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The Canada School Journal.

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The Canada School Journal

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CANADA SCHOOL JOURNAL HAS RECEIVED

An Honorable Mention at Paris Exhibition, 1878.

Recommended by the Minister of Education for Ontario.

Recommended by the Council of Public Instruction, Quebec.

Recommended by Chief Superintendent of Education, New Brunswick.

Recommended by Chief Superintendent of Education, Nova Scotia.

Recommended by Chief Superintendent of Education, British Columbia.

Recommended by Chief Superintendent of Education, Manitoba.

The Publishers frequently receive letters from their friends complaining of the non-receipt of the JOURNAL. In explanation they would state, as subscriptions are necessarily payable in advance, the mailing clerks have instructions to discontinue the paper when a subscription expires. The clerks are, of course, unable to make any distinction in a list containing names from all parts of the United States and Canada.

OUR NORMAL SCHOOLS.

The Minister's Report supplies the usual statistics of these institutions, and the special Report of the Director gives some additional information about their internal economy. It is unnecessary to remark that educational work cannot be estimated by the cord and that quality far more than quantity is the main thing worthy of attention. The large number of teachers attending these schools is, however, some slight guarantee that in several departments valuable work is accomplished, and that the country is on a whole getting a fair return for its outlay. Though their progress has been slow, and not at all commensurate with the general advancement throughout the high schools of the province during the last decade, they have lately taken some onward steps. It is noticeable that for the last two years we have heard fewer complaints from ex-students that their time is frittered away in laboriously doing nothing, and the Ottawa school is at last reported fairly efficient. The indications are that this is only the beginning of a thorough reformation, and that shortly they will command the respect accorded to the Toronto school in its early years under the energy and contagious enthusiasm of men like Robertson, Ormiston, and Sangster.

Sweeping criticism is out of place where such large staffs of instructors are involved. It is somewhat difficult to speak plainly and point out conspicuous failures, even where such failures have been publicly notorious for many years, and the Director has chosen the more agreeable alternative of calling attention to the excellent work done by master workmen. Students soon catch the fire and zeal of real masters, and though their praises should never be written in any public

Report, they are embalmed in the hearts and memories of each succeeding class of students, whose generous appreciation of real help is always equal to their scorn and contempt for a mere succedaneum.

Perhaps it is even worth the money wasted on *one* unmitigated sham, to have at the very heart of our system a sort of educational beacon for the instruction and warning of novices about to enter a noble profession. The Greeks were not generally supposed to have been lacking in acuteness, yet they sometimes introduced an intoxicated slave into the presence of their children to produce in them a disgust for inebriety. On the same principle of contrast, the lack of training, scholarship, and teaching power, the evils of *ill-tempered scolding, perpetual nagging, coarse manners, and unsympathy*, may be deeply impressed by a peculiar kind of object lesson. Experimental methods of teaching are greatly valued in these days, and if students are made to experience in their own persons some of the worst educational calamities, we may naturally suppose they will go to the fields of labor with an abiding distaste for the evils to which they have for a little while been subjected, and will be extremely cautious how they inflict similar wrongs on those committed to their own care. A single blot sometimes shows off the effect of a fine picture, and a lengthened probation to stupidity may be at bottom founded on a sound and subtle philosophy of education. Foreign educationists do not seem to have discovered this shadow which heightens the general effect of our system. Perhaps it would be difficult to persuade the French and the Germans, after what they have heard of us, that we keep an expensive model of imperfection for the sake of getting our young teachers to press on to perfection.

Turning to brighter things, we find the most marked improvements in Music, Drawing and Methods. The cheery influence of song is surely making its way into our schools, and a great majority of our Normal students go away anxious to introduce it into their schools. Some who could not draw a straight line return to their school-rooms, set their pupils to work at designing new patterns and thus give happy and varied employment, furnishing recreation and imparting practical skill along with taste and refinement. Practical Chemistry is well taught in many a public school, and the young pupil led successfully into the path of experimental science while he is at the same time interested and amused. *Our Normal Schools are growing better and not worse, and on the whole deserve generous support and kindly criticism.* Every lover of education heartily wishes them good speed in their noble work. They ought to be multiplied in number, increased in power, thoroughly equipped and fully prepared for the great mission that lies before them during the closing years of the century. Superannuated incompetence could better be accommodated with housing at some other public institution.

THE SCHOOLS OF NOVA SCOTIA.

The Annual Report of Dr. Allison, the Superintendent of Education, states that the record of the past year is more than usually satisfactory. There has been an increase in the number of schools, teachers, and pupils, and the sum expended on school buildings much exceeds the average amount during recent years. Teachers' salaries have gone slightly upward, and new interest has been manifested both in methods and subjects of instruction. During the winter 1,911 teachers were employed and 2,011 during the summer term, to instruct 98,307 pupils enrolled at 1,943 schools. In 1878 the number of pupils was 102,538, showing a falling off similar to that observed in the province of Ontario during the last few years. In 1880 the attendance sank to 93,700, so that, as in Ontario, it is again on the increase.

The total expenditure for public schools for 1883 was \$612,889, of which \$176,072 was government aid and \$436,817 derived from local sources.

The average salary for first class male teachers was \$408.70 and for female teachers \$298.24. For second class teachers the averages were, males, \$279.06, females \$230.52. The averages for third class teachers were \$206.09 and \$159.10 respectively. The highest averages were \$669 for first class males, \$450 for second, and \$414 for third class. The corresponding figures for women were \$430, \$330, \$270. These figures bear out our contention that part of the fixed grant to schools should depend on the grade of the teacher's certificate, and make it plain that the plan would be fair to the local authorities, while it would stimulate teachers to advance as rapidly as possible in their profession. In fact the distribution in Nova Scotia *does* depend on (a) the number of teachers employed, (b) the grades of license, and (c) the relative time the schools are open. During the summer term 630 teachers removed to other schools, and 664 in the winter term, while 1,136 and 953 respectively continued in the same sections. During the same periods 215 and 263 teachers respectively were engaged for the first time.

There is one Normal School, on which the expenditure was \$5,133, and \$753 was paid for the travelling expenses of Normal School students. It has five teachers, whose salaries amounted to \$4,250; it instructed 125 students, of whom 77 received licenses to teach. The Model Schools attached have 12 teachers, whose salaries amounted to \$4,850, and the total expenditure on these schools with 1,009 pupils enrolled was \$6,808, of which the province paid \$800. General and professional education are carried on simultaneously at the Normal School, but the Superintendent urges the necessity of making it distinctly a training school for teachers. There is nothing corresponding to the County Model Schools of Ontario, but Dr. Allison recommends such a reconstruction of the academic system as would prepare the advanced schools to undertake the entire non-professional training of teachers, just as the High Schools of Ontario now do with marked efficiency. He also recommends the separation of the non-professional from the professional examinations of teachers as the first step to be taken. The admirable results obtained

here by training third class teachers in local model schools are worthy of careful examination, if a general reconstruction of the system of professional training is aimed at by the authorities of Nova Scotia. The outlines of the proposed plan for reconstructing the secondary schools were given in these columns last month. After giving statistics to show that only a small percentage of all the pupils study such branches as science, algebra, geometry, Latin and Greek, the Superintendent remarks:—

"A glance at the foregoing figures will tend to allay the apprehensions, cherished by some, that our schools are being given over to the domination of certain high sounding 'ologies.' To be candid, I have never shared in such fears, believing them, when entertained, to be based on misconceptions. In the first place, to sneer at a useful branch of knowledge, whose principles may be closely related to the health, the life, or the general usefulness of human beings, as an 'ology' does not affect either its intrinsic or its educational value. We have made a beginning of introducing the elements of science into our schools, to say nothing of the *pre-scientific* work done in a goodly number in the shape of simple lessons in color, form, and the more obvious phenomena of nature; but in my judgment we must do more in both directions before we meet the real necessities of the case. Secondly, our 'Course of Study for Common Schools' is intended to lay emphasis on the importance of the fundamental branches. No ideal perfection is claimed for its provisions; it is probable that extended experience will suggest as desirable their modification at certain points; but beyond all question the course has the merit of recognizing *all* of the studies accepted as constituting the general basis of human culture and the instruments by which the ultimate results of education are to be secured. These it adjusts in their proper relations, and, at least approximately, assigns to each its just degree of importance. Surely those who criticize it as a means designed to promote a showy veneer of knowledge at the expense of all that is solid and substantial in education, have never studied either its aim or its requirements."

CANADIAN HISTORY.

The following extract from the report of an address by the Hon. G. W. Ross at the opening of the free library in this city articulates itself precisely into the remarks of the JOURNAL on the teaching of history. The hon. gentleman said:—

"Above all things was it necessary that Canadians should study thoroughly the history of their own country. If there was one thing more than another that was studiously avoided in the educational system of this country it was the study of its history. Even in the Public Schools—those schools of which they were so proud and boasted so much in the Province of Ontario—this branch was grievously neglected. The children were taught the history of France, of Germany, of Italy, and of other European countries; they were taught the history of ancient Greece and Rome; but the history of their own country—this fair Canada of ours—which it behooved them all to know and understand, was almost totally neglected. It was not so in the United States. Every schoolboy and girl was taught something of the life and doings of George Washington and of those other men who had helped to build up the great country to the south of us. But how many children in Canadian schools had any acquaintance with the lives of the distinguished men whom Canada had produced? He feared the number was amazingly small."

This is, we hope, the shadow of a coming event. Let "Canada for Canadians" be the motto of the school-room as well as the political platform.

Everything cannot be accomplished in a few months, but we take it for granted that this Canadian Minister of Education means to make Canadian children somewhat acquainted with the story of their own fair land. Our boys and girls shall know who Champlain and Frontenac were, how England came into possession of these floods and forests, what dangers and difficulties befel the pioneers in these provinces, how responsible government came in and with what struggles, how the constitution and laws arose under which we live, what is the measure and what the guarantee of the freedom and privileges we are handing over to these children. Our Canadian boys and girls shall know something of the heroic struggles and the sturdy independence of those whose monuments are the free, fair homes of Canada hewn from the unbroken forest. They shall feel their young hearts glow with patriotic enthusiasm over the story of adventure and daring equal to any in European annals. They shall grow up to honor the memory of the soldiers, the statesmen, the scholars, the philanthropists, the hardy pioneers, all who have labored in the spirit of self-sacrifice to place the boys and girls of 1884 in the midst of the advantages they now enjoy. They shall mark the errors of the past, and learn to use their liberty and intelligence in developing the material and moral resources of our young nation and in shaping for it a destiny worthy of its noble parentage.

This is indeed one of the best things our system can do for the rising generation. How is the result to be accomplished? By training its teachers, for **THE TEACHER IS THE SCHOOL**. It cannot be done by merely drawing up paper programmes, and prescribing dictionaries of Canadian antiquities. That plan has been tried before, and has failed on every trial. It cannot be done by setting examination papers for public and high schools, for colleges and universities, with one or perhaps two questions only on Canadian affairs. It cannot be done by continually giving Canadian history the go-by, and acting on the assumption that we have no history worth studying, and that the doings of stark William, red-haired William, long-legged Edward, or six-wived Henry are of more practical importance to the average Canadian citizen than Pontiac's conspiracy, the American invasion, Durham's report, or the Act of British North America.

We have been bestridden by European ideals in this matter, and have been led to look upon ourselves as mere colonists to such an extent that scarcely a hundred of our seven thousand teachers have any adequate knowledge of our three centuries of remarkable progress. The demand has been so small that we have scarcely a decent text-book. Place Canadian history on a level with chemistry and geography and good text-books will soon appear. Make it a necessary subject in every examination for a teacher's certificate, and insist on something more than can be learned in a few hours from a child's primer, and we shall soon have teachers with a constructive comprehension of the subject, with power to hold the attention of their pupils, placing before them the stirring scenes of our history and filling them with the idea that they have a country worth living for, a liberty worth defending, and

a future not to be over-shadowed by that of any other civilized community. Good speed to the introduction of Canadian history into the schools of Canada.

✓ THE ELEVENTH PLAGUE.

The malignity of Satan has never devised anything worse for youth than the Dime Novel, the Nickel Library, and the rest of the foul brood that is constantly issuing from the New York printing-houses. The arch-fiend made a master stroke in getting the press enlisted into his service. This juvenile criminal literature is a far more awful scourge to our race than leprosy, cholera, and yellow fever combined. They slay their thousands, but corrupt literature specially prepared for young boys ruins its tens of thousands. The angel of death can sheath his sword, and pestilence at last ceases from the work of destruction. But the wretches who ply the infamous business of corrupting and degrading our boys take no holidays. They dig graves that reach down to perdition, and never cease from the diabolical trade of snaring the flower of our youth into the jaws of something worse than death, and ruinous as hell. Their terrible poison pours more than seven vials of woe into the bosom of the family, and blights the hopes of parents by destroying the son of their tenderest affection. If fiends ever rejoice, it must be when they see literature, one of the grandest instruments for the moral elevation of mankind, the handmaid of purity and virtue, vilely prostituted to the service of darkness and vice.

If these remarks seem too strongly expressed, we could easily produce a dozen paragraphs from the daily papers gleaned in the course of merely a couple of weeks to show that this statement of the evil arising from impure books for boys is all too feeble, and does not convey half the truth concerning its heinousness and turpitude.

We have laws to protect even our cattle against contagion. We have quarantines and health officers to prevent the spread of smallpox, cholera, ship fever, and other virulent diseases. We have gone so far as to prohibit filthy, obscene, licentious literature. We have penal laws against the revolver and the dirk. But this "Jesse James" and "Buffalo Bill" literature is allowed to cross our lines without objection, though it is destroying our first-born and steeping many a home in woe. It is time that the teachers and parents throughout the whole Dominion joined in a thousand-voiced protest of indignation against this outrage on our schools and our homes. Let every teachers' convention and every board of trustees pass resolutions of abhorrence and forward them to the local governments. Let every Sunday School convention and every conference, synod, and assembly do the same. Let every newspaper and educational journal attack the vile trash and demand its exclusion from our shores. Let every pulpit denounce this traffic in the souls of our boys. It is the common enemy of the human race, let us join battle against our hated foe without distinction of creed. Canada long ago, first on this continent, first of the British colonies, declared death to

slavery. But this is an evil of vaster magnitude than the slave trade. Like slavery, it is a totally foreign element. None of these satanic books are printed here; and we want a national policy to protect our morals as well as our manufacturers. One solid, united effort, and the perilous stuff will be sent back to the slums whence it issues. If any bookseller dares to defy decency and indignant public opinion by dealing in this poison, let him be exterminated; he is a traitor to civilization.

We contend for a *pleum*, not a *vacuum*. Every child should be taught to read, every reader should have abundance of good reading. The enemy of darkness is heaven-born light. Teachers, what are you doing to sow the good seed which shall spring up and smother out these foul and poisonous weeds? Do you get the *Pupils' Companion* for your pupils from C. W. Hagar, 697 Broadway, New York? Have you ever told your boys of that miracle of cheapness and pure literature, *The Elzevir Library*, issued by John B. Alden, 18 Vesey Street, New York? Do they know that for a two cent stamp each they may have delivered at their own post-office Creasy's *Battle of Waterloo*, his *Battle of Saratoga*, his *Battle of Hastings*, Swift's *Battle of the Books*, Irving's *Rip Van Winkle*, *Aesop's Fables*, *Sinbad the Sailor*, and many other entertaining books all at two cents each? Do your pupils know anything about the *Boys' Own Magazine*, *St. Nicholas*, *The British Workman*, *Our Little Ones*, and other friends of purity and fun? Have you ever tried to get up a club for some of these papers at your school, so that the taste for good reading may come by tasting good reading? Do you ever read to your boys books they like to hear read? Have you read the *Hoosier School Boy* or *Tom Brown's Schooldays* to them? Let the sweet sorcery of pure story, adventure, and fairy tale cast its spell over the susceptible imagination. All work and no play is a bad formula for school as well as home. A couple of hours on Friday afternoon devoted to *The Arabian Nights*, *Robinson Crusoe*, *Pilgrim's Progress*, etc., and to readings and recitations by the pupils themselves, may under the power of sympathy be made a means of grace. If you would get a troublesome pupil on your side do three things: get him to help you to do something, set him to work that he likes to do, and *read a good story to him*. Impudence, laziness, sulkiness, even stupidity itself will vanish under the sunshine of sympathy, congenial employment, and good reading. *THE CANADA SCHOOL JOURNAL* will assist you.

An American School of Classical Studies has been established at Athens, Greece. It was founded by the Archæological Institute of America, and is supported by the contributions of fourteen of the principal colleges in the United States. The Faculties of these colleges select the Director of the School, who holds office for a year. The gentleman who filled the position during 1882-3 was the celebrated Harvard Professor, Dr. W. W. Goodwin. His successor for 1883-4 is Prof. Van Benschoten, of the Wesleyan University, Middletown, Conn.

The report of the first director, Dr. Goodwin, has been deemed so important in its general bearings and superior classical instruction that it has been included among the publications of the National Bureau of Education at Washington. Dr. Goodwin in his report expresses the opinion that facts prove a real demand for such a school as that which has been established. The idea lying at the root of it is neither new nor specially American. The French Government has supported such a school in Athens for the past thirty-seven years, and the German Government one for the past nine years; in these schools learned scholars of both nations are permanently maintained, valuable libraries are kept up, and students are supported, all at the expense of the Governments at home. The French school occupies an elegant palace on Mt. Lycabettus, commanding a view of the whole Attic plain. The German school, while occupying a more modest abode, commands the services of one of the most accomplished scholars of Germany, Professor Kohler. England also is seriously considering plans for the establishment of a similar school. The precise objects of the American school are thus stated:—

"The object of the American School of Classical Studies is to furnish graduates of American Colleges an opportunity to study classical literature, art, and antiquity in Athens under suitable guidance, to prosecute and to aid original research in these subjects, and to co-operate with the Archæological Institute of America, as far as it may be able, in conducting the exploration and excavation of classic sites. . . . The director superintends personally the work of each member of the school, advising him in what direction to turn his studies and assisting him in their prosecution. He conducts no regular course of instruction, but holds meetings of the members of the school at stated times for consultation and discussion."

REPORTS OF CASES.

Twenty-seven boys and girls sat in a school-room—two at a desk. An old rusty stove stood before the teacher's desk; behind that desk sat a woman about twenty-four years of age. Her lips were compressed, chalk dust lay on her brown hair and on her black dress. She was evidently—mad. It was time for dismissal, the clock hand pointed to ten minutes past four o'clock, and still she sat there. The scholars were very uneasy, for the air was close and they were tired. Finally the teacher rose.

"You are all anxious to go home, but why are you not anxious to be good scholars? I declare I am positively ashamed of you. You have been so noisy that you don't deserve to go home; but I shall dismiss you."

They filed out, one at a time, not one looking back to say good night, or ask her if her head ached, or if she would not go home with him and take tea. For a few moments gay laughing and cheerful voices were heard outside; then all was still.

The teacher went to the window and leaned on her hand; she watched their retreating forms; soon all were gone. Then she burst into tears.

All this grew out of a want of co-operation between these two parties. The teacher complained only of little things; the pupils complained only of little things. But life is made up of little things. Teachers, you must plant if you would reap.

Official Department.

EDUCATIONAL LEGISLATION.

