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THE CANADA
EDUCATIONAL MONTHLY
AND SCHOOL CHRONICLE.

MARCH, 1881.

NOTES ON GEORGE ELIOT'S LIFE.

BY LOUISA MURRAY, STAMFORD, ONT.

“Those who only knew her books will deplore an irreparable loss to English letters, while those who also knew the writer will feel that a great and noble spirit, supreme in intellect as in culture, as tender as it was strong, has passed away from the world.”

THE twenty-ninth of last December, the remains of George Eliot were laid in her grave in Highgate Cemetery. Men of foremost eminence in literature, art, and science were among the mourners who followed the hearse—Mr. Herbert Spencer, Professors Tyndall and Huxley, Mr. Frederick Harrison, Mr. Robert Browning, and a crowd of the known and unknown, distinguished and undistinguished admirers of her genius assembled in and around the Unitarian chapel in which the funeral service was performed. Many ladies were among them, thus paying a tribute of gratitude justly due to a woman who by the simple might of her intellect and genius has contributed so much to

raise the intellectual status of her sex. The coffin was completely covered with flowers, beneath which was the inscription,—her married name, her pen-name, the dates of her birth and death, and a line and a-half from Dante

quella fonte
Che spande di parlar sì largo fiume.*

Widely as George Eliot was known as a writer, the circumstances of her life, as well as her own quiet tastes, made her live in comparative retirement. Almost the only thing generally known about her tastes and habits was, that she had a deep love for music, was a fine performer on the piano-forte, and regularly attended the Monday Popular Concerts. Even if seen in public, strangers had no opportunity of recognizing the face of the great writer, as her portrait has

* That fountain which pours abroad so rich a stream of speech.

never been exhibited in any art gallery, nor her photograph ever seen. Mr. G. A. Sala says, that during thirty years of wide intercourse with literary people, artists, and those who sought for their society, he had never seen George Eliot, and had met with very few people who had her acquaintance. To the general public "George Eliot" signified merely an abstraction, an impalpability.

"Whether it man or woman only were
That could not any creature well descry ;"

and for a long time, even in literary circles, the real name concealed by this *nom de plume* was unknown. It was owing to this that one of those foolish frauds which seem like a species of mania on the part of the concoctor, aided by the ignorance, vanity, and credulity of his dupes, became possible, and a daring attempt to claim the literary laurels, which, through the reticence of the rightful owner were held, as it were, suspended above a *nominiis umbra*, was made. After the publication of "Adam Bede," following close on that of "Scenes of Clerical Life," had shewn that a new novelist of great and original power had appeared, and conjectures as to the author were rife in the literary world, a letter, signed by the Rev. H. Anders, Rector of Kirkby, came out in the *Times*, in which the writer informed the public that the author of "Scenes of Clerical Life" and "Adam Bede" was Mr. Joseph Liggins, of Nuneaton, Warwickshire, adding that Mr. Liggins himself and the characters he had painted were as well known there as the twin spires of Coventry. A reply from George Eliot appeared the following day, distinctly denying the statement made by Mr. Anders, and emphatically stating that Mr. Liggins had never seen a line of "Scenes of Clerical Life" or of "Adam Bede" till they were printed, nor had any knowledge of them whatever. But

this did not put down the false claimant. Mr. Liggins exhibited a drawer of MSS. which he declared to be the rough copies of the famous novels he claimed to have written, and a subscription was set on foot by his friends to compensate him for the injury which he was supposed to have received from the so-called George Eliot. Whereupon Messrs. Blackwood, the publishers of the works in question, came forward with a solemn declaration that they were certainly not written by Mr. Liggins, and if he, or anyone else, was receiving charitable contributions on the ground of being their author, that person was obtaining money on false pretences.

