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The Canada School Journal.

VOL. IV.

TORONTO, FEBRUARY, 1879.

No. 21.

REV. W. CYPRIAN PINKHAM,

CHIEF SUPERINTENDENT OF PROTESTANT SCHOOLS, MANITOBA.

The schools of Manitoba are in a condition of surprising excellence, considering the very short time that has elapsed since the province was opened up for settlement by the Dominion Government. So far as a Public School education is concerned, the residents of Manitoba can obtain in the towns and villages, and in many of the rural districts, quite as good advantages for their children as in any of the older provinces. At first thought, this seems to be almost impossible. One is disposed to ask, how can it be, that with so many difficulties in the way the young province has in ten years reached a state of advancement which was only reached in the other provinces after a struggle of half a century? How did the system of free Public Schools fight and win so great a battle in so short a time? The answer is simple. The battle had been fought and won in the sister provinces. The settlers in Manitoba came mainly from these provinces, and they carried with them the deep love for the Public Schools which they had formed in early days. There were none of the prejudices and antagonisms which had to be removed in Ontario and the parts of the Dominion where the free Public School was introduced as a "new idea." Yet there were difficulties in the way of the establishment of an educational system on a proper basis. Chief among these was the fact that the residents of the province were nearly equally divided in both religion and language. These difficulties have been overcome. Two Boards of Education, the Protestant and the Roman Catholic, have been formed. The boards work separately as regards their own schools, and jointly in the management of the school matters of the province as a whole. This united action is continued through the higher departments of education. University consolidation is in Manitoba an established fact.

Each of the Boards of Education has a Chief Superintendent. The Superintendent of the Protestant schools is the gentleman whose career forms the subject of the present sketch.

Rev. Mr. Pinkham was born at St. John's, Newfoundland, in 1844. He received a good part of his early education at the Church of England Academy there, and was a pupil teacher in that institution for two years, under the direction of the Rev. G. P. Harris, a distinguished graduate of Cambridge. He next

taught in the Public School in Brookfield, and was highly commended by the Rev. Moses Harvey, at that time Secretary of the Protestant Board of Education for St. John's. He afterwards proceeded to St. Augustine's College, Canterbury; and having taken the usual course, received his diploma in 1868. During the summer vacation of 1867 he acted as private tutor to two sons of Sir Frederick Fowkes.

He left England for the Red River settlement in 1868, almost immediately after receiving his diploma. He was appointed a member of the Protestant Board of Education in Manitoba, in 1871, after the passage of the new School Act. His colleagues were, the Bishop of Rupert's Land, Rev. John Black, Rev. George Young, C. J. Bird, M.D., Mr. John Norquay, and Mr. St. John,

the first Superintendent. During the absence of Mr. St. John from the Province, Mr. Pinkham performed the duties of Chief Superintendent, and in September, 1871, he was regularly appointed to the position by Lieutenant Governor Archibald. Since that time he has continued to perform the arduous duties of his office in a manner that has given much satisfaction. He took a very active interest in drafting the Amended School Acts of 1873 and 1876. He is a member of the Council of St. John's College, and of the Theological Faculty for the degrees of B.D. and D.D., being examiner in Ecclesiastical History and Liturgiology. During the present year he was unanimously chosen by the Protestant section of the Board of Education to represent that body on the Senate of the University of Manitoba.

Mr. Pinkham has peculiar qualifications for the position he so ably fills. It is no small matter to adapt a system of

education to the tastes and requirements of a people of such a varied character as the people of Manitoba at present. Englishmen, Irishmen, Scotchmen, Germans, Mennonites, Icelanders, and "Half-breeds" form the population. Each race has some peculiar views which must be respected. How great an amount of wisdom was necessary to prepare and administer a School Law in such circumstances! The present Chief Superintendent was just the man for the situation. Young, vigorous, considerate for others, possessed of rare tact and judgment, he is specially adapted to the work he has had to perform. It must not be supposed that he has formed a heterogeneous system consisting of the peculiar views of the different races of the province. The system is based on the fundamental principles of sound education, as wrought out in all enlightened countries; and in the standard required for teachers, and in other important features, it is deserving of high commendation.



Glennings.

"WHERE DOES THE DAY BEGIN?"

"Where does the day begin?" is a question which has attracted a good deal of attention from the readers of this journal, and its discussion, together with that of the gain or loss of a day in going round the world, has occupied a considerable space in its columns. Nevertheless it has occurred to me, that the story of how we, who were passengers on the Pacific Mail Steamship "City of Tokio" during her eleventh voyage across the Pacific Ocean, had Thursday, the 12th of September, 1878, dropped out of our lives, might not be devoid of interest.

The omission of the day, although generally a topic of conversation among those on board of a vessel crossing the Pacific—often creating a ripple of thought of quite an unusual character among many travellers—is accompanied by no demonstration which would of itself attract attention, and might take place entirely without the knowledge of the passenger, who would only discover that he was one day behind time upon arriving at the Asiatic port.

The way in which we learned of the loss may be briefly stated.

We left San Francisco—latitude $37^{\circ} 48' N.$, longitude $122^{\circ} 21' W.$, at 12 M. on Saturday, August 31, 1878. The route selected by Commodore Maury, who was in command, was the longest of the three upon which the vessels belonging to this company sail—being almost parallel to the equator, the latitude of Yokohama being between $35^{\circ} N.$ and $36^{\circ} N.$ Each day at noon the position of the ship was determined and the record posted as a bulletin in the smoking room. The ship's clocks were also corrected according to the distance passed over during the previous 24 hours.

At noon on Wednesday, the 11th day of September, we found ourselves in longitude $175^{\circ} 14' W.$, so that with favorable weather we hoped to pass the 180th meridian a little before noon the next day. The rule which our commander followed was that if this line be passed between midnight and noon of any day that day should be dropped; if between noon and midnight the succeeding day should suffer the consequences. This made it uncertain whether we should lose Thursday or Friday, as the time of passage of the meridian must be very nearly noon. In fact, had weather having been in our way during the night, we did not expect on Thursday morning that we should be able to make the passage before noon, and had resigned ourselves to the quiet enjoyment of Thursday, content that Friday, which was an unlucky day at best, should be taken from our supply of days for that week. But we were doomed to be tossed from one day into another in the twinkling of an eye.

Our last bulletin had read:

Wednesday, September 11, Latitude $34^{\circ} 40' N.$, Longitude $175^{\circ} 14' W.$, and upon hunting up our new one we found it as follows:

Friday, September 13, Latitude $34^{\circ} 33' N.$, Longitude $179^{\circ} 49' E.$

Thus, although technically Thursday had been dropped—practically we had made two bites of the cherry, calling one half Thursday and the other Friday. Just before this change our time was about six and one-half hours slower than "Columbus time" at home. It suddenly becomes about seventeen and one-half hours faster.

During the morning I had been musing over what was taking place at home. It was the day for the opening of the Collegiate year at the State University, and I had been picturing to myself the gathering of professors and students—armed with renewed health and vigor for the "Fall campaign," and thinking—I will confess it—with a tinge of sadness of my own work there; of the implements of warfare no longer my own. Now my reverie is disturbed by the thought that all this took place yesterday instead of to-day; or why may I not console myself with the reflection that it never took place at all?—for Thursday, September 12, is a day which has no recognized existence.

Many things of curious interest occur to which the passengers call attention.

Several persons discover that they have slept on deck from Thursday morning until Friday afternoon. It was discovered about 1 P.M. on Friday that we had been served with nothing to eat since Thursday morning, and immediately everybody was furiously hungry.

A poor fellow making the trip previous to this one suffered the loss of his birthday. By going back the same way, however, he may be able to have a pair of them.

It is generally so managed that Sunday is neither dropped nor doubled. Of one commander it is said that he doubles Sunday whenever it is possible, and has service in the cabin on both days.

Our commodore—who never told a lie—says that he twice passed the meridian at 12 M. precisely, so that it was one day at one end of the boat and another at the other end. The "City of Tokio" is 424 feet long, and therefore able to reach into two days. Our commodore—whose veracity has never been questioned—goes on to say that in this way it has occurred that there was card playing in the smoking room—which is forbidden on Sunday—and divine services in the Social Hall—which are not held the rest of the week—at one and the same time, the first being "fore" and the other "aft."—*Ohio Educational Monthly.*

HISTORY IN OUR COMMON SCHOOLS.

BY J. M. GREGORY, LL.D., ILLINOIS.

It is told of Beecher that he once gave this recipe for making good coffee: "Find out how they make it at the restaurant, and don't do it that way." So perhaps one may give the rule for teaching history by saying, "Find out how they teach it in the common schools, and do not teach it that way." There are, doubtless, restaurants which make good coffee, and common schools which teach history efficiently; but the rule, it is to be feared, is poor coffee and bad teaching.

The importance of the study of history is admitted. It has the two characteristics of a useful study: it affords good mental exercise, and it gives useful knowledge. Properly taught, it brings into play not only the memory, but also the judgment of the connection of events; the causes of human successes and failures, and the moral qualities of the actions of men and of nations. The knowledge it gives vividly impressed, is thought-inspiring, and useful in our daily estimates of men and events. In the hands of a skillful teacher, few studies can be made so useful or interesting; but, as commonly pursued, none are so tiresome or useless. In place of the vivid picture of great peoples and great men, struggling, suffering and triumphing by turns; building cities, settling states, forming governments, conquering enemies, developing industries, extending commerce, and growing great or sinking into weakness through the presence or lack of heroism, wisdom and justice, there is too often the dull memorizing, or attempts to memorize, some poor, dry abridgment—a meaningless and lifeless string of dates and events half told.

First Mistake.—The first mistake made by most teachers in teaching history, comes from not discriminating the differences between history and the other common studies, such as arithmetic and grammar. In these latter branches, the facts and principles to be studied lie in the text books themselves. The real numbers and operations are in the arithmetic which the pupil holds in his hand; the real words and sentences to be analyzed are in his grammar. The problems to be thought out, the demands upon the judgment and the reasoning faculty, are there in the book, and can not be evaded. The exercise of the memory cannot be substituted for that of the judgment. Thought is imperative. But history is the description of scenes and events not present, and which demand at the outset an exercise of the imagination to bring them before the mind. They involve relations of time and place which can only be learned by a careful study of their chronology and geography. They require often an explanation of old customs and usages, and a study of contemporary events and people. To be valuable, history must be vivid. The reader or student must, as much as possible, live over the events, and be, as it were, an eye-witness of the scenes. Especially must he comprehend the motives and feelings of the real actors, and make his own judgment of their wisdom and justice. Nothing of all this is accomplished, or even attempted, by the ordinary text-books of teachers. A lesson of so many pages, in some mere "outline" as it is called, is assigned the class, and nothing is demanded except the rehearsal of the lesson—often only selected parts of it, giving some leading events and dates—a sort of abridgment of an abridgment. The pupil is invited, if not compelled, to substitute an act of memory for an exercise of thought and reason. No problem demands solution. No thinking is required beyond the simple understanding of the words. Occasional questions are perhaps asked on the geography and chronology in-

volved, confined usually to the query, "where, or when, did this event occur?" Can one wonder that history thus taught is one of the idlest and most fruitless studies in our common schools?

Second Mistake.—The second, and perhaps the fundamental error of the common-school teacher of history, is the lack of the needful preparation. Misled, it may be, by the fact that one who has mastered a given text-book in grammar or arithmetic, can give lessons in it, the teacher concludes that a knowledge of the text-book used for the history-lesson is all that is needed to give the proper instruction. But this is as if one were to attempt to give lessons from a work on grammar, having only the table of contents before him. Our little school histories are scarcely more than a table of contents of history proper. It seems palpable that a teacher of history must know history. He must know, with some proper fullness, the events which the text-books mention in brief. He must be able to restore, with its proper details, color and circumstances, the picture of which the text-book gives the most meagre outline. He must supply, or show the pupil how to supply, the geographical and chronological environment of the historic fact stated, and must thus call into exercise the critical historical judgment in determining both the truth of events, and their real character and significance.

The possession of this full knowledge implies much reading and study, more, perhaps, than most of our common-school teachers can be expected to have done. But the necessity remains the same—no knowledge, no good teaching. Let the teacher feel this, and he will perhaps command the time to master the history of our own country. Let him, at least, do this, or cease to pretend to teach history.—*Nat. Jour. of Ed.*

SHALL WE HAVE MANUAL INSTRUCTION IN OUR PUBLIC SCHOOLS?

There has been of late years a growing disposition to criticise our public schools on the ground that they attempt too much, and offer a course of instruction out of all proportion to the practical use of the graduate; that knowledge and not training is made the end sought, and that in the desire to secure a high organization, individual powers and tastes are disregarded. Certainly the machinery of our public schools has grown more complex and costly, and it is to be feared that the children who leave them are confused oftentimes with knowledge rather than athleticized by training in elements of mental power. To a too intellectual training certain offsets have gradually been introduced. The introduction of drawing as a regular part of education has been a marked advance in the right direction, although the best methods of teaching it are still under discussion. The introduction of music in more systematic form came earlier, and was a very important sign of educational progress. Latterly sewing has been introduced with marked results for good, and the chief regret of its friends has been that there was not some universal implement like the needle in the use of which boys might be trained.

Now, in sewing, a twofold advantage is secured. The training of the hand and the eye follows, much as it does in drawing. Of the great number of boys and girls who leave our schools with a fair use of the pencil, how few ever add to their livelihood by drawing, yet the capacity to draw has been something more to them than the acquisition of a new power; it has been a training of the eye and the hand. Then the child who passes in our public schools through all the stages from threading a needle to cutting out a dress is supplied with an economy of power far more useful, in the lower sense, than the art of drawing is to her.

It is this twofold advantage which would be secured by boys could the sewing which their sisters are taught in the public schools be represented in their case by the more complex instruction in the use of tools. There is no simple tool for them like the needle—the jack-knife hardly answers—and therefore the problem is a more difficult one; but the principle is the same, and the practical solution of the problem is to be found in the direction of the experiment which I have described in this paper. The School of Mechanical Arts at the Institute of Technology is now supplementary to public-school instruction; the School of Carpentry carried on by the Industrial School Association is an evening school, to which public-school boys may go. It may be that the experiment must be continued by volunteer associations—the Massachusetts Charitable Mechanics' Association might well undertake the charge—but it is very likely that the claims of the school shops will be urged

one of these days upon the attention of the public to a constituent place in the public-school system. It is noticeable, by the way, how clearly it already fits into the department of drawing. Children resorting to the Whittling School, who had been trained in industrial drawing in the grammar schools, were quite competent to make their own patterns. As an illustration, one of the teachers said that he took some patterns from the drawing-book of his own child.

Whenever this question arises for final answer, it will be found closely connected on either side with two questions which people are beginning to ask: Manual instruction as an element in common-school education finds a singular alliance with the Kindergarten method, which is also passing through its experimental phase, and demanding recognition in the public schools. On the other hand, it is claimed that the State should not be burdened with the task of giving high-school education to the select few who can avail themselves of it. By a fiction we speak of our system of public schools ascending from the primary to the high school, and crowned by the college and university; we are misled by this specious grade into assuming that the instruction in the primary schools should be made preparatory to that in the grammar school, and that in the grammar school to the instruction in the high school. But in point of fact, while with few exceptions children in the primary schools do pass into the grammar schools, the grammar schools represent the end of education to the great majority of those attending them, and should be treated as finishing, not as preparatory, schools. When it is claimed, therefore, that children should have the rudiments of technical knowledge given them in school shops at the expense of the State, there will be many ready to ask, On what ground should the mechanic be given a training for his trade which will exclude the professional student from claiming a like privilege for himself? These questions will come together, and the best practical result will be in a public-school system so adjusted that the common school, including the primary, should stand as the meeting ground of all alike, and the high school on one side, the school of mechanic arts on the other, should be open to the diverging stream of life, whether wholly, partially, or not at all at the charge of the State, city, or town, is a question in which both may stand or fall together; but the main question will be in the adjustment of the common school course to the two special courses, the one looking to higher education, the other to artizanship.—H. E. SOUTDER, in *Harper's Magazine for February*.

RELIGION IN THE SCHOOLS.—The truth is, that the public school, supported by taxation, without reference to the religion of the taxpayer, simply for State purposes, cannot be made the medium of religious propaganda of any kind, without offence and injustice to somebody. The wiser and the better way is not to make the attempt, and thus leave religion to depend on the voluntary offerings of the people. This is in accordance with the American principle, and there is no good reason why the principle should not be applied to the public school.—*Independent (N. Y.)*

—Mr. Homer B. Sprague, writing concerning written examinations and the evil of cramming in preparing for them, says:—"Let the class never know when the examination is to be held; let the intervals between the examinations vary—sometimes two weeks, sometimes three, five, seven. Where recitations in any branch of study occur daily, there should, perhaps, be from five to ten written examinations in a year. The utter uncertainty as to the time of examination, its liability to occur any day, holds the student faithfully to his work; for he must be in constant readiness to give an account of his stewardship. The heat which burns up his body and brain when concentrated into a few days or hours is a gentle and healthful warmth if diffused evenly through several weeks. In his lessons he learns to slight nothing, omit nothing, be ignorant of nothing, leave nothing to chance."

—When Oliver Cromwell was Lord Protector of England he had a cap of Liberty made as a stamp for all Government paper. After his death, and when the Stuarts had returned, it happened one day that King Charles the Second wanted to write a letter. They brought him some of the Cromwellian paper. He noticed the stamp, and said, "What is that in the corner?" When he was told he flew into a passion, and said, "Take it away. None of your foolcap for me!" This is said to have originated the term "foolcap paper."

The Canada School Journal

IS PUBLISHED

THE FIRST OF EACH MONTH,

—AT—

11 WELLINGTON ST. WEST, TORONTO, ONT., CAN.

Subscription \$1.00 per year, payable in advance.

*Recommended by the Minister of Education for Ontario.
Recommended by the Council of Public Instruction in Quebec.
Recommended by the Chief Supt. of Education for New Brunswick.
Recommended by the Chief Supt. of Education for Nova Scotia.
Recommended by the Chief Supt. of Education, British Columbia.
Recommended by the Protestant Supt. of Education for Manitoba.*

TORONTO, FEBRUARY, 1879.

IMPORTANCE OF THE PRIMARY TEACHER'S WORK.

While it is generally admitted that the higher classes in our public schools ought to be entrusted only to well-educated and experienced teachers, the impression seems to prevail that the primary classes may be safely placed in the hands of the veriest tyros in both knowledge and experience. "Good teachers for the higher grades, but mere apprentices for the lower grades,"—this is the policy which is not unfrequently maintained in theory, and, unfortunately for the interests of education, too often reduced to practice. It is perfectly absurd, say some from whom better things might have been expected, to exact a knowledge of literature, history, music, drawing, &c., from those who are to teach junior grades, and whose highest work will therefore be to impart a knowledge of the bare rudiments of the "three R's." When men who are popularly credited with holding enlightened views of the nature and aim of education take such ground as this, we cannot wonder that school trustees, too often governed by a spirit of false economy, show a constant preference for the *cheap* teacher, and practically illustrate their abiding conviction that "*anything* will do for primary classes." If any one thinks we are stating the case too strongly, let him compare the salaries of teachers in the lower grades of our schools with those of teachers in the higher grades, and granting that the "labourer is worthy of his hire," and that the "hire" is a measure of the labourer's worth, he will be forced to the conclusion that the great work of primary education is at present largely in the hands of comparatively illiterate and inexperienced teachers.