1. High School Masters will henceforth elect two representatives to the Senate of the Toronto University, instead of one as formerly. These representatives, however, will now be elected by the head masters and their legally qualified assistants, so that the whole teaching staff will be represented as well as the head masters. This doubles the representation and quadruples the constituency. Next year the representation must be doubled again, and our legislators must not be allowed to forget it.

2. Power is given to the Senate of Toronto University to grant the LL D. degree without examination. The subject of Honorary Degrees will hardly bear even the most delicate handling. Least said is soonest mended. The influx of Honorary Degrees from obscure colleges in Michigan, Georgia, etc., perhaps made this step necessary. We sincerely hope that the Senate will prove ultra conservative on this point and religiously abstain from using the power conferred upon them.

3. Power is given the Convocation of Graduates to provide for the representation of members who are unable to be present at its meetings; and the meetings of Convocation are facilitated by some minor amendments. The power of the graduates in Convocation is, however, left as before, the shadow of a shadow.

4. Non-residents may require the school-tax on unoccupied land to be appropriated to a separate school situated within three miles, in a direct line, from said separate school.

5. Any board of separate school trustees, and the council of any municipality (three-fifths of whose members are not separate school supporters), may enter into an agreement for a term of years, that for each year of the said term, and at such times and in such sums as may be agreed upon, there shall, in lieu of and as being the amount to be levied and collected in such year for separate school purposes, be paid by said municipality to said board a fixed proportion of the total amount levied and collected within the municipality in and for such year for both public and separate school purposes, provided always, that if in and for any such year the rate in the dollar of assessment actually levied for separate school purposes within said municipality is not the same as that actually levied therein for public school purposes, then said agreement shall not be in force for or apply to such last mentioned year; provided also that any agreement made as aforesaid may be determined at the end of any calendar year on giving six months' notice by either of the parties thereto to the other party.

6. Mr. Gibson (Hamilton) moved—"That inasmuch as the Senate of Toronto University has for several years admitted women to the university examinations and class lists, and inasmuch as a considerable number of women have availed themselves of the privilege, but labor under the disadvantage of not having access to any institution which affords tuition necessary for the higher years in the course: in the opinion of this House provision should be made for the admission of women to University College." Motion carried after an animated discussion.

CHANGES RELATING TO THE EXAMINATIONS FOR TEACHERS' CERTIFICATES.

By regulations recently adopted, some changes are effected respecting the examinations for teachers' certificates in July next.

READING TEST INTRODUCED.

1. Reading has heretofore been neglected to a certain extent in our High Schools, and as a consequence no examination was required in this subject from candidates applying for second or third-class

certificates. The new regulations provide that every candidate must read a passage to be selected by the County Board of Examiners, and in the presence of an examiner appointed by the County Board for this purpose, the result of the test to be sent to the Education Department. It is thought by this means that greater attention will be paid to this very important subject of the school curriculum.

REGULATION REGARDING PENMANSHIP.

2. Another subject very much neglected is writing, and in this no standard was required. Under the new regulations excellence in penmanship will be absolutely necessary. Although writing is not generally regarded as a test of scholarship, still it is very desirable that greater attention should be paid to it in our Public Schools, and excellence in a teacher is one way of securing excellence in the pupil.

MUSIC AND DRAWING.

3. To encourage the study of music and drawing an examination may be passed in either or both of these subjects, and the number of marks obtained by the candidate will be added as a bonus to the total obtained in the obligatory subjects, and thus assist in making up the aggregate necessary for a certificate. It is hoped by this means to encourage the study of music and drawing in all the Public Schools of Ontario.

ORDER OF EXAMINATIONS.

4. The examinations for second-class will immediately follow the intermediate and third-class examinations, so that both can be taken by the same candidate, but third-class certificates will not be awarded on second-class papers.

AN ENTRANCE FEE.

5. Every candidate will be required to pay a fee of one dollar towards defraying the expenses of his examination. Heretofore these examinations have cost the Province between \$5,000 and \$6,000. It is considered just that candidates themselves should bear this burden, and in doing so they are only submitting to the obligation imposed upon candidates at the law examinations at Osgoode Hall and elsewhere.

RENEWAL OF CERTIFICATES.

6. It has been the practice of the Department in order to retain successful teachers in the profession to renew third-class certificates on the recommendation of the Inspector and the Board of School Trustees without re-examination. This custom has been found to operate injuriously. Many teachers were content to continue teaching on a third-class certificate, trusting to the indulgence of the Inspector and the exigencies of Boards of Trustees for a renewal. Under the new regulations no renewal can be obtained without re-examination except under very special circumstances, but in order to prevent the worthy teacher from leaving the profession the Inspector is to be allowed to add any number of marks up to 200 to the number made by such a candidate at the non-professional examination.

In this way the teacher is obliged to keep up with the educational advancement of the country by constantly revising his studies, and if successful his services receive an appropriate reward. It is also hoped that a re-examination will have the tendency of inducing many who would be disposed to repose upon their laurels to press into the higher ranks of their profession.

The following is the full list of the regulations regarding the forthcoming examinations:—

SUBJECTS FOR THE NON-PROFESSIONAL EXAMINATIONS.

NOTE.—It will be observed that the only material change introduced into the curriculum for the present year, is that the subjects of reading and writing are required. Candidates for the intermediate only will take the subjects 1 to 7, and either subjects 8, 9, or 11, as formerly.

THIRD-CLASS NON-PROFESSIONAL EXAMINATION.*

The obligatory subjects of this examination for 1894 are as follows:—

	Value.	Minimum required.
1. Reading.....	100	25
2. Writing.....	75	19
3. English Grammar.....	150	45
4. English Literature.....	150	37
5. Composition.....	100	25
6. Dictation.....	50	12
7. Arithmetic and Mensuration.....	150	45
8. { Algebra.....	100	25
{ Euclid.....	100	25
9. { History.....	75	19
{ Geography.....	75	19
10. Mental arithmetic.....	75	19
11. And any two of the following three:—(a) Natural philosophy, chemistry, botany...200		50
(b) Latin.		
(c) French.		
(d) German.		

To encourage the study of Music and drawing an examination may be passed on either or both of the subjects, and the number of marks obtained by the candidate will be added as a bonus to his total. The value of each of these is fixed at 75 marks.

The total value of the obligatory subjects is 1,400, and in addition to the prescribed minimum on each, the candidate is to make 700 marks on the aggregate.

The presiding examiner in the subject of Reading shall be selected by the County Board of Examiners, the result to be reported to the Department. He shall hear each of the candidates read a passage selected by examiners from an authorized Fifth Reader. The paper in Writing will also be considered by the Central Committee.

* Those who have already passed the Intermediate Examination are not required to pass again in the same subjects for Third-Class. A female candidate may, at either the Second or Third Class Examination, substitute for Algebra one of the subjects of French, German, Music, or Botany, in which she has not been examined for the Intermediate. The bonus for Music will not be allowed where Music is taken as a substitute for Algebra.

EXAMINATION TIME-TABLE.

FIRST-CLASS, 1884.		NON-PROFESSIONAL, THIRD, AND SECOND-CLASS, 1884.		
DAYS AND HOURS.	SUBJECTS.	DAYS AND HOURS.	SUBJECTS.	CLASS.
<i>Non-Professional Examination.</i>		Monday, July 7.		
GRADE C.		A.M. 9-9.20	Reading Regulations	3
Tuesday, July 15.		9.25-11.25	English Literature.	3
P.M. 1-2.30		P.M. 1-2.30	Algebra	3
P.M. 2-3.....		2.35-4.05	Geography	3
3.5-5.5.		4.10-5.40	Chemistry	3
Wed'eday, July 16.		Tuesday, July 8.		
A.M. 9-12..		A.M. 9.00-11.00	English Grammar...	3
P.M. 2-5.....		11.05-12.55	History	3
Thursday, July 17.		P.M. 1.30-3.30	Euclid	3
A.M. 9-12..		3.35-6.05	Natural Philosophy	3
P.M. 3-4.30		Wednesday, July 9		
Friday, July 18.		A.M. 9.00-11.00	Arithmetic	3
A.M. 9-12....		11.05-11.25	Reading Regulations	2
P.M. 2-5.....		11.30-12.00	Arithmetic	3 and 2
Saturday, July 19		P.M. 1.01-2.00	Composition	3 " 2
A.M. 9-12....		2.05-2.35	Dictation	3 " 2
P.M. 2-4.30		2.40-3.40	Drawing	3 " 2
Monday, July 21.		3.45-5.30	Reading	3 " 2
A.M. 9-11....		Thursday, July 10		
P.M. 2-5.....		A.M. 8.30-8.55	Writing	3 and 2
Tuesday, July 22.		9.01-11.50	Latin Authors	3 " 2
A.M. 11.5-12.35		11.35-12.35	Botany	3 " 2
P.M. 2-4.....		P.M. 1.30-3.30	French	3 " 2
Wednesday, July 7 & 3 following days.		3.35-4.30	Music	3 " 2
<i>Professional Examination.</i>		Friday, July 11.		
Monday, July 21.		A.M. 8.30-10.00	Latin Gram. & Prose	3 and 2
A.M. 11.5-12.35		10.05-12.05	German	3 " 2
P.M. 2-4.....		P.M. 1.30-3.30	English Literature	2 " 2
Tuesday, July 22.		3.35-5.05	Chemistry	2
A.M. 11.5-12.35		Saturday, July 12.		
P.M. 2-4.....		A.M. 9.00-11.00	English Grammar	2
Wednesday, July 23.		11.05-12.35	Geography	2
A.M. 8.30-10.30		P.M. 2.00-3.45	Algebra	2
P.M. 1.15-3.15		Monday, July 14.		
A.M. 8.30-10.30		A.M. 8.30-10.30	Arithmetic	2
P.M. 1.15-3.15		10.35-12.05	History	2
A.M. 8.30-10.30		P.M. 1.15-3.15	Euclid	2
P.M. 1.15-3.15		3.20-5.20	Natural Philosophy	2

Mathematical Department.

SELECTED PROBLEMS,

SUITABLE FOR FIRST AND SECOND-CLASS TEACHERS' EXAMINATIONS, WITH

SOLUTIONS.

1. What must be the rate of interest so that a sum of money may double itself in 20 years at compound interest?
Given $\log 2 = .301030$; $\log 20705 = 4.3160752$ and $\log 20106 = 4.3160962$.—*Intermediate Arts, London, 1882.*

Let M = amount, P = principal, R = amount of £1 for 1 year, and n = number of years. Then $M = PR^n$, but $M = 2P$, $n = 20$.
 $\therefore 2P = PR^{20}$; i.e. $2 = R^{20}$. $\therefore \log 2 = 20 \log R = .301030$
 $\therefore \log R = .0150515$, whence $\log 2 R = .3160815$
But $\log 2.0705 = .3160752$
Difference = .0000063

Now, $\log 20706 - \log 20805 = .0000210$, which is the difference for unity.

$\therefore .0000063$ is the difference for $\frac{20}{100} = .2$
 $\therefore 2 R = 2.07053$ and $R = 1.035265$, \therefore rate per cent. = 3.5265.

2. If n be a whole number, what is the least value of n for which $(\frac{2}{3})^n$ is less than $\frac{1}{4}$? *London Matriculation, 1882.*

Given $(\frac{2}{3})^n < \frac{1}{4}$; $\therefore n \log (\frac{2}{3}) < \log (\frac{1}{4})$
 $\therefore n (\log 2 - \log 3) < (-3) \log 2$
or, $n (\log 3 - \log 2) < 3 \log 2$
 $\therefore n < \frac{3 \log 2}{\log 3 - \log 2}$, i.e., $< \frac{.90309}{.1760913}$, i.e., < 5.1

Now since n is to be a whole number, n must = 6.

3. Find the condition that $x^2 + ax + b$ and $x^3 + a_1x + b_1$ may have a common divisor $x + c$. Prove that this common divisor will also divide $ax^2 + (b - a_1)x - b_1$.—*London 1st B.A., 1882.*

Divide $x^2 + ax + b$ by $x + c$, remainder = $c^2 - ac + b$, which must = 0 since $a + c$ is a divisor; $\therefore b = c(a - c)$. (A.)
Again, divide $x^3 + a_1x + b_1$ by $x + c$, remainder = $-c^3 - a_1x + b_1 = 0$, as before; $\therefore b_1 = c(a_1 + c^2)$. (B.)
Lastly, divide $ax^2 + (b - a_1)x - b_1$ by $x + c$, and the remainder = $ac^2 - c(b - a_1) - b_1$.

[NOTE.—These remainders are found by substituting $-c$ for x in the expressions. See *Teachers' Handbook*.—ED.]

Now, if this last remainder = 0, the third expression is exactly divisible by $x + c$. Substitute the values of b and b_1 found above, and we have $ac^2 - c(b - a_1) - b_1 = ac^2 - c\{c(a - c) - a_1\} - c(a_1 + c^2) = ac^2 - ac^2 + c^3 + c_1c - a_1c - c^3 = 0$.

Hence the expression is divisible, and the conditions are (A) and (B).

4. Find r and s in terms of a and b , p and q , so that $x^4 + px^3 + qx^2 + rx + s$ may be divisible by $x^2 + ax + b$, whatever x may be.—*London Matriculation, 1880.*

Find the remainder when expression is divided by $x^2 + ax + b$ and put this remainder = 0, thus:—

1	1	+	p	+	q	+	r	+	s
- a	-	a	-	(ap - a^2)	-	(aq - ab - a^2p - a^2)	-	(bp - ab) - b(q - b - ap + a^2)	
- b			-	b					
1 + (p - a) + (q - b - ap + a^2)									

Now we must have each column of the remainder = 0, i.e., $\therefore r - bp + 2ab - aq + a^2p - a^2 = 0$, $\therefore r = bp - 2ab + aq$; also $s - b(q - b - ap + a^2) = 0$, $\therefore s = b(q - b - ap + a^2)$.

If $x = 0$, dividend = s , and divisor = b
 \therefore For division to succeed, we must have $s = nb$, where n = a whole number.

5. Find the side of a square inscribed in a semi-circle whose radius is 5 feet.—*Pupil Teachers' Examination, 1879.*

Let FG be the diameter, A and E the corners on the circumference, and B and D the corners of the square $AEDB$ on FG . Join O , the centre, with A and E .

Then (I. 47) $OA^2 = AB^2 + OB^2$
 $= 5OB^2$, (see cor. II. 4).

$\therefore OB^2 = \frac{OA^2}{5} = 5$, i.e., $OB = \sqrt{5}$

Now side of square = $2OB = 2\sqrt{5} = 4.472136...$

A worthy Quaker thus wrote: I expect to pass through this world but once; if, therefore, there be any kindness I can show, or any good thing I can do, any fellow human being, let me do it now. Let me not defer or neglect it, for I shall not pass this way again. Let this be my epitaph:

What I spent, I had;
What I saved, I left behind;
What I gave away I took with me.

6. Show that $\frac{e}{2} = \frac{1}{|2|} + \frac{1+2}{|2|} + \frac{1+2+3}{|2|} + \dots$ ad inf.

Series $e = 1 + 1 + \frac{1}{|2|} + \frac{1}{|3|} + \frac{1}{|4|} + \dots$ ad inf.

$$\therefore \frac{e}{2} = \frac{1}{2} + \frac{1}{2} + \frac{1}{2|2|} + \frac{1}{2|3|} + \frac{1}{2|4|} + \dots$$
 ad inf. (A)

Now sum of the A. P. $1+2+3+4+\dots+n = \frac{n(n+1)}{2}$

$$\therefore \frac{1+2+3+4+\dots+n}{|n+1|} = \frac{n(n+1)}{2|n+1|} = \frac{n(n+1)}{2(n+1)n(n-1)} = \frac{1}{2|n-1|}$$

Now when $n=2, \frac{1+2}{|3|} = \frac{1}{2}$

" $n=3, \frac{1+2+3}{|4|} = \frac{1}{2|2|}$

" $n=4, \frac{1+2+3+4}{|5|} = \frac{1}{2|3|}$, and so on.

Substituting these values in (A) we get the required expression.

7. A man has 1000 apples for sale; he sells at first so as to gain at the rate of 50% on the cost price. He sells the remainder for what he can get, losing thereby at the rate of 10%. His total gain is at the rate of 29%. How many apples did he sell at the losing rate?—*Science and Art Examination, 1882.*

Let $x =$ number @ 50% gain, $\therefore 1000 - x =$ number @ 10% loss.

\therefore Gain on first lot $= \frac{x}{2}$ apples,

and loss on second lot $= \frac{1000-x}{10}$ apples.

\therefore Total gain $= \frac{x}{2} - \frac{1000-x}{10} = 29\% = 290$ apples.

$\therefore x = 650$; remainder $= 350$.

8. If $z = \sqrt{x^2 + y^2}$, show that

$$x + y + z : -x + y + z :: x - y + z : x + y - z$$

—*Science and Art Examination, 1881.*

$$z^2 = x^2 + y^2, \therefore 2z^2 = 2x^2 + 2y^2, \text{ or } z^2 - x^2 - y^2 = x^2 + y^2 - z^2$$

Add $2xy$ to both sides, and

$$z^2 - (x-y)^2 = (x+y)^2 - z^2$$

i.e., $(z+x-y)(z-x+y) = (x+y+z)(x+y-z)$ whence, &c.

9. Solve the following sets of equations, finding all the values of x , or x and y .—*Science and Art Examination, 1881.*

(a) $\frac{1}{x+a} + \frac{1}{x+b} = \frac{1}{a-x} + \frac{1}{b-x}$

Transpose, $\frac{1}{a+x} - \frac{1}{a-x} = \frac{1}{b-x} - \frac{1}{b+x}$

i.e., $\frac{-2x}{a^2-x^2} = \frac{2x}{b^2-x^2} \therefore x=0$

$$\therefore -b^2 + x^2 = a^2 - x^2 \therefore x = \pm \sqrt{\frac{a^2 + b^2}{2}}$$

(b) $x^2 + y = 51$ and $2x^2 + y^2 = 102$.

Multiply (1) by 2 and subtract $\therefore y^2 - 2y = 0 \therefore y = 0$ or 2. Substitute in (1) and $x = \pm 7$ or $\pm \sqrt{51}$.

(c) $\sqrt{x+y} + \sqrt{x-y} = 5$, and $\sqrt{x^2-y^2} = 4\sqrt{5}$

Square 1st and subtract twice 2nd and $2x = 16, x = 8$

Square 2nd and substitute, and $y = \pm 6\sqrt{143}$

10. In a field which grows uniformly 31 oxen can consume $8\frac{3}{4}$ acres in $\frac{1}{2}$ of the time in which 15 oxen would consume $5\frac{1}{4}$ acres, and 22 oxen would require 8 days longer to consume $7\frac{1}{2}$ acres than 20 oxen would require for $6\frac{1}{2}$ acres: in what time would 31 oxen eat up the $8\frac{3}{4}$ acres?—*Colenso's Arithmetic.*

acres.	acres.	oxen.	oxen.	
$5\frac{1}{4}$	$8\frac{3}{4}$	= 15	: 25	(1)
$7\frac{1}{2}$	$8\frac{3}{4}$	= 22	: $25\frac{1}{2}$	(2)
$6\frac{1}{2}$	$8\frac{3}{4}$	= 20	: 28	(3)

Let $u =$ a certain unit of time : put $4u =$ time required by 25 oxen to eat the grass on $8\frac{3}{4}$ acres, $\therefore 3u =$ time required by 31 oxen.