This is only one among the many fictions which at different times found a nucleus in the hidden personality of George Eliot. Even, after her real name, her residence in London, and her literary achievements were better known, inaccurate and conflicting statements about her birth-place, her parentage, and early life, continued to appear in newspapers and magazines. It was said that she was the daughter of a poor curate, of a Methodist minister, of a working carpenter, and also that she had been educated by a clergyman of the English Church, whose character, and family circumstances she had depicted in the Rev. Amos Barton. In a series of articles which appeared in an English magazine* in 1875, we were told that the people of Wirksworth, in Derbyshire, were perfectly well acquainted with the actual persons from whom the characters in "Adam Bede" were drawn. Dinah Morris, they said, was in every respect an exact description of Elizabeth Evans, a Methodist preacher, well known among the hills and dales of Derbyshire. The plain dress, the quaker bonnet, the whole personal appearance, speech and manner, occupations and incidents of life, were pre-

* *London Society.*

cisely the same in each. Dinah preached on Hayslope Green; Elizabeth on Roston Green, where the Donnithorne arms still hang out. It was even said that the prayer used by Dinah in the cell of Hetty Sorrel had really been composed by Elizabeth for a young woman who was condemned to death for the murder of her child, and actually executed, and in whose cell she remained, praying with her and comforting her to the last. Adam and Seth Bede were also recognized as the portraits of well known men, whose real names were William and Samuel Evans. The natural inference drawn from the magazine articles in which the true story of "Adam Bede" is assumed to be told, was that the characters so graphically described in the novel, and bearing what was then known to be George Eliot's family name, must have been relatives of the author, with whose lives she had been intimately acquainted. However, George Eliot has declared that "Dinah Morris was not intended to be a representation of Mrs. Elizabeth Evans, and that any identification of the two, or of any other characters in 'Adam Bede' with real persons, must be protested against, as not only false in fact, and tending to perpetuate false notions about art, but also as a gross breach of social decorum."

But in spite of this protest, the people of Wirksworth persisted in identifying the characters in "Adam Bede" with those who so closely resembled them in real life. A tablet was put up in Wirksworth Methodist Church to commemorate the religious labours of Elizabeth Evans and her husband, and the inscription stated that Elizabeth was "known to the world as Dinah Morris."

Mary Ann Evans, "George Eliot," was born on the 22nd of November, 1820, at Griff, near Nuneaton, in the land of Shakspeare, "the heart of England." Like Shakspeare, and

more exclusively than he, "George Eliot" sprang from "the people." Shakspeare had gentle blood in his veins through his mother with the sweet poetical name, but George Eliot's rich genius owed nothing to any aristocratic element in its making. What professes to be an authentic account tells us that her father, Robert Evans, was bred a carpenter, had a talent for building, and the management of land, learned surveying, and became bailiff on Mr. Newdigate's property in Warwickshire. He was a man of great integrity and worth, esteemed and respected by all who knew him, and after a time raised himself to the position of land agent for four estates in Warwickshire. His character has been lovingly depicted in "Caleb Garth," his pure, single-minded integrity, his gentle benevolence, his delight in thorough conscientious work, and no doubt his circumstances and manner of life, with, of course, such differences as artistic needs require. In all sincere and earnest writing which deals with the inner life of men and women, their thoughts and emotions, and the circumstances which influence them for good or evil and shape their destinies, there must always be more or less of a biographical element, however skilfully disguised, and we cannot doubt that George Eliot's strong and powerful idiosyncrasy continually depicts itself in her works. But though something of her early life may be shewn in Mary Garth, it is in Maggie Tulliver we must look for a portrait of her inner nature. The child-life of Maggie and Tom has a touch of truth beyond the reach of art; and that the love of the little sister is no feigning, but a true thing, is set above questioning by the series of sonnets published in the volume entitled "The Legend of Jubal, and other Poems," in which she describes the affection felt by a little girl for her brother, looking back at it

through past scenes, and child-like conceptions.

"He was the elder, and a little man
Of forty inches, bound to shew no dread,
And I the girl that puppy-like now ran,
Now lagged behind my brother's larger
tread.

If he said 'Hush!' I tried to hold my
breath;
Wherever he said, 'Come!' I stepped in
faith."

Again, in Maggie's yearnings and strivings after light and knowledge, the beautiful things of the world, and the joys of life, amidst her cramped and gloomy surroundings, with her attempts at self-renunciation and religious devotion, while her soul struggled against the bondage to which she compelled it to submit, we see a transcript of "George Eliot's" own experiences. In Romola and Dorothea the same conflict between the inward impulse and outward fact which is the lot of every imaginative and impassioned nature, is described; and we may be sure that in all the three—Maggie, Romola, Dorothea—we have the true, that is, the ideal, character of "George Eliot" herself, depicted under different aspects, with different surroundings, and amidst different trials and temptations.