Now, this utterly inadequate view of the nature and results of primary education—this wretched theory that the possession of the mere rudiments of learning qualifies a man as an EDUCATOR—has operated, and is still operating, adversely to the highest interests of national education. The country demands, and wisely, from teachers in our higher forms, considerable education and culture—a measure of enthusiasm in their work, some insight into human nature, and a knowledge of the laws of mental development. But we maintain that, in the entire field of educational effort, the work of the primary teacher is second to none; we may go further and declare that it is above

and beyond all others in importance—demanding a not less cultivated intellect, a more loving and patient heart, a sublimer self-devotion, and a clearer insight into human nature, and especially child nature. Under the primary teacher the child makes a beginning which will tell with good or evil influence on all his after life. Shall a love of learning or a distaste for all study be engendered? Shall rational methods of instruction prevail, and thus secure a wise economy of time and the happy results of earnest and well-directed effort? Shall proper habits be formed, and, by a wise discipline of intellect and moral nature, the foundation of a noble character be laid? The answer to these and kindred questions, with all that they involve, depends on the character of the work done in the primary school-room.

Taking even the lowest view of education, it is an error to infer that because only the elements of learning are to be taught, the illiterate teacher is quite competent for the task. It is not true, for example, that "anybody" can teach the multiplication table, or give the child its first idea of numbers. The mere empiric may indeed attempt to teach this source of juvenile "vexation." But how does he proceed, and with what result? He "grinds" in a vain repetition of (to the child) unmeaning words; he makes no appeal to the intelligence; he is a mere instrument for mechanical cramming; and his efforts are attended with the usual result of inciting disgust in the minds of the poor unfortunates who are compelled to submit to the unnatural operation. However elementary the subjects of instruction may be, they are infinitely better taught by him whose thorough education enables him to fully comprehend their relation to the knowledge of which they form the groundwork, and places at his command a wealth of illustration far beyond the power of him whose attainments consist of an imperfect knowledge of even the elements he undertakes to teach. But it is not true that the highest work of the primary teacher is to impart an elementary knowledge of the "three R's;" the highest aim of the primary teacher, and of all teachers, is the *education* of the child—the harmonious development of its nature. And in every stage of his educational course, the *mode* of instruction is of higher importance than the subjects taught. We say in *every* stage this is true, but it is pre-eminently true in connection with the primary stage. The amount of information, the facts and principles to be communicated are comparatively few, and therefore the methods of education should be as nearly perfect as they can be made by culture, training, and experience. Only in the hands of the educated teacher can these elements have any educative value. In the hands of the illiterate, the teaching may become, and too often does become, positively injurious. It degenerates into the impartation of barren facts and principles lifelessly communicated to an unawakened mind. There is placed in the teacher's charge a mind to be educated, and he is supposed to be possessed of the means by which this can be accomplished. But is it possible for him to discharge the responsibility unless he knows something of the nature of the being over whom he acts, and the effects on that nature of the various means through which he acts? How is it possible for any but injurious results to follow from the crude experi-

ments of him who is densely ignorant of the plainest laws of mind? In a word, how shall the teacher truly educate unless he knows the laws that govern the child's mental and moral activities, and how can he know these unless he brings to their investigation the high intelligence of a well-disciplined mind?

In what we have said we would not be understood as making an attack on our primary teachers. We know from personal experience that many of them are well educated, and possessed of qualifications as teachers which make them unsurpassed. But there are many others who are by no means qualified for the great work in which they are engaged. These, perhaps, cannot be blamed for undertaking duties for the discharge of which they have not the requisite qualifications. But school authorities cannot entirely escape censure. For if they placed a true estimate on the value of the primary teacher's work — recognizing that qualifications of the highest order are essential — they would offer salaries commensurate with the importance of the work to be done, and thus teachers would be induced to qualify themselves more thoroughly for the faithful discharge of the most arduous and the most responsible duties connected with the teaching profession.

INDUSTRIAL SCHOOLS.

In this country industrial schools are regarded as places of confinement for juvenile offenders, or neglected children whose education is undertaken by the State, where, in addition to the ordinary school branches, instruction of a practical character is given in some industrial calling. Industrial schools in their fullest meaning are schools devoted exclusively to the culture of young men and women in some departments of manufacturing skill or industrial art. It will, no doubt, be interesting to many teachers to know what is being done in Europe in relation to industrial schools of the latter class. When such care is taken by the governments through their departments of Public Instruction to train the young men and women in the principles of art and design, and to develop manual skill and dexterity, we need no longer wonder that European countries should lead the world in manufacturing articles of beauty and utility.

The Hon. B. G. Northrup, State Superintendent of Public Instruction, Connecticut, gives the following account of the Industrial Schools of Europe:—

"No feature of the educational systems of Germany, Switzerland, Austria, Belgium, France and other European countries, is more striking to an American observer than the large number of industrial schools specially designed to train apprentices and make skilled workmen and competent foremen. These schools are very numerous, and as various as the kinds of industry pursued in each country or province. There has been the greatest progress in manufactures in those countries where these schools have been maintained longest and most liberally. Geneva has for many years maintained an horological school, and the Swiss watches have long been celebrated throughout the world. Last summer I visited the new Horological Insti-

tute then building at Geneva—a magnificent edifice to cost over \$200,000, and also witnessed the work of the old school then in its old quarters. The course of study and practice covers three years. There were seven instructors, who are experts, both in theory and practice. No one can graduate till he has proved his skill again and again, by making an entire watch of standard excellence.

"The same attention to minute details is seen in the industrial schools at Lyons, France, to which the pre-eminence of that city in the manufacture of silk is largely due. It has twelve professors, and the course of study occupies three years. Here, as in all industrial schools, a prominent study is *drawing*—drawing ornaments, tinted drawings, and sketching plans of machines from memory. Thorough instruction is given in every detail relating to the manufacture of textile fabrics, especially of silks; the natural history of silk; treatment of the silk worm and cocoon; spinning, throwing, weaving and testing of silks; sorting and cleaning; winding, warping and beaming; changing of looms for weaving different styles; defects in operations and their remedies; decomposition of tissues; chemistry, especially as applied to dyeing and printing; physics, with its applications to heating steam boilers, to drying and ventilation; mechanics, embracing prime motors, materials, and construction; hygiene, including physiology, noxious and useful animals, dangerous and unhealthy occupations; contagious diseases and how to avoid taking them; rural economy and 'industrial plants.' Manual exercises are conducted in the workshops in making, mending and putting up and shipping looms, in turning, filing, forging, fitting, in the various factories in Lyons, under the lead of an instructor, where every part and process is fully explained. The students afterwards draw from memory plans of patterns and of machines.

"About one hundred pupils, on an average, are in attendance. The regular charge for tuition, use of laboratories and work-shops, is \$140 a year. Indigent students are aided by the Chamber of Commerce and Municipal Council of Lyons, so that a portion only pay the full tuition. That this school, conducted without aid from the government of France, should be so liberally supported by the citizens of Lyons, and continue to flourish for so long a period, is ample evidence of its great usefulness in the opinion of most competent judges.

"More than sixty years ago France started special schools in the arts of designing, engraving and dyeing; in silk and ribbon-weaving, and lace making; in carving, stone cutting, and diamond-cutting (hence the diamond cutting for the world is still carried on mainly in Paris); in porcelain and various ceramic productions—and the pre-eminence thus gained is still retained. The artistic manufactures of France command the markets of the world. The industrial schools more recently organized in Germany, Switzerland, Belgium, Austria, Italy and England, which in the aggregate are numbered by thousands, make these nations formidable competitors in artistic work.

"When invited by the Minister of Public Instruction of France to visit the National Porcelain Factory at Sevres, I expressed to him surprise that such an establishment should come under the supervision of the Educational Department, to

which he replied: 'It is because it is the duty of this Department to supervise and control the preparatory school for Sèvres, which you shall first visit.' On inspecting this school of design in Paris, I found in the lower rooms the methods and work of a first-class drawing-school. But in the upper rooms the classes were painting on excellent goblets, cups, plates, vases, and other choicer wares, just brought from Sèvres, and to return there for baking. After witnessing this truly artistic work, I no longer wondered that in the Sèvres factory itself the artisan had indeed become an artist, and that only men of princely wealth could procure the products of this unrivalled establishment.

"In Belgium the girls have shared the advantages of industrial schools as well as the boys. The schools for training in lace-making and embroidering in Brussels have long been celebrated, and kindred schools have more recently been opened in Rowles, Ghent, Ash, Deerlyk, and in many other places in this little kingdom. To those familiar with this fact, it is no surprise that the Belgium lace shown at the Philadelphia Exposition was unrivalled. Some industrial schools are maintained wholly by the central government; others partially; and still others are supported by endowments, and many are private institutes, dependent mostly on tuition for support. A large number, called the Apprentice Schools, are maintained by benevolent associations. These are designed to train boys and girls both in skilful manipulation in various trades, and in the practical studies and theories most helpful in such pursuits.

"Belgium with about fifty industrial schools, and fifteen thousand apprentices graduated from them; Germany with over fifty-two thousand apprentices in fourteen hundred and fifty industrial schools; and France with twelve thousand industrial scholars, show the practical appreciation of these institutions in those countries which distanced the competition of surrounding nations in the great markets of the world. Steam and telegraph are bringing all nations into such near neighborhood, that industrial ascendancy will belong to that country that provides the best industrial education."

—We are in receipt of a communication from a High School Master complaining that the Education Department limits the number of examination papers for the Intermediate to the exact number of the candidates who are to write in each High School. The action of the Department is no doubt prompted by motives of economy. These examinations cost the country a large sum, and where any considerable saving can be effected it is the duty of the departmental officers to see that it is made. We fully agree with our correspondent, however, in his statement that the presiding examiner and the head master should each be furnished with a copy of the papers. The expense for the whole province would be less than fifty cents for each subject.

Contributions and Correspondence.

RELATION OF TEACHER TO TRUSTEES. II.

BY DR. HODGINS, DEPUTY MINISTER OF EDUCATION.

The relation of a teacher to his trustees, although not in some

respects so tangible, is much more complex and delicate than that of the relation of teacher to teacher. The former is chiefly "legal" or "official" in its character, while the latter is largely social and fraternal. In European countries, chiefly on "the continent," the relation of the teacher to the parish, or local community, has for generations been clearly defined, and his official status has been tacitly recognized. But in Canada, and notably in Ontario, the relations of teacher and trustees are, I regret, in rural sections, as yet somewhat antagonistic. This feeling was evidenced years ago, when an effort was made to apply the "Master and Servants' Act" to the relation of teacher and trustees, but the Superior Courts wisely decided that it did not apply.

In cities and large towns this feeling of want of harmony does not exist, as there the identity of the individual teacher is lost in that of numbers. Thus in Toronto there are about 140 teachers, but only 18 trustees. Except, therefore, as chairman of a special committee, the trustees and teachers of a city rarely come into contact. In the rural sections the numerical relations are reversed, and, as a general rule, there are three trustees to one teacher. These gentlemen, anxiously alive to the effects of the maximum and minimum of salary on the pockets of their constituents, are often disposed, even against their better judgment, to "drive a hard bargain" with the teacher. Another element frequently obtrudes here which intensifies rather than moderates this feeling. Teachers outbid each other. The old County Board certificated teacher (although diminishing year by year) is the chief rival of the younger teacher with more modern ideas and higher qualifications. Then, again, the third-class teacher outbids the second-class, and the second outbids the first-class, while the female teachers of the like grades outbid, or, as I should say with more deference, are "available" at a lower rate of salary than their male rivals of like qualification. All this tends to render the relation of teacher and trustees less harmonious and agreeable than it would otherwise be, if trustees would more generously discriminate in the matter of salary between the grades of certificate and the really superior qualifications of the better trained teacher.

The school legislation of 1871 and subsequent regulations have largely curtailed a growing evil connected with the employment of teachers. Trustees, or trustees' neighbors, having relatives desirous of being employed as teachers in their neighborhood, used to bring an unusual degree of pressure on the late township superintendents, and latterly on the County Inspector, but with much less effect, if any, on the latter, so as to get these relatives passed through the ordeal of examination with the application of the least possible test as to their qualification. The evil, though local, was nevertheless somewhat widespread, and in some localities prevented for a time the employment of duly qualified teachers. The evil still exists in a modified form; but under our present system it has been almost reduced to a minimum.

One or two other disturbing elements in the relation of trustees and teachers still exist, and which, without penal or special legislation (which is always to be deprecated) it has been found very difficult to remove. The first is one to which public attention has of late been frequently called. It is a breach of faith on the part of teachers to keep their engagements with trustees. This breach takes place at one of two periods of the agreement, and involves trustees in serious embarrassment. The one generally occurs just at the opening of the school, when the teacher is first engaged. The offer of the trustees is accepted, but in many cases evidently with the mental reservation that if a better one can be secured from some other school corporation before the school opens, the first engagement shall not be considered as binding. The other takes place subsequently, either when the place becomes distasteful to the teacher, or a better situation is offered. In either case the

breach of agreement is highly reprehensible, and is *prima facie* an evidence that the teacher concerned is not the person who should be entrusted with the training and instruction of children.

This view has been pressed upon the Department, and the plea urged for penal legislation in the matter is, that if in matters of business like this teachers are dishonorable, if not unprincipled, they should be *ipso facto* declared disqualified from holding the office of teacher in a public school.

On the other hand, trustees sometimes do the same thing, leaving the teacher without redress; and they sometimes, also, in other ways provoke sharp practice on the part of teachers. Thus in some cases they seek to secure an agreement with a teacher which will terminate at the end of the half year (30th June), or just before the commencement of the summer holidays. This is done with the double object of saving six weeks' salary and of preventing the teacher from claiming payment for the holidays to which he is legitimately entitled after his six months' arduous labours, and which the School Act expressly reserves to him at the end of the term.

Thus a feeling of latent antagonism is developed on both sides, owing to the fact that the rights of trustees on the one hand, and the just claims of the teacher on the other, have not been fully and frankly admitted by the opposite party. The Department has sought to interpose by friendly counsel and advice, where its offices have been sought with that view. It has also sanctioned a form of agreement, of general application, which guards both interests, and yet secures the rights of both. In regard to the vexed question of right to the holidays, after willing or unwilling breach of agreement on the part of the teacher, it has laid down the following principles, which are designed to apply to such cases:—If the period for which the teacher is engaged be completed at "the expiration of the School Term," he is justly entitled to payment for the holidays or vacation immediately following that term. If, however, the agreement has still a further time to run, and was broken by the teacher withdrawing from the school before the time mentioned in that agreement, or failing to get a certificate renewed (which has expired before the end of the term), it would be optional with the trustees to allow for the holidays or vacation.

It must, however, be borne in mind that this view applies only to cases where, by the non-compliance of the teacher to continue his professional duties during the term of his agreement, the interests of the school have been injuriously affected. In all other cases the teacher would be entitled to be paid for the holidays or vacations; and a liberal and equitable interpretation should be given to the law and the agreement on both sides. For instance, where the trustees consent to the retirement of the teacher, by accepting his resignation, they become parties to the dissolution of the agreement, and thus give him a legal and equitable right to be paid for the holidays and vacations, should any occur at the close of the term specified in the letter of resignation which has been accepted.

Thus much in regard to the relation of teacher to trustee legally and financially. But there are other and more important ones, to which I shall briefly refer. To the trustee is committed the merely business (or as I may more properly term it, the purely secular) part of providing the local machinery for carrying on the great work of education. But to the teacher is entrusted in reality the momentous work of gradually moulding character. He has also largely the power of fixing or undermining principles, of developing or dwarfing intellect, of stimulating or discouraging industry, and of aiding the youthful and unskilled architect of life's superstructure—here and hereafter—to build that superstructure and his hopes of heaven "on the rock" or "in the sand."

I know that this aspect of the question of the relation of teacher

and trustee is rarely thought of, much less realized, in the prosaic act of employing a teacher. But the reality of the truth itself, and the incident of the teacher's power and influence over pupils, arising out of the relation of trustee and teacher, are no less momentous facts in the case. Dr. Arnold, who must be regarded as the "great model" in our days of a "great teacher," was, under God, no less largely the moulder and fashioner of the character of his boys than is the humblest teacher in the backwoods (in a greater or less degree) that of the boys and girls who come daily to him for instruction, counsel and discipline.

The work of the teacher and the success of the school would be greatly promoted if trustees would personally enter more heartily into the arduous labors of the teacher. They could do so by visiting him now and then in the school, by encouraging him in his work, and thus strengthen his hands. They could also see that he is supplied with the necessary material and appliances for the efficient discharge of his duties. The routine and drudgery of a school room year after year are very wearing, and tell on the mental and physical resources of the teacher, and especially on those of a young teacher accustomed to an active life and abundance of outdoor exercise. A little consideration and sympathy would lighten this labor and cheer the heart of the laborer in his efforts to aid the youth of the neighborhood in their efforts to reach a higher plane of intellectual life, light and knowledge.

Toronto, January, 1879.

KINDERGARTEN DRAWING.

BY MISS ADA MAREAN, TORONTO.

I.

The "Froebel School" of Kindergarten drawing consists of a simple but interesting series of combinations of the simplest elements of inventive and industrial drawing. It sets aside all attempts at merely mechanical copying as worthless. It furnishes material and opens the way immediately for the exercise and cultivation of the inventive powers.

This, however, simple as it is, cannot be introduced into the Kindergarten with the very little children just stepping from the threshold of babyhood. One lifetime was too short in which to complete the great work Froebel began, and it remained for those of his followers who were thoroughly imbued with his spirit to carry out his plans in many minor details. The want here indicated, as well as many others, has been supplied most successfully by Mrs. Kraus-Boelte, of New York city. She was for several years associated with Madame Froebel, and has by long experience, careful loving study, and great natural abilities, gained a wonderful insight into the needs and working of the minds of these little buds of humanity.

Her system of

"BABY DRAWING,"

arranged in strict accordance with the principles of the advanced "Froebel School," is marvellous in simplicity and beauty, and cannot fail to delight the hearts and meet the full approbation of all earnest primary teachers. It leads the little one, by natural and easy steps, from its own first independent expression of a desire to represent the material objects with which it is familiar, up to an intelligent understanding of the first principles of the inventive and industrial drawing of the schools.

No doubt, at first, a little child's pleasure in the possession of a slate and pencil is partly due to the fact that a noise results from his action in bringing the two in contact. He soon discovers how

other results follow his action, and his imagination discovers striking resemblances between his random scrawls and familiar objects around him. Without discouraging these efforts as worthless, or in any way lessening the child's pleasure in his own work, the mother (for this work should begin in the nursery) or kindergartner, by skilful use of her superior knowledge, can turn all this activity to profit, and make it a means of mental improvement. She has but to supply proper material, and lead the way by careful and not too frequent suggestions. The child's play is not interrupted, but continued with increased pleasure and growing interest, in proportion to the degree of interest awakened.