Then $25 : 31 = 3u : 3\frac{1}{2}u$;
And $4u - 3\frac{1}{2}u = \frac{1}{2}u =$ growth of grass eaten by 25 oxen in one unit of time.

$$\frac{1}{2}u : 4u = u : 14\frac{1}{2}u \text{ growth.}$$

$\therefore 14\frac{1}{2}u - 4u = 10\frac{1}{2}u =$ original quantity of grass.

Now 25 oxen in $\frac{1}{2}u$ eat $1u$ growth,

$\therefore 25$ " $1u$ " $2\frac{1}{2}u$ " "

$\therefore 1$ " $1u$ " $\frac{1}{2}u$ " "

And $25\frac{1}{2}$ " $1u$ " $8\frac{3}{4}u$ " " from (2)

And 28 " $1u$ " $4u$ " " (3)

That is 28 oxen eat $(4u - u) = 3u$ of the original growth,

and $25\frac{1}{2}$ " $(3\frac{1}{2}u - u) = 2\frac{1}{2}u$ " " "

$\therefore 25\frac{1}{2}$ oxen would eat the whole original grass in $10\frac{1}{2} \div 2\frac{1}{2} = 3\frac{1}{2}u$, and 28 " " " " " " $10\frac{1}{2} \div 3 = 3\frac{1}{3}u$.

\therefore The given difference of 3 days $= \frac{1}{3}u$.

But 31 oxen require $3u$ to eat the grass,

$\therefore \frac{1}{3}u : 3u = 3$ days : 21 days, the time required.

11. If the series of natural numbers 1, 2, 3, ... 10, 11, 12, ... were written down in a row without separating the figures, what would be the 750th figure of the row?—*Bursary Competition, Aberdeen University.*

Up to 99 there are $9 \times 10 \times 2 + 9 = 189$ figures, and the three figure numbers commence. We require $750 - 189 = 561$ figures more.

$561 \div 3$ gives 187 numbers of 3 figures each. Hence the last number will be $99 + 187 = 286$, and the last figure is 6.

12. Given $(x+y)^4 + (x-y)^4 = a^4$ (1)
and $(x^2+y^2)^4 + (x^2-y^2)^4 = a^4$ (2), find x and y .

—*St. John's College, Cambridge.*

Cube (1) by formula $(a+b)^3 = a^3 + b^3 + 3ab(a+b)$ and substitute for $a+b$, and we have

$$2x + 3a^4(x^2 - y^2)^4 = a, \therefore x^2 - y^2 = \frac{(a - 2x)^4}{27a} \quad (A)$$

Then from (2) $(x^2 + y^2)^4 + \frac{a - 2x}{3a^4} = a^4$

Cubing as above $x^2 + y^2 = \frac{(2a + 2x)^3}{27x} \quad (B)$

(A) + (B) gives $54ax^2 = (2a + 2x)^3 + (a - 2x)^3 = 9a(a^2 + 2ax + 4x^2)$

$$\therefore x^2 - ax = \frac{1}{2}a^2, \text{ whence } x = \frac{1}{2}a(2 \pm \sqrt{5})$$

Substitute for x in (B) and

$$\frac{1}{2}a^2(2 \pm \sqrt{5}) + y^2 = \frac{a^2(18 \pm 10\sqrt{5})}{9}$$

$$\therefore y = \frac{1}{2}a\sqrt{(86 \pm 22\sqrt{5})}$$

$$= \frac{a}{2} \left(1 - \frac{1}{\sqrt{5}}\right) \sqrt{\left(1 - \frac{4}{\sqrt{5}}\right)}$$

ONTARIO EDUCATION DEPARTMENT.

SECOND CLASS TEACHERS, JULY, 1883.

1. Prove that $\frac{1}{4}$ of $\frac{3}{7} = \frac{3}{28}$.

Let $\frac{1}{4}$ of $\frac{3}{7} =$ value.

\therefore the whole of $\frac{3}{7} =$ value $\times 4 = \frac{1}{7} + \frac{1}{7} + \frac{1}{7} + \frac{1}{7}$

$$\therefore \text{value} \times 28 = 1 + 1 + 1 + 1 = 3$$

$$\therefore \text{value} = \frac{3}{28} = \frac{3}{28}$$

N.B.—In this proof we have assumed multiplication and division of equals by the same, $\frac{1}{4}$ or $\frac{7}{7} = 1$, and that a fraction expresses the division of numerator by denominator.

Simplify $(2\frac{3}{7} \div 3\frac{1}{7}) + \frac{1}{7} - (1\frac{1}{7} \div 1\frac{1}{7}) - (1\frac{1}{7} \text{ of } 4\frac{1}{7} \div \frac{1}{7})$

2. The pendulum of one clock makes 24 beats in 26 seconds; that of another, 36 beats in 40 seconds. If they start at the same time, when first will the beats occur together?

1st will make its 120th and 2nd its 117th beat at the end of the 130th second. Answer, 2' 10".

3. A can do as much work in 4 hours as B can in 6; B in $3\frac{1}{2}$ as

6/130 1/12 130 9/11 10/9

C in 5. A does half a certain piece of work in 12 hours; in what time can it be finished by B and C, working separately equal times, and C succeeding B?

A in 28 = B in 42 = C in 60. ∴ amounts are as 14:21:30. A does work in 24 hrs. ∴ B in 16 hrs., and C in 12 hrs. In 1 hr. B does $\frac{1}{16}$ and C does $\frac{1}{12}$ work. In 1 hr. both will do $\frac{1}{16} + \frac{1}{12} = \frac{5}{48}$ work. If both worked together they would finish in $\frac{48}{5}$ hrs., but as they come one after the other they will require twice as long, = $2 \times \frac{48}{5} = 18\frac{4}{5}$ hrs.

4. A note for \$100, made March 9, at 3 months, is discounted April 11, at 8%. What is received for the note? (True discount.) 59 days at 8% gives $\frac{59}{365}$ of $8 = \frac{472}{45}$ of a dollar interest on each dollar of face value.

∴ Discount = $\frac{472}{45}$ and P. W. = $\frac{365}{45}$ of face value.
Then $\frac{365}{45}$ of \$600 = &c.

5. The unclaimed dividends on a certain amount of stock which pays 6% per annum amounted in 3 years to \$1152. The stock was sold at a discount of 12½% on its par value. What sum was realized? As no rate of interest is mentioned, we assume that the dividends do not accumulate.

3 years' dividends = \$1152 = 18% of stock = $\frac{18}{100}$ stock
∴ stock = $115200 \div 18$. At a discount of $\frac{1}{8}$.
Value = $\frac{7}{8}$ of $115200 \div 18 = \$5600$.

6. Teas at 3s. 6d., 4s., and 6s. a pound, are mixed to produce a tea worth 5s. a pound. What is the least integral number of pounds that the mixture can contain?

Marking the gains per pound with +, and the losses with -, we have

$$+ 1\frac{1}{2}, + 1 \text{ and } - 1.$$

Now the total gain must equal the total loss. It is evident that 2lbs, 1lb, and 4lbs are the smallest integral numbers which will make the loss balance the gains. ∴ Ans. = 7lbs.

7. A man buys 150 pounds of sugar, and, after selling 100 pounds, finds that he has been parting with it a loss of 5%. At what rate per cent. advance on the cost must he sell the remaining 50lbs that he may gain 10% on the entire transaction?

To make 10% he needs to get the cost price of 165lbs.
He sold 100lbs for the cost of 95lbs.
He must sell 50lbs for the cost of 75lbs.
i.e., at the rate of 100 for 150, ∴ advance = 50%.

8. Each member of a pedestrian club walks as many miles as there are members in the club. The total expense is £50 13s. 11d. How many members are there?

If there are x members, each walks x miles, at x pence per mile, ∴ x^2 is the cost in pence of the whole trip = 12167 pence.

$$\text{i.e., } x^2 = 23^2, x = 23 \text{ members.}$$

9. The hour, minute, and second hands of a watch are on concentric axes. When first after 12 o'clock will the direction of the second hand produced backwards bisect the distance between the other two?

The rate of the extremities of the hand are as 1:12:720 respectively, for the hour hand goes round the circle once, the minute hand twelve times, and the second hand seven hundred and twenty times in the course of twelve hours. Suppose the hands in the position described in the question. The reader may draw a figure, placing A at the end of the hour hand, B at the end of the minute hand, and C at the extremity of the second hand. Let the second hand be produced backward half way between A and B. Mark the point D. Call the distance from XII. to D one space, then A to B is 11, and B to C 108 spaces. Also observe that B to C is the same as C to A.

$$\therefore 11 \text{ spaces} + 708 \text{ spaces} + 708 \text{ spaces} = \text{circle} = 60 \text{ min.}$$

$$\therefore 1 \text{ space} = 60 \text{ min} \div 1427 = 30\frac{1}{1427} \text{ sec.}$$

ELEMENTARY ALGEBRA.

1. Find the factors of $(a-b)^3 + (b-c)^3 + (c-a)^3$.
Suppose a were to become b , we should have left $(b-c)^3 + (c-b)^3$ which is = 0. This shows that when $a-b=0$ the whole expression = 0, and from this we infer that the expression itself is of the form $(a-b)Q$ where Q is the exact quotient when $a-b$ is divided into the expression. For if $a-b$ did not divide the expression exactly but left a remainder, R , which has no longer contained $a-b$, then it would be of the form $(a-b)Q + R$, and when $a-b=0$ the first term would vanish but the remainder, R , would not vanish. Hence it

is plain that if the whole expression becomes zero when any particular letters become zero, these letters must be exact factors. Thus, in the case before us $(a-b)$ is a factor, similarly $(b-c)$ and $(c-a)$ are factors, therefore their product $(a-b)(b-c)(c-a)$ is a factor of the given expression.

Now the given expression is of five dimensions, and therefore must have factors to make up five dimensions just as a^5 must = a, a, a, a, a . We have found three such factors, corresponding to a, a, a . We must have left two factors corresponding to a, a , or one factor corresponding to a^2 . There is no other supposition possible. But we cannot have two other factors of one dimension like a and b , or like $a+b$, and $b-c$; for a, b , and c occur throughout the expression in precisely the same manner, i.e., wherever there is an a^2 there is a b^2 and a c^2 , etc. So that if a and b were factors c must also, from the symmetry of the expression, be a factor, and thus abc would be a factor, which with the three factors already found would give six dimensions instead of five. Similarly it is of no use to try $a+b=0$ as a factor. Therefore the remaining part of the expression must be a single factor of two dimensions.

Now a factor of two dimensions in a, b , and c can only contain terms made by taking a into a, b , and c , b into a, b , and c , and c into a, b , and c , i.e., it can only have terms of the form $a^2, ab, ac, b^2, bc, c^2$. Looking at these we see that they are all of two kinds, viz.: Squares like a^2, b^2, c^2 , and products like ab, bc, ca .

Hence the factor we are searching for must be of the form $K(a^2 + b^2 + c^2) \pm P(ab + bc + ca)$, where K and P are numerical and include any numerical factor that might belong to the rest of the expression. ∴ $(a-b)^3 + (b-c)^3 + (c-a)^3$ must

$$= (a-b)(b-c)(c-a)\{K(a^2 + b^2 + c^2) + P(ab + bc + ca)\}.$$

To find K and P , put $c=0$ and we have

$$(a-b)^3 + (a^3 - b^3) = (a-b)(-ab)\{K(a^2 + b^2) + P(ab)\}.$$

Divide this by $a-b$, and

$$(a-b)^2 - (a^2 + ab + b^2) = -ab\{K(a^2 + b^2) + P(ab)\}.$$

i.e., $-5ab(a^2 - ab + b^2) = -ab\{K(a^2 + b^2) + P(ab)\}$

$$\text{or, } 5(a^2 + b^2) - 5ab = K(a^2 + b^2) + P(ab).$$

And as these are not only equivalent but *identically the same*

$$\therefore K \text{ must} = 5 \text{ and } P = -5.$$

So that the whole expression must

$$= (a-b)(b-c)(c-a)\{5(a^2 + b^2 + c^2) - 5(ab + bc + ca)\}$$

i.e., expression = $5(a-b)(b-c)(c-a)(a^2 + b^2 + c^2 - ab - bc - ca)$.

NOTE.—We have written down every step of this process because no explanation of this method is given in any of the ordinary text-books, and students generally experience considerable difficulty in obtaining a grasp of it. See *McClellan's Teachers' Handbook*, pp. 87 and 229, for a concise statement of it.

2. Factor $a^3(b^2 - c^2) + b^3(c^2 - a^2) + c^3(a^2 - b^2)$.

As in (1) we see by inspection that $(a-b)(b-c)(c-a)$ is one factor.

Also as in (1) we see that the remaining part must be a single factor of two dimensions of the form

$$P(a^2 + b^2 + c^2) + Q(ab + bc + ca).$$

$$\therefore a^3(b^2 - c^2) + b^3(c^2 - a^2) + c^3(a^2 - b^2) = (a-b)(b-c)(c-a)\{P(a^2 + b^2 + c^2) + Q(ab + bc + ca)\}$$

Put $c=0$ and we get

$$a^3b^2 - a^2b^3 = (a-b)\{(-ab)\{P(a^2 + b^2) + Q(ab)\}\}$$

or $a^2b^2(a-b) =$

$$\therefore -ab = P(a^2 + b^2) + Q(ab), \text{ which shows that } P=0, \text{ and } Q=-1$$

$$\therefore \text{Expression} = (a-b)(b-c)(c-a)(-ab - bc - ca).$$

We subjoin a few more examples for practice and additional ones may be found in the *Teachers' Handbook passim*.

$$3. a^3(b+c-a)^2 + b^3(c+a-b)^2 + c^3(a+b-c)^2 + abc(a^2 + b^2 + c^2) + (a^2 + b^2 + c^2 - bc - ca - ab)(b+c-a)(c+a-b)(a+b-c) = 2abc(bc + ca + ab).$$

$$4. 2(a+b+c)^3 - (a+b)^3 - (b+c)^3 - (c+a)^3 + 3abc = 3(a+b+c)(ab + bc + ca).$$

$$5. (y-z)^3 + (z-x)^3 + (x-y)^3 = 3(x-y)(y-z)(z-x)(x^2 + y^2 + z^2 - xy - yz - zx).$$

$$6. (a-b)^3 + (b-c)^3 + (c-a)^3 = 2(a^2 + b^2 + c^2 - ab - bc - ca)^2.$$

$$7. (a+b+c)^3 - (a^3 + b^3 + c^3) = 3(a+b)(b+c)(c+a)(a^2 + b^2 + c^2 + ab + bc + ca).$$

$$8. a^4(b-c) + b^4(c-a) + c^4(a-b) = -(a-b)(b-c)(c-a)(a^2 + b^2 + c^2 + ab + bc + ca).$$

Correspondence.

To the Editor of the CANADA SCHOOL JOURNAL.

SIR,—As the question whether literature or science is the more effectual means in the development of the intellectual and moral nature has lately been before the public, I imagine the subject may yet be of sufficient interest to justify the expression of a few ideas through your popular journal. In the prosecution of my work as a practical educator it has often occurred to me that too much attention is paid to science. For a while science cast literature, with its life-giving and nourishing influence, completely into the shade. It was the fashion to speak of a proficiency in mathematics, and an expertness in solving problems resembling the renowned fifteen puzzle, as the great end of education. I am not opposed to science or mathematics in the work of education, but I maintain that the higher qualities of the mind are cultivated by other means, and that considerable latitude should be allowed in regard to the requirements of those studying these branches. There are persons who have a scientific or mathematical aptitude, but there are others who possess high and important qualities who look upon such studies with positive distaste. There are individuals who can see shades of thought, meaning, and humor in literature which others can never see; what if the aptitude of the one class should be the gauge to measure the abilities of the other? It would be just as reasonable, I apprehend, in a case of this sort as any other. Many men have achieved distinction in certain walks of life, and even made their names immortal, who would run a chance of being "plucked" at some of our examinations, even after careful preparation. There is, perhaps, too much difficulty in our examinations in some respects. It is right and proper for men and women to be trained for their life-work—and I believe in a long and gradual course of training—but it is in the doing of that work, principally, that they should stand or fall to a great extent, and in which they shall eventually stand or fall. The professions and occupations may be crowded, but there will be the survival of the fittest, and the only proper way to know who can do the work required of him, is to let him try it. Many a man is ruled out on account of his not being proficient in intellectual gymnastics, who might otherwise do good work in the profession from which he has been excluded. We cannot all be Hanlans or Westons, but we can row a boat well enough, and walk far enough and fast enough, to get through the practical work of every-day life, perhaps as well as they. I admit that examiners may be conscientious in prescribing such large doses of science, for the purging of the mind and training of the intellect. It depends a good deal on the opinion an educator has as to what a properly developed man should be, what means he takes to educate him. If a man is to be trained principally to amass wealth, and to get ahead of his fellow-men generally, a scientific education principally will not prevent his doing so. Science may train the perceptive and reasoning powers, but the finer forms of perception and the higher powers of reason are reached only by the lofty thoughts of noble minds. Literature is nourishing, life-giving; science is not. Literature partakes of the nature of the soul of man; science is more useful in the common meaning of the term, but lower. But the traditions and history of ages, and the natural respect and admiration of men for the literary qualities in other men, prove that literature occupies high ground, that it contains life, and thought, and power.

Port Albert, March, 1884.

T. F. YOUNG.

NOTES.—1. We welcome fresh and practical correspondence; but brethren, be brief, and strike out into your subject in the first sentence.

2. We hardly perceive what Brother Young aims at. He is not sufficiently definite, and we do not know what particular reform he wants. Literature is getting pretty fair attention, and the programme for higher certificates provides for options fairly well. Those "aptitudes" can switch off, we fancy, at a reasonably early period.

3. Examinations secure "the survival of the fittest" moderately well, even under present conditions. Brother Young should consider the misery of students who have no "aptitude" for literature, and cancel it against the other misery.—EDITOR.

To the Editor of the CANADA SCHOOL JOURNAL.

SIR,—I wish to call attention to an article on "Pedagogics" in the Practical Department of the JOURNAL for March.

The writer remarks:—"There is in the minds of the thoughtful to-day a growing discontent with the results of our educational system." In support of this statement he goes on to say:—"A successful business man not long ago said, 'I have sent my son to school for seventeen years; he has graduated with honor at one of our most noted universities, and now he does not know how to do anything.' That father seemed to think his duty had been faithfully performed when he had merely introduced his son to this world and handed him over to the schoolmasters. The truth is that the fault in this case lay not in the school system, as we are left to infer, but in the home training; unless, indeed, nature herself was at fault, which is not at all improbable.

It is true that the results of our educational system are often unsatisfactory. There is a vast difference between our young people as they are and as they ought to be. But the writer of the article on "Pedagogics" makes the mistake of confounding our educational system with our school system. The school system is in reality only one of a system of educative forces acting on the child, the combined effects of which ought to produce a perfect man. The home, the church, society, have a work to do in the development and training of the child, which the school cannot do alone, and which ought not to be expected of it. Now, I am quite willing to admit that our school system is by no means perfect; but I am not willing that it should have to answer for sins that ought to be charged elsewhere. The province of the school is to give such training and impart such knowledge as every person, whether farmer, artisan, or professional man, ought to have to fit him for the work of life. That is to say, its training should be general, not special. The best place to learn agriculture or any of the trades is on the farm or in the shops. If a father sends his son to school expecting him to come out a thoroughly equipped business man or mechanic, and there appears a "calf" instead, that father has only himself or his son to blame for the disappointment. Parents make the mistake, I repeat, of expecting the school to do what it never was meant to do. Children ought to be sent to school for a purpose. If "nine-tenths of the human race have to earn their bread by daily toil," let parents be content with giving their children a sound elementary education at school and then put them under special training for whatever is to be their life-work.