Mary Ann Evans—to drop for the present the name she chose to adopt, and give her that she received from her parents—was brought up in strict accordance with Evangelical views of religion, and at twelve years old she taught regularly in a Sunday School. She was for a time a pupil in a school for young ladies in Coventry, but those who remember how often in her works she speaks of the superficial and unsatisfying nature of school teaching—"shreds and patches of feeble literature and false history;" "the ends of long threads that snapped immediately"—will not suppose that her vivid intellect received much congenial aliment there. But genius,

we know, will find and assimilate the food it needs under all circumstances. Her mother, we are told, died when Mary Ann was little more than a child. She was the youngest of the family; her brothers and sisters were married and she and her father were living together alone when Mr. Evans removed from Griff to Foleshill, near Coventry. Here she was able to get books and to gratify her desire for "learning and wisdom such as great men had." Eager to grasp the keys of all the realms of thought and culture, she studied Latin and Greek under the Head Master of Coventry Grammar School, and French, Italian and German under an Italian Professor. She even, it is said, learned something of Hebrew. She had a passionatè love for music, and a fine musical ear, and she now obtained thorough teaching from the organist of St. Michael's Church, Coventry. We may read her estimate of him in her description of Rosamond Vincy's master, who, she says, "was one of those excellent musicians here and there to be found in our provinces worthy to compare with many a noted *Kapellmeister* in a country which offers more plentiful conditions of musical celebrity."

Every species of culture that came within her reach she aimed at mastering, and people of intelligence soon became interested in the quiet, sedate, studious girl, with pale, grave, earnest face, who was known to be a devoted daughter and a careful manager of her father's house. She gained the friendship of Mr. and Mrs. Charles Bray, then living at a place called Rosehill, near Coventry, and received from them sympathy and encouragement in her desire for knowledge, and in the more enlightened views of religion she had already begun to entertain. The Brays were intimately connected with some of the most advanced thinkers of the time,

and at their house Miss Evans met many men eminent in literature and philosophy. Among them was Mrs. Bray's brother, Mr. Charles Hennell, whose inquiry into "The Origin of Christianity" was considered in 1838, when it appeared, as an important contribution to the cause of free thought. It was through Mr. Hennell's advice that Miss Evans undertook the translation of Strauss's "Leben Jesu," and accomplished her work in little more than a year—an extraordinary achievement for a young woman of twenty-five. Competent judges declared that it shewed equal mastery over the German and English languages, and Strauss himself complimented her on her success.

In 1849 her father died, and soon after she accompanied Mr. and Mrs. Bray in a tour on the continent, and with the exception of a short stay in Geneva, continued to reside with them till 1851, when she was invited by Dr. Chapman to assist him in the management of the *Westminster Review*. She then took up her residence in London, and besides contributing articles to the *Review*, she edited the sections allotted to Contemporary Literature. At the house of Mr. John Chapman she made the acquaintance of Mr. Herbert Spencer, whose friendship was hers till her death, and who was one of the mourners at her grave. It has been said that she owed much to Mr. Spencer's counsel and assistance in the cultivation and development of her mind, but this has been contradicted by Mr. Spencer himself. When his friendship with her began, in 1851, he says, "She was already distinguished by that breadth of culture and universality of power which have since made her known to all the world." In 1853 she published a translation of Feuerbach's "Essence of Christianity"; but about that time she seems to have

"discovered her genius," and thenceforth, her chief works lay in the sphere of fiction, with some volumes of poetry, which, though full of high, delicate, and subtle thought, and exquisite feeling, have, on the whole, been condemned by the critics as wanting the true music and inspiration of the singer born, not made.

It was also at Mr. Chapman's house she first met George Henry Lewes, then literary editor of the *Quarterly*, a brilliant but short-lived weekly journal of the most advanced liberal opinions, and a man of extraordinary versatility of powers. "He began life," says Mr. Frederic Harrison, "as a journalist, a critic, an essayist, a novelist, a dramatist, and a biographer; he ended as a mathematician, a physicist, a chemist, a biologist, a psychologist, and the author of a system of abstract general philosophy. He first made known the philosophy of Comte to Englishmen, and though he altogether repudiated Comte's social organization and religious system, he was the chief representative, to most English readers, of the Positive Philosophy. His "History of Philosophy" and his "Life of Goethe" must keep a permanent place in English literature, and his "Problems of Life and Mind," the supreme effort of his life, the concluding part of which was edited by the gifted woman who was the partner of his life and labours, has been recognized by all scientific thinkers as a work of great and original merit.

