and that of the lucky winner of the Prince of Wales' Prize—Mr. N. Bégin, student in Divinity. As in the Normal Schools, this prize is given in money and serves to reward intrinsic, not comparative merit; this was the first time it had been conferred in the University, and consisted of a purse, containing twenty sovereigns which the Rector handed to Mr. Bégin. The following are the names of the graduates: N. Bégin, *Bachelor of Arts*; L. Catellier, Chas. Delage, Chas. Verge and N. Dion, *Bachelors of Medicine*; H. J. Taschereau, J. Blanchet, Jos. Héu, Ed. Gauthier and R. Casgrain, *Bachelors of Law*; Chas. N. Hamel, *Licentiate* (Faculty of Law).

Dr. Sewell of the Faculty of Medicine then delivered an address from which we make the following extract:—

"Since the opening of this University in 1854, death has been very busy among us. Besides M. Casault, we have to lament the removal from our midst of the Rev. Messieurs Holmes, Parant and Gingras, three gentlemen who, though not spared to see the University in its present flourishing condition, took interest in its development, and an active and zealous part in its early organization. In 1857, the Faculty of Medicine was called upon to regret the death of Dr. Blanchet, its first Dean and Professor of Physiology. Dr. Blanchet received his medical education in London, and held the diploma of the Royal College of Surgeons of that city. He was possessed of a great fund of professional knowledge and of practical experience, acquired during a long and most extensive practice. His professional services were much sought after by the poor, and were, I believe, never refused. They, with many others, will long mourn his loss as that of a kind friend and medical adviser. This list, for the short time, is formidable enough, but it is not complete. The Messenger of Death has been again abroad and within the last few days we have been called upon to consign to the solitude of the silent tomb all that remained of our friend and colleague, Dr. Frémont. The subject of this short and imperfect notice determined at an early age to follow the trying profession of medicine, and completed his studies in Montreal, as a pupil of the late Dr. Stevenson. This he effected under circumstances sometimes most difficult, and often requiring the greatest possible self-denial. Upon his being received he established himself at Point Lévi, where he continued to practise for some years, and where he laid the foundation of that career which ultimately placed him at the top of his profession. Finding the field of Point Lévi too limited, he removed to Quebec whither his reputation as a kind and skilful practitioner had already preceded him, and, as was to have been anticipated, he at once entered upon a more extended sphere, into a useful and lucrative practice, which continued to his death. Kind and conciliating in his manner, he succeeded in securing not only the confidence but the affections of his patients, a large circle of whom deplore with us this day his untimely removal. If called upon to specify one point which more than another characterized our friend, I would say it was his keen sense of honor. Elevated above the petty jealousies which so often disgrace the medical profession, he was never known, nor even suspected, of having condescended to a mean action, and consequently always commanded the regard and esteem of his conferees. Some twenty years ago, Dr. Frémont, associated with some medical friends, assisted in the formation of the "Quebec School of Medicine," in which he occupied the Chair of Surgery, and which he continued to fill till the affiliation of the school with this University. Here the same post was assigned to him, and on the death of Dr. Blanchet he was promoted to be Dean of the Faculty, which honorable post he filled to the satisfaction of all concerned. At the time of his death he was joint proprietor of the Lunatic Asylum at Beauport, and as such evinced much business talent. He was also physician to the gaol of this city, as well as visiting physician to the Hotel Dieu Hospital, where his kindness and attention were fully appreciated and will be long remembered. In 1860 he visited Rome, as bearer of an address from the Catholics of this city, on which occasion His Holiness the Pope was pleased to decorate him with the cross of the Order of St. Gregory. But he is gone! Just as he had reached the summit of his hopes and ambition—just as he hoped to retire upon the fruits of his hard labor, it has pleased God to remove him not only from his sphere of usefulness, but from the bosom of an attached and loving family. Early in May last he removed to the country, with a view of retiring gradually from the more arduous duties of his profession. He had not, however, been long there before the symptoms of that disease which ultimately proved fatal began to manifest themselves. These symptoms at first attracted but little attention, till his very rapid emaciation and failing strength soon excited the alarm of his friends. After trying various remedies and change of air to the Upper Province, from which he had derived much benefit, he was ultimately recommended to try the effect of a sea voyage to Europe. This advice he followed, and sailed for Liverpool in October last. In London he sought the opinion of two leading physicians, but contrary to that given by his friends here, he deter-

mined to proceed to Egypt in the vain hope that a warm climate might benefit him. At Malta, finding his strength failing he determined to retrace his steps homeward, and die surrounded by his family and home comforts. Mr Rector, you know the sad sequel! That home he never reached! He died at sea on the 10th of December, and we are here this day to mourn his removal."

Dr. Larue, Professor in the University, followed, and in the course of his remarks paid a high tribute of praise to the first rector of the University. He touched upon historical ground, reviewing the question of university education in general and that of the relations of the Laval University with other colleges, and declared himself in favor of a higher standard and more severity in testing the qualifications of candidates for those degrees and diplomas which entitle the holders to regard and distinction; adding that the liberal professions were already overcrowded, and unless something were done to exclude the less competent, the standard must inevitably fall still lower. He concluded by eulogizing the character and private virtues of the late rector, and resumed his seat amid loud and general applause.

The Rector then invited the auditory to attend the inauguration of the monument to the first rector in the Chapel of the Seminary, where an imposing ceremony took place.

To Mr. Chas. Taché, who took the initiative in opening a subscription, much credit is due for the success of the enterprise,

District of St. Francis Teachers' Convention.

This Convention met at Sherbrooke on the 27th of December, when the following office-bearers were elected for the ensuing year:—Inspector Hubbard, President; Professor Graham, of St. Francis College, Richmond, and Dr. Nichols, of the University of Bishop's College, Lennoxville, Vice-Presidents; Mr. Marsh, Sherbrooke, Secretary. After some remarks from Mr. Marsh and Mr. Graham, it was proposed and resolved, that teachers be invited to send, prior to each meeting, specimens of writing and mapping showing the progress made by the pupils under their charge respectively. Mr. Marsh enquired of Mr. Hubbard if it were true that more progress in calligraphy was made in the French than in the English schools of the district, to which the latter replied in the affirmative. Mr. Sanborn then delivered a lecture on the relations of public instruction to the State—the principle of uniformity in schools, school-books, and the method of teaching being fully elucidated. He also insisted on the necessity of making teaching a profession and not merely a make-shift only resorted to till something better could be procured. He expressed the opinion that school commissioners and the Department of Education ought to give the preference to teachers who adopted their profession in good faith, and not to those who only followed it temporarily. Many teachers were, he added, students of law or medicine while engaged in keeping schools; but it was very difficult to combine successfully all these functions, as all demanded close study and application.

Extracts from the Reports of Inspectors of Schools, for 1859 and 1860.

Extracts from Inspector HUME'S Report.