If a little child should be directed to make a row of straight lines of the same length across his slate, it would be not only an uninteresting task, but an impossibility for the clumsy little fingers without some guide. To meet this last difficulty, the slates and drawing books used are lightly ruled in squares of one-eighth of an inch in size, furnishing a guide for both perpendicular and horizontal lines of a given length. But how shall this work be made interesting? There is no meaning to the child in these straight lines, and if it is insisted that this work must be done, the activity becomes toil, and the slate and pencil are no longer friends. But let the kindergartner indicate the work to be done, and speak of these lines as soldiers marching up the street, in regular order, or school children marching at the tap of the bell, and the child's imagination is all alive in a moment. He will even imitate the drum or sing the song the children are singing in their march. The horizontal lines are soldiers asleep or children in bed, etc., etc. The unsteady lines will be disorderly soldiers or children, and an effort will be made to have as few as possible.

The same is repeated with a promise of something new to be brought out by a little further effort. When finished, the lines are joined two and two by a horizontal line drawn at the top, and immediately all are in the dining room of a hotel, with its long rows of tables, or in the show-room of the cabinet-maker. A little conversation may follow as to the contents and use of these tables, and also the various materials used in their construction. An exercise in counting can be introduced here naturally. The necessity for leaving every alternate space between the tables vacant requires thought, and in a simple way the mind is at work with pleasure and profit. Another row of soldiers, joined at the lower side of the square, furnishes the gardener with flower-pots. Another row, joined at both top and bottom, contain, if you can believe the assertions of the workmen, unlimited treasures.

Lines two squares in length are next in order, and the child draws each line while counting one, two, pausing an instant at the end of the first length to insure the attention necessary for making the lines of equal length. These lines are treated in a manner similar to those of the first length, only care should be taken that the work has enough originality to avoid monotony. Lines of the second length are drawn two or three squares apart, and a horizontal line drawn from the middle of one to the middle of the other, and a row of beds is complete. A short slanting line drawn from the head indicates the pillow, etc. The first and second lengths are then combined. The child draws a row of men and boys; a tall one, then a short one, etc. A horizontal line drawn from the top of the short one to the middle of the taller one, forms a chair. A similar combination with the lines even at the top and closed above and below forms a flag, which may be still further finished by drawing the diagonals of the square inclosed.

The next step requires more thought and a little practical knowledge of numbers. The perpendicular lines are to be made at a distance of two squares apart. These joined at the top form long tables, joined at the bottom window gardens, joined at top and bottom they form mamma's work box. A line drawn parallel with

the top a little above the middle indicates the line where the cover closes over the box, a little dot below marks the keyhole. All these little details help to keep up the interest in the work. A description of the contents, if given by the children, exercises the memory in recalling the various sewing implements found in mamma's work-box. The oblong is repeated and the diagonals drawn, and an envelope is ready for the postman, and loving messages and bits of news for papa are inclosed; then a dot placed in the corner indicates the seal.

By this time the little people will have faith enough to believe that the kindergartner can and will make play out of everything, and they stand ready for any undertaking, sure that pleasure will come out of whatever she plans for them.

With the little ones the work may be continued in this way for a long time, the work already described being only the introduction to this part of the system. Children who show any indication of weariness, because of the extreme simplicity of the work, should not be held to work which has become merely mechanical.

There is a love of symmetry natural to every mind, in some more active than in others, but enough in every one to make the cultivation of that taste profitable and desirable. All the occupations of the Kindergarten are arranged according to the "law of opposites," which lies at the foundation of all symmetrical forms; and are designed especially to cultivate the mind in that important direction. The children delight in working out what are known in the Kindergarten as "Forms of Beauty." The simplest of these forms begins with a perpendicular line of the first length as a centre. Other lines of the same kind are drawn above, below, at the right and left, at equal distances from the first; or, the lines may be drawn at the upper right and lower left sides, and at the upper left and lower right. These forms are exceedingly pretty, and admit of a variety of arrangement in carrying out. Careless children need close watching, that the sides be kept evenly balanced; but no line should be drawn at one point at any time, and the lines should be always at direct opposites. Pretty borders of various kinds are made by repeating the centre of one of these forms at even distances. The same plan is carried out in the horizontal lines. The horizontal and perpendicular lines are then combined, forming right angles in four different positions. When the angle is at the upper side of the square, it represents a person making a profound bow, either to the right or to the left. When the angle is at the lower side, the person has fallen on the ice, or it may be a boot, etc.

The four angles, touching one square on the outside, form a centre for a symmetrical form. The same angles reversed and inclosing nine squares form another centre. The square is next in order, and can be treated in three ways. One square is used as a centre, and others joined to it in the corners, etc; a like centre has the surrounding squares joined to it in the sides; and thirdly, the squares are entirely separate and may be arranged around a centre of one or four as desirable. All this work is repeated in lines of the second and third length.

From the various combinations of the perpendicular and horizontal lines given, we proceed to the combinations of the direct slanting line. This, with the half slanting and curved lines, will be treated in another article.

FAULT FINDING.

BY HENRY BEERS, MODEL SCHOOL MASTER, PERTH.

Teachers should avoid the habit some have of continual fault finding. If there were any excuse for doing that which is wrong,

then, perhaps, this fault might be excused, for I believe it arises chiefly from two causes,—either the teacher is not in good health, or he is over-anxious for the advancement of his pupils. Of course, if the teacher is bilious, he cannot help being peevish or dissatisfied with everything around him. When this is the case, I would recommend the fault-finder to lay aside his books for a few evenings and spend the time in walking, or football, or boating; I can assure him that this will bring him back to a pleasant state of mind. The other cause I mentioned for this bad habit of fault-finding is an over-anxious desire for the advancement of his pupils. This fault is only a virtue carried to excess, and here, as in the other case, if faults were at all excusable, this one would be; but they are in no case excusable, for in all cases they work evil; therefore, if faults are pointed out to us, or if we discover them in ourselves, we must take instant means to cure them. But some will say, What would you have me do then; am I to let my children do as they please in order to avoid this habit of fault-finding? Bear in mind, please, that it is against the habit of continual fault-finding that I am now speaking. I am aware that there will be only too much occasion for scolding, and it is to guard against carrying the thing to excess that I wish to warn you. In the execution of your duties in the school it will be well not to be extreme, at all times, to mark what is amiss. You will frequently, if you are judicious, find occasion not to see many little mischievous tricks of the children. Remember that though you have told them that these things are wrong, yet they are but children, and are brimful of life and energy, which must find a vent. If you can make them use this superfluous energy in improving themselves your success will be so much the greater; but if you fail, do not let it make you too prone to find fault.

I do not wish you to think from what I have said above that you need not be too watchful of what goes on in school; on the contrary, I would recommend the utmost vigilance. I have heard some persons say that when they were at school, they fancied the teacher must have eyes in the back of his head, for he was sure to catch them in their mischief. Now, if you can get your pupils to imagine this of you, it will help you greatly to keep order. To eat fruit, or read a story book, or whittle a desk, right under a teacher's eyes, is something worth doing in the estimation of many boys, and there are teachers who do not detect these things. It should be your aim to impress the pupils with the belief that from the time of coming into school, until leaving the same, they can do nothing without being detected; they will then be very careful to do that which is proper, and will not form those bad habits too frequently found in school. Besides making them believe that you see all that is going on, you must impress them with the feeling that you will be firm and consistent in reproving them for their misdeeds. To overlook at one time what you will punish at another is to offer a temptation to the child to commit the fault; for, as every soldier going to war knows that many will not return, yet feels sure he himself will be safe, so the pupil thinks that others may be caught but he will escape.

To the Editor of the Canada School Journal.

SIR,—In a late number of your journal I noticed a paragraph in which were given a few amazing specimens of the answers of youthful candidates at examinations. I happen to have a great deal to do with examinations here, and it may perhaps amuse some of your readers if I quote a few of the answers that have recently come under my notice.

In answer to questions on Grammar and Parsing I have had the following replies:—

"A Verb is Transitive when the subject passes to the object."
 "An intransitive verb shows that the subject does nothing."

"An Adverb is a word which modifies most other parts of speech."

"An Adverb is a word used instead of a Verb."

"Adjectives are words used with nouns to denote some quality or attribute about which the Noun stands for, and clearly shows whether we wish to denote its superiority or inferiority it above or below the standard of which we are speaking about."

"Superlative degree is the highest an adjective can go."

"The comparative degree is that which gives a more decisive appearance to the word than the positive degree."

"Comparative degree is when the adjective is more so, and superlative most."

"Gender is the infliction of a noun as regards things; sex is the infliction of a noun as regards living beings."

"There are three degrees by which we can class the whole human family: masculine, feminine, and neuter."

Examples of Gender: "Masculine *hill*, feminine *valley*;" "masculine *umbrella*, feminine *parasol*;" "masculine *church*, feminine *chapel*."

"The voice of a verb shows whether you do the deed yourself, or employ some one else."

"A Conjunction is a word which joins a sentence. There are two kinds, *copulative* and *junctive*."

"It has been proved that there is only one relative pronoun, that is *we*."

"*Full*—part indicative of the verb to *fill*."

"*Bring*—past tense *brung*, past participle *brung*."

"By the suffix is meant that the person or thing spoken of possesses the qualities of the prefix."

"In this list (of verbs) *lay* is the only transitive verb, because you can lay an egg."

"The Noun *tears* is only used in the plural, because we don't cry out of one eye without letting tears out of both."

In answer to questions on English Literature I have had the following:—

"Shakespeare was born at Stratford-on-Avon. He was well up in his history, as may be seen by what he knew of the beings who lived before his day."

"Shakespeare was born at the town of Mertoun, and as he grew up he took a fancy to writing plays and other things; for instance, he made up the game of chess."

In Geography I have been told:

"The waves in the ocean are caused by the rotation of the earth."

"The position of the sun is the cause of the length of day and night in the different seasons. It is also due to the attraction of the sun and moon."

"The Rhone rises in the Bay of Biscay and flows through Germany."

"The Nile starts in Egypt, flows down through Nubia and the great Sahara and Abyssinia and down towards Natal, where it empties itself into the Gulf of Zanzibar."

"The Nile is one of the oldest rivers on record."

As quotations from the Sermon on the Mount I have seen:

"Blessed are they that laugh now, for they shall weep."

"Blessed are they that weep now, for they shall laugh."

"Blessed are the poor, for they shall be rich."

"Blessed are they that are persecuted for covetousness' sake."

The following was a short essay on Self-control:—

"Self-control.—He who can master the can master the world. But alas! thou hast fled from me to-day, or I might have done what I have left undone. I shall go back from whence I came, and try and find thee, that when I re-appear in this place I may be a lion, as I am as yet but a lamb."

I remain, yours faithfully,

C. P. MASON.

Mathematical Department.

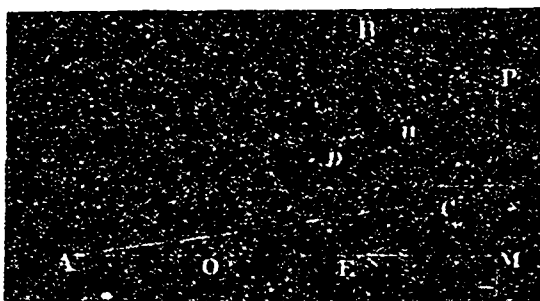
Communications intended for this part of the JOURNAL should be on separate sheets, written on only one side, and properly paged to prevent mistakes.
 ALFRED BAKER, M.A., Editor.

HOW TO DRAW A STRAIGHT LINE.

We usually tell our pupils at the commencement of their geometrical studies that Euclid supposes placed at our disposal two instruments, the compass and ruler, to enable us to describe a circle,

and to draw a straight line. The practical utility of the science will evidently, in a measure, depend on the mechanical accuracy with which these two constructions can be effected. The degree of precision to which we may attain in the description of circles is unlimited; we require two movable points having the distance between them maintained invariable, and these points having any degree of fineness may readily be obtained, and wood or metal to which to secure them may always be found sufficiently rigid to keep the distance between them unchanged. But what certain practical method have we of drawing a straight line? Euclid has tried to tell us what a straight line is, but even if his definition gave us information, which it does not, we desire something more than knowledge of what straight lines are,—we wish to use them. It will now be suggested that we employ the ruler. But what shall we do if the ruler be not straight? True, we have certain infallible methods of testing whether the ruler possess the desired property or not; yet if these tests simply reveal the imperfection of our instrument without helping us to remedy it, we are as far from our object as ever. It will be seen at once that there is a great difference between the methods of describing a circle and of drawing a straight line. Were we to apply the ruler method to circles, we would require a circle to describe a circle,—would require a circular lumina, and would make the figure by running our pencil round the edge.

We propose in the present article to show how a straight line may be drawn without a straight ruler, but by a combination of circular motions. That such an enquiry may be of importance in mechanics, will appear when we consider that Watt's *Parallel Motion* is an unsuccessful attempt to develop rectilinear from circular motion. Watt's contrivance, in its simplest form, consists of two equal bars AB, CD , with their extremities B, C connected by a third. Let AB, CD be placed parallel to one another, BC at right angles to both of them, and A, D on opposite sides of BC . In this position let the extremities A and D be pivoted to the table, and it will be found that the middle point of BC describes not a straight line, but an elongated figure 8. What Watt's discovery failed to effect is attained by the invention of Peaucellier, an officer of Engineers in the French army. The contrivance of Peaucellier will be readily understood from the accompanying figure.



ED, DC, CP, PB are four equal links with pivots at B, D, C, P . AB, AC are equal links pivoted to the table or drawing board at A . DO is a seventh link pivoted to the table at O , AO being equal to OD . The links move freely about the pivots; A and O are the only fixed points in the figure. When the link-work is in motion, AB, AC turning about A , and OD about O , a pencil at P will trace a straight line.

Draw PM, Bn perpendicular to AO, AP respectively. Describe the semicircle ADE with centre O . Join DE .

From the symmetry of the figure A, D, P are in the same straight line. Also from similar triangles ADE, AMP

$$AD \cdot AP = AE \cdot AM. \quad (1)$$

$$\text{Again } AB^2 = An^2 + Bn^2,$$

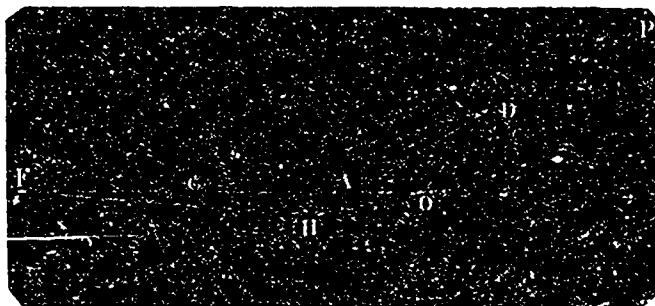
$$BP^2 = Pn^2 + Bn^2;$$

$$\text{therefore } AB^2 - BP^2 = An^2 - Pn^2 = (An + Pn)(An - Pn) = AP \cdot AD.$$

Hence AP, AD is constant, and being once equal to AE, AM , must always be so, and the point P cannot leave the straight line PM . For if it did, let AD cut this line in P' . Then by (1), $AD \cdot AP'$ is equal to $AE \cdot AM$. But $AD \cdot AP$ is always equal to $AE \cdot AM$. Therefore $AD \cdot AP'$ is equal to $AD \cdot AP$, which is impossible. The locus of P must, then, be the straight line PM .

The links may be made of pasteboard: we have found the best for the purpose to be the stiff kind used by bookbinders, at whose establishments it may be cut into strips of suitable width,—no inconsiderable labor with an ordinary knife. The pivots are easily made of pieces of catgut, the heads of the pivots being formed by pressing the face of a hot chisel on the ends of the gut.

Another interesting property of the above instrument is that with a slight modification it enables us to describe a portion of a circle of any given radius, however great.



For suppose AO unequal to OD ,—less suppose (Fig. 2). A, O, D and P are the same as in Fig. 1. Make the angle APF equal to $\angle ADO$. Draw DG parallel to $P'F$. Let DA meet the circle again in H , and join FH, HO, OP . We shall show that PF and FA are constant, i.e., that P moves on the circumference of a circle of which F is the centre, and FP the radius.

$$\frac{FP}{FA} = \frac{GD}{DA}; \text{ and } \frac{GD}{DO} = \frac{GA}{AO};$$

$$\therefore \frac{FP}{FA} = \frac{GA}{DA} \cdot \frac{DO}{AO} = \frac{FA}{AP} \cdot \frac{DO}{AO};$$

$$\therefore \frac{FP}{FA} = \frac{DO}{AO}; \text{ or } FP = DO \cdot \frac{FA}{AO} = DO \cdot \frac{PA}{AH}; \text{ Euc. VI. 15, the}$$

triangles FAH, PAO being equal in area.

Again, $AP \cdot AD = AB^2 - BP^2$, Fig. 1.

$$\text{Also, } AH \cdot AD = OD^2 - AO^2;$$

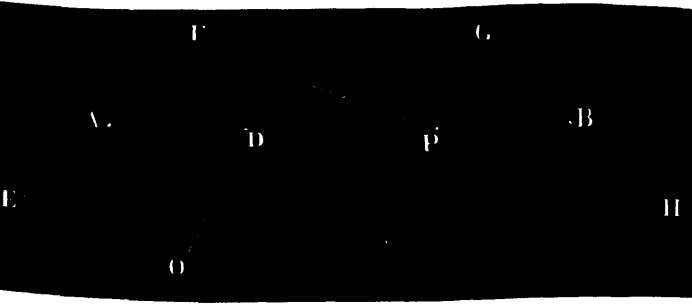
$$\therefore \frac{AP}{AH} = \frac{AB^2 - BP^2}{OD^2 - AO^2}.$$

$$\text{But } FP = DO \cdot \frac{PA}{AH};$$

$$\therefore FP = DO \cdot \frac{AB^2 - BP^2}{OD^2 - AO^2}. \quad (1).$$

Hence FP is constant; and since we have shown that $FA = \frac{AO}{DO} \cdot FP$, it follows that FA is constant also, i.e., the locus of P is a circle whose radius is FP . From (1) it appears that, by diminishing the difference between OD and OA , we may make the radius FP as great as we please, and also that we may cause it to have any assigned value, AO being then determined from the equation (1). We have thus a contrivance for describing a circle of radius ten miles, if need be.

It will be observed that in Peaucellier's apparatus seven links are employed. Rectilinear motion may be obtained with five links, as may be seen from figure 8. Here $EG = FH, EF = GH$, and A, D ,



P, B divide the links in the same proportion. At E, F, G, H are pivots. It may be shown that AD, AP is constant. If then a fifth link DO be introduced, and A and O be pivoted to the table, so that $AO = OD$, as before, P will describe a straight line. In this case it may be shown that BD, BP, AD, DB , and AP, PB are all constant, so that the fixed points may be made to occupy a variety of positions with respect to the link-work.