Many admirers of "George Eliot" have believed that she was legally married to Mr. Lewes, but those who were better informed were aware that his first wife was still living, and had never been divorced from him. It was said, however, that she had forfeited all her rights as his wife, and that he could easily have obtained his release from the tie she had broken if he had chosen to go through

all the misery and scandal of a suit in the Divorce Court; but to this both he and Miss Evans were on principle strongly opposed. Their friends knew that they considered their union as true marriage. Mr. Lewes, whose esteem and admiration for her were unbounded, and made evident at all times and on all occasions, always spoke of her as his wife, their friends and acquaintances addressed her as such, and even those outside their circles came at last almost universally to accord her the title of Mrs. Lewes. Every year the nobleness of her character and manner of life, combined with the pure tone and high moral teaching of her writings, did something to lessen the prejudice which her anomalous position naturally excited in those to whom marriage was a sacred bond; and on the Christmas day after her death it was possible for Dean Stanley to pay a touching tribute to her memory in his sermon in Westminster Abbey.

Those who have read "George Eliot's" works with any true comprehension of their meaning and tendency will feel assured that to her also the marriage bond was sacred, and faithfulness to all ties the highest law of our being. This is most impressively shewn in "Romola."

"'You are seeking your own will, my daughter,' Savonarola says when he meets Romola flying from her unworthy husband. 'You are seeking some good other than the law you are bound to obey. But how will you find good? It is not a thing of choice; it is a river that flows from the foot of the Invisible Throne, and flows by the path of obedience. Man cannot choose his duties. You may choose to forsake your duties, and choose not to have the sorrow they bring. But what will you find, my daughter? Sorrow without duty—bitter herbs and no bread with them. . . . My daughter, every bond of your life is a debt, the right lies in the payment of that debt, it can lie nowhere else. . . . Romola, cries out in her bitter anguish—'My husband . . . he is not . . . My love is gone.' 'My daughter, there is the bond of a higher love

. . . if he were a malefactor your place would be in the prison beside him. You may say 'I will forsake my husband, 'but you cannot cease to be a wife.'"

But she shews us the other side also.

"The law was sacred, yes, but rebellion might be sacred too. The problem where the sacredness of obedience ended and the sacredness of rebellion began had come to her . . . There are moments in life when the soul must dare to act on its own warrant, not only without external law to appeal to, but in the face of a law which is not unarmed with divine lightnings—lightnings which may fall if the warrant has been false."

In December, 1878, Mr. Lewes died, and we learned from the newspapers that Mrs. Lewes was utterly prostrated and broken down with grief. Afterwards she edited the concluding portions of Mr. Lewes's great philosophical work which he had committed to her charge. And then in May, 1880, the telegraph wires flashed the tidings that she was married to Mr. John W. Cross, who had been Mr. Lewes's executor, and whose mother we were told had been one of "George Eliot's" most intimate friends, but of whom her readers and admirers on this side of the Atlantic had never heard before. It cannot be denied that the news came to them as a great shock, in which the lofty image her own words had taught them to form of her seemed to crumble away, and their divinity to take her place among the common herd of faithless and forgetting mortals. It seems a pity and a wonder that she did not give the strongest proof in her power of the sacredness and completeness of her union with Mr. Lewes by remaining faithful to his memory.

"In the grave,
With her sweet faith above for his monument."

But in the absence of all knowledge of the motives and circumstances which led to her marriage, noth-

ing can be said on the matter worth listening to. And who are we that we should lightly judge such a woman as "George Eliot?"

In some favoured children of genius, a beautiful person is combined with a beautiful soul, but it was not so with "George Eliot," and we are told that her consciousness of her plainness made her object to have her likeness taken. However, in the private office of Messrs. Blackwood, her publishers, her portrait hangs in company with the portraits of Scott, Lockhart, John Wilson, and the Ettrick Shepherd. It is described as being of life size, the features almost masculine in strength and with a strangely sad expression on the countenance. She is said to have borne a striking likeness to the portrait of Savonarola at Florence, painted by Fra Bartolommeo. She has described the great Florentine Reformer in Romola, from this picture of course. "In the act of bending the cowl was pushed back and the features of the monk had the full light of the tapers on them. They were very marked features, such as lend themselves to popular description. There was the high arched nose, the prominent under lip, the coronet of thick hair above the brow, all seeming to tell of energy and passion; there were the blue-gray eyes shining mildly under auburn eyelashes, seeming, like the hands, to tell of acute sensitiveness."