In reporting upon the progress of Education in my District of Inspection during the past year (1860-61) it affords me much pleasure to be enabled to state that considerable improvement has been made during that period in many of the municipalities. The number of children who have attended school will be found to be much greater than in any preceding year, the increase as compared with 1860, being upwards of 500; and there has also been an increase in the amount of local contributions. There are also a greater number of qualified teachers than formerly, though in some municipalities, in consequence of the difficulty the commissioners have experienced in finding teachers with diplomas, they were obliged to employ those who had none. There are five female teachers in the district with diplomas from the Normal Schools three of whom have the Model school diploma. The gradual introduction of teachers from these schools cannot fail to be attended with beneficial effects in those municipalities where they are employed; and as a general desire is felt to procure their services, I have no doubt that in a few years one or more will be found in nearly every municipality.

Although a general improvement has taken place in many of the municipalities of this district, some still remain in which there

is room for much more. I cannot say that there exists anything which can be called *opposition* to the school law, but there is, in some places, indifference, and, with many people, a carelessness in not sending their children regularly to school.

I am happy to say that the prejudices which existed some years ago in many of the municipalities against assessment for school purposes, are gradually diminishing; one municipality after another is adopting the system of assessment, and I trust that ere long there will not be a single one where it will not be in force.

I will now proceed to give a brief statement of the state of education in the different municipalities of this district of inspection.

COUNTY OF BEAUCE.

1. *St. Victor de Tring.*—Some improvement was made in this municipality during the last year, more especially in the principal school which is now conducted by a good teacher; it is numerously attended, and some of the pupils have made satisfactory progress. There are four schools in operation; tolerably well attended, and conducted by teachers who manifest much zeal in the discharge of their duties. The inhabitants of this municipality have always been well disposed towards education.

2. *St. Ephrem de Tring.*—In this municipality there are three schools in operation, and though none of the pupils are much advanced, some progress has been made. In consequence of a temporary interruption to the schools last year, the assessments were not regularly paid, and the commissioners are considerably indebted. This arises from the circumstance that since St. Ephrem became a separate municipality three new school-houses had to be built. The inhabitants are extremely poor, but manifest a laudable desire to have their children educated.

3. *Forsyth.*—There were two schools in operation at the time of my last visit; a few of the pupils had made very good progress, but in general the attendance appeared to have been very irregular. Much credit is due to the Rev. Mr. Bérubé, the *curé* of the parish, and to some of the inhabitants for their exertions in favor of the schools.

4. *Lambton.*—I am happy to say that in this township there is a very great improvement. Two well qualified teachers have been engaged, to whom liberal salaries are paid; and the pupils under them have made satisfactory progress. School affairs are in a prosperous state in this municipality.

5. *Aylmer.*—There are three schools here, in two of which the attendance has been irregular. The inhabitants are, however, well disposed in favor of education, and considering their means, few municipalities have contributed more liberally than they have done. There is a great amount of arrears of assessment due; yet this arises not from the unwillingness of the people to pay, but from the extreme scarcity of money prevailing in nearly all new settlements.

COUNTY OF DORCHESTER.

6. *West Frampton.*—In this municipality there are two good schools under the control of the commissioners, very numerously attended and at which very satisfactory progress has been made. These two schools, however, are insufficient, and many of the inhabitants evidently feel no interest in education, being unwilling to pay for the services of a qualified teacher. One school has been closed on this account for the last year. A dissentient school has replaced that which was formerly in operation. A new school-house has been built, and a qualified teacher engaged.

7. *East Frampton.*—Two schools are established here (one a dissentient), and others will probably soon be opened, as three more schools at least, will be required in this municipality. Although many of the inhabitants do not take much interest in school affairs, a building has been purchased for the school under the commissioners.

8. *Standon.*—Only one school in operation in this township, which is not very numerously attended. The teacher, though attentive, is almost superannuated and not much progress has been made. A competent teacher cannot be secured for want of means.

9. *Cranbourne.*—No school was open on my last visit, but the determination was expressed to open one or more as soon as teachers could be procured.

COUNTY OF MEGANTIC.

10. *Leeds*.—Though no assessment is levied the schools are liberally supported, and the teachers regularly and well paid. Seven schools under the commissioners and one independent school were in operation—the progress made being satisfactory. There are more pupils learning the advanced branches in Leeds than in any other municipality in this district. A Model school was opened last year under an able teacher with a diploma, from the McGill Normal school.

11. *Interness*.—Much credit is due the commissioners for their energy in carrying out the school law during the last year and levying the assessment. A new division of the school districts of the township will afford additional facilities. Seven school-houses are in course of erection for which special assessment was made; and upwards of \$600 already paid in. Ten schools, controlled by the commissioners, were in operation, and satisfactory progress generally made. Male teachers for the winter half-year and female teachers for the summer are employed; and though this system has many advantages, it causes a too frequent change of teachers. There are also two dissentient schools, one of which is attended by French Canadian pupils whose parents are preparing to build a school-house.

12. *Nelson*.—An English and a French school are established here; and in a third district a new school-house has been built, to which the pupils will be admitted so soon as a teacher can be found. Five schools would be required to supply the wants of this municipality.

13. *St. Calixte de Somerset*.—In no other municipality have greater efforts been made to promote education. The building intended for a convent has been completed and the classes opened. There were 71 pupils in attendance at the time of my visit, and I was much pleased with the method of instruction followed in this institution. There is a Model school for boys and five elementary schools, at all of which very satisfactory progress has been made. The teacher of the model school is conversant with both languages, well qualified and a pupil of the Laval Normal school. The commissioners could not avoid incurring a considerable debt, but, I believe, it will be all paid without pressing too heavily upon the rate-payers.

14. *St. Julie de Somerset*.—Two new school-houses have been built; and there are now five elementary schools in operation, and a model school whose teacher is from the Laval Normal school. Considerable progress had been made.

15. *St. Sophie d'Halifax*.—Eight schools are kept here; satisfactory progress has been made in all except two; and the school law is well carried out. This is gratifying, as a few years ago this municipality was one of those most opposed to the school system. This reformation is due, in a great measure, to the exertions of Mr. Hébert, the chairman of the commissioners.

16. *St. Ferdinand d'Halifax*.—The only drawback to the prosperity of this municipality, as regards its school affairs, is the large amount of debts remaining unpaid, viz. \$500. There are ten schools under the commissioners, two of which employ teachers from the Laval Normal school. Satisfactory progress has been made. Three new schools were built and others repaired. There are also two dissentient schools, conducted with success and very well attended. A new schoolhouse has also been built by the dissentients.

17. *Ireland*.—This municipality affords another proof of the advantage of assessment over the voluntary contribution, as no difficulty has been experienced in maintaining the schools since the latter system was abandoned. Seven schools are in operation, and considerable advance has been made.

18. *Broughton*.—Only one school is in operation, as the limits of this municipality have lately been altered, and the time has been too short to permit the organization of others.

Notices of Books and Publications.