Since 1874, "Linkages" has been a matter of considerable enquiry in England, the practical part of the subject relating chiefly to straight line motion. We may mention that by link-work a method has been devised for trisecting any angle, a problem impossible by ordinary geometrical processes.

SOLUTIONS OF PROBLEMS.

We give the following solutions of problems which appeared in the December number of the JOURNAL. Already the receipt of some solutions of these problems was acknowledged, which solutions, unfortunately, were crowded out of the January number.

Prob. 1, December, by Mr. S. H. Parsons, of Montreal. Let the angles of incidence be a_1, a_2, a_3 . Then $2a_1 + 2a_2 + 2a_3 = 180^\circ$. $\therefore \tan 2a_1 + \tan 2a_2 + \tan 2a_3 = \tan 2a_1 \tan 2a_2 \tan 2a_3$. Also, from the law of reflection of elastic bodies, $\tan a_1 = e \tan a_2 = e^2 \tan a_3$. $\therefore \tan 2a_1 + \tan 2a_2 + \tan 2a_3 = \frac{2 \tan a_1}{1 - \tan^2 a_1} + \frac{2e \tan a_1}{e^2 - \tan^2 a_1} + \frac{2e^2 \tan a_1}{e^4 - \tan^2 a_1}$. Whence by adding and multiplying we have, after dividing by $\tan a_1$, $\tan^4 a_1 - \frac{e + 2e^2 + 4e^3 + 2e^4 + e^5}{1 + e + e^2} \tan^2 a_1 + e^4 = 0$; and $\tan a_1 = \sqrt{e + e^2 + e^3}$ or $\sqrt{\frac{e^3}{1 + e + e^2}}$. Also, since $\tan a_1$ was a factor, another and evident value of a_1 is 0.

Problem 2, December, by Mr. J. K. McGillivray, of Ridgetown. In each case draw a diagram of the dial, denoting the positions of the second, hour and minute hands, when at half-past four by S, H and M respectively; and let s, h and m respectively denote their positions when they fulfil the requirements of the problem. For the sake of brevity, let the number of minute divisions between any two points in the circumference of the dial be represented by the letters at these points. Since the ratios of the rates of the hands are as $1 : 12 : 720$, $\therefore Mm = 12 \times Hh$ and $Ss = 720 \times Hh$. Again, $ms = 2 \times hm = 2 \times Mm + 2 \times hM$; also, $SH = 3 \times HM = 3 \times Hh + 3 \times hM$; $\therefore Ss = 6 \times hM + 40 \times Hh$; $\therefore 720 \times Hh = 6 \times hM + 40 \times Hh$; $\therefore hM = \frac{1}{6}$ of $(680 \times Hh) = 113\frac{1}{3} \times Hh$; $\therefore HM = (113\frac{1}{3} + 1) \times Hh = 114\frac{1}{3} \times Hh$; $\therefore 7\frac{1}{3}$ minute divisions $= 114\frac{1}{3} \times Hh$; $\therefore Hh = \left(\frac{7}{114\frac{1}{3}}\right)$ minute divisions; $\therefore 720 \times Hh = \frac{7 \times 720}{114\frac{1}{3}} = 47\frac{7}{13}$ minute divisions; $\therefore 47\frac{7}{13}$ seconds after half-past four is the required time.

Proceeding similarly with second part of the question he obtains the correct result $26\frac{4}{13}$ seconds after half-past four.

Prob. 3, Dec., by Mr. McGillivray, of Ridgetown:

1 ox, in 1 day, eats $\frac{1}{17} \times \frac{1}{28}$ of grass in field at first + $\frac{1}{28}$ of what grows in 1 day; also, 1 ox in day eats $\frac{1}{12} \times \frac{1}{21}$ of grass in field at first + $\frac{1}{21}$ of what grows in 1 day; $\therefore (\frac{1}{17} - \frac{1}{28})$ of what grows in 1 day = $(\frac{1}{17} - \frac{1}{28})$ of grass on field at first; \therefore what grows in 1 day = $\frac{1}{17}$ of grass on field at first: \therefore whole amount of grass to be eaten in $25\frac{1}{2}$ days = $(25\frac{1}{2} \times \frac{1}{17} + \frac{1}{21})$ of grass on field at first. But 1 ox in $25\frac{1}{2}$ days eats $25\frac{1}{2} \times (\frac{1}{17} + \frac{1}{28} \times \frac{1}{28})$ of grass on field at first; \therefore the number of oxen required to eat the amount = $(25\frac{1}{2} \times \frac{1}{17} + \frac{1}{21}) \div \{25\frac{1}{2} \times (\frac{1}{17} + \frac{1}{28} \times \frac{1}{28})\}$ or $\frac{25\frac{1}{2}}{17} \div \frac{1}{28} = \frac{25\frac{1}{2}}{17} \times \frac{28}{1} = 19$.

Algebraic solution by Mr. S. H. Parsons, of Montreal.

Prob. 4, Dec., by Mr. T. P. Hall, Can. Lit. Inst., Woodstock.

Assume $1^4 + 2^4 + 3^4 + \dots + n^4 = A + Bn + Cn^2 + Dn^3 + \dots$. Then put $(n+1)$ for n & $1^4 + 2^4 + 3^4 + \dots + n^4 + (n+1)^4 = A + B(n+1) + C(n+1)^2 + D(n+1)^3 + \dots$

Subtract & $(n+1)^4 = B + C(2n+1) + D(3n^2 + 3n + 1) + E(4n^3 + 6n^2 + 4n + 1) + F(5n^4 + 10n^3 + 10n^2 + 5n + 1)$. We stop with F , since the coefficients G, H, \dots would all be $= 0$. Equating coefficients, $1 = 5F, 4 = 10F + 4E, 6 = 10F + 6E + 3D, 4 = 5F + 4E + 3D + 2C, 1 = B + C + D + E + F$. Whence $F = \frac{1}{5}, E = \frac{1}{5}, D = \frac{1}{5}, C = 0, B = -\frac{1}{5}$. $\therefore S = A - \frac{n}{30} + \frac{n^2}{3} + \frac{n^3}{2} + \frac{n^4}{5}$, in which put $n=1$ and A is found to be $= 0$.

$S = \frac{n^5}{5} + \frac{n^4}{2} + \frac{n^3}{3} - \frac{n}{30} = \frac{n}{30}(n+1)(2n+1)(3n^2+3n-1)$

$= \frac{1}{30}(3n^2+3n-1) \left(\frac{n}{6}\right)(n+1)(2n+1) = \frac{1}{30} \left\{ 6 \left(\frac{n^2+n}{2}\right) - 1 \right\} \left\{ \frac{n}{6}(n+1)(2n+1) \right\} = \frac{1}{30} \left\{ 6(1+2+3+\dots+n) - 1 \right\} (1^4 + 2^4 + 3^4 + \dots + n^4)$, since it is easily shown that $\frac{n^2+n}{2}$ is the sum of the series $1 + 2 + 3 + \dots + n$, and $\frac{n}{6}(n+1)(2n+1)$ the sum of $1^3 + 2^3 + 3^3 + \dots + n^3$, the latter by a process similar to the above.

The same solution of the problem is also given by Mr. A. Hay, Kingston.

Prob. 6, Dec., by Mr. Hay, of Kingston. From the given equations we obtain by transposition $n = a(x_1 + x_2) - x_1 = (a+1)(x_1 + x_2) - x_2$; whence $(a+1)(x_1 - x_2) = x_1 + x_2 = (a+3)(x_2 - x_1)$, from eqs. 3 and 4, $\therefore x_1 - x_2 = 0$, or $x_1 = x_2$. Substituting x_1 for x_2 in the four given equations we get

- $x_1 + n = a(x_1 + x_1), (1)$
- $x_2 + n = (a+1)(x_1 + x_1), (2)$
- $x_3 + n = (a+2)(x_1 + x_1), (3)$
- $x_4 + n = (a+3)(x_1 + x_1), (4)$

From (1) and (2), $\frac{x_1 + n}{x_1 + x_1} = a = \frac{x_2 + n}{x_1 + x_1} - 1$, whence $x_1 = -x_2$.

From (3) and (4), $\frac{x_3 + n}{x_1 + n} = \frac{a+2}{a+3}$ and thence $x_3 = \frac{n + (a+3)x_1}{a+2} = \frac{n - (a+3)x_1}{a+2}$. Putting these values for x_1, x_2 in the first equation $x_1 = \frac{-n}{a^2 + 8a + 1} = -x_2$, and $x_3 = \frac{n(a+2)}{a^2 + 8a + 1} = x_4$.

We are asked for the solution of the following:—How much money ought to be divided between A, B and C , so that A gets \$1.44, C \$2.25, and B as much per cent. more than A as C has more than B ?

It is evidently equivalent to a question in compound interest: a certain percentage added to \$1.44, and the same percentage added

to the sum, give \$2.25. Hence if $R = 1 + r$, $R^3 = 1 + 3r + 3r^2 + r^3$, or $R = 1 + r = 1.25$; $\therefore 25$ per cent. is answer.

The following problem is proposed:—Construct geometrically a series of lines in the following ratios,— $1 : \sqrt{2} : 2 : \sqrt{8}$, &c.

A. Burke, Newport. It seems customary to consider that the signs of multiplication and division give to quantities between which they stand more the character of a single quantity than do those of addition and subtraction, so that you would multiply first and add afterwards. See communication from Mr. Wilkins, of Chatham.

Mr. John Anderson, of Dixie, has sent in a correct solution (trigonometrical) of Prob. 8, in the December number.

To the Editor of the Canada School Journal.

DEAR SIR,—Question 5 on the Arithmetic paper for "Entrance to High Schools, December, 1878," appears to have caused, at least as far as the candidates from this locality were concerned, a great deal of needless trouble on account of a supposed ambiguity in the wording thereof. When, however, it is remembered that, time and again, various Teachers' Associations with which I have had the honor to be connected, have declared this and all similar questions ambiguous and incapable of a definite solution; when it is remembered that many have been and are still misled by certain fallacious assertions in some American mathematical works, to the effect that "one sign is as good as another," it is scarcely a matter of surprise that only ten per cent., at least as far as this county (Kent) was concerned, succeeded in rightly apprehending the question; and of these, it is but justice to add, all but two had been provisionally admitted to the High School at Chatham, and had been, therefore, drilled in similar questions till they thoroughly understood the right method of attacking them. Without further introduction I shall here state the question.

(5). Simplify
$$\frac{5\frac{1}{2} \text{ of } \frac{2}{3} \text{ of } 2\frac{1}{4} - 1 \div (\frac{1}{2} + \frac{1}{3})}{1 - \sqrt{\frac{1}{2}} \text{ of } (\frac{1}{2} + \frac{1}{3} \text{ of } \frac{2^0}{1^0})}$$

The candidates failed in their work by taking 1 from $2\frac{1}{4}$ in the numerator, and $\sqrt{\frac{1}{2}}$ from 1 in the denominator. They then seemed to think that in order to be consistent they must add $\frac{1}{2}$ to $\frac{1}{3}$, before multiplying it by the fraction $\frac{2^0}{1^0}$. Before stating the true method of working this and similar questions, I shall give some examples where no ambiguity can exist, or at least where none is admitted.

(1). $7 \times 1000 + 6 \times 100 + 4 + 10 + 8 = 7000 + 600 + 40 + 8 = 7648$. No one in his senses ever dreams of simplifying the first statement in this manner: $7 \times 1000 + 6 \times 100 + 4 \times 10 + 8 = 7 \times 1006 \times 104 \times 18 = 18, 182, 624$.

(2). $8 \times 10,000 + 5 \times 100 + 3 \times 10 + 9 = 80,000 + 500 + 30 + 9 = 80,539$. No one ever simplifies the first expression thus: $8 \times 10,000 + 5 \times 100 + 3 \times 10 + 9 = 8 \times 10,005 \times 103 \times 19 = 156,638,280$.

(3). $9 \times 10 + 5 \times 7 + 8 \times 6 - 4 \times 5 = 90 + 35 + 48 - 20 = 153$. No one would make it $9 \times 15 \times 15 \times 2 \times 5 = 20,250$.

(4). $84 - 76 + 108 - 81 = 25$. This being the indisputable solution, why should there be any difficulty about the following, which is the same question: $7 \times 12 - 4 \times 19 + 9 \times 12 - 243 \div 3$; or about this, which is the same carried out a little farther: $7 \times 8 \times 2 \times 2 - 2 \times 2 \times 19 + 9 \times 3 \times 3 \times 2 \times 2 - 3 \times 3 \times 3 \times 3 - 3$.

(5). $91 + 156 - 144 + 16 - 12 - 44 = 63$. Here there is no ambiguity. Why then should there be in the following method of writing the same question: $7 \times 13 + 2 \times 2 \times 17 - 3 \times 3 \times 2 \times 2 \times 2 \times 2 + 2 \times 2 \times 2 \times 2 - 3 \times 2 \times 2 \times 2 \div 2 - 8 \times 11 \div 2$?

(6). $8 \times 4 \times 5 - 6 \times 9 \times 8 + 7 \times 6 \div 8 - 3 \times 5 \div 15 + 18 \div 3 = 160 - 162 + 14 - 1 + 6 = 17$.

(7). $a \times b + c \times d + e \div f - g \times h - m \div n = ab + cd + \frac{e}{f} - gh - \frac{m}{n}$. Here there is no possible ambiguity, and what is

true in the generalized Algebra must of necessity be true in the particularized Arithmetic. The mere fact of indicating multiplication in Algebra by writing letters, i.e. unlike quantities, in juxtaposition, and of indicating division, both in Algebra and Arithmetic, by fractions, shows clearly that products and quotients ought to be simplified as far as possible before addition to or subtraction from any other term. Keeping this general principle in mind, the following method of working questions similar to those given above will be—

(1). Consider how many terms, i.e., parts connected by + and - signs, the expression contains.

(2). Simplify each term, if composed of factors.

(3). Perform the additions or subtractions indicated by the + or - signs.

Thus far for integers. Now what is true in the case of integers ought to be, nay, is true in the case of fractions: otherwise we introduce a needless and purposeless ambiguity simply to vindicate a position which is false in the case of integers. Again, too, it must

be borne in mind that $1 \div \frac{1}{2} = \frac{1}{\frac{1}{2}}$, and that $\frac{1}{2} \times \frac{1}{2}$ has no meaning

unless it mean $\frac{1}{2}$ of $\frac{1}{2}$; it being utterly impossible to add a fraction or even a whole number $\frac{1}{2}$ of a time, or anything less than once. Therefore in order to solve question (5) and similar questions the same general plan must be followed as in the case of integers. Thus in the numerator of question (5) there are two terms only, viz. $5\frac{1}{2}$ of $\frac{2}{3}$ of $2\frac{1}{4}$, and $1 \div (\frac{1}{2} + \frac{1}{3})$. In the denominator there are also

two, viz. 1 and $\sqrt{\frac{1}{2}}$ of $\left\{ \frac{1}{2} + \frac{1}{3} \text{ of } \frac{2^0}{1^0} \right\}$.

The first term of the numerator simplified is 2^2 , the second $\frac{1}{\frac{1}{2} + \frac{1}{3}} = \frac{6}{5}$. In like manner the second term of the denominator

becomes $\sqrt{\frac{1}{2}}$ of $\left\{ \frac{1}{2} + \frac{1}{3} \text{ of } \frac{2^0}{1^0} \right\}$; i.e., $\sqrt{\frac{1}{2}}$ of $\left\{ \frac{1}{2} + \frac{1}{3} \text{ of } \frac{1}{1} \right\}$; i.e., $\sqrt{\frac{1}{2}}$ of $\left\{ \frac{1}{2} + \frac{1}{3} \right\}$, i.e., $\sqrt{\frac{1}{2}}$ of $\frac{5}{6}$, i.e., $\frac{1}{2}$. Lastly, the fraction becomes $\frac{2^2 - \frac{6}{5}}{1 - \frac{1}{2}} = 2$.

Consider also the following example:

$$\frac{\frac{1}{2} \times 48\frac{2}{3} \times \frac{5}{6} - 2 \times 8\frac{1}{2} - 6 + (\frac{1}{7} \times 53\frac{1}{2} - \frac{11}{8}) \times \frac{1}{2}}{61 \times 1\frac{27}{29} \text{ of } \frac{3}{17} \div \frac{6}{17} + 60\frac{1}{2} - \frac{7}{20} \times 140\frac{1}{2} - \frac{5^0}{1^0} \times 5 - \frac{1}{2}} \times 5\frac{2}{7}$$

Here the numerator consists of three terms, the denominator of five. Simplifying the numerator it becomes $\frac{1}{2} - \frac{1}{2} + \frac{1}{2}$, and the denominator $1 + 60\frac{1}{2} - 1 - 59 - \frac{1}{2}$. Lastly, the fraction becomes $\frac{\frac{1}{2}}{\frac{1}{2}} \times \frac{2}{7} = \frac{1}{7} = 8\frac{1}{8}$.

Those who desire to pursue this subject will find it referred to in Smith & McMurchy's Elementary Arithmetic, page 85, Art. 79, Ex. 4 (1877 Ed.); Smith & McMurchy's Advanced Arithmetic, p. 104, Art. 114; Hamblin Smith's Arithmetic, Eng. Ed., p. 62, Art. 78; and Hamblin Smith's Arithmetic, Canadian Edition, III. Ed., pp. 67 & 68, Art. 85, Notes 1, 2, 3, 4.

They will also find that in the older text-books, the first step in the rules for addition and subtraction of fractions is to simplify all compound and complex fractions before reducing to a common denominator; and such expressions as $\frac{1}{2} \times 7\frac{1}{2} \times \frac{1}{7}$ and $\frac{1}{2} \div \frac{1}{7}$ are, to all intents and purposes, either compound and complex fractions or—nothing.

Lastly, in all such expressions as $\frac{1}{7} \times 52\frac{1}{2} \div 1\frac{1}{8} \times \frac{1}{2}$ there is no real ambiguity, for the signs of multiplication and division are of equal importance, and thus the above is $\frac{1}{7}$ of $\frac{52\frac{1}{2}}{1\frac{1}{8}} \times \frac{1}{2}$ and not $\frac{1}{7}$ of $\frac{52\frac{1}{2}}{1\frac{1}{8} \times \frac{1}{2}}$; while $(\frac{1}{7} \times 52\frac{1}{2}) \div (1\frac{1}{8} \times \frac{1}{2})$ must be read $\frac{\frac{1}{7} \text{ of } 52\frac{1}{2}}{1\frac{1}{8} \times \frac{1}{2}}$

Thanking you for your kindness in inserting this communication, I remain, yours sincerely,

D. F. HENRY WILKINS, B.A.,

Bac. App. Sci., *Mathematical Master, Chatham High School.*
Chatham, Jan. 6th, 1879.

Practical Department.

CONVERSATIONAL COLUMN.

At the recent examination for admission to High Schools, one candidate, in answering one of the questions on the English History paper, gave a lucid summary of Canadian politics. In answer to the question, "What was the Reform Bill? When was it passed, and why was its passing an important event?" he said: It was a Bill to allow Reformers to be elected to Parliament. It was passed about 1856. Before that time only Conservatives could be elected.