A writer in the *London World* gives a description of her as she appeared at her Sunday evening receptions. A slight presence, of middle height, as the height of women goes; a face somewhat long, whose every feature tells of intellectual power, lightened by a perpetual play of changing expression; a voice of most sympathetic compass and richness; a

manner full of a grave sweetness, uniformly gentle, and intensely womanly, which proclaim the depth of the interest taken in ordinary and obscure things and people; conversation which lends itself as readily to topics trivial as to topics profound, and which, like her writings, is full of a humour redeemed from sarcasm by its ever present sympathy." To this we add another description of her appearance and manner by one who had seen her in her own house for the first time. "A slender woman, with an oval face, abundant hair, once apparently fair, now turning gray, brought low down on the broad forehead, and simply coiled behind under some lace worn on the head; appealing gray eyes, and a smile that illuminated her face as if with light from within. She wore a high, black velvet dress, with lace at the throat, fastened by a cameo and pearl brooch, and lace at the sleeves falling back from the graceful hands. Her talk was most charming; without a trace of exaggeration, with a clear and wonderfully swift discernment of every point involved, and, when you least looked for it, an odd, quaint turn that produced the effect of wit. While her opinions on all the subjects she spoke of were definite and decided, there was at the same time such a sincere deference to those of others, that you were drawn on to talk in spite of yourself."

In conclusion, let us take one more glimpse of her as she was seen at the first opening of the Grosvenor Gallery. "She was quiet and gentle, dressed in black, with a white cashmere shawl thrown square over her shoulders. Beside her stood her husband, George Henry Lewes, who wears the worst of soft hats on the cleverest of heads, and whose conversation is simply delightful."

HOW TO MAKE COUNTRY SCHOOLS ATTRACTIVE.

BY MISS ANNIE FOOTE—"BON ACCORD."

A COUNTRY SCHOOL! With what do we associate the term? The low-roofed, old log school-house, with the additions made as the population of the section required,—the unchinked walls, the tumble-down porch, guarding (?) the entrance, the small windows, the long rows of pine desks with the deeply carved initials of former generations of boys, the uncomfortable forms and decaying floor—to how many does the term recall such a picture? Happily these "gaunt, ghastly edifices, with order, symmetry or taste unblest," have become almost things of the past, and we find in their place, the more commodious structure, built to fulfil the requirements of the law as regards size and enclosure, but, in nine cases out of ten, just that and nothing more. The trustees too often satisfy themselves by choosing a site, the most central and whose price will least affect the public purse. This done, they build at the required distance from the road, enclosing with the regulation fence, providing furniture as cheaply as possible, and their duty is done. The result, a plain, staring structure, comfortable enough, it may be, but having no pretensions to beauty or ornament. Add to this the wear and tear of a few years. The fence, innocent of paint, has suffered from wind and weather, and a missing board here and there does not improve its appearance; the building has become weather-stained, there are a few broken panes, the yard is overgrown with thistles and other weeds,

or strewn with firewood, the interior is in keeping with the surroundings; the whole making up a picture that would depress the spirits of the most buoyant child. Much of the work of improving this state of affairs, and making the school attractive, falls upon the teacher. It may here be stated that by *making school attractive* is to be understood, placing it under such circumstances as will prove the most beneficial to the pupils and satisfactory to the teacher, trustees and parents. How can this best be accomplished? First, by improving and beautifying the surroundings. Let the building be kept in repair and the grounds properly levelled. A row of healthy shade trees along the fence will be a great improvement. The teacher can get some of the larger boys to assist in procuring these from the woods, and in planting them. "But," some teacher may say, "what is the use of my taking all this trouble? I will not be here when the trees become worth looking at." Will he not have the satisfaction afterwards of pointing to them with just pride and saying—"I was the means of having this done. I have left a lasting evidence of my stewardship in this section."