BÉNARD: DICTIONNAIRE CLASSIQUE UNIVERSEL, suivi d'un dictionnaire de la prononciation de tous les mots difficiles; by M. Th. Bénard, *Chef de Bureau* in the Department of Public Instruction, France. Published by Eugène Belin, Paris; 1862.—12mo. 736 pp. 5th Edition.

The author might certainly have adopted *Multum in parvo* as

his device. In this compact little volume, printed in very legible characters, we find a vocabulary of the French tongue, ancient and modern history, geography, biography, mythology, sketches of living characters, &c.,—among the latter we notice that several Canadian celebrities have found a place.

LA LITTÉRATURE CANADIENNE, de 1850 à 1860. Desbarats and Derbyshire, Publishers, Quebec; 1863.—1st vol., 8vo., pp. 400.

This fine volume is the first of a series to be presented to the subscribers of the *Poyer Canadien*. Among the contents of this book, we notice extracts from the account of Mr. Garneau's voyage to Europe—a work seldom met with now. We do not see how the proprietors can afford to present their subscribers with a gift that in the cost of materials and printing alone appears to equal in value the amount of subscription charged.

LES SOIRÉES CANADIENNES: The 12th number of the 2nd volume of this interesting publication contains the reprint of a rare old pamphlet, *Le Procès de McLane* (J. Neilson, Quebec, 1797). McLane, it will be remembered, was tried and executed for treason, and this account of his trial presents legal, historical and philological features of great interest to the student. The price of subscription to the *Soirées* is, as heretofore, \$1 per annum, payable in advance.

SADLIER: OLD AND NEW, or *Taste versus Fashion*, By Mrs. J. Sadlier. D. & J. Sadlier, Publishers, New York; 1862.—16mo., pp. 846.

This is one of the works recently produced by our ci-devant townswoman, who still continues to exercise her happy talent as a writer of fiction. Few need be told that while enlisting the sympathy of the reader in behalf of the characters that act and live in her story, this gifted writer ever employs her pen in inculcating moral lessons. In the present instance her purpose has been to expose the bad taste and folly of a certain class forming a characteristic element of society in the United States. In a careful review of the work by *Brownson*, many very plausible reasons are offered touching the origin of the evils depicted by Mrs. Sadlier, and which, in common with the reviewer, she so heartily deplors; the following extract will in part show the views of the American critic on the social relations of the people among whom he acts a conspicuous part.

"The evils Mrs. Sadlier so clearly sees, so vividly portrays, and so justly deplors, are only the natural offspring of the false spirit of the country, of that almost universal contempt for experience and the wisdom of other nations of past ages. The whole spirit and tone of our people is wrong; and nearly all our peculiar notions of society, of politics, of what is the end of society and the means of securing them, are as erroneous and foolish as are those of Mr. Tom just home from college, or Miss Fanny just from the boarding-school, concerning domestic government and the ends and objects for which rational existences have been created. As neither Mr. Tom nor Miss Fanny will be corrected by any parental admonition or advice, or by anything but the adversity which their folly is sure to bring, so we as a people can be corrected only by deep national sufferings, and the downfall of our false and hollow prosperity. This is wherefore we hope so much from the present troubles of our country, and regret so little the present civil war. All we fear is, that it will end too soon, and leave us uncorrected. Our present national life is a sham; we want it supplanted by real life, and our showy but false prosperity substituted by real prosperity, which, having its basis in the truth of things, may have some prospect of being permanent."

This declaration of Mr. Brownson's carries additional weight from the fact that he has always shown himself attached to the political institutions of his country and a devoted friend of the Union. We refer the reader to Mrs. Sadlier's book for an account of the prevailing extravagance, bad taste, and unsatiated thirst for gold, of homage rendered to wealth and fortune, white talent, intellect, art and even morals not unfrequently meet with neglect, adding that it is matter of regret that these traits of character are but too often recognizable nearer home.

THE STUDENT'S FRANCE: a History of France from the earliest times to the establishment of the Second Empire in 1852. With notes. Illustrated by engravings on wood. Harper & Bros., New York; 1862.—12mo 730 pp. Cloth \$1.

Our teachers, we fear, do not bestow upon the history of France all the attention which it deserves. The annals of a country whose civilization assisted so much in moulding the thoughts and habits of the nations of Europe ought certainly to be deemed of sufficient importance to warrant their extrication from the confused mass of

facts and dates taught in our schools as "universal history." Intimately connected from the earliest times with the history of his own country, the English student must ever regard France as a rich field for enquiry. "It is unnecessary," we are told in the preface, "to point out the importance of a knowledge of French history to every one who aspires to a liberal education; but it may not be amiss to remind the reader that the true meaning and effect of the drama of the Revolution, of which we have not yet seen the catastrophe, can be understood only by a far deeper study of the previous condition and history of France than most of our countrymen are disposed to undertake. With respect to the execution of the work, it has been the aim of the author to present a perspicuous view of the events of French history, from the very commencement of the nation down to the present time, avoiding as far as possible the dryness of an epitome, and presenting something more than a chronicle of mere facts and dates. An attempt has been made to draw the portraiture of every important historical character, and to include in a rapid and condensed narrative all the chief transactions, whether political, military, or ecclesiastical, which have marked the varying fortunes of the nation.... In conclusion it may be observed, that it has been the earnest endeavor of the author to avoid the capital error of writing the History of France from an English point of view, a course which can not fail to convey an unjust conception of the institutions, government, habits, and character of the people. What is needed is an impartial, genial, and even sympathetic account of French history."

The book is written with considerable ability, and bears evidence of much research. The language is clear, forcible and flowing; and the order of arrangement simple and perspicuous. With regard to the execution of the *physical* portion of the work, it is enough to say that the Messrs. Harpers are the publishers.

DANA'S MANUAL OF GEOLOGY.—In no part of the world has the science of geology been more successfully cultivated than in North America. But the results that have been arrived at, are scattered through a multitude of reports of the different surveys, and papers of greater or less length in the scientific journals. Up to the present time he who has endeavored to get a clear idea of the geology of the whole North American continent has found it necessary to devote more time and means to the object, than most students can well afford. In the important work, just issued by Professor Dana, this great difficulty is removed. We have now in one compact and beautifully illustrated book, not only a comprehensive and well-balanced account of the elementary principles of the science, but also the general results of what has been ascertained of the geology of this continent, down to the present moment. We have not, just now, leisure to give a full review of this excellent publication, and must therefore content ourselves with a mere glance at its contents. Prof. Dana has divided his subject into four parts, as follows.—

1. **PHYSIOGRAPHIC GEOLOGY.**—In this part of the work, are described the forms of the earth's surface, as exhibited in the distribution of the land and water; the directions of certain physiographic lines, in conformity with which the boundaries of the continents, the ranges of islands and chains of mountains are arranged; the system in the reliefs or surface-forms of the continental lands: the system of oceanic and atmospheric currents and the general laws of the distribution of forests, prairies and deserts. All these phenomena are within the domain of physical geography, but they can never be well understood unless investigated through geology, as their origin dates far back in time.