In the last paragraph of the article in question I find this statement: "Our schools, instead of fitting the young for the practical duties of life, really unfit them. . . . The scholar goes out of school with a distaste and disrespect for honest manual labor."

Now, in as far as this is true—and I think it by far too sweeping an assertion—the cause is to be found in the home influence rather than in that of the school. It does not prove the contrary to say that the most hard-working of fathers and mothers often have idle and useless sons and daughters, who disdain to soil their hands with honest toil; for these are the very fathers and mothers

who often are too *lazy* to train their children to work ; it is easier to do it themselves. There are, doubtless, exceptions, but as a rule it is for parents to say whether their children shall grow up with a distaste for manual labor ; the school is almost neutral in the matter.

Thanking you, Mr. Editor, for the space,

I remain, yours truly,
TEACHER.

To the Honorable THE MINISTER OF EDUCATION.

SIR,—I have the honor to submit the accompanying *résumé* of the result of the visits made by Principal MacCabe and myself, in accordance with instructions received from you.

The Normal Schools visited were the City Normal School in Boston, and the State Normal Schools at Bridgewater and Salem, in the State of Massachusetts. In the State of New York we visited the following: Albany, Oswego, and Buffalo. Besides these, as the opportunity presented itself, we visited the Collegiate and Polytechnic Institute in Brooklyn, and the Stevens Institute of Technology in Hoboken, in order that we might ascertain how the Physical Sciences are taught. In the former especially, we saw good points, particularly their mode of dealing with backward pupils. The Drawing done by the pupils was especially commendable. The arrangement of the Laboratories for Chemical manipulations is very complete.

In the Stevens Institute we met Professor Meyer, of the Physical Department, who took great pains to show us through his Laboratory and to perform some experiments for us. Similar kindness had been shown us by Dr. Thurston, Professor of Mechanical Engineering. We also had the pleasure of seeing the pupils at work in the workshop. Our next visit was paid to the City Normal School in Boston, under Dr. Duntou. Here as elsewhere we were unfortunate in the time of our visit. With the exception of this school a new term has just begun in all the Normal Schools, while here the Principal had sent out his graduating class to teach in the Public Schools of the city, so that we had no opportunity of seeing any classwork. We, however, gained a good deal of information from conversation with the Principal. We also had an opportunity of watching the teaching done in one class of the Primary school by a lady teacher of marked activity and fertile in expedients.

At Bridgewater we found that, while each sex has an ante-room, the general class room was used as a waiting room, in which ladies and gentlemen mingled freely, while some were availing themselves of the Reference Library, which occupies one end of the class room. Attached to this school is a boarding house, under the charge of the Principal, in which all students who are not residents of the town are required to board. We had the pleasure of dining in Hall and witnessing this peculiar feature of Normal School home and family life. In this school printed instructions for the guidance of the students, both in school and boarding hall, are given to each student. We obtained copies of these instructions. They are an admirable code of laws.

At Salem we found a class of 207 ladies, and had an opportunity of witnessing the teaching of certain classes by several of the Normal School Faculty. Here, as in Bridgewater, great attention is paid to Vocal Culture, both in connection with the exercises in Reading and Music and to pose of body. A similar remark may be made respecting Constitutional History. We saw a class in Experimental Chemistry: the work being performed by the students themselves, under direction of the Professor, but without any previous illustration by him. They were required to perform the experiment ; to observe carefully, the essential points of the observa-

tion being written on the blackboard by one of the class ; and lastly to draw the inference, the references being placed on the blackboard, in another column, thus:—

Experiment.	Observation.	Inference.
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In every study the students, in turn, occupy temporarily the place of the teacher of their class-mates ; and are subject to their catechisms as well as those of their regular teacher. Teaching exercises of various kinds form a large and important part of the school work. During the senior term object teaching is made a speciality.

One very peculiar feature of this school is the teaching of Carpentry to such Ladies as desire to learn. We saw some very creditable work that had been done by the young ladies. Besides the physical exercise involved, this work makes them practically familiar with straight lines, angles, and measurements, besides rendering them independent in their own schools if they desire to hang a blind or repair a map.

A most noteworthy feature in connection with this school is the extremely small amount of trouble given by the heating apparatus. There is no regular engineer: the janitor attends to the furnace and boilers. When we were at the school at one o'clock, the janitor had not visited the boiler room since seven a.m.

Albany.—At this school we found 258 students, of whom about 200 were ladies. We had the pleasure of listening to Principal Waterbury's Lecture on Moral Philosophy, which was of a conversational character, interspersed with questions. We attended recitations in several classes, the topical plan being used here as it generally is in the Normal Schools. In the Physical Science Room we listened to a topical explanation of the three kinds of lever.

Here, as in Bridgewater, free intercommunication between the sexes is allowed with certain restrictions. At the beginning of the session the Principal hands to each student a card on which is a suggested distribution of the whole twenty-four hours. Each student reports at the end of the first five weeks how far this suits her or him. When decided on, each student reports every five weeks how far he or she has observed this rule of distribution. A very curious practice obtains here: the students are weighed every five weeks, with the double object of determining their physical development and of keeping up the fare at their boarding-house. We found the Practice School under the charge of a lady teacher and her assistant, who do no teaching, but simply illustrate methods to the Normal School students and criticise the work done in their presence. The pupils of the Practice School are broken up into a number of sections of two or three, and sometimes more. Each of these sections is in charge of a Normal School student. All the sections of the same class have the same work, and when the Normal School teachers have finished the pupils are subjected to an oral examination by the Lady Principal and her assistant, who supplement and, if necessary, rectify the students' work. In the afternoon the students have to visit the city schools and submit to the President their written criticisms. The students are set to work at once to teach, without having any opportunity of seeing a class taught either in the Normal or the Practice School.

Oswego.—In this school, under Principal Shelden, we witnessed more practical work than in all the other schools visited. We attended many of the classes, and were delighted with what we saw and heard. There is an amount of real downright honest work done in this school, which has to be seen to be thoroughly appreciated.

We had an opportunity of listening to a special and a general criticism, given by the Lady Principal of the School of Practice, who, besides being a teacher of Methods of Teaching Geography

and Color, is the Critic, being ably assisted by the lady who has charge of the Methods of Teaching Form, Penmanship, and Drawing. The work of criticism was done *fearlessly*, every point being fully dwelt upon.

Spending, as we did, two days in this school, we witnessed many of the exercises both by members of the Faculty and by students in training. We have no hesitation in saying that more practical good may be obtained by visiting this school than by wandering about from school to school.

Buffalo.—The work done in this school is not unlike that done in Oswego, though possibly the criticism is not so searching; this may be owing to the fact that the Critic—a lady—is a new addition to the Faculty. Besides the criticism given by the Critic on work done before her in the Normal School and in the School of Practice, the student is subjected, as with us, to criticism by the teacher of the class. We witnessed work in several classes, and in the Drawing class found the students drawing from models made by themselves.

REMARKS.

In attempting to estimate the success of these schools, and in comparing their work with ours, it must be remembered that their session extends over a period of two years. They profess, as we do, to take up their academic work from a teacher's standpoint; that is, to present each subject as it is *to be taught*, and in the way in which it ought to be taught. The object, then, is to have the students, in learning any subject, learn also the best form in which it can be placed before pupils. This work is most successfully carried out. As far as time permits our Normal Schools do just as good work in this way. Making due allowance for our short time we do as much as they. We are of opinion, however, that the best results in this way can be attained only by making one session in the year in our Normal Schools—January to December, with July and August intermission; January to June, inclusive, Academic and Professional combined; September to December more strictly professional work. When the plan of reviewing the subjects of the Academic or Non-professional course was introduced into the Normal Schools, it was so introduced because it was found necessary to do so. The time was then extended. A further extension is necessary in order to have good work. Each school could take 120 students and thus keep up the number.

In connection with the review of subjects from a teacher's standpoint, we notice the importance attached to the topical arrangement of the matter. This seemed to work well.

The professional training in these schools, especially the Oswego one, was really training. The plan of giving a student a whole month, or a whole week, or even a whole day, at teaching is very much better than our plan of having an hour or two each day. This broken manner of carrying on the practice tells against our students, and the mixing up of subjects of non-professional study with this work spoils both. If a whole day were given once a week it would be better.

We notice particularly their system of notes on lessons, their criticisms—those of the students and of the critic teacher—and have learned much from these. In Oswego, the care taken in criticising the lessons cannot fail to make good teachers.

In the State of New York each principal receives a salary of \$2,500. In Boston the principal of the Normal School has a salary of \$3,800, while the principal of the Training department, who teaches two hours per day—the morning being devoted to routine work and oversight—enjoys a stipend of \$2,880. In the other schools of Massachusetts the salary of the principal averages \$3,000.

Know how sublime a thing it is,
To suffer and be strong.—H. W. Longfellow.

Special Articles.

THE STUDY OF SCIENCE.*

When a student has mastered the propositions of the First Book of the Elements, he may then learn how they may be applied both in the demonstration of Theorems and the construction of Problems. If the construction of Problems does not readily appear from the principles, let the analysis be attempted. Construct the diagram which represents the data and *quæsitæ*, and suppose the *quæsitæ* known, and trace back the steps which connect the *quæsitæ* with the data. When this is effected, the reverse of the process constitutes the solution of the Problem.

A correct diagram will be found most useful in suggesting the steps by which a Theorem is to be demonstrated. If the student will ask himself why he takes any particular step, he may avoid the habit of random guessing, and will more certainly discover the correct and direct process for effecting the demonstration. In framing a demonstration, that form is the better which proceeds directly or indirectly from principles, with the aid of a correct diagram. When a Theorem admits of more than one form of demonstration, that form is to be preferred which is the least tedious.

It should be remembered that Cambridge is not an infirmary for the weak and feeble-minded, but an Intellectual Gymnasium, where a student may develop and strengthen his mental powers by a course of disciplinary studies in the languages and sciences.

The following opinions describe the utility of the Mathematical Sciences as the best exercises for mental discipline:—

Roger Bacon considered that logic was to be dethroned, and its position replaced by two other subjects, which he regarded as the portals of all knowledge, the study of language and the Mathematical Sciences. He assigns to Mathematics the foremost place. Divine Mæthesis (he writes), and she alone, can purge the intellectual vision, and fit the learner for the acquirement of all knowledge.

Lord Ashburton, in a letter, has stated that "Geometry will afford to the young lawyer the most apposite examples of close and pointed reasoning."

Professor Leslie has remarked that "the Demonstrations left by the Greek Geometers are models of accuracy, clearness, and elegance—admirably calculated for training the minds of youth to habits of close reasoning and luminous arrangement."

The late eminent Lord Chief Justice Cockburn, a member of Trinity Hall, made a passing remark in one of his late charges, to the effect that Euclid's Elements was a mental training second to none.

The late Rev. Dr. Chalmers has stated:—"I am not aware that as an expounder to the people of the lessons of the Gospel I am much the better for knowing that the three angles of a triangle are equal to two right angles: or that the square of the hypotenuse is equal to the squares of the two containing sides in a right angled triangle. But I have a strong persuasion that both the power to apprehend and the power to convince may be mightily strengthened, and that the habit of clear and consecutive reasoning may be firmly established, by the successive journeys which the mind is called on to perform along the pathway of Geometrical Demonstration. The truth is that, as a preparative, whether for the bar or for the pulpit, I have more value in Mathematics for the exercise which the mind takes as it travels along the road, than for all the spoil which it gathers at the landing place."

The opinion of the late Dr. Whewell, Master of Trinity College, is to the same effect:—

"When a demonstrative science has once been thrown into a rigorous logical form, it possesses a permanence and solidity which eminently fit it for being an element of intellectual education. Euclid's Elements are, to this day, at the same time the best scientific treatise, and the best instrument of mental discipline, which we possess.

* Extract from Preface to New Edition of Potts' Euclid, furnished through the kindness of Robert Potts, M.A., Cambridge, England, author of "Potts' Euclid."

Almost all the alterations which have been made in that work, in more recent times, under the pretence of rendering it more easy, or more compendious, have tended to diminish its usefulness in our system of education. And a person writing an elementary book of Mathematics cannot aim at any higher success than that his work should keep its ground and discharge its office as long and as well as Euclid's Elements of Geometry have done. Yet perhaps it may sometimes appear, both to teachers and students, that it is a waste of time and perseverance of judgment to adhere to the ancient kinds of Mathematics [Arithmetic and Geometry] when we have, in the Modern Analysis, an instrument of greater power and range for the solution of problems; giving us the old results by more compendious methods; an instrument, too, in itself admirable for its beauty and generality. But to this we reply, that we require our *Permanent Mathematical Studies*, not as an instrument, but as an exercise of the intellectual powers: that it is not for their results but for the intellectual habits which they generate that such studies are pursued. To this we may add, as we have always stated, that, in most minds, the significance of Analytical Methods is never fully understood except when a foundation has been laid in Geometrical studies. There is no more a waste of time in studying Geometry before we proceed to solve questions by the Differential Calculus, than there is a waste of time in making ourselves acquainted with the grammar of a language before we try to read its Philosophical or Poetical Literature."

The late Professor De Morgan, who was unsurpassed for his insight into the fundamental principles of Mathematical Science, and his power of expressing them, printed some remarks on the first six books of Euclid in the "Companion to the Almanack" for 1849. He states: "There never has been, and till we see it we never shall believe there can be, a system of Geometry worthy of the name, which has any material departures (we do not speak of corrections, or extensions, or developments) from the plan laid down by Euclid."

To these opinions may be added that of the late H. J. S. Smith, M.A., Savilian Professor in the University of Oxford:—

"I should not wish to use words which may seem to reach too far, but I often find the conviction forced upon me, that the increase of mathematical knowledge is a necessary condition for the advancement of Science, and if so, a no less necessary condition for the advancement of mankind. I could not argue well for the enduring intellectual strength of any nation of men whose education was not based on a solid foundation of mathematical learning, and whose scientific conception, or in other words, whose notions of the world and of the things in it, were not braced and girt together with a strong framework of mathematical reasoning. It is something for men to learn what proof is, and what it is not: and I do not know where this lesson can be better learned than in the schools of a science which has never had to take one step backwards, which has never asserted without proof, nor retracted a proved assertion, a science which, while ever advancing with human civilization, is as unchangeable in its principles as human reason: the same at all times and in all places; so that the work done at Alexandria or Syracuse two thousand years ago (whatever may have been added to it since) is as perfect in its kind, and as direct and unerring in its appeal to our intelligence, as if it had been done yesterday at Berlin or Gottingen by one of our contemporaries. Perhaps, also, it might not be impossible to show, and even from instances within our own times, that a decline in the mathematical productiveness of a people implies a decline in intellectual force along the whole line: and it might not be absurd to contend that on this ground the maintenance of a high standard of mathematical attainment among the scientific men of a country is an object of almost national concern."

The following examples may serve as a verification of the correctness of the foregoing opinions:—

The account of Edmund Stone is chiefly taken from Dr. Hutton, and it may be cited as an example of true genius overcoming all the disadvantages of birth, fortune, and education.

Edmund Stone was a son of one of the gardeners of the Duke of Argyll. At eight years of age he was taught to read: and at eighteen, without further assistance, he had made such advances in mathematical knowledge as to be able to read the Principia of Newton. As the Duke was one day walking in his garden, he saw a copy of Newton's Principia lying on the grass, and called some one near him to take it back to the library. Young Stone, the

gardener, modestly observed that the book belonged to him. "To you!" replied the Duke: "do you understand Geometry, Latin, Newton?" "I know a little of them," replied the young man, with an air of simplicity. The Duke was surprised, and having himself a taste for the Sciences, he entered into conversation with the young mathematician. He asked him several questions, and was astonished, at the force, the accuracy and the candour of his answers. "But how," said the Duke, "came you by the knowledge of all these things?" Stone replied, "A servant taught me, ten years since, to read. Does anyone need to know more than the twenty-four letters of the alphabet in order to learn anything else that one wishes?" The Duke's curiosity was redoubled: he sat down on a bank and requested a detail of all his proceedings. "When I first learned to read," said Stone, "the masons were then at work upon your house; I went near them one day, and saw that the architect used a rule and compasses, and that he made calculations. I enquired what might be the meaning and use of these things, and was informed that there is a Science called Arithmetic. I purchased a book of arithmetic and learned it. I was told there was another science called Geometry: I bought the books and learned Geometry. By reading I found that there were good books in these two sciences in Latin: I bought a dictionary and learned Latin. I understood, also, that there were good books of the same kind in French: I bought a dictionary and learned French: and this, my Lord, is what I have done. It seems to me that we may learn everything when we know the twenty four letters of the alphabet." The Duke, highly pleased with the account, brought this wonderful genius out of obscurity, and provided him with employment which left him leisure to apply himself to the Sciences.

Stone afterwards went to London, where he became known by his talents, and in 1725 was chosen a Fellow of the Royal Society, and wrote several articles which were printed in the Transactions of the Society. He was also the author of a New Mathematical Dictionary, which was published in 1726. In 1730 he printed a Treatise on Fluxions, partly taken from the Marquis de l'Hospital's "Analyse des Infiniments Petits," and in 1766 he put forth "Some Reflections on the Uncertainty of the figure and magnitude of the Earth and on the different opinions of the most celebrated Astronomers."

Leaving no independent means he was obliged to employ his pen in writing for a subsistence, and he rather injured than increased his reputation by his injudicious productions. His name was erased in 1742 from the Register of Fellows of the Royal Society, and he died in poverty in the early part of the year 1768. Splendid talents, without high moral principle, could not save him from the degradation to which he had reduced himself.

(To be continued.)

BATTALION EDUCATION.

I confess myself appalled sometimes at this problem of what we call educating children, by the scores of thousands. It is easy to recall earlier experiences of different systems, or rather of the workings of methods upon no system, when the individual was not lost in the mass, and self-instruction and self-dependence were the daily lessons. Probably each of us has recollections of incidents and events of our school life spent in widely diversified localities, in other States and nationalities, none of which have but the slightest relationship or similarity to the experiences of the young people of New York city to-day. We can recall, perhaps, the country school-house and the country schoolmaster—the small fraction of the days spent in recitations of lessons learned with more or less diligence at home or in our seats; the well-worn text-books which our older brothers had used before us; the slate and the atlas that had come down even from a former generation, the working out of problems in a self-reliant way, the unassisted application of a book to learn what was in it; the sense of mastery in success, of defeat in failure. Whether hard or easy, it was a struggle on individual account. The *ceteras* of a gratuitous supply list were unknown. The sense of ownership of our appliances fostered the idea of individual independence. We worked our way for personal advancement, and if we whitened the old desk we did it with our own jackknives.