Keep the school-room bright and cheerful. Here the teacher and pupils spend a great portion of their time, and it is their duty to make the place as pleasant and comfortable as possible. I pass, with mere mention, the attractiveness of a clean, well ventilated room, with furniture well arranged,

neatly hung with well kept maps and charts. These are in themselves ornaments. In this department the country teacher labours under disadvantages not often felt by others. Few of our country schools have caretakers appointed, and much of the work of keeping the rooms in order has to be done under the superintendence of the teacher, and when the roads are muddy this is no easy task. However, the difficulties are not insurmountable.

During the summer time, flowers may be cultivated indoors as well as outside. A pot or two of hardy plants, say geraniums and fuchsias, will repay by their beauty the little care they need. Then, for a very small outlay, a few hanging pots may be filled with the commoner basket plants, and will do much towards taking off the deserted look that so many school-room windows have. These plants, besides acting beneficially on the atmosphere of the room, will give it a bright, inviting aspect that cannot fail to influence both teacher and pupils. Encourage the pupils to decorate their desks with bouquets. It teaches them to harmonize colours, and cultivates the taste.

It is almost needless to state that much of the attractiveness and, therefore, the success of the school, depends on the teacher's manner. The cold, haughty, unsympathetic nature, that harshly demands respect, rarely gains it. There may be a bending to the will of such, but it is a forced submission and there is wanting the feeling of confidence, the ready obedience and respect, amounting almost to reverence, which is won by a kind, gentle demeanour and firm but considerate treatment. Get your pupils interested in the school work, cultivate those virtues you would have them practise, make them feel that you have their best interests at heart, and you will succeed in establishing

a bond of sympathy which will help to make the duties of all concerned rather a pleasure than a task.

Plans must be devised for making the exercises interesting, if we wish to make them profitable. The law recommends that children be required to commit to memory selections in prose and verse. To make this more effective a Literary Society may be formed, the exercises to consist of recitations, dialogues, singing, etc. The society should be regularly organized, and a time set apart for the meetings, say the last hour on Friday afternoon. Let the selections be submitted to the teacher, who will see that they are of a nature that will be interesting, and as instructive and amusing as possible. Among the larger scholars a debate on some subject will give variety and also afford a means of improvement. With such a society, little entertainments may be got up in the school, which will tend to increase the interest of the parents as well as of the children, for the fact that "our Johnny is going to say a piece," or, "Mary sing" is sufficient to induce the father to attend in order to witness and encourage the efforts of his child. Such a society, properly conducted, will supply a training the want of which is felt by all classes. The method of conducting a meeting, the duties and powers of the different officers, and many other items of useful information thus become familiar to the youthful mind and prove of value afterwards. Besides, the exercises give the pupil practice in expressing his opinions in public, and inspire him with becoming confidence in his own powers, dispelling that diffidence that causes so many of our ablest men to hide their light under a bushel. But the teacher must enter into the work heartily, must become enthusiastic, if he wishes the society to be a success.

As country children have generally

to leave school at an early age, it would be well if the teacher would, from the beginning, strive to direct their attention to, and inspire them with a love for, the works of nature. Call their attention to the beauty of form in the leaf and flower, the harmony of colours in the sunset, the order and symmetry of everything around them; teach them, in a word, to hold communion with nature. It develops the æsthetic faculties, it refines the mind, it humanizes the whole being. To assist in this matter, a sort of Natural History Society, (if we may use such a dignified title) may be formed in a country school. With a little extra time and trouble, short excursions may be arranged for the purpose of botanizing, collecting insects, observing the habits of birds, etc. Of course the pressure of other work may make the pursuit of these studies to any great extent almost impracticable; still, a few object lessons on these or similar subjects may be given during the winter months, and the practical work done during the summer time. An hour now and then would be sufficient, and would not be missed. Something of this kind is a necessity. How many of our school children, either in town or country, are able to tell even the names of the birds, trees or common flowers they see every day? The plants collected may be pressed, the insects and other objects preserved, named and arranged, and thus the nucleus of a Museum of Natural History may be formed, which can be easily increased and will prove a source of much pleasure as well as profit, not only to the teacher and pupils but to the whole community. As an evidence of the feasibility of such a scheme, we may refer to the Elora School Museum. It had quite a humble beginning, but by the indefatigable energy of its founder, it has assumed dimensions far exceeding the expect-