2. **LITHOLOGICAL GEOLOGY.**—Relating to the composition and different kinds of rocks.

3. **HISTORICAL GEOLOGY.**—Under this title is discussed the main portion of the subject; the description in their order, of all the formations from the most ancient up to the most recent. Here we have, for the first time, the science of geology elucidated by special reference to the series of American rocks; thus removing the great difficulty we have pointed out in the first lines of this notice. Full details of all the deposits, their lithological composition, their characteristic organic remains and geographical distribution are given. There appear to be about 700 figures of fossils, nearly all of which were drawn on wood by Mr F. B. Meek, an accomplished artist, and one of the best palæontologists of the continent. Most of the species figured are American, and several of them are from the Decades of the Canadian Survey, representing peculiar forms only possessed by the Provincial Collection of Canada. It is not uncommon to find works on general geology illustrated by figures, which, for all natural-history purposes, are perfectly worthless. This must happen when neither the artist nor the author is

a naturalist. In the book before us, the illustrations are first-class, for the reason that all the parties engaged in their production, perfectly understood how to prepare them.

4. **DYNAMICAL GEOLOGY.**—This division treats of the causes of events in the earth's geological progress. "These events include the formation of all rocks, stratified, with whatever they contain, from the earliest Azoic to the modern beds of gravel, sand, clays, and lavas; the oscillations of the earth's crust; the increase of dry land, elevation of mountains, and elimination of the surface features of the globe; the changes of climate; the changes of life."

The work concludes with an appendix and a copious index. Geology is a science of such vast extent, and so largely composed of all others that few men possess the almost universal knowledge required to produce a good manual of its elementary principles. The author of this work being a profound geologist, mineralogist, zoologist, and physicist, is one of the best qualified for the task. His book is a great one, and its publication will mark the commencement of a new era in the progress of the science. In conclusion we would strongly recommend it to the Canadian student. With the General Report on the Geology of Canada, soon to be published by Sir W. E. Logan, the Decades of the Survey, and Dana's Manual, he can enter the field unimpeded by the crowd of difficulties to which observers in this province, have heretofore found themselves opposed at the very outset.—*Canadian Nat. & Geologist.*

MONTHLY SUMMARY.

EDUCATIONAL INTELLIGENCE.

—At the Annual Meeting of the Colleges constituting the Queen's University in Ireland, the Lord Chancellor, who is Vice-Chancellor of the University, stated that 116 members had passed their academical examinations during the year—a larger number than in any previous year—and that of the 745 students in attendance during the last session, 203 were members of the Established Church, 200 Roman Catholics, 247 Presbyterians, and 95 members of various other religious denominations. The number of annual entrances had increased from 196 in the session of 1858-59 to 312 in the last session—a number almost identical with those who had entered the ancient University of Trinity College.—*Educational Times*

—The Hon. Mr. Galt, late Inspector general and M. P. P. for the town of Sherbrooke, has made a donation of \$400 to St. Francis College, Richmond, towards the establishment of scholarships.

LITERARY INTELLIGENCE.

—The Hon. T. D. McGee lectured recently before the Literary and Historical Society of Quebec on *Champlain the Founder of Quebec*.

The remarks of the learned gentleman were listened to with deep attention, as the subject has been invested with more than usual interest by the discovery of a long lost manuscript that had belonged to the celebrated voyager. This document has been published by the Hakluyt Society of London and a copy is now added to the unbroken series of that society's publications in the possession of the Department of Education in Montreal. The lecture of Mr. McGee, from which we extract the following, will well repay perusal.

"The English Association to whom we are indebted for the publication of this MS, in their annual volume for 1859, is one particularly beneficial to students of early American discovery and adventure—established in 1846, it has repeatedly devoted its funds and the talents of its members, to the editing of those rare old tracts, or recently recovered MSS, which bear upon the Atlantic voyages and American explorations of the XVI. and XVII. centuries. It bears appropriately the name of that Richard Hakluyt, Pretendary of Bristol, in the reigns of Elizabeth and James I., who was the most enthusiastic and laborious, as he was the earliest collector of voyages and travels in the English language. It seems something more than a coincidence—the natural result of Commercial causes—that Hakluyt should have been officially connected with Bristol, which held in those days to other British ports, for enterprise and wealth, a corresponding place to that occupied by Liverpool in our times.

"The Hakluyt volume for 1859, is translated from the French original of Champlain, by Miss Alice Wilmer, who is also the writer of the exceedingly full and interesting biographical introduction. It is edited with great care by Dr. Norton Shaw, a member of the Council of the Society.

"Miss Wilmer in her introduction acknowledges the Society's obligations to Mr. Peret, Librarian of the Public Library of Dieppe, from whom the original MS was obtained. The story of its recovery after so long an interval is thus told:—

" M. Feret obtained this valuable document from an inhabitant of Dieppe, where it has been for an unknown time; and it is more than probable that it had been in the possession of Mr. de Chastez, Governor of the town and Castle of Dieppe, who was Champlain's chief friend and protector, under whose auspices he had been employed in the war in Brittany against the League, and by whom, after his return from the West Indies, he was sent to Canada. To him, it is most likely that Champlain would present a narrative of his voyage. On Mr. de Chastez' death, the manuscript probably passed into the possession of the Convent of the Minimes at Dieppe, to which he was a great benefactor during his life, and by testament after his death. He was also, by his desire, buried in the Church of the Convent. The library of the Minimes Fathers was, with the rest of their property, and that of the other Convents of the town, dispersed at the great revolution; but most of the books remained at Dieppe, as may be seen by a reference to the numerous works which have gradually found their way, by gift or purchase, to the "Public Library" of that town, bearing inscription as having belonged to the Convent."

"The original title is couched in these words.—

"*Brief Narrative of the most remarkable things that Samuel Champlain of Brouage, observed in the West Indies, during the voyage which he made to the same, in the years One Thousand Five Hundred and Ninety Nine to One Thousand Six Hundred and Two, as follows—*"

SCIENTIFIC INTELLIGENCE.

—Mahmoud Bey, astronomer to the Viceroy of Egypt, has just published the results of his investigations of the pyramids, undertaken at the request of the Viceroy. The measures of the great pyramid he finds to be 231 meters for the sides of the square base, and 146.5 meters for the height; so that the faces form an angle of 51° 45' with the horizon. This agrees with the known inclinations of the six other pyramids of Memphis; which vary between 51° and 53°, and average 52° 30'. This common inclination, and the fact that the pyramids, and the other funereal monuments which surround them, are, as Mahmoud has satisfied himself, always placed exactly facing the four cardinal points, suggests that these pyramids had some relation to a celestial phenomenon, and to the divinity which presided over that in the Egyptian mythology. Now he has found that Sirius, when it passes the meridian of Gizeh, shines vertically upon the southern face of the pyramids; and in calculating the change in the position of this star for a series of centuries, shows that 3,300 years before the Christian era, the rays of this star, at its culmination, must have been directly perpendicular to the southern face of the pyramids, inclined at an angle of 52° 45' with the northern horizon. According to the principles of astrology the influence of a star is greatest when its rays fall perpendicularly upon an object. If now we suppose that these pyramids were constructed a little more than 5,090 years ago, it would appear evident that their faces received the angle of 52 degrees, in order to be perpendicular to the rays of Sirius, the brightest star of our northern heavens; which was consecrated to the god Sothis, the celestial dog, and the judge of the dead, and was also said to be the soul of this deity.