At the Intermediate, a candidate named as the three great epic poets Homer, John Bunyan and Horace Greely.

Can you suggest any means of preventing bad language and other bad habits at Public Schools by boys who are well trained at home? This is an important question. The answer is: The bad habits are not acquired in school, but in the school-yard and on the street going to and coming from school. In cities and towns parents should insist on their children coming home to dinner. They should fix a certain reasonable time in which their children can walk to and from the school, and they should insist on their reaching home in that time. They should also keep them at home in the morning and at noon until they have merely time to reach the school say ten minutes before the opening of the classes. This will reduce the evil to a minimum. A teacher should always be in the yard, if possible, and it is possible in a graded school, during recess. It is quite as important for a teacher to be with his pupils during the fifteen minutes of recess as during any fifteen minutes of the arithmetic hour, or any other hour during the day. It is a serious question whether in cities and towns recesses as now given should not be entirely dispensed with, and five minutes of proper exercise, accompanied with singing, taken at the close of each hour instead. In junior divisions two minutes might be profitably spent in this manner at the end of each half hour.

While admitting the difficulty referred to in the question, it must be remembered that many parents conveniently saddle the burden of their own neglect and utter want of judgment on the public schools. If school registers are consulted it will be found that very few who attended school regularly two hundred days in the year were ever in penitentiary. The bad habits are learned while on the streets, or at the "corners." Keep the boys at school during the day, and at home after seven in the evening, and most of their bad habits will remain unlearned.

MISTAKES IN TEACHING.

IV.

It is a mistake to tell pupils what they know already or can be led to find out for themselves as the result of their previous knowledge.—

Telling is not teaching. Lecturing or sermonizing is not teaching. The teacher should lead or guide his pupils through the garden of knowledge, and show them which kinds of fruit are beneficial and which injurious; he should also show them the best means for obtaining the fruit, but he should not pluck it for them, and eat it for them, and digest it for them. He should teach his scholars how to think; he should not do the thinking for them.

Professor Tyndall says: "Looking backward from my present standpoint over the earnest past, a boyhood fond of play and physical action, but averse to school work, lies before me. The aversion did not arise from intellectual apathy or want of appetite for knowledge, but mainly from the fact that my earliest teachers lacked the power of imparting vitality to what they taught."

No wonder that little fellows with so many germs of life and power in them waiting to be stirred into activity and vigor, should have an aversion to attend such a school. If a teacher is not acquainted with the wonderful nature of the mind he has to develop, and the natural order of the growth of its faculties, he should be very tolerant of truancy. The temptation to play "hooky" may sometimes come from imprisoned observant powers protesting against their most unjust neglect. Certain it is that, independent of the evil effects resulting from known disobedience, a boy would learn more in the fields and woods with the flowers and birds than in a school.

Let the pupils have a chance to enjoy the pleasures of *discovering* for themselves, and school will be to them not a prison, but a temple of joy. How children delight in overcoming a difficulty! How much greater is their satisfaction when they overcome it without aid from the teacher! The honor is then entirely the child's own. What a difference there is, too, in the results of teaching when the pupil is allowed to do his own share of the work! If an infant was always carried in arms it would never learn to walk. Each little effort it makes for itself gives new power and vigor to its muscles. So the child that is lifted over every obstacle by the strong mental arm of its teacher will become mentally crippled, and dependent upon others. It will lean, if it is trained to do so; and when it has to go forth into the world without its teacher for a helper, it will be unable to surmount the difficulties in its path. A pupil can never forget a fact learned practically, as the result of his own investigation. One boy learns by actually mixing yellow and blue colors that they form green, and discovers the effects of all the primary colors in forming secondary colors. Another is *told* the results of the combinations of the primary colors. He may even have these results exhibited by means of the most ingenious and elaborately colored charts. The results in the two cases will be vastly different. The second boy, ten years after leaving school, may remember, after a process of thought, that red and blue produce purple. The first does not need to go through any process of reasoning. He is not *conscious* of an effort in remembering. He *knows* it as he knows his name; that he has two hands, ten toes, &c.; that the weather is cold in winter; or as he knows any of the thousand and one facts which he has learned practically.

It may serve to illustrate the meaning of the foregoing remarks to give a few examples of teaching, or rather trying to teach, by *telling*.

1. In teaching an object lesson it is a mistake to tell the class that sponge is *soft*, ivory *hard*, steel *elastic*, glass *transparent*, the wall *opaque*, &c. The pupils themselves should be allowed, by actual handling and examination, to learn these things for themselves. The chief aim in teaching object lessons is not to give information, but to develop the child's faculties.

In teaching chemistry it was until lately regarded as the perfection of teaching to be able to tell clearly the relations of the elements

and their compounds to each other, and illustrate these relations by experiments performed by the master. Now, however, educators agree that this subject is not really taught until each student has actually performed the experiments himself. In this way only can the principles be taught so as to enable pupils to grasp, remember, and apply them.

There is more unnecessary *telling* done in teaching arithmetic than any other subject. Long, hard, unmeaning rules are memorized, often without even being explained by the teacher. The pupil is told to multiply at a certain time by a certain number, and then divide by something else, and so on, and he will get the answer. The class reaches a new exercise, say addition of fractions, and the teacher proceeds to show them how to do the work. He writes on the blackboard $\frac{1}{3} + \frac{5}{12}$, and says, frequently with his back to the class, "Now the L. C. M. of 3 and 12 is 12. 3 into 12 goes 4 times; $8 \times 7 = \frac{56}{24}$. 12 into 24 goes twice; $2 \times 5 = \frac{10}{24}$. Then $\frac{21}{24} + \frac{10}{24} = \frac{31}{24} = 1\frac{7}{24}$. How many think they can do another like that?" And an example is given on which they experiment. This is not an exaggerated specimen. The teacher does all. No use is made of the knowledge already possessed by the pupils. They are not asked whether the things to be added have the same name or not; whether they can add numbers of different denominations or not; so as to show the necessity for reducing the fractions to a common denominator. How easy it would be to ask the pupils to add £6 and 4s., to lead them to see that before adding them together they would have to be changed to the same name. How natural then to make the step from *pounds* and *shillings* to *eighths* and *twelfths*. This point having been reached by the class without any *telling* by the teacher, why should he do the work of reducing to a common denominator? The pupils can do this before they reach addition. Having done the reduction and obtained $\frac{3}{4} + \frac{1}{4}$ they should be told to add the two. No doubt more than half the class will obtain $\frac{4}{4}$ as the answer. How can they be led to see their error? Will it not do for the teacher to say "We never add the denominators?" Certainly not. Perhaps the best way to prevent such a mistake is to ask the class to write down $\frac{3}{4}$ in some other way. After a little thought one at least will suggest 21 *twenty-fourths*. This fact clearly understood, that the denominator is merely the *name*, and that it can be written in *letters* as well as *figures*, one half the difficulty in teaching fractions is removed. Having got this from the class, the example should be written down thus on the board: $\frac{21 \text{ twenty-fourths}}{10 \text{ twenty-fourths}}$ and another

placed beside it, such as $\frac{21 \text{ apples}}{10 \text{ apples}}$. Then ask the class whether they would add the *letters* in the names of the things to be added or not? The result will be gratifying. The class will not add *names* again. To reduce a mixed number to an improper fraction the pupils are told to "multiply the whole number by the denominator and add in the numerator, and under the result place the denominator." When they can repeat this, to them meaningless sentence, the teacher places an example on the board, and, without even questioning his class to make them apply the rule they have learned, he proceeds to "do" it. He says, $8\frac{3}{7}$; $8 \times 7 = 56 + 3 = 59$; now put 7 under the 59 and we get the answer $8\frac{3}{7}$. Why not let the class see that they are merely to work a simple example in reduction descending, the principles of which they learned long ago? To do so it is only necessary to write down the example thus: $\frac{8 \cdot 3}{\text{whole sevenths} \quad \text{lbs oz.}}$. It is then exactly similar to reducing $8 \cdot 3$ to ounces. The method of solution can then be drawn from the class, as well as the reason for putting the denominator under the answer. Writing 7 under 59 is merely an abbreviation to save writing "sevenths" after it.

Subtraction of mixed numbers should in a similar way be explained to the class to be a form of compound subtraction.

In reduction of denominate fractions the *rules* and *telling* are even worse than in any of the cases mentioned. When it is necessary to reduce $\frac{3}{4}$ of a £ to the fraction of a farthing, instead of giving a long rule absolutely without any living meaning to a child, why not say "If you had £3 to reduce to farthings, what would you first do? Multiply by 20 to reduce the pounds to shillings. Then do the same with fractions with whole numbers. Multiply first by 20. But which shall we multiply, the 3 or the 7? What is the 7? The name of the fraction. Would you multiply the name? No, not the name, but the number." Reduction descending in fractions will require no further explanation, and no rule need be given other than the rule given in dealing with whole numbers.

In reduction ascending a similar course may be adopted. Get the pupils to make the rule for fractions, by basing it on the rule already taught for whole numbers. For example, reduce $\frac{3}{4}$ of a farthing to the fraction of a pound. What would you first do, if this was a whole number? Divide by 4. What part of a number do you take when you divide by 4? The one-fourth. If we take the $\frac{1}{4}$ of a number then, what do we really do to it? We divide it by 4. Then if I take $\frac{1}{4}$ of $\frac{3}{4}$ do I divide it by 4? Yes. Let us indicate the work and we have $\frac{1}{4}$ of $\frac{3}{4}$. To divide this by 12, we take $\frac{1}{12}$ of it, and so on. When all the work is indicated, we have a compound fraction, which the pupils can of course already reduce to a simple one.

These few examples in fractions have been selected because it is in this subject that many teachers do their most meaningless teaching. Similar errors are committed all through the arithmetic. The pupils are told that 16 oz. make a lb., &c., instead of being set to work to find out the fact for themselves with a pair of scales. They are informed that 12 inches make one foot, &c., instead of being compelled to discover for themselves, by actual examination and comparison of the measures, the relations of the various lengths to each other. The "compound rules" and reduction are unfathomable mysteries to most children, because they are told to follow certain formal rules, instead of being allowed first to perform the various operations with actual money, or measures, and then to do mentally or on the slate the work which they have been doing with the real things. There is also room for a great deal of "objective" or "intuitive" teaching in geography, grammar, and the other subjects.

(To be continued.)

CALISTHENICS AND FREE GYMNASTICS. I.

Free Gymnastics are exercises performed without apparatus, such as bells, wands, clubs, &c. The following exercises are collected from various sources and arranged in classes. The instructions are given in language as simple as possible. A sufficient number is explained for ordinary school exercises; but the teacher may vary those given by *inventing* new exercises. If he does so, he should of course remember the following rules:—

1. Aim to force the shoulders backward and downward.
2. Expand the chest.
3. Give the neck and back, as well as the sides, plenty of exercise.

GENERAL RULES FOR TEACHERS.

1. Study and practise thoroughly an exercise and movement before you teach it.
2. Be prompt, decided and energetic in conducting drill and calisthenic exercises.

8. Speak in a *loud tone*, not in a *high key*.
4. Be *clear* and *definite* in giving instructions.
5. Do not follow the book *explanations slavishly*.
6. Warn pupils carefully against the *errors* commonly made in performing an exercise or movement.
7. Explain the object of each new movement before it is practised.
8. Do each movement slowly before asking your pupils to do it.
9. After giving a command, see that every pupil has followed your directions before you take another step.
10. Teach by *correcting errors* (neglecting this rule causes most failures). When teaching "by numbers" see that every pupil performs each part of the movement accurately before proceeding to the next.

11. Perform calisthenic exercises as much as possible in time with music. Any marching time, or even measure, will do. If you have no instrument, sing; if your class cannot sing, let them count.

12. Insist on the exercises being performed in an energetic manner; guard against listlessness.

13. Let the exercises be short.

The exercises given here may be performed by *both male and female pupils*. They should all be performed *in time with music*. Marches, waltzes, or any music in regular time will be found suitable, and the pupils may sing while going through the exercises, if no instrument of music be at hand. Occasionally one or two pupils may sing while the rest perform the motions. When an exercise is completed, and the teacher wishes to stop its practice, the class should be brought to *attention* by the word *steady*.

I. HEAD AND NECK EXERCISES.

Commands:—Head Exercise, No. 1, &c., by numbers; *one*, &c.

EXERCISE 1.—*One*. Swing the head towards the *left* shoulder.

Two. Swing the head towards the *right* shoulder.

Continue 1, 2, at least 5 times.

EXERCISE 2.—*One*. Roll the head towards the *left* shoulder. as though trying to look behind.

Two. Roll the head towards the *right*.

Continue 1, 2, at least 5 times.

EXERCISE 3.—*One*. Bend the head backwards without moving the shoulders.

Two. Bend the head forward without moving the shoulders.

Continue 1, 2, &c.

These should be done *slowly*.

II. ARM AND CHEST EXERCISES.

Commands, as before.

EXERCISE 1.—*One*. Hands clenched and thrown forcibly back as high as the shoulders, nails to the front.

Two. Throw them as high as possible.

Three. Bring them back to shoulders as in *one*.

Four. Bring them to the sides.

Continue 1, 2, 3, 4 at least five times.

The whole exercise should be performed with considerable energy.

EXERCISE 2. Same as last, except in No. *two*, when the hands are thrown to the *front* with the nails upwards.

EXERCISE 3.—*One*. Fingers of both hands on the shoulders.

Two. Left hand extended upwards as high as possible, palm inwards, right hand down to the full extent of the arm, palm to the front.

Three. As in *one*.

Four. As in *two*, with right hand up and left hand down.

The eyes should always follow the uplifted hand.

The exercise may be continued for some time, the hands being always brought on the shoulders between the extensions of the arms.

EXERCISE 4.—*One*. Both hands on the shoulders.

Two. Extend the arms to the side as far as possible on a line with the shoulder, palms up. Continue 1, 2, &c.

EXERCISE 5.—*One*. Meet the hands in front, backs together.

Two. Raise the hands to the chin slowly, backs together, touching the clothes as they ascend.

Three. Extend both hands at the same time.

Continue 1, 2, 3, &c.

EXERCISE 6. *One*. Both hands at the side of the body, thumbs to the rear, fingers to the front.

Two. Circle the left arm around the head three times, *pressing the shoulder back* when lowering the arm:

EXERCISE 7. Same as last exercise, with the *right* arm moving instead of the left.

EXERCISE 8. Same as 6 and 7, with the arms brought around the head *alternately*.

EXERCISE 9.—*One*. Extend the arms downward and to the front.

Two. Shut the hands tight.

Three. Open them smartly.

Continue 2 and 3.

EXERCISE 10.—*One*. Extend the arms to the right and left, as high as the shoulders, hands clenched, nails upwards.

Two. Roll the hands backward and forward ten times.

EXERCISE 11.—*One*. Place the clenched hands on the chest, knuckles to the front.

Two. Left hand forward to the full extent of the arm.

Three. Right hand forward and left back to chest.

Continue 2 and 3 ten times *with force*.

EXERCISE 12.—*One*. Bring the arms to the front as high as the shoulders, palms together.

Two. Rub the hands past each other lengthwise twenty times, *without bending the elbows*.

EXERCISE 13.—*One*. Place the left hand under the right shoulder, thumbs to the rear, and the right arm raised and bent over the head.

Two. Bend as far as possible to the left, and breathe deeply a few times.

EXERCISE 14. Same as 13, with arms reversed and body bending to the right.

III. COMBINATION EXERCISES.

Designed to bring the muscles of the whole system into vigorous play

EXERCISE 1.—*One*. Step to the *front* with the *left* foot, and raise the *right* hand, palm towards the head.

Two. Bring the *left* foot to the *rear* and raise the *left* hand. Continue 1, 2, &c.

Always look towards the uplifted hand.

EXERCISE 2.—*One*. Step to the *front* with the *right* foot, and raise the *left* hand.

Two. Bring the *right* foot to the *rear*, and raise the *right* hand. Glance towards uplifted hand as in Ex. 1. The *left* foot must be fixed in this exercise.

EXERCISE 3.—*One*. Step to the front with the *left* foot, and meet the backs of the hands together on the chest.

Two. Step to the rear with the *left* foot, and swing the hands to the rear with a *circular* motion, as far as possible.

The right foot remains fixed.

EXERCISE 4. Same as Ex. 3, with left foot fixed and right foot moving.

COMPETITIVE EXAMINATIONS IN THE COUNTY OF DURHAM.

Competitive Examinations have been held throughout the County of Durham for several years. The results of these examina-

tions have been highly satisfactory to the Township Councils, who vote a sum of money for the purpose, to the parents, and especially to the teachers who find it much easier to awaken an interest in their studies on the part of pupils.

The next examination will be held on Friday and Saturday, March 21st and 22nd, 1879, beginning each day at 9 a. m. Pupils will be divided into four classes—Special, Senior, Intermediate and Junior. Pupils in the Special class will be examined on Friday, and those in the other classes on Saturday. Pupils in the Special and Senior classes must be under 17 years of age, in the Intermediate under 14, and in the Junior under 12.

PROGRAMME FOR EXAMINATIONS :

Special Class—Arithmetic ; Algebra to Simple Equations inclusive ; Euclid, Book I., with exercises, and Book-keeping.

Senior—Arithmetic, Grammar, Geography, Reading, Spelling, Writing, as prescribed for IV. Class in Public Schools, with Canadian and British History during the reign of Victoria.

Intermediate—Same subjects as for Senior, omitting History.

Junior—As prescribed for III. Class.

In the Special Class, three general proficiency prizes and one prize for each subject will be offered. In the other Classes, eight proficiency prizes and one prize in each subject will be offered in each Township.

In order to obtain a prize 40 per cent. of the maximum marks must be obtained. Honor Cards will be awarded to pupils who obtain 40 per cent., but fail to obtain a prize.

In addition to the above, a Silver Medal will be given to the pupil who stands highest in each class in the County.

The questions will be printed, and the examination, except in Reading, will be conducted wholly in writing.

The prizes in the Senior, Intermediate and Junior classes in each Township will be awarded on the decision of Examiners appointed for the purpose, none of whom will be Teachers in the Township for which they are Examiners. The Medals will be awarded by the Central Committee of Examiners, who for this purpose will examine all the papers of the best candidates in each Township. They will also examine the papers of the Special Class, and award prizes.

Each School is allowed to send three pupils in each Class, but no pupil will be awarded more than two prizes in one Class.

In order to provide funds for procuring prizes, each School sending pupils shall contribute one dollar for each class represented, except the Special, and twenty-five cents for each pupil in every Class.

Notice of intending candidates, with age of each, must be sent to the undersigned not later than the 1st of March, and must be accompanied by certificate of age, signed by parent or guardian, Class for which entered, name of Teacher and Township, number of Section, and the prescribed fees. Parties enclosing postage stamps will please remit in nothing higher than 3 cent stamps.

Cavan and South Monaghan are united for this examination as heretofore.