tations of its promoters, and is to-day a credit not only to Elora but to the whole Province. Although all cannot hope to make such a collection, yet enough may be done to produce good results. Apart from the actual knowledge that the pupils gain from the study of natural objects, it teaches them to observe closely, cultivates a love for nature, and opens to the youthful mind an unlimited field of useful, healthy enjoyment that will be of lasting benefit. It is true the teacher may not be able to do more than give the child the merest glimpse of this wide field, but that may be enough. The simple analysis of the commonest flower, the critical examination of the butterfly, and a short explanation of its life and habits, may be little in itself, but enough to awaken a thirst for more knowledge, for a closer inspection of every-day objects which may ripen into a deep and lasting desire for truth, the production of which is the true end and aim of all instruction. We must remember that genius does not always shew itself on the surface. We may sometimes meet with a Burns, or an Edwards, or a Dick, such true admirers of nature that their minds, undirected, seek out her beauties for themselves, but with the majority of mankind this faculty must be developed; and who should be better fitted or has more frequent opportunities for the direction of thought than the teacher, controlling and guiding the mind, as he does, during the most susceptible period of its growth.

But the pertinent questions arise—How is the teacher recompensed for all this extra trouble? Does it pay? The fact that the pupils are benefited by his exertions is a sufficient reward to the right-minded, earnest teacher. But apart from this, it does pay both directly and indirectly. In the first place, since the parents and children take a greater interest in the school,

a more regular attendance is insured, and thereby the section is materially aided. It is a noted fact that while a badly located, unattractive building has a tendency to produce rough, in-subordinate pupils, those of the neat, well kept school-house are, as a rule, better behaved and more easily disciplined. Such is the influence of surroundings on the human mind. By interesting himself in such matters, the teacher gains a reputation which is of much practical value. But he gains, besides, that of which the value cannot be reckoned in dollars and cents ; for while seeking thus to cultivate the æsthetic tastes of his pupils, his own are influenced ; and while he strives to direct their minds to those

things that refine and elevate, his own mind and aspirations are ennobled. Thus it is maintained that neatness, cleanliness and taste inside and outside the school are of great benefit to both pupils and teacher ; that, by keeping the parents and children thoroughly interested in the work, the labours of the teacher are much lightened and made more efficient ; that the effect will be observed not only in the children but in the parents, will not only make the generation under his charge better, wiser and more liberal-minded men and women, but will also tend to improve the whole community, and thus fulfil the great aim of our calling—to EDUCATE, *i.e.* to enlighten, to *civilize*.

TEACHERS' ENCOURAGEMENTS.

An Address delivered before the Halton Teachers' Association.

THERE are teachers and teachers : those who engage heartily in the work, and those who, though it gives them a living, dislike it intensely, and make no secret of their dislike. The former deserve to be encouraged to keep on, even though sometimes, worried and wearied, they are inclined to vote the whole thing ill-paid drudgery. The latter, I have always thought, should get all the encouragement possible *to leave* the ranks of the profession which they do not love and which they, in general, do not therefore adorn. To such, anything I can say by way of encouragement will doubtless seem paltry as compared with difficulties which, to half-hearted people, appear ten-fold greater than they are in reality. To beginners who have contracted, it may be, some

small measure of dislike for the work to which they have set their hand, I say, go on. For the likelihood is that as you proceed, and with a wider experience, you will find things much better than you anticipate. It is a glorious work in which you are engaged ; a work than which there is none grander, more elevating, or more permanent in its results. To bear a part in moulding the national life and destiny of our young Dominion is something to be coveted, even at the cost of much discomfort and many difficulties. And it ought thus to be well understood by the teachers and made clear to all, that however transcendent one's talents and attainments, he *cannot* condescend to such work as this ; that on the contrary, the finest talents and the most splendid attain-