This opinion is confirmed in an unexpected manner by the following considerations. The pyramids, being tombs or funereal monuments, would naturally be under the patronage of that divinity who presides more particularly over death, that is to say with Sothis, who is no other than the three-great Hermes, Cynocephalus, Thoth or Anubis. Now the hieroglyphic designation of Sothis is a pyramid by the side of a star and a crescent. Nothing is therefore more natural than this relation thus discovered by Mahmoud Bey between Sirius and the pyramids. The date of 3,300 B. C., thus assigned to these structures, accords with Bunsen's determination, according to which King Cheops reigned in the thirty-fourth century before our era. It also agrees with the tradition of the Arabs, according to which they were constructed three or four centuries before the deluge; which they assign to the year 3,716 before the Hegira.—*Le Cosmos*.

—The Rev. Father Secchi, the learned director of the Roman Astronomical Observatory, has just published an essay, in which he discusses from an advanced point of view the theory of attraction. After having shown in accordance with the views so ably expounded by Mr. Tyndal in his paper on Force, published in the *Naturalist*, (p. 241,) that all the physical forces or movements of which we are cognizant come to us from the solar centre, the learned Jesuit inquires, "But how does this movement or series of movements return to the sun? Who knows but what that part of the heat thus emanating from the sun, which is not lost by radiation into space, is converted into an impulsion of the mass of the earth towards the sun? I do not pretend to give a theory, but only to propose a conjecture, which it will be sufficient for me to show not to be absurd."

"We see that the intensity of heat, like that of gravity, diminishes inversely as the square of the distance. We know also that a prodigious quantity of molecular movements come from the sun by luminous and calorific radiation, and under the form of vibratory disturbances, remain, apparently destroyed, at the earth's surface, instead of being lost by radiation towards the planetary spaces. In fact, heat coming from sources of a very high temperature (that is to say, heat of short undulations,) when brought to a lower temperature, (or to long undulations,) can no longer traverse the terrestrial atmosphere and radiate

into space. A certain quantity of motion coming from the sun must thus rest imprisoned in terrestrial bodies, by the chemical force to which it gives rise. So that in reality the *vis viva*, and the quantity of movement in the terrestrial globe, and its surrounding mass of ether, must increase indefinitely, if there were not some way of escape or discharge. Why may not this discharge be the incessant fall of the earth towards the sun, a fall expressed by the linear distance which the earth deviates from the tangent of its orbit; which tangent the earth would follow, in virtue of its inertia, did not some cause draw it towards the solar centre?"

Of this brilliant and novel conjecture, the learned editor of *Le Cosmos*, from whom we extract the above, remarks, that it seems to be one of those happy inspirations which belong to truth alone; and he adds, "there is great merit in having originated an idea which has never before presented itself to the human intelligence and which, in time to come, may bring forth fruitful results."—*Ibid*.

—The celebrated French chemist, M. Boussingault has recently presented a memoir to the French Academy, detailing a series of interesting and highly valuable experiments on the so-called respiration of plants, by which he has been led to the discovery of a new and unexpected fact in connexion with the process. Our knowledge of the influence which the green parts of plants exercise on the atmosphere has been but little advanced since the memorable researches of Théodore de Saussure. The separation of the elements of carbonic acid by leaves under the influence of the sun's light, the assimilation of the carbon and the elimination of oxygen, still expresses the extent of our acquaintance with phenomena discovered in the course of the last century; and no sufficiently precise determination has since been obtained of the connection existing between the volume of the oxygen evolved and the carbonic acid decomposed. In all the experiments of Saussure, and also in the very careful experiments of MM. Cloez and Gratiolet, Drapper, and others, a considerable quantity of nitrogen had always been found accompanying the other gases; and this nitrogen, it was supposed, was emitted by the plant along with the oxygen, set free by the decomposition of the carbonic acid in the process of respiration. M. Boussingault was induced to submit this nitrogen to a more careful scrutiny, and he was abundantly rewarded by finding that it contained a portion of a combustible gas. Analysis indicated that this gas consisted of carbonic oxide, with a trace of some carburetted hydrogen. The nitrogen, that had misled Saussure and his successors, was found to be derived from the air absorbed by the plant in its exposure to the atmosphere and the surrounding moisture; and it now appears that during the decomposition of the carbonic acid by the leaves, no nitrogen is emitted, but that the oxygen is accompanied by oxide of carbon and carburetted hydrogen, the combustible gases being produced in the proportion of 1.11 to every 100 of oxygen. Light appears indispensable to the development of these combustible gases. If the apparatus filled with leaves be placed in strong sunlight, but covered with a black cloth, until the water attains a temperature of 38 degrees, the gas collected contains no trace of carbonic oxide or carburetted hydrogen. To keep, then, the expression of these results strictly within the conditions of M. Boussingault's experiments, it may be stated that these combustible gases constantly accompany the oxygen which is evolved from a plant under the influence of solar light when immersed in water impregnated with carbonic acid.

M. Boussingault concludes his memoir by asking, "Is it not curious that after the lapse of a century it should be established before this Academy that probably the leaves of all plants, and very certainly the leaves of aquatic plants, in emitting oxygen which ameliorates the atmosphere, also emit one of the most deleterious gases known—oxide of carbon? In the emanation of this pernicious gas may we not discover one of the causes of the unhealthiness of marshy countries?"—*Educational Times*.