All this has changed. The experience of such days and places

has no sort of relation, and throws no light upon, the practical problems which present themselves for solution by us now. The question is not how to nurse a child; it is how to feed an army. Pupils come to us as battalions, not as units. They must be treated in the mass. The bright mind and the dull mind are equally out of their element. The average must be found and all things suited to that. There is little study, it is all instruction. Perpetual uniphonic recitation swells and echoes like the sound of many waters. From the old times, the real work of the scholar is divided by five, the work of the teacher multiplied by five. All this is a peremptory necessity. It has its evils, it has also its compensation. There is virtue in the competition of great numbers. The first vice of youth is conceit. A boy in a New York school early learns his own value. The laggards and the feeble are left, to be sure, but the quick mind has opportunities of hearing and learning to-day of useful things that his father in a country school-house never dreamed of.—*Stephen A. Walker, President of N. Y. Board of Education.*

JUVENILE CRIME.

We hear complaints from all sides of the great and most disheartening increase of juvenile crime. Especially is this the case over in the States, though it is very noticeable in Canada. The dime novels and the wretchedly indecent and immoral weekly publications which are circulated all over the States in hundreds of thousands are generally blamed as the chief causes of such a state of things.

This may account for some of the evil, but not nearly for all. Take our own towns and cities. The most miserable and depraved of the juveniles to be met with in our streets will be found to read *nothing at all*. In too many cases they *cannot* read the simplest sentences in the First Book, and know nothing of JESSE JAMES, or DICK TURPIN, or any other of the kind. But they are perfectly soaked in every kind of iniquity all the same. And how are they so thoroughly and so soon indoctrinated into all the ways of evil? To a very large extent because their parents are drunken, degraded, selfish, and brutalized almost beyond thought. From their earliest years these children hear nothing but blasphemy, see nothing but the vilest possible conduct, and receive nothing but the harshest and most unfeeling treatment. How should they know anything of decency? They have been at school ever since they could walk, and that school is one which makes them adepts in swearing, lying, tobacco chewing, whiskey drinking, and every kind of abomination. In many cases they are turned out when almost babies to sell papers, to beg or steal, so as to supply their wretched fathers and mothers with drink, and *they dare not come back empty-handed*. In other cases they are turned into the streets in order not to bother their parents by their presence in the miserable hovels that are called homes. What can be learned in these street classes can easily be ascertained by anyone who will spend an hour or two in the investigation. Every one either knows or may easily be assured of the fact that we have only too many such in Toronto. In one of the evening schools at which philanthropic individuals of both sexes are trying to do some of these boys good almost every one chews, drinks, and swears. Their idea of enjoyment, as they avow it, is to go out of the city, get dead drunk, and lie on the grass.

Almost without exception their parents are drunken, brutalized, and degraded beyond anything to be found among mere savages. In too many instances they are the cast-off illegitimate children of some who are accounted of the "better classes," and many of them will in due time graduate at the Police Court, through the Central Prison, to the Penitentiary and the gallows. Who or what are mostly to blame for most of that festering mass of moral depravity? Not literature even of the dime novel description, but the drinking

habits of society, the fallen and the falling character of the parents, the license of the "better classes," the "seduction" which so many would fain call no crime, but only at worst a pardonable indiscretion, and the dram shop at every corner, dealing out its "liquid fire and distilled damnation." The dime literature is no doubt inexpressibly base, the theatrical exhibitions of the low realistic order which are specially patronized by the hoodlums are frightfully corrupting, and many similar things are surely doing their work of death in multitudes of cases. But the relaxation or destruction of family order, the mean housings, and the dissipated habits of multitudes of fathers and mothers are doing more than all to make and increase among us a class of juvenile and precociously depraved practisers of every kind of iniquity, from whom our dangerous classes are continually being recruited, and by whose doings the time and attention of our police and our magistrates are more and more fully taken up.

We in Canada have not yet, as in the States, gangs of juvenile highwaymen, but we have sneak thieves in abundance, and we have precocious and premature depravity, such as it would be difficult to surpass even on the other side. What is to be done to stay this ever rising tide of iniquity? A good deal is already being done, otherwise matters would be much worse than they are. But a great deal more is necessary, and whoever sufficiently helps, be he of the Salvation or any other Army, ought to be welcomed as a coöperator in the war against iniquity in any and every form—iniquity which threatens in the form of drunkenness and other kindred vices to sap the very foundations of society, and to make our boasted civilization appear after all something like, very like, a failure and a sham.—*Toronto Globe.*

OLD ENGLISH SPELLING.

BY WILLIAM HOUSTON, M.A.

There is a very general impression that old English spelling is exceptionally capricious and irregular, and this feeling has a deterrent effect on many who would otherwise be tempted to pay more attention to the English language and its literature in the earlier stages of their history. The best corrective of the erroneous impression referred to is the study of old English, which will amply repay those who take it up intelligently, earnestly, and systematically, but something may be done to remove it by a reference to well-known and established facts. I do not deny that old spelling is very irregular; but I do deny that it is either more irregular or more capricious than the present day spelling, and I hope to show that the latter would be greatly improved by a return to some of the old methods.

By "Old English" I mean the language prior to, and including, the period of Spenser, whose text is generally printed as he wrote it, while those of Shakespeare, the authorized Bible, and Milton are modernized before being put into the hands of the modern reader. When one hears the spelling reform movement denounced, therefore, as an interference with "our fine old English spelling," he may take it for granted that the critic never saw the language of Shakespeare, Milton, or the Bible as it appeared when first printed, and that he is so ignorant of the whole subject as not to be aware that the spelling now in vogue is substantially that substituted for the older and better spelling by the finical and often mistaken scholarship of the eighteenth century. Samuel Johnson was the literary dictator of his time. In compiling his dictionary he made an honest attempt to depict the spelling of the language according to the best usage then in vogue, but the usage had changed considerably from that of Milton, and very much from

that of Shakespeare and the Bible—not to speak of Spenser and still older writers—and not always for the better.

In order to be able to determine the comparative excellence of different modes of spelling it is obviously necessary to have some principle to refer them to. What constitutes good spelling? When is one mode of spelling better than another? Is there any general principle underlying our spelling which will serve as a test? Or, are the forms of words determined entirely by usage, which is too often another name for caprice? Spelling reformers contend that there is such a principle. They claim that as spoken language existed before written language the latter should be made to accommodate itself to the former, just as the clothing is made to conform to the body clothed. Written marks make up the dress of spoken sounds, being intended to represent to the eye the spoken language addressed to the ear. In other words, spelling should be phonetic, and the more phonetic it is the better it is. On the authority of Mr. Skeat, one of the foremost English scholars, old English spelling was intended to be phonetic, and it would have been more so than it is but for three causes: (1) the defectiveness of the English alphabet, (2) the carelessness or ignorance of copyists, and (3) the local variations of pronunciation.

I propose to show by means of a few illustrations that if we choose to avail ourselves of them we can get many hints from old English orthographical forms for the improvement of our modern English spelling. We cannot overcome the chief source of confusion and irregularity, our defective alphabet, which has only twenty-three effective letters to represent about forty elementary sounds—three of the letters, *c*, *q*, and *x*, being required to perform phonetic functions already assigned to other letters, *s* and *k*. We might, however, use our alphabet, and also our ordinary orthographical expedients, more consistently than we now do, and in this way greatly enlarge the area of constant orthography which is at present so lamentably small; and any improvement of this kind should be hailed with pleasure by all who have to go through the drudgery of teaching reading and spelling to beginners.

Milton's spelling is comparatively modern, but not so much so as to be useless for my present purpose. In his "Hymn on the Nativity," I find the following forms: Wherewith, darksom, vers, welcom, approaching, quire (choir), toucht, aw, mirtle, sovron, wherin, raign, kist (kissed), stedfast, com, don, weltring, som, agast, dumm (dumb), nimphs, dread, worshipt, jail. I find in "L'Allegro" the following additional spellings: Darknes, washt, skumbring, wher, plowman, sithe, nibling, brest, boosom'd, sed, ern, swet, mattin. We have a great deal of importance attached in our day to etymological spelling, and yet we find Milton spelling, in the clearest violation of etymology, "nimph" and "mirtle." Nor is he even consistent, for while he spells "nimph" in the "Hymn" I find "nymph" in "L'Allegro." I find him also using the forms "saide" in the one poem and "sed" in the other, to suit the exigencies of his rhyme:

Such music (as 'tis saide)
On earth was never made.
—*Hymn*.

She was pincht and pull'd she sed;
And he, by friars lanthorn led.
—*L'Allegro*.

It would be absurd to accuse a scholar of Milton's standing of illiteracy because his spelling is neither strictly etymological nor strictly uniform; why then are modern writers not allowed the same privilege? I leave the opponents of spelling reform to furnish the answer.

Shakespeare's own spelling looks quite antiquated alongside of the modernized text of his plays. I select the following pas-

sages as illustrations, for the benefit of those who so persistently plead for the retention of "the English of Shakespeare":

At this fusty stuffe
The large Achilles (on his prest bed lolling)
From his deepe chest, laughs out in lowd applause,

That's done, as neere as the extreamest ends
Of paralels.

—*Troilus and Cressida*, I. 3.

You speake your faire pleasure, sweete Queene faire Prince,
Here is good broken musicke.

—*Ibid* iii. 1.

Doo you thinke I will?
No, but something may be done that we wil not.

—*Ibid* iv. 4.

Grow like the summer grasse, fastest by night,
Unseene, yet crossive in his facultie.

—*Henry V*. 1.

Spenser's spelling is very antiquated, and his text abounds in forms more phonetic than their modern representatives. Take, as examples, the following from his sonnets: Hart (heart), blis, ryme, doo, toung, ravisht, wil, colord, flowre, hir, raine (reign), implido (implied), thretning, honor, spred, drido (dried), brest, al, through, mou'd, forst (forced), yeeld, clima (climb), pœce, skil, pittie, disobey. Spenser's orthography is extremely irregular; it is not uncommon to find the same word spelt two or three different ways on the same page.

I take the following examples of archaic and phonetic spelling from Ascham's "Scholmaster": Therefore, exceding, delite, somment (meant), ols, honor, yong, nie (nigh), cumlic, corage, solumme (solemn), presens, hed, wherby, foloe (fellow), ar, cum (come), compas, cold (could), beleve, readines, forse, ilnes. Of course Ascham was too much of a scholar to be chargeable with illiteracy because of either odd or inconstant spelling.

Gascoigne, who wrote about the middle of the sixteenth century, spells words as follows: Dwol, welth, shoperds, shuld, al, therin, lieftnants, sceptor, don, smel, bin (been), crookt, mont, skil, of (off), plowman, forain (foreign), wil, yong, ful, fel, cal, deckt, comly, evry, faivo (feign), threts, grevous, hart (heart), stil.

Lord Surrey, who flourished a little earlier, has the following forms: Futhers, hed, doutfull, hye (high), ols, mist (missed), hart, wher, brest, reuener (renewer), ther, fredome, releafe.

In the celebrated ballad of "The Nut-Brown Maid" will be found the following: Ther, furst, gon, greve, beleve, shal, redy, thief, deth, plesure, ful, wher, cum, erl, wurs.

The only other text from which I shall quote is that of "The Vision of Piers Plowman," which belongs to the third quarter of the fourteenth century. In it I find such terms as sesun, brod, dredful, dich, leve, seneth, Heven, plesse, gittles, cheef, peple, ese. I may add that in this, and most of the texts older than it, the combination "th" is represented, as every simple sound ought to be, by a single letter, the Anglo-Saxon "thorn," which we have unfortunately lost. If this old letter could be restored it would greatly simplify the spelling of an enormous number of words, including such common ones as "the," "that," and "this." Only those who have looked into our old English texts can appreciate the benefit of such a simplification of spelling.

In view of the above specimens of archaic English spelling I may be permitted to quote, with warmest approval, the following remarks by Dr. Murray, the editor-in-chief of the new "Historical Dictionary," the first part of which has just appeared:

"If you would know to what extent our words have changed during the past two hundred and fifty years, compare the English of the Bible of 1611 with that of the edition now in use. In the first chapter of Genesis you will find 135 spellings which are different from those of the present day—135 differences in thirty-one verses, though the same version, word for word! Yet there are simpletons who, when 'spelling reform' is mentioned, scream hysterically: 'You are going to alter our language! Keep your sacrilegious hands off the language of Milton, Shakespeare, and our English Bibles.'"

* From Dr. Murray's address on retiring from the Presidency of the English Philological Society.

Promotion Examinations.

COUNTY OF WELLINGTON PROMOTION EXAMINATIONS, MARCH 21st, 1884.

INSTRUCTIONS TO PRESIDING EXAMINERS.

1. Candidates in the same class are to be seated at least five feet (or two desks) apart, and whenever space will admit, no two candidates of any classes are to be seated together. Whisping and copying are to be strictly prohibited, and in every case noted and reported by Examiner.

2. All books are to be taken from seats, and maps from walls. Teachers cannot be permitted to hold the examination at any other time than Friday, 21st March, 1884.

3. Great care should be taken to impress upon the pupils that they should write their names at the top of each page of answers, and after folding the papers in the usual way, and placing them one within the other, the candidate should write on the back his NAME, the CLASS for which he is writing, and the SUBJECT. In case of paper running short both sides may be written upon.

4. The time-table is to be strictly followed.

5. The answer papers of each school are to be "done up" in three parcels (Arithmetic and Dictation in one, Grammar and Composition in another, and Geography and History in a third), and sent per book post (one cent per four ounces) to the proper examiner, as intimated elsewhere; but the list containing the names of the candidates and the marks assigned for Reading, with the declaration of the examiner, are to be forwarded to your Inspector.

READING.

First Book, Part II., page 54:—"When by the sun,..... flew off with it."

WRITING.

Copy on slates in script (not printing), page 56:—"A little bird.....she loved them well."

DICTATION.

Pupils will take separate seats with slates. To be conducted in writing.

1. So far flew the mother away from her brood.
2. I chased a little mouse under a chair.
3. It was a gray-bird's nest, and in it were three brown-and-white eggs.
4. They ate it with zest, for they were hungry.
5. The groom found him and took him home.
6. She whipped him, she slashed him.
7. They had to feed him on milk and the yolk of eggs.
8. A box of pork floated to the place where the men were.
9. To-day they set out for some sport with their kites.
10. Guard me safely through the night.
11. Here you see Florence at her tasks for next day's school.
12. All must hate a lying tongue.
13. He was at all times pleased to lend Curly his ball, or top, or kite.
14. Sixty minutes make an hour.
15. You may be sure Charlie's school-mates felt sorry.

ARITHMETIC.

1. Write in words 678, 1040, 703, 680 and 139.
2. Write in figures five hundred and six, one thousand and ninety, one hundred and seventy; and in Roman numerals 84 and 999.
3. Find value of $64934 + 3650 - 2967 + 532005 - 98789 + 48788$.
4. Tom has one hundred and eighty-six marbles, James has 78, John has 19, William has 37. How many has Tom more than the three other boys?
5. In a school of nine hundred and nine pupils, there are four hundred and sixty girls; how many more girls are there than boys?
6. George bought 28 marbles on Monday, 26 on Tuesday 44, on Wednesday, but on Tuesday he lost 17 and on Wednesday 23; how many had he left?

7. Mary bought a slate for 10c., a book for 25c., a fan for 60c., and a parasol for \$1.75; how much change should she receive out of a \$4 bill?

8. Find the difference between 786840034 and 982917802.

9. Three numbers added together amount to 2000; the first is 387, the second 1107; find the third.

10. A stair has 18 steps in it. Now if Willie goes up 13 steps, then down 6, then up 9, then down 5; how far is he from the top? Value, 100 marks—10 each.

N.B.—The teacher will conduct this examination, and report the results to the Inspector at his first visit to the school.

READING.

PROMOTION TO THIRD CLASS.

Second Book, page 123.—"The Lark and her young ones." Ten to twelve lines of this lesson.

PROMOTION TO FOURTH CLASS.

Third Book, page 297.—"I know that entertainments..... make our appearance together!"

PROMOTION TO FIFTH CLASS.

Fourth Book, page 137.—"The eagle is seen perched..... his talons from beneath."

Note.—This paper is not to be seen by candidates. Examiners are required to give careful attention to the marking of the reading. Consider expression, fluency, and correct pronunciation. Examiner will fill in the reading marks in list of candidates.

WRITING.

Writing will be judged from Dictation Paper.

SPELLING.

ENTRANCE TO THIRD CLASS.

To be read slowly and distinctly, and the greatest care taken that each pupil understands every word. Each sentence to be first read in full, the pupils simply paying attention, then again slowly, the pupils writing.

1. The tortoise said, "good-bye," and steadily persevered.
2. The violets courtesied in their own curious way.
3. She spied her grandmamma's spectacles and snuff-box.
4. This huge giant, clothed in complete armor, repeated his challenge daily, defying the men of Israel.
5. The boys separated to go on their several errands.
6. It was proposed that they should go to a neighboring carpenter's shop.
7. The saint that wears heaven's brightest crown.
8. The other boys confessed he had more courage than any of them.
9. The farmer loaded his pistol with lead.
10. They were rejoiced to find that their prayers to heaven for aid had been heard.
11. He thought he could spare the crocuses.
12. Searched, tyrant, prudent, surrounded, punishment, prowling, luscious, assistance, failure, wagoner, citizen, liberal.

ARITHMETIC.

ENTRANCE TO THIRD CLASS.

1. Write in words 800014. Write in figures one million six thousand and two. Write in Roman numerals nine hundred and ninety-nine.
2. Divide 708654321 by 6375.
3. Multiply 97008 by 90780, and take 7079034 from the product. N.B.—No values for questions 1, 2, and 3 unless absolutely correct.
4. A farmer has 729 barrels of apples. After selling 589, losing 87 by decay, and giving away 38 barrels, how many has he left?
5. If I buy 40 sheep for \$300, for how much must I sell them to gain \$100?
6. How often can 197 be subtracted from one million?
7. Simplify $604 + 35 \times 7 - 140 \div 4 + 8075 - 76 \times 43 - 80$.
8. If a man's wages are \$16 a month and his expenses are \$8 per month, how much can he save in a year and a half?
9. When 19 is added to a certain number, 81 is contained in the sum 67 times; find the number.

10. Jack has five times as many marbles as Harry, and both together have thirty; how many have each?

11. A man bought 920 head of cattle for \$21160, and sold them at a loss of \$3 each; find the amount he received for the cattle.

12. A farmer sells 36 hogs at \$2 each, 24 sheep at \$2½ each, 11 cows at \$17 each, and 8 horses at \$150 each. With the proceeds he buys land at \$4 an acre. How many acres did he buy?

GEOGRAPHY.

ENTRANCE TO THIRD CLASS.

1. Draw a map of the County of Wellington, showing its Townships, County Towns, Towns, Incorporated Villages, Railroads, and chief Rivers.

2. Bound the Township of West Luther

3. What line divides Nichol from Pilkinton?

4. What is a Cape? What is a Desert? What is a Sea? What is a Volcano? What is an Island?

5. Name the Cardinal Points of the Compass.

6. Name twenty post offices in the County of Wellington.

7. What county north of Wellington? What counties on the east of Wellington?

8. Name largest township in Wellington. Give the name of the smallest township in the County.

9. I went by rail from Arthur to Drayton; what lines of railway did I pass over?

SPELLING.

ENTRANCE TO FOURTH CLASS.

To be read slowly and distinctly, and the greatest care taken that each pupil understands every word. Each sentence to be first read in full, the pupils simply paying attention, then again slowly, the pupils writing.