It is earnestly hoped that the active exertions put forth by the County Association and the Inspector, in striving to make these Competitive Examinations still more effective for good, will be heartily responded to by Teachers and Trustees, in sending up a large number of candidates in each Township.

Materials for writing will be furnished at the examinations.

Any explanation may be obtained from the undersigned.

JOHN SQUAIR,

Sec. Teachers' Association, Co of Durham.

Bowmanville, January 21st, 1879.

MONTHLY REPORTS TO PARENTS.

It is important that a direct communication should be sent from the teacher to the parents of the pupils at least once a month. Believing that many teachers are anxious to obtain the very best possible form for such a report, we present the one used in the Toronto Public Schools as a basis for criticisms and suggestions. With the aid of these a model form will be prepared and published. We request all teachers and inspectors interested in the subject to aid, by giving any improvements they may be able to suggest, so that a very excellent form may be obtained.

In favor of the form in its present shape the following points of excellence may be noted :

1. One form does a pupil for six months. A great saving is thus effected.
2. The parents can see how the report of one month compares with those that have gone before. If monthly reports are sent on separate sheets they are generally lost.
3. The time of the teacher is economized, as the largest blanks require to be filled only once in six months.

TORONTO PUBLIC SCHOOLS.

Monthly Reports of a pupil in the Division of the School, for the half of the year 187

MONTHS	Total number of Lessons for the month.	Lessons perfect.	Lessons imperfect.	Good Conduct Marks.	Middemeanour Marks.	Total Good Marks.	Total Bad Marks.	Days absent.	Times Late.	Exercises neglected.	Standing in Class.	Name of Pupil who received the highest number of Good Marks.	Teacher's Signature.	Parent's Signature.
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Parents should sign and return this Report as soon as possible. If the Report is unsatisfactory, Parents should try to call at the School, to learn the reasons which caused the pupil to receive so many Discredit Marks. Lessons will be assigned for preparation at home each evening, in all classes but the 8th, 9th, and 10th Divisions. They will be made so short as not to interfere with the health or enjoyment of the scholars, and parents are respectfully urged to see that they are attended to properly.

NO TIME.

A note from a sterling Principal says : " I have nine assistant teachers, but I cannot induce them to take an education journal ; they say they have no time ! nor could I get them to read one if I pay for it myself ; no fact is so discouraging." This reminds us of a miracle performed upon ten persons ; only one, it appears, returned to give any thanks. " Where are the nine ? " was the question. For upon all of these ten teachers a great educational work has been wrought—a real miracle ; they are not barbarians, thanks to a different teaching ; they know something of the earth, the sea, the air ; something of God and Heaven. All of their real value has been derived from some educator who had time to tell

them this wonderful knowledge. Have they time, we wonder, to make frizzles, bangs, and trains to sweep the dirty school-room floor; to work crochet; to read novels, etc., etc.? Not at all! Those people who are so economical of their time that they cannot pray, find plenty of time to gossip, if nothing worse; those teachers who "have no time" to read upon education, find more time to waste in one year than a real teacher does in ten. These same teachers probably have no time to prepare themselves daily on the lessons the pupils are to recite. They enter to-day the same as yesterday; know no more, probably a little less. Teaching, to them, is turning round a question-crank; it is, as they manage it, about equal to the organ-grinder's business, only it is *so respectable*. They do not at all consider the claims the pupils may have upon them, that they enter fresh and bright each morning, so that the class look forward to their coming with delight. "She will have something to tell us to-day."

Those who complain for want of time to read on educational subjects are only teachers in name. They have sought the school for the purpose only of securing a little money, and hence the *spirit* of teaching is wanting; there is plenty of language that may be in measure and rhyme, and not be poetry, because the *spirit* of poetry is wanting. It produces no permanent effect upon its readers; so with this teaching.

Teachers, take time to make yourselves the best kind of teachers; take time to know more to-day about teaching than yesterday; take time to know the reason why knowledge, presented in a certain method, serves to develop the human mind, and presented differently, really produces stupidity. Take time to know the work of the great masters of your profession. Take time to prepare yourself daily to teach as well as the most faithful of your pupils do to recite. Take time to investigate the principles upon which your methods are based; take time to study over each pupil to see if you are doing him all the good you can. Take time to learn what other laborers in the field are doing. Take time so to live and act that your Creator will at each moment of the day say of your deeds "Well done, good and faithful servant."

PERSONALS.

Charles Clarkson, M.A., received a very handsome present from his pupils on leaving the Brockville Model School, to take charge of the High School in Seaforth.

Mr. John E. Bryant, formerly of the Whitby High School, and lately Head Master, Clinton High School, has been appointed Principal of the new Pickering College.

Mr. Livingston, S.S. No. 4, North Oxford, received a fine gold chain from his pupils at Christmas.

Mr. Metzler, assistant High School teacher in Listowell, has been presented by his pupils with a beautiful inkstand and time-piece combined, and a gold pen.

Miss L. Hollinger, Ferguson's Falls, was the recipient of a beautiful workbox and set of vases on parting with her pupils.

Mr. G. W. Field, the Second Master of the Seaforth High School, received at Christmas, a present of handsomely bound volumes of the poetical works of Cowper, Longfellow, Burns, Tennyson, Shakespeare, and Wordsworth.

At the close of last session, the pupils of Harriston Public School sent home three of their teachers happy. Mr. C. McPherson, Mr. Pringle, and Miss Jamieson were the recipients of handsome presents.

Mr. P. N. Davy, late Head Master of the Millbrook Public School, has received an appointment in the Toronto Model School.

Mr. S. Nethercott received several useful articles from his pupils in Mitchell at the close of last session. Mr. Sinclair, of the same town, received some elegantly bound volumes at the same time.

Miss M. Kernigan's pupils, S. S. No. 6, Maitlandville, gave her some beautiful tokens of their esteem when she was leaving for the holidays.

Mr. J. Cruickshanks, of Wardville High School, was entertained at a public supper in that village a short time ago.

Mr. John Wood has taught school in the one school section, in Lobo, for over 21 years, and is likely to teach for 21 more. So says a local paper.

The Rev. Benjamin Bayley, M.A., Head Master of the London High School, died a short time ago, of inflammation of the lungs, at the age of 72.

Mr. F. J. Allan, of Perth, was surprised at the close of the examination in his school, by the receipt of a writing desk from his pupils.

The pupils of school section No 2, Hibbert, presented their teacher, Mr. J. Hislop, with a gold locket and chain.

Collingwood Collegiate Institute has secured the services of Mr. J. G. Hands, for some time Principal of the Training College for Teachers of Western Ontario. Several of Mr. Hands' students go with him to Collingwood.

The pupils of Mount Pleasant School gave their teacher, Mr. Wilson, a gold locket at the close of last session.

At the close of a very interesting examination in Westminster School, Mr. Joseph W. Stewart was presented with a valuable gold pen-holder.

Mr. J. B. Brown, formerly assistant teacher in Ontario Business College, Belleville, has received the appointment of teacher of visible speech in the Provincial Deaf and Dumb Institute.

G. Cavanaugh has been appointed Principal of the Selkirk Public School.

John Murphy has accepted the Principalship of the York Public Schools.

Mr. Clark Moses, P.S.I., has recently been in the city and selected the books for the newly established library of the Haldimand Teachers' Association.

John K. McGillivray has assumed the duties of Head Master of Ridgetown Public School.

Mr. Thos. O. Hagan, formerly of Trenton, has received the appointment of Principal of the City of Belleville Separate Schools.

Notes and News.

ONTARIO.

Dr. George Wright, M.A., M.D., has been re-elected chairman of the Toronto School Board.

The number of pupils registered in Toronto Public Schools during the year 1878 was 11,487.

At the late Manitoba elections Messrs. A. W. Ross, A. M. Sutherland and S. C. Biggs, graduates of Toronto University, were elected to the Legislature.

During the year, 1,815 pupils have been enrolled at the St. Catharines public schools, with an average attendance of 1,043. Each pupil's education for the year cost 36.87. The staff consists of twenty-five teachers, to whom is paid as salaries \$10,430. The highest salary paid to a male teacher is \$700; the lowest \$500. The highest paid to a female teacher is \$480; the lowest \$264. Total expenditure for the year, \$14,285.

The Bishop of Huron has obtained \$40,000 in England for the Western University.

Plans and specifications for a new brick schoolhouse in Parkdale were presented, the cost being estimated at about \$1,800.

The Picton School Board are to be commended for the intelligence displayed in the following resolution: "Moved by Mr. C. D. Morden, seconded by Mr. Norman, That the interests of the schools demand that the junior departments be supplied with competent teachers, and that to this end Miss Owens and Miss Gibson be placed in charge of Brock and Tecumseth Ward Schools respectively." Many Boards seem to think that anybody is good enough to teach the little folks. No greater mistake could be made.

At the Intermediate and Second Class examination in December, 159 candidates obtained 2nd A., and 501 obtained 2nd B. certificates.

The following are extracts from the official report of Inspector McLellan on his visit to the High School, St. Thomas:—"Accom-

modations—Excellent; new buildings, one of the best in the Province; site, two acres. Equipment—Four masters; a good supply of apparatus. Remarks The school is in capital working order, excellent building, &c. There has been a great increase in number of pupils—58 boys and 3 girls in Latin, about 40 in French drill has been introduced. There are now four masters employed, all good teachers, thoroughly in earnest in their work; prosperous Literary Society, &c. No school has made greater progress during the last six years; with new buildings, &c., its future progress will be still more satisfactory.

The Guelph School Board has adopted the following scale of punishments as penalties for truancy:—First offence—warned; second offence—suspension of the refractory pupil till parents personally guarantee regularity of attendance so far as is their power; third offence—pupil suspended until re-admitted by the written authority of the Chairman of the Board, with the consent of the Principal; fourth offence—pupil to be expelled by the Board.

The registered attendance in St. Thomas Schools is 1,014; the average, 853.

18 students of the High School passed at the late Intermediate examination.

The High School in Aylmer has to be enlarged to make room for the increasing number in attendance.

Brockville High School is compelled to provide additional accommodation. The Principal, Dr. Law, is to be congratulated on the fact that, notwithstanding the opposition of some who ought to be friends of the school, he has brought it to so high a degree of efficiency. A very large number of candidates were admitted at the last entrance examination from the class of Mr. Clarkson.

The following resolutions were adopted at the last meeting of the Perth Teachers' Association: (1) That it is highly desirable that the work in English History for entrance examinations to High Schools, should be confined to the first period as taught in Creighton's Epochs in History. (2) That the same privileges in the superannuation fund should be given those holding 1st class county certificates as to those holding provincial certificates. (3) That the subjects of examination for 1st class certificates should be divided into groups, and every candidate for such certificate after obtaining a 1st class county certificate, allowed the privilege of passing in one or more of these groups, at separate times. (4) That after a candidate has obtained a 1st class certificate he be allowed the privilege of options, as is now done in the case of those obtaining 2nd class certificates. (5) That all Head Masters of High Schools who hold a Public School Inspector's license, be given the status of a 1st class grade "A" Public School Teacher. (6) That, if possible, some change should be made in the school law, with the view to making the position of a teacher more permanent than it is at present.

The Port Hope Public Schools, under the able management of Mr. D. J. Gogin, Principal Durham Co. Model School, are in a very efficient state. Out of twenty-six pupils sent up for examination for entrance to the High School, all but two passed very creditable examinations.

QUEBEC.

The Protestant Commissioners of the Montreal Schools are considering the advisability of introducing the solfa system of singing into the schools under their control. It will be tried first in the Dorchester Street School, and afterwards introduced into the others if success attends the introduction.

In the case of Napoleon Malette, the friar who was charged with assaulting a schoolboy named Labelle, who died afterwards from small-pox in its incipient stage, his Honor Judge Dugas gave judgment in the Montreal Police Court, condemning the friar to pay \$5 and costs. The judgment was lengthy and of much interest, showing that in correcting boys no implement like a pointer should be used except when applied on the hands. His Honor said a teacher might strike moderately a pupil with a martinet on any part of the body without incurring any danger, but he would not say as much with regard to a ferule. In the present case his Honor asked if a father or mother could be found in a thousand whose feelings would not have been wounded by the defendant's conduct in the premises; he did not believe one could be found. Had the blows been more severe defendant might to-day have been forced to answer to a more serious charge.

Bishop's College School, Lennoxville, re-opened after the Christmas vacation on the 20th January. The school had broken up before the usual time for vacation owing to the breaking out of sickness among the pupils of the school.

The students of Morrin College have appeared for the first time in academic cap and gown. The college has more students this year than it has had in any previous year.

Mr. L. O. Cloutier, medical student of Laval University, has been appointed Professor of Sciences in the Laval Normal School in Quebec.

The Hon. G. Ouimet, Dr. Meilleur and M. Chauveau, have been named officers of Public Instruction by M. Bardoux, the French Minister of Public Instruction, while the lower title of Officers of Academy has been conferred upon M. U. E. Archambault—both in connection with the late International Exhibition.

On the 7th of December, died at Montreal, at the age of 83, Dr. Meilleur, first Superintendent of Education in Quebec. Dr. Meilleur was born at St. Laurent, near Montreal, the 9th of May, 1796. His recollections run back to the time which French Canadians call the Reign of Terror and the days of "King Craig," as the Governor, Sir James Craig, was called. In those days education was by no means so common as it is now. Young Meilleur received a classical training in the College of Montreal, and then proceeded to Castletown, in the State of Vermont, to pursue the study of medicine. In 1825 he obtained his doctor's degree. In 1834 he was editor of the *Echo du pays*, and was shortly after elected member of Parliament. During this period school matters in Quebec were in a hopelessly chaotic state. There was hardly any approach to a system. In 1818 the Royal Institution had been organized by letters patent. Of this institution the Protestant Bishop was President. Commissioners made rules for the erection and conducting of schools. These schools were to be under the direction of the clergy of the locality, while in mixed populations the clergy of each belief had the office of watching over the spiritual instruction of their respective faith. Of course such a plan could not succeed in Quebec. Its failure was complete. In 1834, according to a table prepared by the Rev. Mr. Mills, secretary of the institution, there were only 22 schools under its control, with about 1,100 pupils. This was the result of sixteen years labor. Mr. Perrault says that "the Royal Institution has closed almost all its schools; they had very few pupils; the masters being for the most part of a doubtful character and named by persons unknown to the inhabitants, could enjoy neither their confidence nor that of the curés." This of course is the evidence of a French Canadian. There seems to be no doubt however, that the opposition, or at least want of co-operation, on the part of the Roman Catholic clergy was fatal to the institution. Until 1841 various temporary shifts were made to do something for the education of the people. But the times were adverse. At length, in 1841, in the first session of the United Parliament, a law was passed which appointed elective commissioners, who had the power to tax the newly made municipalities for the support of schools. Hon. Mr. Jameson was named chief superintendent, with Dr. Meilleur as superintendent for Quebec, then Lower Canada. The legal imposition of taxes was fatal to this law in Lower Canada. From 1791 to 1878 the French Canadian has always shown an inveterate hatred to anything in the shape of direct taxation. Accordingly, in 1845 the system of voluntary contribution was substituted for that of legal taxation. Even this experienced determined opposition. "The agitation," says Mr. Chauveau in his work on Public Instruction in Canada, "was extreme in certain places; open revolt, incendiarism, persecutions of all kinds, were the means of resistance suggested to the people by a certain number of men denominated by the journalists of the day "extinguishers" (*teigneurs*). Before the agitation ceased the Bishop of Montreal had to place under the interdict one obstinate parish. To Dr. Meilleur belonged the duty of putting into execution this law in the midst of an ignorant and opposing people. The difficulty of the task which the superintendent had to surmount may be estimated by the fact that in 1849 there were still 48 municipalities which held out against the execution of the school law; while the success which had attended Dr. Meilleur's efforts may be reckoned by the fact, that in 1854 there were 2,795 schools in operation, attended by 119,737 pupils. Such was the work of Dr. Meilleur in connection with education in Quebec. In 1855 he resigned his office, and was succeeded by Hon. Mr. Chauveau. After his resignation he was appointed Director of the Post Office in Montreal, and since Confederation has been Deputy-Registrar of the Province. He is the author of a work entitled "Mémorial de l'Éducation du Bas Canada: a résumé of the principal facts relative to education from 1615 to 1855.

These notes are taken chiefly from the above mentioned work of M. Chauveau "L'Instruction Publique au Canada."

NEW BRUNSWICK.

The annual school meetings throughout the Province were held, according to law, on the second Thursday in January. On that day, the ratepayers in every district, except in the cities of St. John and Fredericton, and a half-dozen corporate towns, met for the purpose of electing school trustees and voting the sum to be raised by assessment to supplement the moneys received from the County Fund and the Provincial Treasury. With few exceptions, the proceedings of the meetings held on the 9th ult. seem to have been of a satisfactory character. There is reason to believe that, notwithstanding the continuance of "hard times," the amounts voted in the majority of the districts were not less than last year; while in many localities the people made still more liberal provision for the support of their schools. An examination of the reports from a large number of districts in all parts of the Province shows an average assessment of nearly \$450. About seven per cent. of these districts voted sums not exceeding \$100; while about one-half as many ordered assessments of upwards of \$1,000. The following are some of the largest amounts included in the list now under consideration: Newcastle, \$3,600; Hampton, \$2,400; Shediac, \$1,989; St. Andrews, \$1,750; Sackville, \$1,700; Chatham, \$1,600; Fairville, \$1,250; Sussex, \$1,150; Caraquet, \$1,025.

It is expected that, at the coming session of the Legislature, authority will be given to the Board of Education to carry into effect its well understood policy with respect to the qualification of Inspectors. That policy has been before the public for six years past, as expressed in the following regulation:—"Reg. 42. In view of the operation of Section 13 of the Act, all candidates for the office of Inspector thereunder shall have taught for a period of at least three years, and shall have obtained a license of the Grammar-School Class in accordance with the foregoing Regulations; and upon appointment to office each Inspector shall spend one term at the Provincial Normal School, or such time as the Board of Education may require, with a view to a more perfect acquaintance with the methods of School Management and Teaching to be employed in the schools of the Province."

When the 13th Section of the Act is brought into operation, the Inspectors will be required to perform arduous and responsible duties in addition to those now devolving upon them. It will then become a part of their work to determine by examinations, at stated periods, "the quality of the instruction given" in each school; and the rank of the school, as thus determined, will regulate in part the amount of the Provincial grant to the Teacher. Teachers generally will approve of the regulation in question, demanding of candidates for Inspectorships certain professional qualifications, since it is manifestly "based on solid, satisfactory grounds." This, the *St. John News* (Jan. 18) denies, alleging that the Board proposes to discriminate against clergymen, lawyers and others in the appointment of Inspectors. To require specific qualifications for the office should not be construed as debarring any class ineligible.

It may not be too early to announce that the time fixed for the next meeting of the "Educational Institute" (Provincial) is the 19th of August and two following days. Among the subjects to be discussed are a Course of Instruction for the Public Schools,—the Granting of Certificates to Pupils who complete the course in Advanced or High Schools,—the place of written examinations in school work,—the promotion of pupils in graded schools,—lessons in natural science,—pictorial illustrations as an accessory means of instruction, etc.