—M. Faye, of the Institute, has, with the sanction of the Government, drawn the attention of the French officers now in Mexico to the Zodiacal light which can be observed at this season to great advantage in that country. This phenomenon, so important to astronomy, and with reference to which so many discordant theories have been advanced, consists of a cone of whitish light, having the sun for its base, and generally perceptible at sunrise and sunset during the equinoxes. In our latitudes it is of rare occurrence, but the nearer we get to the equator the more remarkable is the splendour of the phenomenon. Within the tropics it is almost permanent. The most singular theories have been imagined to explain the appearance of this cone in the heavens. Some have considered it a kind of perspective projection on the celestial canopy of one or more rings of cosmical matter, circulating round the sun, much in the same way as Saturn's rings revolve around that planet. These imaginary rings are believed to lie within the orbit of the earth, but very near to it. M. Biot saw in the zodiacal light a permanent manifestation of one or several rings of shooting stars and aerolites. M. de Tesson, having remarked that the point of the luminous cone was often at a distance of from 90 to 100 degrees from the sun, concluded that this point lay far beyond the terrestrial orbit. According to others, the zodiacal light is simply an immense solar atmosphere, strongly depressed, of a lenticular form, and constituting the matter which feeds the sun. This is the theory of Messrs. Mayer, Waterton, and Thompson. Others again consider the phenomenon to be purely terrestrial—a view of the case which does not exactly agree with the inclined position of the zo-

dinal light, although the earth's atmosphere has been proved to extend much higher than the fifteen leagues formerly assigned to it. Lastly, the Rev. G. Jones, of the United States, imagines the zodiacal light to be owing to the existence of a very thin ring of nebulous matter circulating round the earth, and within the orbit of the moon. Which of all these views is the true one, further observation will decide. (*Ibid.*)

MISCELLANEOUS INTELLIGENCE.

— The following is an extract from a highly interesting article on *British North America* in the last issue of *Blackwood's Magazine*. The political papers here have, since its publication, asserted that an understanding had been arrived at for the establishment of postal and telegraphic communication with the British possessions in the Far West on terms which will be made known to Parliament when it opens on the 12th February next:

"On the expiry of the Hudson Bay Company's Charter in 1859, when the discovery of gold on the Fraser River led to the establishment of Vancouver Island and British Columbia as colonies of the Crown, a controversy arose as to whether Red River Settlement and the territories of the Saskatchewan, which extend for a thousand miles between Lake Superior and the new colonies beyond the Rocky Mountains, should not also be taken from the jurisdiction of the Hudson Bay Company, and erected into a new colony. We do not think the time has come for the adoption of such a measure; but, leaving the vast and almost unoccupied territory under the government of the Company, measures should be taken, in conjunction with our American Provinces, to construct a good waggon-road and a line of telegraph connecting Canada with British Columbia. On the 4th of July last, the Duke of Newcastle said that "he thought the Company should give facilities for a full postal and telegraphic communication between Halifax on the one side and New Westminster on the other;" and he added that "he thought it would be possible, for an expenditure of £100,000, to form a communication (to the new colonies) through Canada, and he believed that the journey might be brought within thirty days." Whether or not the Home Government is sleeping over the matter, we cannot say: but it is reported that the Governments of Canada, New Brunswick, and Nova Scotia, have agreed to act together in this important matter. Obviously they are the parties most interested in obtaining a communication with the colonies on the Pacific; but the question, as one of Imperial policy, cannot be ignored by the Home Government. There are various sums, for postal services for bringing home troops and invalids from the Pacific station, &c., which the Government, we doubt not, would willingly transfer in aid of this new and much shorter route.

"The soil and climate of the region lying between Lake Superior and British Columbia are, of course, matters of great importance in determining the policy to be pursued in regard to them. Captain Blakiston's report, which is characterised as admirable, even by those who are disposed to underrate the value of this region, speaks thus of the soil and productions of Red River Settlement:—

"The country is very level, and on the west generally open. There is a considerable amount of swamp: but in the dry parts the soil is well adapted for the growth of cereal and other crops, and naturally supports a rich growth of the different grasses. The trees are generally small, but there is fine oak and elm along the borders of the river, and there is timber suitable for building purposes to the north-east of the settlement. Farming operations comprehend the growth of wheat, barley, oats, Indian corn, and potatoes,—the manufacture of cheese and butter,—and the keeping of cows, horses, pigs, and sheep; besides gardening operations for the culture of turnips, onions, pease, cabbage, rhubarb, radishes, mangold, carrots, hops, pumpkins, and melons—which all appear to thrive in ordinary seasons. In respect to the growth of wheat, the soil seems particularly well adapted, but owing to the climate it is occasionally caught by the early frosts. Large returns are obtained from new land, sometimes up to forty bushels per acre, and the soil will bear cropping for many years in succession. Barley and oats do well, and are never damaged by the frost; but Indian corn is sometimes destroyed. The green crops flourish,—potatoes, turnips, and onions attaining very large size. Melons are said to come to maturity in the open air. In regard to stock-farming the greatest difficulty is the length of the winter, owing to which so much hay is required for the subsistence of the animals. The cattle during summer roam at large at the back of the cultivated land, where they find plenty of excellent pasturage. Sheep thrive well at Red River. Pigs do remarkably well, and, if turned out where there are oak woods, require no looking after."

"Evidently this is a country which perfectly admits of being colonised. Hitherto, owing to its isolated position, and the greater attractions of less distant settlements, it has made very little progress, but a time is certainly coming when its condition will be very different. It is often the destiny of the latest-settled countries to falsify the poor opinion of them entertained at the outset—of which the history of the British Isles, Holland, and Prussia furnishes a familiar example. And however little attractive to emigrants the territories of the Red River and the Saskatchewan may be at the present day, we need not hesitate to predict that they will be amply peopled in future times. As it is, we must beware of underrating these possessions. The Americans, who know them as well as we do, and who know their own western territories much better,

prefer our unoccupied territories to their own. The Government Surveys of the United States show that the character of their territory west of the Mississippi and south of the great Missouri Road, beyond the 98th degree of longitude, is unfit for settlement. This is shown in a paper drawn up by Professor Henry, published in the Patent Office Report for 1856. And Mr. Louis Blodget, of Philadelphia, an eminent meteorologist, supports that opinion, and points out, in contradiction, the immense resources yet in store for Canada on both branches of the Saskatchewan, to the west of Red River. There he says, "Of the plains and woodland borders the valuable surface measures fully five hundred thousand square miles"—or five times the extent of the whole United Kingdom. If these statements are correct, we may expect ere long to see a gradual influx of American settlers down the Red River into the British territories; while the fact that the only roads from Red River Settlement lead into the American territory, from whence, too, the settlement derives its supplies, is not calculated to make the settlers in that isolated but most important region very zealous of their nationality.

"From the Red River Settlement to the frontier of British Columbia, on the west of the Rocky Mountains, is nearly nine hundred miles. Except in winter, the journey may be made by water all the way up to the foot of the Rocky Mountains. The Red River, upon which there are steamboats, runs into Lake Winnipeg, at its south-eastern end; and at the opposite end of the lake is the mouth of the Saskatchewan, a river nearly as large as the Missouri, and upon whose broad stream, which parts into a northerly and a southerly branch, canoes can reach the Rocky Mountains at several points. Steamboats will soon take the place of canoes on this great stream. The country between Lake Winnipeg and the Rocky Mountains is very level, and unintersected by any bill-ranges; so that both the navigation of the river, and the process of road-making, present a minimum of difficulties. Although the Saskatchewan will be of great use by and by for the transport of heavy goods, the fact that its stream is frozen during the winter months necessitates the construction of a good waggon-road for travelling parties, and also for the mail express. A line of telegraph may simultaneously be constructed at a trifling cost. These things can easily be done, and will be done. Whether, or at least when, a railway will be carried over this ground, we shall not attempt to say, but this much is established, that from the Red River Settlement to the foot of the Rocky Mountains, the country does not present a single engineering difficulty.