1. Fritz's eyes fairly danced.

2. A punctual discharge of the sluicer's duties.

3. He cast a lingering and agonizing look upon the setting sun.

4. As M. Bachand had rightly conjectured, they were fast asleep, and totally unconscious of the devouring element.

5. What a noble resolve was made, and how heroically executed.

6. The crew who felt it their duty to ask, from the Lords Commissioners of the Admiralty.

7. Scorching, crackling, blazing as it was, he went through it for a few short moments of agony.

8. A touch of generosity seemed to come over him.

9. They were all dressed in what is called voyageur costume.

10. To these admirable arrangements must be ascribed the brilliant results which ensued.

11. I reflect with sorrow and astonishment on the little competitions, fractions, and debates of mankind.

12. Correspondent, leisure, eminent, remembrance, fatigue, disguise, penury, ardor, patriotic, frigate, sceptre, pageantry.

ARITHMETIC.

ENTRANCE TO FOURTH CLASS.

1. A had a field of 3 acres; he sold it all but 3 roods, in four equal lots. What was the size of each lot?

2. Find the least number which, divided by 675, 1050, and 4368, will leave in each case 32 as a remainder.

3. A sold a load of oats at 30 cents a bushel, and with $\frac{1}{2}$ of the proceeds he bought 16 yards of cloth at 80 cents a yard. How many pounds of oats were there in the load?

4. When 14 oxen cost \$539, what is the cost of 96 sheep, if 5 sheep are worth as much as 2 oxen?

5. A has only 25-cent pieces. B has only 20-cent pieces; how can A pay B \$3.20 for a hat?

6. A man bought two horses and a wagon for \$210; he pays for each horse twice as much as he does for the wagon. What does he pay for each horse?

7. Write in figures twenty-three billions, two thousand and four, and in words 100030003.

8. Thirty-three telegraph posts, placed at equal distances, extend a mile; how far apart are the posts?

9. In a certain length of fencing, it is found that whether the posts be put 8, 9, or 10 feet apart, there is always 6 feet over; find the length of fencing.

10. Simplify $\frac{1}{2}$ of $(3\frac{1}{2} - 2\frac{1}{2}) \div \frac{2}{3}$ and $\{\frac{1}{2} - \frac{2}{3} + \frac{1}{4}\} \div \{\frac{1}{2} - \frac{2}{3} + \frac{1}{4}\}$.

11. Find the product of '47 and '00432; and find the quotient of '408 by '0016.

12. A owns $\frac{1}{2}$ of a farm, B $\frac{1}{3}$ of the remainder, and C the rest. A has 60 acres more than C; how many acres has each?

GEOGRAPHY.

ENTRANCE TO FOURTH CLASS.

1. Define latitude, longitude, meridian, watershed, channel, promontory, beach, and lake.

2. Name the cities of Ontario, rivers of United States, and bays of South America.

3. In what county do you find Collingwood, Goderich, Port Dalrymple, Harriston, Orangeville, Brockville, Lindsay, Cornwall, Petrolia, and Madoc?

4. Name the Provinces of Dominion of Canada with their capitals and chief exports.

5. Name and locate ten of the largest cities in the United States

6. What and where are Calgary, Chaleur, St. Rogue, Havana, Magdalena, St. Pierre, Port Arthur, Sable, Georgia, Brandon, Hull, Moncton, Severn, Rainy, Soratta, Aspinwall, Vera Cruz, San Juan, Kickinghorse, Barrard?

COMPOSITION.

ENTRANCE TO FOURTH CLASS.

1. Write short descriptions of the following tradesmen and their occupations: (a) A carpenter. (b) A tailor.

2. Write short descriptions of a Township show. A circus. A church tea meeting.

3. Where do you make use of Capital Letters? By what names are these marks known, ; : . ? " " "

4. Combine into one sentence: The man was an engineer. He was a steady man. He was a sober man. He drove the fast train. He arrived on time. The snow was deep. The track in places was dangerous.

5. Correct where necessary:

well jack the anxious parrent crys.

how did you manidgo jack replys.

i thoct each day it's wants wood hav

and apotite again wood crav.

GRAMMAR.

ENTRANCE TO FOURTH CLASS.

1. Define a Relative Pronoun and a Transitive Verb.

2. Compare *little*, *bad*, *ill*, *friendly*, *rough*, and *much*.

3. What is a simple sentence?

4. What is the subject of a sentence? Give examples.

5. Name the ways in which gender is distinguished.

6. Define a Proper, Common, and Abstract Noun. Give examples.

7. Enlarge the subject in the following sentence in all the ways you can:—"Boys play."

8. Give three instances of a Transitive Verb, and three of an Intransitive Verb.

9. Correct the following sentences, and state, if you can, the rule in each case:—(a) Let you and I go for a pailful of water; (b) The boys was playing; (c) They ran away and hid themselves; (d) I have seen him last week.

10. Analyze and parse:—(a) They received their new guests as a vastly superior order of beings.

(b) Remote from town he ran his godly race.

CANADIAN HISTORY.

ENTRANCE TO FOURTH CLASS.

1. What is a Treaty? In what year and by what Treaty was Canada formally ceded to the British?

2. Give the date and provisions of the Quebec Act.

3. What gave rise to the United Empire Loyalists? Explain fully.

4. In the Revolutionary War was Canada involved? Explain fully. Give name, provisions, and date of Treaty closing the war.

5. What do you mean by the Constitutional Act and what brought it about?

6. From what is the word Parliament derived? Define Motion, Bill, Act of Parliament, Adjourn, Prorogue, and Dissolve.

7. What led to the war of 1812? Give any important engagement.

SPELLING.

ENTRANCE TO FIFTH CLASS.

To be read slowly and distinctly, and the greatest care taken that each pupil understands every word. Each sentence to be first read in full, the pupils simply paying attention, and then again slowly, the pupils writing.

1. A dull sound of the heavy beast striking against the unyielding trunks of the fallen trees.
2. A sturdy Virginian reaches down and draws up the lad before the tearful, breathless multitude.
3. Another circumstance which occurred about this period afforded him inexpressible delight.
4. Now lulls in dying cadences.
5. The annals of the American war record the following story.
6. The scene is altered from the interesting and beautiful to the majestic and terrific.
7. A peerless moon rode through an occasional cloud.
8. The unwieldy craft are brought to Quebec in great numbers.
9. An uninterrupted communication being thus made practicable across the St. Lawrence.
10. Before he died he paid the victorious army this magnanimous compliment.
11. She seemed to have lost the power of speech, as she sat, gazing in unutterable despair on the mangled form of her husband.
12. Launched, incautiously, fractured, precipice, contemptuous, disease, upathy, hospital, architecture. physician, unmanageable, manoeuvre.

ARITHMETIC.

ENTRANCE TO FIFTH CLASS.

1. Find the total cost of 2,360lbs. of hay @ \$10 per ton.
2,352lbs. of flour @ \$5 per barrel.
4,700lbs. of pork @ \$24 per barrel.
1,200lbs. of pease @ 70cts. per bushel.
2. Write down Square Measure, Dry Measure, and Troy Weight. Reduce 238,760 inches to miles, furlongs, etc.
3. A boy gave $\frac{1}{3}$ of his apples to his sister, $\frac{1}{4}$ of what was left to his mother, and had 84 apples left. How many had he at first, and what were they worth at the rate of 3 for 5 cents?
4. Bought a lot 25 rods long and 20 rods wide for \$1,000. Sold the same at 25 cents per square foot; find gain.
5. Three boys, Tom, Dick, and Harry, are respectively aged 9, 11, and 12. Divide 416 nuts among them according to age.
6. Simplify $\frac{\frac{1}{2} + 2\frac{2}{3} \text{ of } \frac{3}{4} + 11\frac{1}{2} \times 8\frac{1}{2}}{5\frac{1}{2} - 1\frac{1}{3}} + 3\frac{2}{3} \times \frac{1}{8}$.
7. Two-thirds of A's money is equal to three-fourths of B's, and four-fifths of B's is equal to five-sixths of C's. Altogether they have \$1,234; how much money has each?
8. Multiply 3456 by 1234, and divide the result by 1.92. (N.B.—Must not reduce to Vulgar Fractions.)
9. What must a farmer ask for a horse which cost him \$120, so that after throwing off 20% of the price asked, he may still make 25% of what it cost him?
10. How many bricks 9 inches long, $4\frac{1}{2}$ inches wide, and 4 inches thick, will be required for a wall 60 feet long, 17 feet high, and 4 feet thick, allowing that the mortar increases the bulk of each brick one-sixteenth?
11. Define the following:—Factor, Prime Number, Measure, Least Common Multiple. Resolve 87780 and 12350 into prime factors, and from them determine the Greatest Common Measure and the Least Common Multiple of the numbers.
12. How much will \$215.75 amount to at 8 per cent. per annum, for three years and a half, simple interest?

GEOGRAPHY.

ENTRANCE TO FIFTH CLASS.

1. Define Pole, Horizon, Meridian, Zone, Channel, Earthquake, Plateau, Delta, Colony, and Tide.
2. Give the Seaports of the Dominion of Canada and Mexico, specifying the principal articles of export from each.
3. Where is Guiana, and what are its divisions? Name its capitals.
4. Where are Mounts Etna, Vesuvius, and Hecla? For what are these mountains noted?

5. Where are the following cities situated, and for what are they severally remarkable:—Genoa, Amsterdam, Marseilles, Orleans, Liverpool, Cork, Odessa, Naples, Glasgow, and Oporto?

6. Draw a map of Nova Scotia, and locate its principal towns, rivers, lakes, capes, and bays.

7. Name and bound the Republics of North America.

8. What and where are:—Wight, Jordan, Indus, Suez, Cairo, Gibraltar, Ceylon, Fraser, Grand, and Bowmanville?

COMPOSITION.

ENTRANCE TO FIFTH CLASS.

1. Write a composition on Christmas day, telling when it is, why it is kept, where you went last Christmas day, who were with you, what you did, and what your opinion is of the value of Christmas day.

2. Correct where necessary the following:—John Steggins and co'y., fergus, respectfully informs the publick that they have had 100crate of grocery, 50 chest of teas and an inense stock of dry goods added to his stock from steemship sarmation on wedensday february 22nd which i am determined not to be undersold by any in the trade.

N.B.—i am abel to do this by purchasing for cash only.

3. Write a composition of not less than 25 lines on any of the following subjects:—The Cow. Railway. Kindness. Truth.

GRAMMAR.

ENTRANCE TO FIFTH CLASS.

1. Analyze:—He had exhausted all the resources of his skill; but he still wanted one of those effective dishes, capable of producing a great sensation, which rear on a solid basis the reputation of the cook of a great house.

2. Parse: The ships sailing across the ocean, looked like great ocean birds.

3. Give the plural of *potato*, *brother*, *datum*, *phenomenon*, *beau*, and *cherub*.

4. Correct where necessary, giving clear reasons in each case:—

- (a) Thou should love thy neighbor as thou loves thyself.
- (b) None of my hands are empty.
- (c) Many have profited from good advice.
- (d) The number of our days arc with thee.
- (e) Either the boy or the girl were present.
- (f) Which is the heaviest? Her's or Your's?

5. Write sentences containing—

- (a) A noun clause.
- (b) An infinitive or an infinitive phrase in the subject.
- (c) A sentence containing a relative pronoun.
- (d) A verb in the passive voice.

6. Give the principal parts of snow, spit, rive, mow, tread, weave.

ENGLISH HISTORY.

ENTRANCE TO FIFTH CLASS.

1. Name the kings of the Norman Period. Give dates when you can, and tell the leading features of the period.

2. Was London always the capital of England, if not what was? What were the Crusades and what King of England became famous in one of them? In whose reign was the title of Prince of Wales given to the eldest son of the King of England?

3. How came Henry IV. of the House of Lancaster to be King of England? Explain fully.

4. What do you mean by the Wars of the Roses? The King-Maker, who was he? At what period were many of the Nobility of England utterly destroyed and Feudalism became extinct? Who was the last of the Plantagenets and by whom was he succeeded?

5. What events of the reign Henry VIII. can you relate, giving dates where you can? In whose reign was Mary Queen of Scots beheaded, The Spanish Armada repulsed, The Church of England reformed, and what great men lived during the same?

6. When were the Crowns of England and Scotland first worn by one Monarch. What was the cause of the Civil War in the time of Charles the First and how did it end? Who was Oliver Cromwell and what was the extent of his authority in England at the close of his life? Give the character of Charles II. and James II. and the reason why Prince William of Orange, his son-in-law,

succeeded the latter. What famous General lived in the reign of Queen Anne and in what battles did he defeat the French?

7. Tell me what you know of the South Sea Company, of the battles of Culloden, Plassy, and of the Plains of Abraham, William Pitt, George Washington, Napoleon, The Duke of Wellington, and Prince Albert.

Practical Department.

TWO TEACHERS.

ESSENTIAL DIFFERENCE IN THEIR QUALITY.

A few days ago we visited a school taught by a young lady who openly acknowledged that she hated teaching and taught simply for the almighty dollar. And yet she boasted that she could teach as good a district school as any Normal graduate; and that her pupils progressed as rapidly in their studies as the pupils of professional teachers. We entered the school-room just as the pupils were coming in from recess; and were kindly received by the young lady in charge. Ten minutes were consumed in quieting the pupils, and during that time we took a general inventory of the room and its occupants. It was naturally a pleasant room, well lighted, neatly plastered, good furniture; and, had the walls been hung with a few pictures to break the monotony of the scene, it would have been as pretty a country school-house as is often seen. But the only attempt at decoration was one solitary, ragged multiplication chart, which had evidently been handed down as an heirloom from preceding generations. In one corner a long bench was piled with a promiscuous mass of hats, caps, overcoats, mittens, and dinner pails; and sticks of wood, pieces of bark, and a few crusts of bread, were scattered around the stove. We were curious to see what intellectual development could take place under such circumstances; so we took out our note-book and noted, or rather took a synopsis of, the proceedings.

The first class called was "A class in geography," consisting of two boys and three girls. A few questions were asked and answered in the usual way, and, though our hearing is generally considered to be acute, we failed to comprehend the answers given. The teacher was evidently troubled in the same way, for she suddenly jumped to her feet and exclaimed: "We want this noise stopped instant! I'll not hear another lesson till this room is quiet." Comparative quiet reigned; and we were enabled to grasp a few ideas. "James, what is the rain fall of a country?" "Rain that falls." "Johnny, if you don't get your book and make less noise, I'll—Johnny, do you hear what I am saying?" "No, mom." "Get your book." During this colloquy the geography class were variously occupied: one of the girls was studying her spelling lesson, and the two boys were seeing how many times they could sit down on the floor without being detected, and the other two were quietly enjoying the fun. "Eddie, describe the effect of high mountains on ocean winds." "Cools 'em off." (No comment by teacher.) "James, what two principal causes modify the climate of western Europe?" "Scholars, there is too much noise in the room; don't let me see another whisper to-night." Eddie had not yet disposed of the climate of western Europe, but had been engaged in something of vastly more importance to him; and by the skilful manipulation of "Pick or Po" had added several pins to his stock-in-trade. The teacher took it for granted that the question had been answered, and continued the lesson. But, if we should continue the contents of our note-book, it might be recognized, so we'll let this suffice.

But the same farce continued through every recitation. No stated time was given to any class; not a word of explanation was

offered; not a kind word spoken during that afternoon. The teacher hated teaching; the pupils hated to go to school; and when there, teacher and pupils worked against each other. One little fellow who was trying hard to study amid the hubbub came to a hard word, and the little hand went up for help; but "no questions now" dampened his ardor, and the hand reluctantly came down. The little fellow twisted uneasily in his seat, and with a disappointed look closed the book and commenced marking on his slate. Inside of three minutes he was ordered to "put up that pencil and study his lesson."

"Intellectual child murder," as *The Moderator* said a few weeks ago, was being committed daily, and those bright young intellects were being dwarfed and stultified and all their finer sensibilities being deadened by a conceited teacher who was no more fit to instruct the dawning intelligence of a child than you or I to build a suspension bridge. And yet I imagine this is not a solitary case. God grant the day may not be distant when teachers cannot enter the school-room without special training for their work.

In contrast to the above is a little experience in southern Wisconsin a few years ago. We were riding along the road about ten o'clock, and came suddenly on a little frame school-house nestled in a small grove. It was not very prepossessing in appearance, and we concluded to see how it looked on the inside. A rap at the door called the ruler of the little place into view. We apologized for the intrusion; explained that we once belonged to the pedagogic ranks, and asked permission to enter. We were cordially welcomed and made to feel at home at once. We heard only two recitations; but they did not interest us as much as numerous other things. On the desk we noticed "Swett's Methods of Teaching" and a copy of the "New England Journal of Education." The walls, though dingy, were decorated with advertising cards tastefully arranged, and a couple of lithographs of the Buckeye mowers and reapers. Over the teacher's desk hung "Wide Awake" and "Fast Asleep," two handsome chromos given, I believe, to subscribers to the *Christian at Work*. On a stand in the corner was a copy of "Zigzag Journeys in Foreign Lands" and two copies of *The Youth's Companion*. Before we left we were asked to read a chapter of "Trapping for Barnum" from its pages. We gladly complied, and it was a pleasure to read to those bright, attentive listeners. The teacher told us she was in the habit of reading to them every day, and often used *The Companion* as a text-book for her advanced class in reading.

The picture of that school-room, and that gentle girl leading those young minds in wisdom's ways, will ever linger a pleasant memory in our mind. We love to think of it, and a prayer goes up from our hearts for God to bless that teacher and those pupils, wherever their lot on earth may be cast. She loved her pupils and her work. Her pupils loved her and their work. They were a happy, loving family. On her register we found only three cases of tardiness, and not a pupil had been absent, unless detained by sickness, during a three months' term.—*Michigan Moderator*.

✓ SCHOOL HYGIENE.

School Hygiene is attracting a good deal of attention in both Europe and America. The Provincial Board of Health of Ontario are not behind in taking it up, and we hope soon to see practical results. It may be regarded as consisting of two parts: one relating to the structure and condition of the school-rooms, the other to the teaching of the subject of hygiene to the pupils. In either there is a broad field, requiring consideration and practical undelayed work. Years ago the late Minister of Education, Mr.

Crooks, promised that he would endeavor to have this important subject taught much more generally in the public schools. We trust and believe that the new Minister will take more decided action in this behalf; and we respectfully urge upon him the importance of giving the earliest possible attention to the subject. In this connection we would suggest the construction of a MODEL SCHOOL-HOUSE in Toronto, say. We should like to see the Education Department, the Provincial Board of Health, and the City School Board, unite in the construction of a public school building on the most approved scientific plan as to lighting, warming, and ventilating, its drainage, plumbing, etc. It would be well to have it comparatively small, in order that it might the more directly serve as a model for school buildings in towns and villages. Such united effort for such an important object would not be impossible nor impracticable. There are several medical practitioners on the Toronto School Board, which of them will bring up the matter for the consideration of the board? The Department of Government might very properly grant a suitable sum to aid in its construction, while the Board of Health, with or without the coöperation of other medical men, and engineers and architects, could see that the whole structure be built and furnished on the most approved hygienic principles.—*The Sanitary Journal*.

COUNSEL TO YOUNG TEACHERS.