Some of the teachers of Norton and Upham, Kings County, have formed a local association or institute, and have held one meeting, at which several subjects of practical importance were discussed. Meetings are to be held monthly, the next one being appointed for Feb. 14. Such gatherings of teachers, whether in the towns or in the country districts, may be made exceedingly profitable; but perhaps a meeting once a quarter may be found sufficient, in addition to the annual County Institute. There may be too much of a good thing.

At a meeting of the Common Council of the City of St. John, held a few weeks ago, a proposal was made that the School Trustees should be asked to reduce the salaries of the teachers, on account of the "hard times." The matter was seriously discussed, and referred to a committee of the whole Council, to meet with the Board of Trustees. This action of the Common Council renders very apparent the wisdom of the Regulation of the Board of Education requiring every teacher to enter into an agreement of a specified form before taking charge of a school. The teachers of

St. John, as well as all others in the Province, are under contract at specified rates of salaries till October 31, 1879; and these contracts can be annulled only on notice given by one of the parties thereto, one month previous to the date of expiry. This regulation of the Board was evidently intended as a just protection not only to teachers but to Boards of Trustees and to the best interests of the schools. It is to be hoped that, when next October arrives, the financial clouds which overshadow the community may have begun to disperse.

"The Argosy," a very creditable monthly, published by the students of Mount Allison College Sackville, holds that collegiate education in this country is too costly—that is, for the student. The editors are of opinion that the higher learning should be placed within the reach of all, without fees for tuition. That this may be done, endowments and scholarships are needed. An appeal is made to the friends of education who have the means, to come forward and distinguish themselves, while they benefit the country, by bestowing the necessary funds. No doubt good use will be made of all that is given.

"L'Etoile du Nord" is the name of a small French paper recently started in St. John, with Moise M. Cormier as editor. It is intended chiefly for the "Acadians" of N.B. In the first number, issued Jan. 6th, the editor specially claims support from teachers, backing his appeal by a promise to be ever ready to take the part of the teacher, to place himself, if possible, *en rapport* with the Board of Education, and to labor for the best interests of the youth of the country. His intentions are good. It is to be regretted that more care has not been taken to guard against errors in grammar and style.

In connection with the opening of the new Normal School at Gorham, Maine (on the 27th Jan.), it may be noted that the authorities sent to New Brunswick for aid in making up their staff of instructors, have secured the services of Miss Bessie A. Read, one of the most successful teachers at Fredericton. Miss Read was trained at the Normal School of N.B., and obtained a first-class license. On leaving her recent charge, she was the recipient of a testimonial from her scholars.

Mr. Wm. F. Best, of St. John, is endeavoring to do something to meet the want of scientific instruction referred to in our Notes last month. He has formed a class in Applied Chemistry, availing himself of the apparatus, etc., in possession of the Mechanics' Institute.

Mr. Geo. W. Allen, A.B. of the University of N.B. (1877), is doing good work as Mathematical Master at the Fredericton High School. He has his appointment from the Senate of the University.

NOVA SCOTIA.

The sixteenth Annual Session of THE EDUCATIONAL ASSOCIATION OF NOVA SCOTIA was held in the public hall of Dalhousie College, Halifax, on 26th, 27th and 28th December, 1878. The chair was occupied at most of the meetings by J. B. Calkin, Esq., A.M., Principal of the Provincial Normal School, and Vice-President of the Association. The session was regarded as one of more than ordinary interest and profit, and the members present felt themselves under deep obligations to the efficient Secretary, A. McKay, Esq., Principal of the Dartmouth High School, for his excellent arrangements for the conduct of business. The opening meeting on the afternoon of the 26th was devoted to routine business and the reception of reports, one of the latter—that of the Committee on Text-books, eliciting quite a protracted discussion. The evening meeting on the same day was largely attended to hear the annual address of the President, and other speeches from prominent educationists present in the city. Dr. Allison, Superintendent of Education, and President of the Association, spoke for upwards of an hour in substance as follows:

He expressed his pleasure at greeting so many representatives of the educational service, and argued from their successful resistance of the gravitating influence of Christmas associations towards domestic centres and social enjoyments, a very encouraging interest in the cause of education. He was not there for the purpose of making any official deliverances. He only asked for his opinion, and suggestions the fair treatment of being "taken for what they are worth." He did not propose to discuss education historically or critically, but to say a few words to the Association on that profession with which so many of its members have been or are now identified, and to speak without any very scrupulous adherence to logical order, on the qualifications, obligations and rights of a teacher under such a system as that of Nova Scotia. What he

should have to say in unfolding his conception of the responsible dignity of the teaching function would sufficiently indicate the reasons determining his choice of a subject. He went on to say that the qualifications of a teacher for the capable discharge of his duty may be roughly divided into three classes:

1. There is his *mental outfit*, which should be an intellect well stocked with knowledge, and with its powers of acquisition and thought duly disciplined and developed.

2. His original and acquired aptitudes for the specific duties of teaching and government.

3. His character, as determining him to a conscientious performance of duty, and to the exercise of a wholesome exemplary influence on his pupils.

These points were discussed elaborately, both separately and in correlation, and in the light of the law and regulations of Nova Scotia bearing on each. Many matters of provincial interest were incidentally touched on, and the President concluded his address as follows:

I end as I began, with an expression of the satisfaction afforded by the encouraging auspices under which we have convened. No doubt the proceedings of the Association will largely take the stamp of modern modes and tendencies of thought. Matters of detail and application receive more consideration now than what are vaguely called general principles. A keen analysis is searching out that which is peculiar in the laws which govern the apt teaching and facile apprehension of particular branches of knowledge. Cautious induction, based on painstaking observation, takes the place of high-flying speculation. Wise and gifted men find in some one simple problem of this great study, the material on which to expend the energies of a life time. Of education in its wide signification, embracing all the physical, intellectual and moral training by which a human being is prepared, during the years of childhood and youth, for the responsibilities and achievements of maturer life, there is to be said, that the history of mankind knows no period when it has not received a measure of attention, and that there is left but little to be gleaned by an inquirer proceeding according to the time-honored methods. Nor let it be said in depreciation of the aims and results of those who spend their strength in hewing out some definite form from the quarry, that these fall short in dignity and import of the true philosophy of education. It is simply the aggregation of these individual achievements which marks the difference between the Education of the present and the Education of the past; and if any one here can place a new plank, or relay an old one, in the bridge by which the mind of man passes over from a state of ignorance to a state of knowledge, so that this task can be more easily and quickly performed, let him know that he is registered in the list of the real (even though they are the *unrecognized*) benefactors of mankind.

At the conclusion of the President's address, brief but stirring speeches were delivered by Professor Higgins, of Acadia College, one of the Provincial Examiners, Hon. Samuel Creelman, of the Council of Public Instruction, Dr. J. R. Inch, President of Mount Allison College, Principal Calkin of the Normal School, Hon. Senator L. G. Power, and other gentlemen.

At the forenoon session on Friday, Professor Tufts, of Acadia College, delivered an admirable address on History and the mode of teaching it, selecting Grecian history for purposes of illustration. He recommended teaching history by topics and combining literature with it; also composition and discussions on history. The address was an eminently practical one.

A lengthy discussion followed on Merit Cards, opened by D. H. Burbidge, Esq., A.M.

The following resolution, moved by the Secretary, A. McKay, Esq., seconded by A. H. McKay, Esq., A.M., Principal of Pictou Academy, was adopted:

Resolved, That in the opinion of this Convention it would be for the interest of education that Teachers' Institutes be held regularly in different parts of the province, and that hereafter this Association be held under laws and regulations prescribed by the Council of Public Instruction.

The Association was engaged during a portion of the afternoon session in the election of officers for the ensuing year—a list of which we omit for want of space. The regular exercises of the Association were resumed by B. Russell, Esq., A.M., barrister-at-law, who read a paper on the subject of the Teaching and Study of Classics in the Common Schools, which he said could be defended on grounds of utility alone, but the advocacy of which he would prefer to undertake on higher grounds than those of mere utility.

He alluded to the necessity for a higher standard of taste on the part of the general public, and spoke of the success of what he termed literary impostors, as showing a want of discrimination and sound taste on the part of the public. He seemed to think that this state of things could be improved by setting the children in the public schools at the study of Latin and Greek, in addition to the tasks with which they are already burdened, and wound up by alluding to the marvellous course of education prosecuted by John Stuart Mill, under the eye of his father, as proving that classical studies might profitably be commenced at a very early age.

Then followed the reading of a paper on "How to Teach Vocal Music in Common Schools," by Mr. Christie, of the Truro Normal School. It was listened to with close attention.

The President occupied the chair at the evening session, and introduced Rev. Dr. McKnight, Principal of the Presbyterian Theological Hall, who delivered a very comprehensive and forcible address on "Courses of Study." The subject served the learned Professor as a basis on which to found many wise and original remarks, as well as much discriminating criticism. The interest of this session was enhanced by vigorous addresses from Rev. Messrs. Dunn and Pitblado, Principal Calkin, and A. McN. Patterson, Esq., formerly of the Acadia Villa Seminary. The Association adjourned on Saturday morning. Want of space precludes reference to several interesting discussions which occupied its attention.

The regular semi-annual meeting of the Senate of the University of Halifax took place on December 26th and 27th, in the Legislative Assembly Room. There were present, the Chancellor, Rev. Principal Ross, D.D., Professor Lawson, Ph. D., Rev. Principal McKnight, D.D., Rev. T. J. Daly, M.A., Rev. R. McDonald, M.A., Hon. P. C. Hill, D.C.L., Professor Higgins, M.A., Hon. E. Farrall, M.D., D. Allison, LL.D., Superintendent of Education, President Inch, LL.D., Hon. L. G. Power, LL.B., Rev. E. M. Saunders, M.A., R. S. Black, M.D., A. F. Reid, M.D., Hon. Judge Johnston, M.A., Rev. D. Honeyman, D.C.L., Rev. T. A. Higgins, M.A.

The principal transactions were:—

1. The Chancellor, the Vice-Chancellor, the Superintendent of Education, Prof. Lawson and Hon. L. G. Power were appointed a committee to report upon the advisability of altering the dates of some of the examinations for 1880 and succeeding years.

2. It was resolved to accept the matriculation examinations of the University of Toronto as equivalent to that of this University, and the Grade A license from the Council of Public Instruction of Nova Scotia in lieu of the certificate of matriculation of this University.

3. The committee appointed on the previous day to select subjects for Examination in Classics, English, Modern Languages and Hebrew, for 1881, reported. The report was adopted, and the subjects selected will be published in the Calendar for 1879.

4. It was resolved that in all cases where local examinations are held in places outside the City of Halifax, they shall be conducted by sub-examiners appointed by the Senate, but not resident in the localities where the examinations are being held and not connected with the institutions whose students are being examined.

The new High School building of the city of Halifax, previously described in our notes, was formally opened on January 7th. The magnificent lecture hall was filled with a most influential and deeply interested audience. Speeches appropriate to the occasion were delivered by the Chairman of the Board of School Commissioners, J. J. Brennan, Esq., the Superintendent of Education, His Honor the Lieutenant-Governor, His Lordship the Bishop, Chief Justice Sir Wm. Young, and the Rev. Chancellor Hill. Much enthusiasm was excited on the occasion.

A revised Syllabus of Examination, and some additional and modified regulations regarding the examination of candidates for Provincial Licenses have been published in neat pamphlet form by authority of the Council of Public Instruction. Copies, we understand, may be obtained from the Inspectors.

It is reported that the Rev. W. S. Darragh has resigned the Inspectorship of Cumberland County, on account of ill health.

PRINCE EDWARD ISLAND.

A large meeting was held in the Normal School Hall on the Friday evening previous to the beginning of the Christmas holidays, at which addresses were delivered by several gentlemen who have always taken a deep interest in educational affairs. The Principal

of the Normal School occupied the chair. The Rev. Dr. Murray, who was formerly a member of the Board of Education and examiner for teachers' license, referred, in a plain, sensible speech, to the efforts which were being made to raise the educational status of the Island, and pointed to a future when the people would be proud of their schools. The Hon. W. D. Stewart addressed the students of the Normal School, pointing out to them the importance of the work in which they were about to engage; and, in referring to educational changes, hoped that the time was not far distant when the Prince of Wales College would be developed into an institution for young ladies as well as for young men. The Rev. Mr. Lathorn congratulated the Island on the progress which had already been made, and gave some good advice to the large and attentive audience on educational affairs.

The new school in Summerside has been opened and organized, with Mr. Neil McLeod as Principal and seven associate teachers. The schools there have been re-graded since the opening of the new building, and thus all dissatisfaction has disappeared.

The Provincial Examination of teachers was held during the week preceding Christmas. There were over forty successful candidates, notwithstanding the fact that many of the questions were beyond the scope prescribed for examination.

Our admirable system of education, as worked out in accordance with the provisions of the new School Act, is fast bringing forth good fruit. Only a little more than two years ago the public schools of the City of Charlottetown were a reproach to civilization; today, they are such as larger cities might well be proud of. The numerous advantages of the graded system are every day being made more abundantly manifest. And to Mr. Harper, the efficient Principal of the Normal School—to whom was entrusted the arduous duty of grading the city schools, and who still exercises supervision over them—is justly due no small share of credit for the present high standing of the schools.

The Christmas Examination of the Prince of Wales College took place on Thursday, the 17th December. The attendance of students was about fifty, and in the examination of the several classes they acquitted themselves creditably. The examination was conducted by the professors of the college and Mr. Caven. At the close the students presented Messrs. Anderson, Alexander and Lepage with addresses and valuable Christmas gifts. Mr. Caven, Chief Justice Palmer, Sir Robert Hodgson, Judge Honsley, Rev. Mr. Lathorn and Hon. L. H. Davies complimented the students very warmly on the progress they were making, and encouraged them to persevere until they had reached distinction. The Chief Justice showed the advantage of good reading, and intimated that he would give a prize of a silver watch to the best reader at the next midsummer examination.

MANITOBA.

The following is the report of the Christmas Examination in St. John's College:—

THEOLOGICAL COURSE.

Greek Testament.—I. Class—R. Machray, Jas. C. Flett, A. G. Pinkham, W. A. Burman.

Church History and Articles.—I. Class—W. A. Burman.

Creed (Pearson).—I. Class—R. Machray, W. A. Burman. II. Class.—J. C. Flett, A. G. Pinkham.

ARTS COURSE.

Homer.—I. Class—L. J. Clarke, R. Machray, R. R. F. Bannatyne, W. T. B. Kennedy, R. McLennan, A. G. Pinkham.

Sallust.—I. Class—R. R. F. Bannatyne, W. Kennedy, R. Machray, L. J. Clarke, R. McLennan. II. Class—A. G. Pinkham.

Latin Prose Composition.—I. Class—W. Kennedy, R. R. F. Bannatyne, L. J. Clarke, R. Machray. II. Class—R. McLennan, A. G. Pinkham.

Pro. Archia.—I. Class—R. R. F. Bannatyne, W. Kennedy, L. C. Clarke, equal; R. McLennan, R. Machray, equal. II. Class—A. G. Pinkham.

Macbeth.—I. Class—R. Machray; R. R. F. Bannatyne, L. J. Clarke, A. G. Pinkham, equal. II. Class—W. Kennedy, R. McLennan.

Green's History.—I. Class—R. R. F. Bannatyne, R. Machray, L. J. Clarke. II. Class—A. G. Pinkham, R. McLennan, W. Kennedy.

French.—I. Class—R. R. F. Bannatyne, L. J. Clarke, R. Machray. II. Class—W. Kennedy, R. McLennan, A. G. Pinkham.

Arithmetic.—I. Class—L. J. Clarke, R. McLennan. II. Class—W. Kennedy, A. G. Pinkham, R. Machray, R. R. F. Bannatyne.

Euclid.—I. Class—L. J. Clarke, R. McLennan, W. Kennedy.

II. Class—R. Machray, R. R. F. Bannatyne. III. Class—A. G. Pinkham.

Algebra.—II. Class—R. McLennan, L. J. Clarke, R. Machray, W. Kennedy, A. G. Pinkham, R. R. F. Bannatyne.

Special.—J. C. Flett, Homer Class II., Sallust Class I., Pro. Archia Class II., Latin Prose Class I., Green's History Class II., Euclid Class III.

Honor Mathematics.—I. Class, R. Machray, W. Kennedy.

The College re-opened on the 15th January.

The following resolution respecting the Principal of Winnipeg public schools was adopted by the Board of Education, at a meeting held on 8th January:—

Moved by the Superintendent, seconded by Mr. Mulvey, That inasmuch as Mr. M. J. Fletcher, Principal of the Winnipeg public schools, whose examination commenced December 26th, was so ill that he was unable to proceed with the work of examination—the medical certificate which had been submitted to the Board corroborating his own statements as to his health; resolved, that his examination must be resumed, or, if he prefers it recommenced, either on the 20th or on the 27th January, and completed; that a certificate in accordance with the results of said examination be granted to him; and that his interim certificate be extended to the present month. Carried.

Mr. Fletcher has chosen to recommence his examination on the 27th January, and the Board of School Trustees for the city has decided at a meeting held on the 14th inst., to extend the time within which his agreement is to be signed to the first Monday in February.

The following report was unanimously adopted by the Board at its last meeting:—

To the Protestant Section of the Board of Education:

GENTLEMEN,—Your committee have had under consideration the question of defraying the travelling expenses of the members of the Board who reside in the country, when attending meetings of the Board, and would recommend:—

1st. That the Board meet for the transaction of general business once every three months, viz.: on the first Thursday in February, May, August and November, of which public notice shall be given; and that the executive committee be empowered to deal with such matters as require immediate attention during the intervals.

2nd. That ten cents per mile be granted to all members who reside over four miles from the place of meeting.

Respectfully,

THOMAS HART,

W. N. KENNEDY,

W. CYPRIAN PINKHAM.

Winnipeg, Jan. 8th, 1879.

Mr. Forget, a school teacher, has recently been appointed Superintendent of Education for Roman Catholic schools, in the room of Mr. Elie Tasse, who has resigned. Mr. Forget is a brother of Lieut. Governor Laird's private secretary.

ANSWERS TO QUERIES.

11. I have taught for several years on a second-class certificate obtained at the Normal School; can I write for a first-class certificate without attending the Normal School again? E. S. D., Chatham.

Yes.

12. May second-class candidates not attending a High School take the Latin or French course at the examination in 1879?

Yes.

13. What is the programme in French for the Midsummer examinations? A STUDENT, Cambridge.

The Accidence and principal rules of Syntax; Exercises, DeFivas' Introductory French Reader, pp. 1-49; either Souvestre, un Philosophe sous les toits, I-VIII, or Emile de Bonnechose, Lazare Hoche, chapters I. and II.; re-translation of easy passages into French; rudiments of conversation.

14. What are the qualifications necessary for a Public School Inspector in Ontario? S., Montreal.

First Class Provincial Certificate, Grade A.

Or, a degree with honors in Arts from an Ontario University,

and at least five years' experience in teaching a High or Public School in Ontario.

(The qualifications mentioned would not be sufficient.)