Arrived at the lofty chain of the Rocky Mountains, the eastern boundary of British Columbia, we find that there are a dozen passes by which the chain may be crossed on horse or foot. At the north-eastern corner of British Columbia, indeed, the mountain-chain is so interrupted that the Peace River flows right through it; and by ascending its stream in a canoe, Sir George Mackenzie arrived within a few miles of the upper tributaries of the Fraser River. This route lies too much to the north to be adopted as the highway from Red River Settlement; but there are eight passes more to the south through which a highway might be carried, and some of which, as appears from Captain Palliser's report, are practicable for a railway. At the time Captain Palliser surveyed these passes, not one of them was considered by him to be practicable for waggons; but two months ago we saw it stated that a party with sixty waggons had arrived safely on the Columbia River from Red River. There is no question as to the practicability of carrying a railway from Canada right through to the Pacific; the difficulty is, where is the money to come from for the construction of so extensive an undertaking? No doubt, much might be done by the Government conceding to the company large allotments of land along the line, as is done by the American Government. But the Grand Trunk Railway has hitherto proved so bad an investment for the original shareholders, though of immense value to Canada, that it will need no ordinary concessions from the Government to induce a company to undertake the enterprise.

"At present the most westerly point to which the railway system has been carried in Canada is the eastern shore of Lake Huron. From that point up to the head of Lake Superior, we think the water-communication might suffice, without a railway, for many years to come. But even if this were granted, the Americans have far the start of us. Their railway system extends from New York to St. Joseph on the Missouri—in the longitude of Red River Settlement: so that they have less to do to complete an interoceanic route than we have. On the other hand, the country between St. Joseph and California is less fitted for settlement, and presents greater engineering difficulties than the region between Red River and British Columbia. The Americans will have to cross two mountain-chains—the Rocky Mountains and the Sierra Nevada—with the desert of Utah between them; whereas we have only to cross one, and no desert. Moreover, gold has already been found in our territories on the eastern side of the Rocky Mountains, on the headwaters of the Athabasca and Saskatchewan; and if, as is not improbable, the diggings there prove rich, there may be a rush to them also, in which case the project of the interoceanic railway would at once assume a more hopeful character.

"The Americans have already established a direct and tolerably good communication between St. Joseph and San Francisco. At first they tried a "pony express," which travelled the distance in about nine days; but now they have established stage-coaches on the route, which passes through the Mormon territory, and also a line of telegraph, so that telegrams can be sent direct from San Francisco to New York. This is a great advantage which the American States on the Pacific

have over our newly-established colonies. Moreover, a bill has been actually passed by the House of Representatives at Washington for the extension of their railway system to the Pacific.

"The bill incorporates a company, with seventy-five corporations, to construct a railroad from the 102d degree of west longitude to the western boundary of Nevada; and grants to the company every alternate section of land on the line of road, and also bonds of the United States to the amount of 16,000 dollars (upwards of £4600) a-mile. The Federal Government is to be represented in the company by five commissioners; public lands are granted, and public credit loaned to the enterprise,—the latter taking the shape of 6 per cent. bonds, of 1000 dollars each, running thirty years. The route chosen is known as the 'middle' route—namely, from Western Kansas to Western Nevada; and the Government engages to concede to the railroads now in course of construction through Kansas and California such aids as may be necessary to their completion. And, as a return for such subsidies and grants, the usual preference is to be given to the Government in the transmission of troops and material, and in the use of the telegraph, which the company is also required to construct collateral with its road. Two years are given for the location of the track.' Let all our North American provinces join together, and, with the consent and countenance of the Home Government, offer terms equally good to any company which will construct a railway from Lake Superior to British Columbia. The interests at stake are enormous, and if terms like these are offered, and gold be discovered in quantity on the eastern side of the Rocky Mountains, the work may yet be accomplished.

"The lamentable war in the United States, which is disorganising every-thing, will necessarily delay and seriously obstruct the project to which the House of Representatives has given its assent. It is still possible, therefore, that an inter-oceanic line of railway may first be constructed on British territory. But if the opposite is the case—if the line from St. Joseph to San Francisco be opened first—then the kindred British project will be given up,—at least so far as regards the present generation. The consequences, though they may be inevitable, will be serious to us in many ways, and highly advantageous to the Americans,—as a slight consideration of the balance of interests, and the tendency of affairs will show."

—It is with deep regret that we are called upon to chronicle the death of Dr. Mountain, Lord Bishop of Quebec, which painful event occurred on the 6th instant. The kind, generous dispositions of this venerable man, and his zealous devotion to those under his care, formed traits in his character so well known and valued that further notice of them here were entirely superfluous.

His Lordship the Right Rev. G. J. Mountain, D.D., D.C.L., was born on the 27th July 1789, at Norwich, England; and when only four years old visited Canada with his father, who was the first Anglican Bishop appointed in this country. The subject of this notice graduated at Trinity college, Cambridge, in 1810, was ordained priest in 1813, and entered upon his duties, as evening lecturer at the cathedral of Quebec, in the course of the year following.

He was soon called upon to accept the charge of the rectorate of Fredericton, New Brunswick, which he continued to administer during three years, when he received the appointment of rector of Quebec. In 1821 he was appointed archdeacon, and four years later went to England to transact some affairs on behalf of the church. In 1835, while in England on business connected with the Clergy Reserves, he was consecrated bishop of Montreal, with the entire charge of that wide tract of country which now constitutes the sees of Montreal and Quebec. The retirement of Bishop Stewart that followed soon afterwards, added the whole of Canada West and Red River to the already very extensive diocese of Dr. Mountain, and not until the appointment of Bishop Strachan in 1839, was he relieved of this additional charge. He visited Red River in 1844, and the beauty of the scenery through which he travelled furnished the theme of his *Songs of the Wilderness*, published in 1846. He retired to the diocese of Quebec in 1850, when Dr. Fulford was appointed bishop of Montreal; and three years afterwards undertook another voyage to his native land, having in view the settlement of the question of colonial synods. He was the founder of Bishop's college, Lennoxville—an institution he lived to see in a highly prosperous and flourishing condition.

The remains of Bishop Mountain were escorted to Mount Hermon Cemetery by an imposing procession, in which the following distinguished persons bore a part: His Excellency the Governor General and Staff, the members of the Executive Council and of Parliament, the clergy of the Diocese and other clergymen, the Chief Justice, the Mayor and members of the Council, Judges, the Recorder, the Commandant of the Garrison and Staff, members of the Bar, Magistrates, Delegates of the Synod, Faculty and Professors of Bishop's College, Officers of the Garrison, Physicians, St. George's Society, children of the Orphan asylums, &c. Rev. G. V. Housman, chaplain to the late Bishop, conducted the service at the Cathedral where so vast a throng had assembled that but few, comparatively, were enabled to gain admittance to witness the solemn and impressive ceremony.