Rev. James Owen, in addressing the out-going students of Swansea College recently, gave the following useful and important advice:—

It is your business to call into exercise, and strengthen and improve, the mental faculties of the scholars. "I wonder," said a friend to a president of a college, "you do not weary of going over and over again the same dry and dusty path, the alphabet of mental and moral science." "That," replied the professor, "is because you are not a teacher. The investigator finds his enjoyment in exploring new lands; a teacher in developing new minds." It is said that there are two million acres of waste land in England, and which, if brought under cultivation, would add greatly to the material resources of the Kingdom. But how many acres are there of mental, and moral, and spiritual waste in England? It is your work to reclaim the waste, and to clothe its barrenness with beauty and fruitfulness. John Ruskin says, "There is just this difference between the making of a girl's character and a boy's; you may chisel a boy into shape, as you would a rock, or hammer him into it, if he be of a better kind, as you would a piece of bronze. But you cannot hammer a girl into anything. She grows as a flower does." I am not able to define the reasons for this distinction in Ruskin's mind; but I know that a flower, tended with care, becomes what it is capable of becoming, unfolds its beauty and loads the air with fragrance. So under the training of a conscientious teacher, who sets a right estimate on her work, many a little girl's character will be developed, and will be made strong and beautiful.

Let me urge upon you, then, *the importance of taking your habits of study with you into active life*. There is a danger of resting content with what we have already gained, and of thinking that it is quite enough to carry us comfortably through the world. Boys and girls too often leave the school, and think no more of what they learn there. Young men and women are sent to a college, or to a boarding-school, to "finish their education." There ought to be no such thing as "finishing education," but education ought to go on through life, to its very close. Of course, every one has his own powers and faculties, and he must be content with them. It can do no good to complain, if you have not the

sanctified genius of Emma Tatham or of Frances Ridley Havergal. But how few make the best of the powers with which they have been endowed! And all of us have reason to be dissatisfied with our attainments. There was a time when Spain held both sides of the Mediterranean at the Straits of Gibraltar; and she stamped on her coins the two pillars of Hercules (as the promontories of the rock were called) and the inscription *Ne plus ultra*, "No more beyond." But when a brave navigator sailed beyond these rocks, and found a new world of beauty, then Spain struck the word "Ne" from the coins, and left *plus ultra*, "More beyond." And you ought to take not *ne plus ultra*, but *plus ultra* for your motto. There is more beyond. Be ambitious to reach it.

Exercise a wise *economy of time*. No one in looking forward to coming years would calmly think of spending them in idleness; but we receive time in moments, and we waste the moments, and thus we gradually waste days, and weeks, and years. I am sure you do not waste time in college; your "time-table" renders it impossible; form a "time-table," and adhere to it, after you leave college.

"Give attention to reading," and so read as to make the book a part of your mental furniture.

There are some books that you can read rapidly; and if you skip them all the loss is not great. But the books that are worth reading are worth reading well. Speaking of Southey's "Peninsular War," Robertson, of Brighton, said, "It is better not to read at all than to run through such a book." And he added, "I have got a small popular book on chemistry, which I am reading now, of 160 pages. I have read little else for a fortnight; but then I could bear an examination on every law and principle it lays down. I read hard, or not at all." This is the proper way to read; read so as to remember, read so as to improve and enrich your mental nature. Make the book you read your own. I do not mean that, if it is a borrowed book, you are to keep it; and some people seem to suppose that the laws of morality do not apply to books and umbrellas. But make what you read your own by impressing it on your mind, by conversation with others upon the subject, by the use of note-books. In the present age of ight reading, of reading hastily, thoughtlessly, indiscriminately, unfruitfully, when very many books are forgotten as soon as they are finished, and very much sooner, it is well to lay stress upon this mental discipline. He who would seek goodly pearls must keep his eyes open; and he who would gain knowledge must throw his whole energy into the pursuit.—*Educational Record, London, (Eng.)*

THE PRINCIPAL.

In school-work, as everywhere in life, success depends on the proper organization of forces and wisdom in utilizing agencies. "The right man in the right place makes all things right; while the best man may be so misused as to become a positive obstruction." In nothing is the unwisdom of our graded school system more displayed than in the mistakes perpetually made concerning the principal. In one school his teaching power is wholly dispensed with, and he is let loose for the sole work of what is called supervision. There are schools, especially in communities where the graded system is a novelty and trained teachers are not easily obtained, in which it is necessary that the principal of a great building, for a time, should be wholly occupied in the supervision of instruction and discipline; spending a portion of each day in every room until the local teacher is able to handle her work effectively. But even this imperative duty requires wisdom and tact, or it will be marred by over-doing. The moment that fifty

Notes and News.

children are convinced that their own teacher is, in any way, incompetent is the moment of defeat; for through that gap, as through a crevasse in a Mississippi levee, the flood of disorder pours in and drowns the land. As soon as possible, the principal should leave the room-teacher with full responsibility, or should cooperate in that friendly and stimulating way which will not undermine her influence with her pupils.

And, as soon as possible, the principal, man or woman, should have fixed periods of instruction with the higher classes of the school. Every bright child will be gratified by the compliment of being enrolled in the principal's class, and many a dull or mediocre scholar will do better work with the hope of reaching it. The last absurdity is reached when a famous teacher is placed over several hundred children and a dozen assistants to be relieved entirely from the work that has made him famous; too often, compelled to waste his energies in school book-keeping and matters of detail. All work of this kind should be reduced as much as possible in quantity, and either distributed among the entire corps or assigned to a principal's clerk; leaving the superior teacher and ruler of the house in a condition to do the best possible work in the organization, instruction, and discipline of the establishment.

On the other hand, a most destructive mistake is often made by shutting the principal entirely in the highest room, leaving no time for supervision, or even for the observation of what is going on below. Anybody can see how helpless the principal must be in this position; compelled to deal with material that has passed through a succession of rooms over which he has no control,—ignorant, in fact, of what is being done in any of them. The attempt to instruct such a class is a perpetual struggle with insurmountable difficulties, which, sooner or later, exhausts the patience and destroys the efficiency of the finest teacher. In too many of our smaller cities and in some of our chief towns this arrangement is made with a purpose. The assistant teachers are thrust in as a matter of favoritism, and, of course, resent supervision and work with a single eye to please their own trustee; the principal, often a woman, being engrossed by the same degrading occupation. The general superintendent is sometimes a weak man, kept in place by ambitious trustees on account of his weakness, that he may not interfere with the plans of ambitious members of the board; or a "Boss" who aspires to the management of every room and the personal supervision of every teacher. While this may be done in a place of moderate size, the attempt to handle the schools of a city even of 20,000 people in this way is a mistake which becomes more apparent with the increase of population.

Supervision is the backbone of every system of public schools. But no superintendent or principal can teach school over the head of the room-teacher. Neither can the room-teacher be wisely indulged in an "independence" that isolates her pupils and breaks up the harmony of the school-family. Here, as everywhere, we want "the golden mean."—*N. E. Journal of Education.*

A curious instance of what a simple change of comma can produce has been noticed of late. It runs as follows: Lord Palmerston then entered on his head, a white hat upon his feet, large but well-polished boots upon his brow, a dark cloud in his hand, his faithful walking-stick in his eye, a menacing glare saying nothing.

Boston's new sewerage system has been carried on under the able management of one of Boston's efficient engineers, Mr. Elliot C. Clarke, a son of Rev. James Freeman Clarke. The idea of the new system is that of intercepting the sewage of the city, and by a large tunnel carrying it under Dorchester bay to Moon island, where it is received in reservoirs and held until the ebbing tide will carry it far out to sea.

THE CANADA SCHOOL JOURNAL.—In the March number of the SCHOOL JOURNAL there are editorial articles on the Report of the Minister of Education and the Reports of the High School Inspectors and Moral Education. There is a large and varied selection of subjects bearing directly on the work of education, which teachers will find both interesting and profitable. In addition to the usual technical papers, Notes and News, an attractive feature will be found in "Readings and Recitations." The SCHOOL JOURNAL is a valuable aid to the teaching profession.—*Canada Presbyterian, March 26, 1884.*

The daily attendance at the Williamstown High School is about fifty, and the progress under the efficient head master, T. Scales, B.A., is very favorably mentioned in the local press.

We are glad to note that J. A. Clarke, M.A., B.Sc., late head master, Smith's Falls High School, is now convalescent. His medical advisers, however, prohibit his return to active duty in teaching for some time.

The Ingersoll Board of Education recently inspected the writing in the highest eight departments, and passed a resolution complimenting the principal, J. S. Deacon, on the marked success which has attended his efforts to improve the scholars in this important branch of study.

The Ingersoll Board of Education at its February meeting raised Mr. J. S. Deacon's salary to \$900. He has been principal of the school (P. S. and M. S.) 11 years.

Ingersoll Model School passed 44 pupils at the two H. S. Entrance Examinations for 1883.

The *Barrie Gazette* says that all the members of the Board of Education in that town "express themselves well pleased with the persevering industry of the head master; the accuracy and promptitude of the monthly reports of the schools are a great improvement." The head master referred to is Mr. T. O. Steele, late Principal of the Perth Public School.—*Perth Courier.*

At the last session of the Milton Model School there were 18 students in training, only two of whom were unsuccessful at the final examination. All the staff are re-engaged except Miss Bastedo, who was employed during the Model Session, and received \$90 for Model School work. The present teachers are,—Mr. H. Gray, head master, Mr. A. Crewson, and Misses Jarvis, Pattinson, and Andrews.

At the Convention of the Dominion Alliance recently held in Toronto, the following was one of the resolutions adopted:—That the convention hail with delight the efforts being made for the introduction of temperance text-books into our public schools, as thereby the youth of our country will be better instructed as to the nature and effect upon the human constitution of alcoholic liquors, and better qualified for the discharge of their duties as citizens of Canada; and that a copy of this resolution be forwarded to the Minister of Education desiring that gentleman and the Board of Education to introduce such a book into the public schools at as early a date as possible.

Cornelius Donovan, M.A., head master of the Separate Schools, Hamilton, has been appointed Inspector of Separate Schools for the Province, to act in conjunction with Inspector J. White, whose sphere was too extended and duties too arduous for effective work, including as it did the whole of Ontario.

The report of School Inspector Hughes for March gives the registered attendance at the Public Schools of Toronto at 12,271, the average attendance at 10,979, the percentage of average at 89.5, and the cases of lateness at 1,107. There were cases of corporal punishment at the schools as follows:—Dufferin, 12; Wellesley, 16; Ryerson, 8; Phoebe, 32; John street, 12; the Park School, 38; Victoria street, 7; Niagara, 24; Parliament, 7; George, 16; Church, 20; Elizabeth, 18; Brant, 14; Bathurst, 30; Hope, 22; Palace, 10; York, 14; Borden, 14; Givens, 12; Girl's Home, 8; Orphans' Home, 4; Chestnut, 4; Jesse Ketchum, 27; Cottingham, 4; Rose Avonue, 7. Seventy-four teachers were late an aggregate of 214 times, and at 19 schools the drill instructor was late 19 times.

Previous to the departure of Mr. D. J. Goggin from Port Hope to his new sphere of labor as principal of the Normal School in Winnipeg, the Board of School Trustees, teachers, and pupils united in showing their respect for him and appreciation of his

valuable services during the eleven years he had spent among them as Head Master of the Model School. The meeting in the Town Hall was crowded. Mayor Hugol occupied the chair, with Mr. Goggin on his left, while seated around on the platform were Messrs. G. M. Furby, James Evans, W. Craig, Sr., D. Chisholm, W. Thornhill, T. M. Henry, W. B. Stott, Drs. Clemesha and Purslow, Major Guernsey, and Rev. Messrs. F. A. O'Meara, D.D., Jas. Cleland, John Learoyd, and Geo. A. Copeland.

On a table in front of the chairman were a silver tea-set from the teachers and pupils of the public schools, and pupils of the high school, who received their primary education under the superintendence of Mr. Goggin, and a silver urn from the public school trustees. The presents were purchased from Mr. A. W. Pringle. The tea-set consisted of a waiter, tea and coffee pots, and sugar, cream, and sloop bowls, worth in all \$150, while the urn was valued at \$89.

After a few complimentary remarks from his Worship, Mr. Thornhill read an address from the teachers and pupils expressive of the high respect and esteem in which Mr. Goggin was held by them, and their deep and heartfelt sorrow at his departure. He (Mr. Thornhill) begged Mr. Goggin's acceptance of the memento which would tend to maintain his recollection of their affectionate regard for himself and his family. The address was signed by representatives of the Central, West Primary, East Primary, and High Schools.

On the part of the trustees Mr. Furby, chairman of the board, after a speech in which he reviewed the history of the schools and the indefatigable labor of Mr. Goggin in advancing them to their present condition of noted efficiency, presented Mr. Goggin with the silver urn, on behalf of himself and colleagues. Mr. Goggin's reply to both addresses was full of deep feeling, impressive eloquence, and cordial thanks. Dr. Purslow, Dr. Clemesha, Dr. O'Meara, Rev. J. Learoyd, and Mr. W. Craig, Sr., bore testimony to the excellent work done in educational matters by Mr. Goggin for the benefit of the town, and while a general tone of deep regret rang through their addresses there was a decided expression of opinion that the authorities in Winnipeg had exercised the greatest wisdom in their selection of Mr. Goggin for the high and onerous position he was about to fill. The singing of "Auld Lang Syne" brought the proceedings to a close.

Since the appointment of Mr. John Noble to the principalship of Uxbridge public schools, progress has been going on steadily and well. Among several new arrangements conducive to the welfare of the school, we may mention the establishment of a school fund to provide pure literature for the scholars, and a weekly meeting of the teachers to discuss topics bearing on their work in the school. We need not dwell on the obvious importance of both these points. Mr. Noble is ably assisted by the Misses Jackson, Walsh, Boden, Bustin, and Nicholls.

The action of the Board of Education in appointing Mr. T. J. Campbell, B.A., to the mathematical mastership of the Whitby Collegiate Institute will doubtless prove a happy one. Mr. Campbell is a gentleman of singular ability and attainments as a mathematician. He has each year of his University course taken a scholarship, and at his graduation last year won the gold medal in mathematics, and from his very high standing was appointed a Fellow of the University, in which capacity he has since acted as assistant to Prof. Loudon in lectures at University College. Mr. Campbell has a first-class grade A Provincial Certificate, and has had three years' experience in teaching. *Per Aspera Ad Alta* is the motto of the Collegiate Institute. May it prove true in this instance.—*Whitby Chronicle*.

A very successful Promotion Examination was held in Wellington County on the 21st of March. In Inspector Olapp's division it is reported seven hundred and seventy-five candidates applied to be examined. The work of reading the answers of the candidates was performed by committees. No teacher presided in his own school, and the papers were sent into the adjoining township to be examined. We understand the reports are all in, and the names of the successful pupils have appeared in the county papers.

The teachers of the first and second divisions of Wellington county, including the city of Guelph, intend holding a Teachers' Institute at Fergus on Wednesday, Thursday, and Friday, the 28th, 29th, and 30th of May. Prof. E. V. DeGraff, of Washington, D. C., has been engaged, and the Hon. the Minister of Education will occupy the afternoon of Wednesday in addressing the school trustees and teachers on proposed amendments to the

School Law. The Minister also lectures in the evening. Principal Grant lectures on Thursday evening. It is expected that Mrs. M. Hunt of Boston will address the Institute on "Compulsory Temperance Instruction in Public Schools." Papers are promised by Hon. Charles Clarke, M.P.P., Principal Mills, Inspector Carson of Middlesex, and by other prominent educationalists.

Strathroy High School has in attendance over 200 pupils. Under the able management of Mr. Wetherall it has been very prosperous. Applications are now being made to have it erected to a Collegiate Institute.

The *Canada School Journal* suggests as a topic for consideration at coming teachers' conventions, "What means should be taken to suppress the publication of pernicious literature among our youth?" The *Journal* cites numerous proofs of the terrible effects of such stories as "Buffalo Bill," "Jesse James," and the like, upon the minds of children, and mentions that in Montreal a boy committed a forgery, in Toronto a lad shot his companion on the street, and in each case the cause was too much dime-novel reading. Insubordination and impertinence are becoming unpleasantly prevalent in the schools—especially in the city public schools—and any remonstrance by the teacher is most violently resented both by parent and scholar.—*Toronto Mail*.

Dr. Haanel, of Victoria College, Cobourg, has made a discovery which is destined to revolutionize the methods of blow-pipe analysis. Hydriodic acid is the re-agent which Dr. Haanel purposes to use. Plaster of Paris tablets are used instead of charcoal. The advantage of the change is obvious. The specimen is placed in a little hollow at the end of the plaster of Paris tablet, and a drop or two of hydriodic acid is added; the specimen is then heated in the blow-pipe flame, and the properties of the mineral are indicated by the colour of the flame. Dr. Haanel's discovery has been sent out to the world in a most creditable way—a series of magnificent lithographs accompanying the explanations.—*Toronto Mail*.

The *Canada Educational Monthly* is not in love with the system of a Minister of Education, but sees a peculiar danger in the elevation of Mr. G. W. Ross to the position of Minister of Education for Ontario. Our contemporary says: "But whether party politics be allowed to obscure his vision and warp his judgment, the result of his elevation to office will be that every aspiring teacher and inspector, with Mr. Ross' shining example before him, will become a furious politician. He will not fail to see in his School Register a Minister's Portfolio."—*Hamilton Spectator*.

At the annual meeting of the Institute of Chartered Accountants of Ontario, held in Toronto on March 7th, Alderman J. W. Johnson, of Belleville, one of the principals of the Ontario Business College, was re-elected a member of the Council. Mayor Mason, of Hamilton, is the new President, succeeding Mr. S. B. Karman, Treasurer of Toronto.

Mr. W. C. Campbell, of Bartonville (East Hamilton), has been appointed assistant master in the Welland High School. Mr. Campbell takes classics, English, mathematics, drawing, and penmanship.

The Philadelphia School of Oratory will hold its summer session at Grimsby Camp grounds this year. The date of the holding of the school is from the 7th of July to the 15th of August. Besides the school there will be lectures by Douglass, Talmage, Fowler, and Thomas.—*Toronto Mail*.

LL.D.'s IN FRANCE.—The authorities of the leading colleges and universities in the United States have made praiseworthy efforts, during the past few years, to give significance to their degrees. The practice of conferring honorary degrees has declined, and examinations have been required for degrees in course. The necessity for such action is apparently not confined to the United States. According to the *Revue Internationale de l'Enseignement* for January, 1882, the French faculties of law did not create any doctors of laws in 1804-5. In 1806 they created 12; in 1820, 16; in 1830, 21; in 1840, 53; in 1850, 59; in 1860, 58; in 1870, 108; in 1872, 131; in 1875, 191; in 1876, 189; in 1877, 174; in 1878, 175; in 1879, 178; in 1880, 175. This rapid increase has excited some suspicion, and the French Government has interposed a check. Henceforth the examination for the LL.D. degree will be more vigorous. The candidate must first be a licentiate of law, and then submit to three examinations before a State Commission; viz., (1) on Roman law; (2) on French civil law and the history of French law; (3) on constitutional law.—*Education*.

[NOTE.—We recommend these remarks to the attention of the Senate of Toronto University. Evolution is better than special creation in the matter of university degrees, and we hope the Senate will refrain from making any use of the power to confer honorary degrees.]

NOVA SCOTIA.