15. I contracted with a Board of Trustees (on the 21st day of Aug. 1877), to teach for one half-year from the date of agreement, at the rate of \$800 per annum, it being understood that the agreement should terminate on the 31st of December. In January of 1878 a new agreement was drawn up. Can I collect \$150 for the time between 21st August, 1877, and 31st December of same year?

SUBSCRIBER, Pembroke.

If the agreement stated that our "half-year" engagement was to terminate on December 31st, you can collect \$150. If not, you should not expect it.

1. Should we follow Mason and all the 3rd Per. Pro demonstratives?

2. Whose teaching should we follow as regards the other pronouns, Mason's or Morris's?

3. Does not Mason lay down the rule that "as" and "than" are either adverbs or conjunctive adverbs?

SUBSCRIBER.

(1.) Yes.

(2.) It would be better to adopt Mason's.

(3.) "As" is sometimes an "adverb" (demonstrative), and sometimes a "conjunctive or relative adverb," e.g., He did it as well as I could do it. The first *as* is an adverb, modifying "well;" the second *as* is a "conjunctive adverb," joining the two sentences and modifying "well," the clause in full being "as well as I could do it!"

4. Should a verb in the subjunctive mood with a singular subject be of singular or plural form?

MAGISTER, Bridgetown, N.S.

(4.) As the form of the subjunctive for the three persons of each number is the same, the number of the subject cannot possibly affect it, e.g., We use the same form "be" or "were" for the present and the past respectively, whether the subject nominative be of the singular or the plural number.

5. In *Pleasures of Hope*, who are called Friends of the world? Why does the poet so call them?

6. In what sense is the word "man" used in the 3rd line and "return" in the 7th line?

7. What is meant by *Sarmatia's* tears of blood alone?

8. Why is *Freedom* printed with a capital letter?

A. A. A.

(5.) *Friends of the World*. This epithet seems to be applied to those addressed in the previous lines. Or they may be taken in a general sense as denoting all who have striven to foster political freedom.

(6.) *Man*. In the sense of mankind. Wield your swords once more in the interests of mankind. *Return*: The poet expresses a pious wish that either of the champions of freedom—Tell or Bruce—were once again in our midst to fight the battles of Freedom.

(7.) *Sarmatia* was the classic name for Poland.

(8.) *Freedom*. The word is spelled with a capital so as to give prominence to the idea, or in consequence of the employment of personification.

9. If a teacher teach from January up to the summer vacation, can he collect pay for vacation if he does not hold quarterly examinations?

TEACHER, LENNOX.

Yes.

10. Can a person holding a first-class Normal School certificate, ob-

tained in 1868, write for a first or second, say next summer, without attending the Normal School for another term?

SUBSCRIBER, Collingwood.

Yes.

EXTRACTS FROM THE ANNUAL REPORT OF THE EDUCATION DEPARTMENT OF ONTARIO FOR THE YEAR 1877.

RECEIPTS AND EXPENDITURE OF PUBLIC SCHOOL MONIES.

Receipts.—1. The amount apportioned from the Legislative grant was \$251,962—increase, \$2,006. The apportionment is made to the several Counties, Townships, Cities, Towns, and incorporated Villages, according to the ratio of the population in each, as compared with the whole population of the Province. The principle of distribution is according to the average attendance and the time of keeping open the Schools, Public and Separate, in each Municipality.

2. The amount apportioned from the Legislative grant (through the Educational Depository) for the purchase of maps, apparatus, prize and library books, was \$18,104—decrease, \$2,515.

3. The amount from County Municipal Assessment was \$868,305, showing an increase of \$65,144.

4. The amount available from Trustees' School Assessment was \$1,564,126—increase, \$10,552.

5. The amount from Clergy Reserves Monies, and from other sources, applied to School purposes in 1877, was \$730,687—decrease, \$45,657.

6. The Total Receipts for all Public School purposes for the year 1877 amounted to \$3,422,185, showing an increase of \$29,529 over the total receipts of the preceding year.

Expenditure.—1. The amount paid by trustees for salaries of teachers in 1877 was \$2,038,099—increase, \$199,778. This is the largest increase of this item that has ever taken place in any one year since the establishment of our present school system; and taken in connection with a marked advance in the higher grade of certificates would seem to prove the complete success of the efforts lately made to improve the professional status, and raise the remuneration of the Public School Teacher.

2. For maps, globes, prize books and libraries, \$47,589—decrease, \$1,542. The Legislative aid given to trustees (through the Educational Depository) for these objects was \$18,104.

3. For rent and repairs of School-houses, &c., \$510,457—increase, \$21,671.

4. For sites and building of School-houses, \$477,392—decrease, \$152,872. For several years after the passage of the School Act of 1871, a large amount was yearly expended in the erection of new school-houses, so that the country is now tolerably well supplied with them. A decrease of this item may therefore be expected for some years to come.

5. Total expenditure for all Public School purposes, \$3,073,489—increase, \$67,033.

SCHOOL POPULATION, AGES OF PUPILS, PUPILS ATTENDING PUBLIC SCHOOLS, AVERAGE ATTENDANCE.

The Statute requires that the trustees' return of School population shall include the entire number of children resident in their School Division; and it confers the equal right of attending the Schools upon all residents in such divisions, between the ages of five and twenty-one years.

1. The School population (comprising only children between the ages of five and sixteen years) reported by trustees, was 494,804—decrease, 7,446.

2. The number of pupils between the ages of five and sixteen years attending the Schools was 469,241—increase, 4,877. Number of pupils of other ages attending the Schools, 2,619—decrease, 4,554. Total number of pupils attending the Schools, 490,860—increase, 323.

3. The number reported as not attending any School is 15,974. These were between the ages of seven and twelve years, which are the ages fixed by the Statute during which all the children of a School Division should be instructed in some School.

4. The average attendance, viz., the aggregate daily attendance, divided by the legal number of teaching days in the year, was 217,184—increase, 4,701.

RELIGIOUS DENOMINATIONS, CERTIFICATES, ANNUAL SALARIES OF TEACHERS.

1. *Number of Teachers, Male and Female.*—In the 5,140 schools reported, 6,468 teachers have been employed—increase, 283; of whom 3,020 are male teachers—increase, 240; and 3,448 females—increase, 43. It will thus be seen that there are about 400 more female than male teachers.

2. *Religious Persuasions of Teachers.*—Under this head there is little variation. The teachers are reported to be of the following persuasions:—Church of England, 972—increase, 30; Church of Rome, 812—increase, 33; Presbyterians, 2,022—increase, 148; Methodists, 2,005—increase, 32; Baptists, 348—increase, 4; Congregationalists, 97—increase, 23; Lutherans, 30; Quakers, 17; Christians and Disciples, 62; reported as Protestants, 54; Plymouth Brethren, 4; Unitarians, 5; other persuasions, 40.

Of 812 teachers of the Church of Rome, 478 are employed in the Public Schools, and 334 are teachers of R. C. Separate Schools.

3. *Teachers' Certificates.*—Total number of certificated or licensed teachers reported is 6,468—increase, 283; Provincial Certificates, 1st class, 250—increase, 9; 2nd class, 1,304—increase, 103; County Board Certificates of the Old Standard, 1st class, 371—decrease, 1; second class, 134—decrease, 5; 3rd class, 14—decrease, 37; New County Board, 3rd class Certificates, 3,926—increase, 238; Interim Certificates, 469—decrease, 24.

4. *Annual Salaries of Teachers.*—The highest salary paid to a male teacher in a County, \$800—the lowest, \$100; in a City, the highest, \$1,000—the lowest, \$450; in a Town, the highest, \$1,100—the lowest, \$300. The average salary of male teachers in Counties was \$379—of female teachers, \$260; in Cities, of male teachers, \$735—of female teachers, \$307; in Towns, of male teachers, \$583;—of female teachers, \$269. The average increase of male teachers' salaries for the Province during 1877 is \$14 per male teacher, \$12 per female teacher.

REVIEWS.

HARPER'S MONTHLY. February. This is decidedly a fine number. In addition to the Editor's Easy Chair, Editor's Drawer, and Literary, Historical and Scientific Records, it contains the following articles:—

Treasures of the Deep.—J. C. BEARD.

With Sixteen Illustrations by the Author.

Rambles in the South of France (Concluded).—S. G. W. BENJAMIN.

With Twenty Illustrations.

Our Travelled Parson.—WILL CARLTON.

With Three Illustrations by ABNEY.

Admiral Hiram Paulding.—Commander R. W. MEADE, U. S. N.

With Portrait.

A Picture and a Parable.—HELEN W. LUDLOW.

At the Mouth of the Amazon.—M. MAURIS.

With Fifteen Illustrations.

Moonshiners, A Story.—JOHN ESTON COOKE.

With Two Illustrations by REINHART.

Song.—ELIZABETH STUART PHELPS.

Winter Sports in Canada.—FREDERICK G. MATHER.

With Nine Illustrations.

OLD FLEMISH MASTERS. VI. Roger Vander Weyden. VII. Jacques Jordans. VIII. Erasmus Quellyn. IX. Frank Snyders.

With Seven Illustrations.

Education by Hand.—HORACE E. SCUDDER.

With Four Illustrations.

Young Mrs. Jardine. A Novel.—DINAH MULOCH-CRAIK.

Mendelssohn's Letters to Madame Moscheles

A Story of the Plague.—REBECCA HARDING DAVIS.

French Farmers.—PHEBE EAELE GIBBONS.

Education by Hand, Treasures of the Deep, and Winter Sports in Canada will be of deep interest to Canadian teachers.

THE CONTEMPORARY REVIEW. January. This standard magazine is full of interesting and instructive reading. There are excellent articles on Atheism and the Church; the progress of Socialism in England, Afghanistan and the Punjab; the Alcohol Question, with contemporary life and thought, and several other good articles of more restricted interest.

The marvellous beauty of the illustrated magazines of this

country is attracting attention throughout the world. The edition of *Scribner* in England has doubled within a few months. The London correspondent of the *New York Times* says: "The whole lot of magazine annuals (English) put together, are not equal in pictorial art to a single number of *Scribner's Monthly*." But the price at which our magazines are sold is even a greater marvel. For example, a single number of *Scribner*, "The Midwinter Number," just issued, has a full-page frontispiece portrait of Emerson, of rare excellence, and contains one hundred and sixty pages of letter-press, with more than seventy illustrations; many of which are works of art such as before the advent of *Scribner* appeared only in gift-works and purely art magazines, and yet it is sold for 35 cents. The subscribers for the current year get, in *Scribner*, not only four of these full-paged portraits of American poets, and nearly two thousand pages of text (equal to 5,000 book pages) of the choicest current literature, with more than 1,000 illustrations, including a completed novel, "Haworths," by Mrs. Burnett, but shorter stories, poems, reviews, descriptions of travel, biographical sketches, etc., and also the splendid series of papers and pictures of exploration in the great South American empire of Brazil.

ST NICHOLAS. Prof. Proctor, the Astronomer, writes from London: "What a wonderful magazine it is for the young folks! Our children are quite as much delighted with it as American children can be. I will not say they are more delighted, as that may not be possible." *St. Nicholas* is sold for 25 cents a number, and fourteen numbers (November, 1878, to 1880) are given for \$3. At first glance one would say, literature, art and cheapness can no further go—but in this country intelligence is so widespread, and artistic culture is so extended, that there is scarcely any end to the demand for such magazines as *Scribner's* for grown-ups and *St. Nicholas* for children, and, as the sale of these publications increases, their conductors will no doubt continue to add new features of excellence and attraction. SCRIBNER & Co., 743 Broadway, New York.

THE ATLANTIC MONTHLY for February has an unusual variety. Serial and short stories, poems, travel-sketches, criticisms, reminiscences,—indeed, almost every kind of article suited for a popular magazine is included. Teachers will be specially interested in Reminiscences of Bayard Taylor, Musicians and Music Lovers, International Copyright by Judicial Decision, and Recent Literature.

THE EDUCATIONAL WEEKLY, Chicago, and the NEW ENGLAND JOURNAL OF EDUCATION are excellent weekly publications for teachers desiring an interchange of ideas on School work.

ENGLISH HISTORY IN SHORT STORIES. *New York, A. S. Barnes & Co., 111 William St.* The body of the book consists of brief sketches of the sovereigns of England, and outlines of the leading events of their reigns. These are written in a clear, definite style, and the characters and events fairly estimated. A short sketch of the chief features of the British Constitution is given. A very valuable chapter is given which is commonly omitted in English Histories. It contains very clear explanations regarding, The Sovereign, The Crown; Parliament; The Nobility, Baronets, Knighthood, in all their grades; The Cabinet; The Privy Council; The Royal Household; The Queen's Body Guard; Heraldry, &c., &c. A valuable appendix to the work contains descriptive sketches of the countries of Great Britain and Ireland.

ART NEEDLEWORK, FOR DECORATIVE EMBROIDERY. Edited by *Lucretia P. Hale*. S. W. Tilton & Co., 50 cents. In England Art Needlework has long been carefully taught. Those who visited the Centennial must have been forcibly struck with the artistic designs and beautiful execution of the laces and tapestries done by the Queen and the members of her household, especially the Prin-

cess Louise. S. W. Tilton & Co. deserve much praise for publishing a series of works on Art Needlework, and other departments of industrial art. This book is a reprint of an English work, with numerous additions relating more especially to America. The history of embroidery is sketched; the materials and implements used are described; the methods of doing various stitches are taught; harmony of color and original designing are discussed; and a few patterns described. Lady teachers and their friends do a great deal of fancy work. Would it not be well to do work of a high and truly artistic character—work that would live after them? Any lady who purchases this work, or has a copy presented to her will be a better woman if she reads it carefully.

Appleton's Journal for February is an unusually good number of an excellent periodical. A bare examination of the table of contents would convey a very inadequate idea of its merits, for the titles of magazine articles are often misleading. There are several papers which have a real philosophical value, such as one by Lord Houghton "On Certain Present Phenomena of the Imagination," one by Mr. W. H. Mullock, on "Intolerance and Persecution," and one by Mr. W. R. Greg, entitled "Verify Your Compass." The chapter from Mr. Spencer Walpole's new *History of English Literature* is deeply interesting, the subject being treated from a new point of view, and in a style differing from all that have preceded it. The most curious paper is that on "The Shakesperian Myth," by Mr. Appleton Morgan, who proves to his own satisfaction, following Judge Holmes, that Shakespeare was simply a theatrical manager and playwright, like Wallock or Daly, or perhaps Dion Boucicault; that he never wrote the great dramas which bear his name, but merely adapted for the stage the productions of others; and that the probabilities are strongly in favour of the finer passages having been written by Lord Bacon or Sir Walter Raleigh. It is impossible to deny the authors of this hypothesis—Mr. Morgan being only an expounder and defender of it—the credit of ingenuity, but it must be confessed that they have some work to do in their capacity of iconoclasts before they succeed in demolishing the popular idol, the ideal William Shakespeare.

THE POPULAR SCIENCE MONTHLY FOR FEBRUARY. Prof. Emil du Bois-Reymond opens the February *Popular Science Monthly* with an able article entitled "Darwin vs. Galvani," in which the rival doctrines of *teleology* and *natural selection* are discussed and compared in a very instructive and dispassionate way. Prof. Jos. Le Conte follows with his second and concluding paper on the "Scientific Relations of Sociology to Biology," pointing out in this article the true position of Sociology as the chief of all the sciences. "The Crystallization of Gold, Silver, and other Metals," by Thos. J. Gregan, is an illustrated and untechnical account of the various beautiful crystalline shapes taken by some of the precious metals, and the conditions under which the phenomena occur. In the next article, "Herbert Spencer before the English Copyright Commission," we have some strong common sense forcibly applied to a very important question. "The Formation of Mountains" is an illustrated account of a series of experiments performed by Prof. Alphonse Favre, of Geneva, to show the formation of the great irregularities of the earth's surface by means of lateral thrust and crushing due to the process of cooling. People who believe in "bumps," as well as those who would locate the mental faculties a little deeper than the scalp, will be interested in "The Old Phrenology and the New," by Dr. Andrew Wilson. The departments are all good, the Editor's Table and Popular Miscellany especially so. New York: D. Appleton & Co. Fifty cents per number, \$5 per year.

CHAMBERS' ENGLISH READERS. W. & R. Chambers, London and Edinburgh. The series, as far as issued, consists of two

primers and three readers. They are edited by J. M. D. Meiklejohn, M.A., Professor of Education in the University of St. Andrews. They are profusely illustrated. That the child may get ideas before words, one sound, *and only one*, is given for the same vowel in the primer. The teachers are strongly advised not to give the names of the letters until the necessity for the names arises in the minds of the pupils. The selections are very judiciously made. We would be pleased to know that the primers were in the hands of every teacher in Canada. "Probably those sceptics who sneer at phonic teaching as a "Yankee" innovation would be disposed to pay some attention to so distinguished an authority as Professor Meiklejohn.

FIRST FRENCH READING LESSONS, embracing the relation of English to French, and the word formation in the French language intended to facilitate the acquirement of an extensive vocabulary, with grammatical, idiomatic and general notes by Alfred Henniquin, M.A., Instructor in French and German in the University of Michigan. *Ann Arbor Printing and Publishing Company, Ann Arbor, Michigan.* Price \$1.50; special copies bound in paper for teachers, 50c.

These "reading lessons" are intended as a substitute for readers in both schools and colleges. The main aim of the author is to make reading a most helpful means of acquiring an extensive vocabulary, and reviewing the most important grammatical principles of the language.

The following extract from the preface will explain some of the advantages this work may claim over the numerous Readers in present use:

"There is evidently more than one aim in view when the student of the language makes a first attempt at reading."

"It should be the means of acquiring a vocabulary,—of fixing in the mind the grammatical principles already studied,—of getting an insight into the genius of the language,—and finally of beginning to speak French."

"In nearly all the so-called 'Practical French Courses' very little is said, if anything, of the relation existing between the French and English words. Likewise nothing is said of the word-formation in the French language."

"The English language contains more than nine thousand French words, or at least, closely resembling French. Now, if we add to this number, more than ten thousand words that can be formed from other root-words—many of which have already been learned by the student, before beginning to read—will it not seem a very rational thing to devote a short time to this special study—the relation of English to French and the word-formation in the French language, before attempting to read at all?"

"Finally, we have avoided translating the idioms, as is usual in Readers. The idioms have been analyzed when possible, in such a way as to fix them on the student's mind."

Official Department.

The following circular to the School Inspectors has been sent from the office of the Minister of Education:—

"SIR,—In some cases it has been found impossible, from various causes, or extremely onerous, for School Trustees to comply with the law and regulations on Public Schools. In such cases it is not desirable or expedient, in the opinion of the Honorable Minister of Education, to deprive the school of its share of the School Fund.

"The Minister, therefore, requests that the circumstances of all such cases should be fully reported to him by the Inspectors concerned, so that he may be enabled to consider them, and to give the necessary directions in each case.

"I have the honor to be, sir, your obedient servant,

"ALEXANDER MARLING, Sec'y.

"Toronto, Dec. 26, 1878."