—Two events of a very different nature closed the old year of the Parisians. The first was the inauguration of the Boulevard du Prince Eugène, and will be long remembered as the occasion of one of those grand fêtes in which the people of that gay capital so much delight;

the other was the death of Cardinal Morlot, successor to Menseigneur Sibour, who, as our readers may recollect, was assassinated in the church of St. Etienne du Mont some years ago, by Verger a suspended priest. Cardinal Morlot was generally supposed to exert some influence over Napoleon III., and to have assisted in bringing about a reaction in the Imperial policy with regard to the Roman question. Previous to his death he received a visit from the Emperor who remained long by his bed side. Born of a poor family he had raised himself by his own industry and talent, to a very high place in the church. He was first consecrated bishop of Orleans then archbishop of Tours, and finally received a cardinal's hat in 1853. He was appointed first Chaplain to the Emperor, Commander of the Legion of Honor, member of the Privy Council, &c. &c. He had been named as one of the Council of Regency which was to act in case of the death of the present sovereign of France.

—In order to prevent wooden posts and piles from rotting while in the ground, the following receipt has been sent to the Société d'Encouragement, Paris. A certain paint is used which has the hardness of stone, which resists damp, and is very cheap. It has been in use for the last five years—50 parts of resin, 40 parts of finely-powdered chalk, about 300 parts of fine hard sand, 4 parts of linseed oil, 1 part of red oxide of lead, and one part of sulphuric acid, are mixed together. The resin, chalk, sand, and linseed oil are heated together in an iron boiler, the red lead and the sulphuric acid are then added. They are carefully mixed, and the composition is applied while hot. If it be not found sufficiently fluid, it may be made thinner by adding some linseed oil. This paint, when cold and dry, forms a varnish the hardness of stone. —This varnish may be useful in other ways than by being applied to prevent the rotting of woods. Coal tar serves that purpose admirably. So also would crude petroleum if introduced into the pores of the wood, by proper and well known appliances. Charring the posts or piles is an excellent artifice.—*J. of Arts and manufactures, U. C.*

—Periodically, and as if by necessity, the great question of uniting Europe and America by telegraph, surges up and demands a practical solution. And it is quite natural that it should do so. No scientific industry of modern times has been more economically successful than the electric telegraph. There are now at work in the United States of America, 40,000 miles of telegraph, extending from San Francisco, on the Pacific, to Newfoundland, on the verge of the Atlantic Ocean—where it is again proposed to land a cable which shall have its other end at Valentia Bay. There are upwards of 150,000 miles of working telegraph in Europe. A telegraph spanning the Atlantic would unite the electric wires of America with those of Europe—as those in Europe are now united with many in Asia and Africa. Establish a telegraphic link between Newfoundland and Ireland, and instantly means would be taken to connect our West Indian Colonies and those of other countries with the mainlands of North and South America—thus bringing the whole industrial system of the two Americas into connection with that of nearly all the rest of the world. This question of an Atlantic telegraph is not merely economically and morally interesting to England and the United States, but it involves world-wide results. It would not only be the greatest triumph of science, but it would be the means of bestowing a rich inheritance of blessings on mankind. It is a benefit which the statesman, the capitalist, the economical reformer, the philanthropist, and philosopher, may heartily join hand-in-hand to promote.

It is almost certain that the Atlantic cable failed from controllable causes. It was manufactured and laid down with undue haste.

Out of the total number of 51 different submarine telegraph enterprises, which are all that have been entered upon, 44—comprising 5,133 miles of cable, and 8,906 miles of conducting wire—are at the present moment in perfect working order. Thirty of these 44 successful cables were laid by Glass, Elliot and Co.—*Mec. Mag.*

—An instrument is now being employed in France, made out of a tube furnished with a circular cutter of rough diamonds. It is caused to revolve, and as it enters into the stone the cutter scoops out a cylinder which is afterwards easily taken out of the tube. Holes in hard granite for blasting purposes, 17 millimetres in diameter, and from 1-10 metres to 1-20 metres deep, are thereby bored in one hour. This would require two days work in the ordinary way. The diamonds, when examined through a magnifying glass, do not seem at all injured.—*Cosmos.*

—The most ignorant labourer knows that the raindrops, falling on his dung heap bring with them silver pieces. He knows that the refuse, sweltering in the ditches of his village, and poisoning the air, would fructify his corn fields. He nevertheless stands by with indifference, like his father before him, and, for the same reason, because things were the same in the good old time. In the same way (continues Liebig), the municipalities of large cities spend annually immense sums on their sewerage. They put the means of reproducing the bread of millions beyond the reach of the farmer. The farmers look on this with indifference. They however think it a praiseworthy undertaking to fetch the same elements from America, several thousands of miles away.—*U. C. Journal of Arts and Man.*

APPORTIONMENT OF SUPPLEMENTARY GRANT TO POOR MUNICIPALITIES, 1862.—(Continued.)

COUNTIES.	MUNICIPALITIES.	Reasons for granting supplementary aid, and establishing the amount thereof.	Amount of the usual annual grant.	Amount of assessment levied.	Amount of supplementary aid applied for	Supplementary aid granted.
			\$ c.	\$ c.	\$ c.	\$ c.
Two Mountains	St. Columban.....	Poor. Supports 3 schools. Built a schoolhouse.....	101 30	333 60	120 00	30 00
"	St. Placide.....	" " 5 " 1 of which is a Model school....	167 20	423 00	20 00	30 00
"	St. Canut.....	" " 3 "	93 96	358 48	50 00	30 00
Terrebonne....	Abercrombie.....	New settlement. Very poor. Population scattered.....	55 28	120 00	100 00	30 00
"	St. Jerome No. 4.....	There is a judgment against this munic. for a consid. sum.....	27 58	100 00	40 00	30 00
Temiscouata...	St. Antoine.....	New and poor. Supports 3 schools. Building 2 schoolhouses.....	100 72	200 00	60 00	30 00
"	N. D. du Portage.....	" " " 4 "	101 06	187 90	80 00	30 00
"	St. Eloi.....	" " " 6 " Built a schoolhouse.....	157 92	195 00	100 00	30 00
"	St. Modesto.....	" " " 2 " Will build a schoolhouse.....	70 10	120 00	20 00
Wolfe.....	Weedon.....	" " " 4 "	91 46	424 00	40 00	30 00
"	Wotton.....	" " " 7 " Built a schoolhouse.....	173 32	308 34	50 00	30 00
"	St. Camille.....	" " Building 3 schoolhouses.....	54 91	150 00	80 00	30 00
"	North Ham.....	" " " 2 "	68 96	75 00	80 00	30 00
Yamaska.....	St. Zephirin.....	Maintains 5 schools.....	144 36	275 00	40 00	29 67
			\$			4016 67

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