The Legislature at its late session revised and consolidated the various Acts relating to Public Instruction. The provision of the law which empowered the Council of Public Instruction, under certain conditions, to sanction separate schools for colored children led to animated debates in both branches of the Legislature. A proposal to entirely eliminate this particular section was defeated, —in the House of Assembly by a majority of two, and in the Legislative Council by a majority of one. The latter body, however, added an important rider to the effect that no colored child can be compelled to attend school outside of the ward in which his parents or guardians reside. After a spirited discussion the House of Assembly ratified this amendment by a large majority.

The report of the Education Committee of the House of Assembly as published in the local *Journal of Education* is quite a lengthy document. It expresses general approval of the text-book policy of the Council of Public Instruction, and contains some excellent suggestions on that and other subjects.

Mr. Robichan, M.P.P., brought before the Legislature in a very interesting speech the educational claims of his countrymen, the Acadian French population of Nova Scotia. His aim was to show that the retention of their own language was essential to the true progress of that people, and that therefore our educational system should make fuller provision both for imparting instruction in French and the special training of French teachers. He supported his contention by pertinent statistics which exhibited much research, and evidently produced considerable impression on the Legislature.

F. C. Sumerhast, Esq., formerly registrar of the University of Halifax, has assumed the proprietorship and principalship of the Ladies' Boarding School, hitherto known as "St. Margaret's Hall." Mr. S., who is well known to many readers of the *JOURNAL* and was for some time Professor of Modern Languages in King's College, has given his institution the name of "Girton Hall."

The Academy at Annapolis has been making excellent progress since the appointment, about a year ago, of Mr. A. McRae to the principalship. Mr. McRae was formerly head master of Digby Academy, where he succeeded in making a very worthy record. The school commissioners have secured a larger school building with a magnificent play-ground, and a decided improvement is visible in every feature connected with the school. Mr. McRae takes the high school work, Mr. Ruggles is second master, and the junior departments are ably conducted by the Misses Clarke, Longley, and Harris.

The attendance at Windsor Academy is nearly 500. The principal, Mr. H. C. Elliott, is an earnest and zealous teacher, and the work now being done will reflect credit upon him. He is efficiently assisted by Misses Faulkner, Haliburton, Bennett, McKeen, Worthylake, Calder, and De Wolfe.

In looking over the prospectus of the new High School in Ridgetown, we conclude the school officials made an excellent selection when they decided to give the management of their school to Geo. A. Chase, Esq., M.A., Medallist in Modern Languages of Toronto University. Although the school is but in its infancy, having been in operation only since last September, there are already ninety pupils in attendance, a third master is employed, and further assistance is required. "It is good to begin well," and the foundation laid seems to be all that is desired, while the trustees are determined to spare no efforts in placing their school among the very foremost in the Province. We wish them every possible success.

GENERAL.

IN HIS PLACE.—Here is something teachers should apply to themselves. Do they ever talk above the comprehension of the pupil? A half-witted fellow found a missing horse, when all search for him had failed, and a liberal reward had been offered for his recovery. On his bringing the horse back to the owner, he was asked "Why Sam, how did you come to find the horse when no one else could?" "Well, I just 'quired where the horse was seen last, and I went thar, and sat on a rock; an' I just axed myself if I was a horse, whar would I go, and what would I do? And then I went and found him." It would be well if every teacher before sitting down to a class of children would ask himself, "If I were a boy how would I feel and what would I want?"

He would thus be more likely to get hold of those boys and bring them along with him whorover he pleases to go.—*Burnes' Educational Monthly*.

I would not like to send a child to a school where there was no library. Intelligent teaching requires a demand for intelligence. Intelligence means becoming a part of the life that has throbbod and struggled through the pulses of the ages, of the people who have lived and toiled and died in this world—in a word, of History.—*Kennedy*.

Expect results from every recitation of every class. Set out with clear aim at a definite mark. Keep the gun of the recitation steadily levelled at the proposed game. If the first shot doesn't bring it, contrive by all that is human that the last shot shall. If the time is up, and no game is bagged, you will not be the first hunter who has returned empty from a long chase. But the point is that you should distinctly know that there was some game in the bush, that you pursued it faithfully and hotly. That you make no capture is only a surety that it is there for you yet, and that at the next chase you must set your traps more skilfully, keep the trail more surely. An interested teacher at every recitation may fire with the zeal of the hunter and enjoy the chase quite as much. But it is good to come home with something.—*Normal Exponent*.

FORM AND SPIRIT.—Admitting all the advantages that Colonel Parker had in being permitted to carry out his ideas on the subject of teaching, there is no doubt that the success was not the mere success of method, but that true earnest spirit of the teacher which was behind the method. There was nothing strange or startling told us by Colonel Parker, little that was altogether new, and we heard teachers express surpriso and bewilderment that this far-famed system should prove to be a thing apparently so simple. These were teachers who had not yet learned to distinguish between the form and the spirit. That a good method is a grand thing in the school-room or elsewhere, and that there are good modes and bad modes of teaching, we do not deny. Still the fact remains that it is the spirit which animates the form, and not the form which animates the spirit.—*N. Y. School Journal*.

Life is made up, not of great sacrifices or duties, but of little things, in which smiles and kindness, and small obligations, given habitually, are what win and preserve the heart and secure comfort.

The main purpose of education is not to promote success in life, but to raise the standard of life itself; and this object can be obtained only by those higher studies which call forth the powers of reason, moral feeling, and artistic taste. Even in professional education, our aim ought rather to be usefulness in life than mere success, and we have great distrust of all theories of education that put success in the first place.—*Century*.

COMMENDATION, NOT CRITICISM.—Did you ever notice how the apostle Paul told all the good he knew about the people whom he wished to rebuke before he reminded them of their defects? "Nevertheless, brethren, I have somewhat against you." If you are going into the scolding business at all, take Paul's plan. Instead of heaping indiscriminate blame upon your child, tell him in what he is pleasing you, and then very tenderly suggest the points where improvement is desirable.—*Richmond (Va.) Rel. Herald*.

"Ah, I have an impression!" exclaimed Dr. McCosh, president of Princeton College, to the mental philosophy class. "Now, young gentlemen," continued the doctor, as he touched his head with his fore-finger, "can you tell me what an impression is?"

No answer.

"What! no one knows? No one can tell me what an impression is?" looking up and down the class.

"I know," said Mr. Arthur, "an impression is a dent in a soft place."

"Young gentlemen," said the doctor, removing his hand from his forehead and growing red in the face, "you are excused for the day."

Meantime the school must continue to fight the saloon. It has its own weapons of defence, not only in its own behalf, but in behalf of the nation and of society. Just so far as the boys of the nation appreciate what an impeachment of true manhood it is for one to "put the cup" to his own or "to his neighbor's lips," and so far as it gets instilled into them that the truest token of a man is the self-control that repels every sort of mere indulgence—so far the school-house is doing triumphant battle for the right.—*Chicago Standard*.

To the best and wisest, while they live the world is continually a froward opposito; and a curious observance of their defects and imperfections; their virtues afterwards it as much admireth. And for this cause, many times that which deserveth admiration would hardly be able to find favor, if they which propose it were not content to profess themselves scholars and followers of the ancients. For the world will not endure to hear that we are wiser than any have been which went before.—*Richard Hooker.*

Books, like friends, should be few and well chosen.

Fear to do base, unworthy things is valor.—*Ben. Jonson.*

Worth begets in base minds envy, in great souls emulation.

To read without reflecting is like eating without digestion.

The usual fortune of complaint is to excite contempt rather than pity.

A taste for good reading will take us into the best possible company.

The less a man thinks or knows about his virtues the better we like him.

Would you have fame? Write your name in deeds of kindness, love, and mercy on the hearts you come in contact with.

The bright days of youth are the seed time of life. Every action is a seed whose good or evil fruit will be the happiness or misery of after life.

Be good, my child, and let who will be clever;
Do noble deeds, not dream them all day long;
And so make life, death, and that vast forever
One grand, sweet song.—*Chas. Kingsley.*

ONTARIO TEACHERS' ASSOCIATION.

PROGRAMME OF SUBJECTS.

The twenty-fourth Annual Convention of the Ontario Teachers Association will be held in Toronto, on Tuesday, Wednesday, and Thursday, August 12th, 13th, and 14th. The following is the programme as it now stands arranged:—

GENERAL ASSOCIATION.

Uniformity of Text-Books, Mr. William Carlyle, Woodstock; Increased Legislative Aid to Public Schools, Mr. Wm. Macintosh, Madoc; How Best to Secure the Permanence and Increase the Efficiency of the County Model Schools, Mr. G. W. Johnston, Hamilton; Status and Value of Third-Class Certificates, Mr. F. H. Mitchell, Perth; University Consolidation and Legislative Aid to Colleges, Mr. A. P. Knight, Kingston; Industrial Education, Mr. James L. Hughes, Toronto. Addresses will be delivered by the Hon. G. W. Ross, Minister of Education, Dr. Geo. M. Grant, of Kingston, and Col. F. W. Parker, of Illinois.

PUBLIC SCHOOL SECTION.

Our Profession from an experience of thirty-two years, Mr. James Duncan, Windsor; The Superannuation Fund, Mr. John Campbell, Toronto; A Plea for Reading and Writing in Our Schools, Mr. F. C. Powell, Kincardine; Advancing Certificates from Grade to Grade on Experience, Mr. R. Alexander, Galt.

PUBLIC SCHOOL INSPECTORS' SECTION.

Amendments to the School Law, Messrs. D. J. McKinnon, Brampton, and Robert Little, Aetou; How may an Inspector be of most service to his Inspectorate, Mr. Wm. Macintosh, Madoc; The Public School Programme, Mr. A. Campbell, Kincardine; Advisability of extending the time for which Third-Class Certificates are Valid, F. L. Mitchell, Perth.

HIGH SCHOOL SECTION.

A Commercial Department in High Schools and Collegiate Institutes, Mr. J. E. Bryant, Galt; Matriculation Examination of Toronto University, Mr. H. I. Straug, Goderich; The Equalization of the Work in High School Options for Second and Third-Class Certificates, Mr. J. A. Clarke, Smith's Falls; Report of Committee on "Subjects in Natural Science for Matriculation," Messrs. J. E. Bryant, J. Turnbull, and D. C. McHenry.

Readings and Recitations.

DON'T BE MEAN, BOYS.

FOR DECLAMATION.

Sometimes I wonder what a mean man thinks about when he goes to bed. When he turns out the light and lies down alone he is then compelled to be honest with himself. Not a bright thought, not a generous impulse, not a word of blessing, not a grateful look comes back to him; not a penny dropped into the palm of poverty, nor the balm of a loving word dropped into an aching heart; no sun-beam of encouragement cast upon a struggling life; no strong right hand of fellowship reached out to help some fallen man to his feet—when none of these things come to him as the "God bless you" of the departed day, how he must hate himself—how he must try to roll away from himself and sleep on the other side of the bed—when the only victory he can think of is some mean victory, in which he has wronged a neighbor. No wonder he always sneers when he tries to smile. How pure and fair and good all the rest of the world must look to him, and how careless and dreary must his own path appear! Why, even one isolated act of meanness is enough to scatter cracker crumbs in the bed of the average man, and what must be the feelings of a man whose whole life is given up to mean acts? When there is so much suffering and heartache and misery in the world, anyhow, why should anyone add a pound of wickedness or sadness to the general burden? Don't be mean, boys. Suffer injustice a thousand times rather than commit it once.—*Burdette.*

THE OLD SCHOOL-HOUSE.

I wandered alone down yonder lane,
Where once "with the boys" I ran in play,
But to-day I leaned heavily on my cane,
And noticed each change with a sense of pain.
By the road-side the grass was not worn away;
Undisturbed, all in place, on the wall lay each stone,
While ferns and flowers grew rank in the wood,
And the now vacant plot to tall grass was grown,
In the place where the old school-house stood.

I seated myself on that large corner-stone
Of the level field, the one on the right;
And I thought of the boys to manhood grown,
Who had played with me there ere care was known,
Ere our trust in the world took its flight;
A few grey-haired men came to my mind,
Who stood like myself as old trees in a wood,
Who might wander as I, some day to find
The place where the old school-house stood.

We, who played round this now lone plot,
Have since played in life a far different game;
But down in our hearts we ne'er once forgot
The scenes that cluster around this spot,
'Mid all life's changes they seem the same.
Many who played here have long been at rest,
Some going while earth seemed yet to them good;
In my musing, I, young with the rest,
As I sat where the old school-house stood.

I thought of the teachers who had tried to make
Our careless boys into wise, useful men,
O, the trouble, I remembered, that some did take
A love for the right in our young minds to wake,
Thinking that love would ne'er leave us again;
They have met, some of us, in that home above,
Where this puzzling life is all understood,
And I thought of them all with a reverent love
As I sat where the old school-house stood.

All took different paths when we parted here,
 Alas, some of us were never again to meet;
 Some paths proved short—the end so near,
 And some so pleasant, and some so drear.
 Each had strange mingling of bitter and sweet;
 Then I heard a sound, it was like a wail,
 And it waved the grass like a mourner's veil,
 O'er the place where the old school house stood.

THE MOTTO TO WEAR.

The proudest motto for the young;
 Write it in lines of gold
 Upon thy heart, and in thy mind
 The stirring words unfold;
 And in misfortune's deary hour,
 Or fortune's prosperous gale,
 'Twill have a holy, cheering power,
 "There's no such word as fail."

THE TRIPLE PLEDGE.

We will not buy, we will not make,
 We will not use, we will not take,
 Wine, cider, beer, rum, whiskey, gin,
 Because they lead mankind to sin.

We will not smoke the smoker's pets,
 Those little things called cigarettes.
 We will not chew, we will not snuff,
 Or waste our time in playing puff.

We will not curse, though many dare
 Open their lips to curse and swear
 Our words shall be both pure and plain;
 We will not take God's name in vain.

DO RIGHT.

Do right is our motto, do right is our aim,
 We care not for glory, for wealth, or for fame;
 A pure spotless banner we'll rise with our might,
 With this for our motto,

"ALWAYS DO RIGHT."

Teachers' Associations.

The publishers of the JOURNAL will be obliged to Inspectors and Secretaries of Teachers' Associations if they will send for publication programmes of meetings to be held, and brief accounts of meetings held.

EAST VICTORIA.—The thirteenth half-yearly Convention of the East Victoria Teachers' Association will be held in the Town Hall, Lindsay, commencing on Friday, May 16, 1884. On Friday afternoon the Minister of Education will meet School Trustees, Municipal Officers, and other persons interested in education, when the following subjects will be discussed. 1. The present mode of distributing the High School Grant. 2. The propriety of requiring County Councils to aid in the support of High Schools in towns separated from counties. 3. The renewal of Third-Class Certificates and the granting of Permits. 4. The propriety of conducting Third-Class Examinations by County Boards, as formerly. 5. The Superannuation of Teachers. 6. General amendments in the School Act. The Friday morning and Saturday morning sessions will be held at the Union School; the Friday afternoon session in the Town Council Chamber; and the evening lecture in the Opera House, when the chair will be taken by Wm. Grace, Esq., Chairman of the Board of Education.

WEST HURON.—The semi-annual meeting of the West Huron Teachers Institute will be held in the school house, village of Exeter, on Thursday and Friday, 8th and 9th of May, commencing each day at nine o'clock. Professor Chapinan, of Hamilton, has been secured to give a number of choice Readings on Thursday evening.

HALTON.—The Halton County semi-annual Teachers' Convention assembled in the school building here on March 6th. About fifty teachers were present. The first session was devoted to preliminary work, such as appointing committees, &c. The afternoon session was devoted to papers on moral ethics and an address from Mr. McKinnon, P. S. I. of Peel County. In the evening a brilliant lecture was delivered in the town hall by the Rev. Mr. Laidlaw, of Hamilton; subject,—"Our Forefathers." The reverend gentleman proved from words found in Hindoo sacred books that we and the Hindoo people were originally of the one race, occupying the Aryan plain in Central Asia. The morning session was devoted to papers on moral ethics, there was also an address by the Rev. G. Robertson on "The Successful Student." In the afternoon the Rev. G. W. Wallace addressed the Convention and a discussion took place on General Superintendent vs. a Minister of Education. A vote of the Convention was taken and a large majority voted in favor of a Minister of Education. At the evening meeting, in the town hall, the Rev. J. Laucley delivered his great lecture entitled "One Another." The reverend gentleman combined deep and original thought with quaint humor. He showed clearly how dependent people were on one another for their happiness, also that it was essential for the good of the race that some should become rich so that we might have our railways, telegraphs, etc., which the poorest can enjoy for a small outlay. That all the rich man's millions represent is at our disposal for a few cents. The Convention adjourned to meet at Acton next midsummer.

REVIEWS.

CAEDMON'S EXODUS AND DANIEL, edited from Grein, by Theodore W. Hunt, Ph. D. Boston: Ginn, Heath & Company.

This neat little volume, 120 pp., is No. II. of the *Library of Anglo-Saxon Poetry* by Ginn, Heath & Co. It contains a general and a special Introduction, copious notes, and a full glossary of words—in fact all the help that could be desired. The same publishers offer a Translation by Garnett, and an Anglo-Saxon Grammar and Reader, so that at a very small cost every student may provide himself with a complete apparatus for prosecuting Early English. The publishers deserve the thanks of studentdom for placing within easy reach, and in a most attractive form, these works, which have hitherto received very little attention amongst us. It is now getting to be generally acknowledged that early monuments of our language are quite as worthy of attention as any books we can read. The English Homer is as important to us as the Greek Homer, and the discipline obtained has the additional advantages of bringing us into close contact with the thought and feeling of our own ancestors, and of enabling us to understand thoroughly the language we have derived from them. We strongly recommend every teacher of English to make a beginning with these books. As a special study, perhaps no other course of reading will be more fertile in useful results. It is in the direct line of present progress, and the day is not far distant when those who have diligently followed up such a course will find an active demand for the skill thus acquired. To those who have not been able to devote time to Latin and Greek, such a course offers special inducements, and will amply repay all who have the enterprise to make a good beginning with the attractive little volumes here noticed.

MAGAZINES.

Whether the decline of the shipping interest of the United States has been due to a protective tariff or other causes is a question, the discussion of which cannot fail to attract all who take an active interest in politics. The subject is ably treated in the *North American Review*, for April, by Mr. Dingley, a member of Congress who is in favor of subsidising home-built ships, and Capt. Codman, who is a freetrader. To the same number Dr. Oswald contributes an article on "Changes in the Climate of North America." Judge Jameson continues the discussion of the means of preserving our civilization from the fate that has befallen the civilization of Egypt, Assyria, Greece, and Rome. Julian Hawthorne discourses of "Literature for Children," Dr. Schaff sketches "The Development of Religious Freedom," and Dr. Newton and the Rev. A. G. Mortimer discuss "Recent Criticisms of the Bible," from the Broad and High Church points of view. We mention last an article by Prof. Eggert, entitled "A Plea for Modern Languages," which will be found to possess a special interest for readers of this magazine. Prof. Eggert's view is, in brief, that too much is attempted in the way of linguistic teaching in the courses of most of our high schools and colleges. He holds that there are very few who can master a modern language while engaged in the study of an ancient one, and therefore suggests that, as a rule, boys and young men engaged in acquiring a liberal education should take up either ancient or modern languages, but not both.