ments are honoured in the performance of the duties of the teacher. His calling is a noble one—none nobler in the wide world—and that is enough of itself to spur every true teacher on, despite all the difficulties which he meets. But there is much else to encourage. I shall try to shew that in the daily routine, *in* the work as well as in contemplation of its greatness, there is much to cheer the conscientious teacher. I do not promise to give anything new. The wise man has said, "There is nothing new under the sun;" and to *Ontario* teachers, one can hardly hope to say anything startlingly original on educational matters. If I can put the old in a somewhat clear and forcible way, so as that it may be impressed on the mind, and if thus I can stir up some *one* even to a higher pitch of enthusiasm, to more energetic endeavour, and to a fuller sense of the greatness of his work, I shall consider myself as, at least, partially successful in doing what I have set out to do. I shall, first of all, call attention to what may be thought a selfish view of the teacher's work:—this, that in the teaching profession, as in every other, it is true that one never does anything, the least, to benefit others, without somehow benefiting himself. It is perfectly clear that the machinist who for years has done his employer's work faithfully and well, is, at the end of the years, a better workman than at the beginning—better, it may be marked, in two respects, more firmly faithful, and as well, more competent in his line of work. Nor is it different as regards the teacher. He must be a very poor specimen indeed who has taught, if for one year only, and is not better for it. Consider the preparation for the meeting with the class—a necessary matter, not only that one may know definitely *what* to teach, but also *how* to teach it. Some, I know, can, with the subject to be taught

clearly outlined in their minds, put questions in a plain and simple way without special preparation. But these are, I believe, in a very small minority. The great mass of those who fail as teachers do so, it seems to me, not because they are deficient in knowledge or in disciplinary ability, but because they do not *study* to put questions and make explanations such as the scholar may easily and at once understand. I can well remember a teacher for whose scholarship I had, when a boy, the most profound respect. To-day, remembering what he was, I realize that my respect for his attainments was born of my failure to answer questions put in language so involved, stilted and mysterious, as completely to frustrate the end they were intended to serve. And, by the way, many rather elderly lads make the same mistake, supposing that, because a teacher in the school room, in the pulpit, or in the press, is incomprehensible, he is therefore a very learned and wonderful man. The preparation of lessons by the teacher is a splendid mental exercise, because he must first understand thoroughly his subject in all its details. This, at least, is the aim of every true teacher. Then there arises the question, "How am I to present this so as best to gain the attention of my pupils, and impress it on their minds?" He must remember that the vocabulary of the young is a very limited one, and that the words in it are of the terse Anglo-Saxon kind. He must, therefore, in this respect, adapt his language to their capabilities. Thus it is not wonderful that in the profession we meet with so many whose conversation is a constant delight. All feel at their ease when in their company. Their simple and vigorous Saxon suits and attracts both educated and uneducated. The style of some, it is true, is Johnsonian, but amongst old teachers these are excep-

tions. It cannot but be that men and women who are compelled habitually to adapt their language to the comprehension of those whose attainments are insignificant, who are in understanding, as many of them are in reality, children—I say it cannot but be that the simplicity and perspicuity of their style should be in striking contrast to that of those who may know as much, but have not learnt how best to impart their knowledge to others. To me, the fact that we are so much improved by this necessary preparation for the instruction of others, is no inconsiderable encouragement. It may seem selfish, but there is no *greater* end which a man can have in view than self-improvement. All well enough to do one's honest best for others, but it is not less one's duty, while endeavouring to elevate others, to aim as earnestly to elevate himself, and thus, whatever a teacher's natural ability is, great or small, as he plods on wearily enough sometimes, he can cheer himself with the thought that while he burns the midnight oil in the service of others, he is impressing upon his own brain the truth he is preparing for them.

Then, again, in the class room there are many things to encourage one. The teacher may indeed take encouragement out of discouragement. For example, there are those in every school who are incapable, and for whose benefit the teacher has to repeat himself time and again. I have taught long enough to know right well what a thorn these are, and to learn, as well, that it is not an unalloyed evil to have them amongst brighter pupils. The necessary iteration is good for the teacher, and of immense benefit to the clever ones, for many of them are quick to comprehend, but not tenacious to remember. They retain all the more firmly that which they knew, but which others were ignorant of, and

which, for that reason, has been repeated and impressed in their presence. I have often thought that teachers have the idea that all such special and extra labour is in vain, except in so far as it results in good to the dunces. Not so, however. The whole class is benefited, the teacher is none the worse, in mind, at any rate, and I am pretty confident that the lessons which are recited without a hitch will, on review or examination, be found to have made less impression than those which have cost the teacher some extra time and explanation. This, it appears to me, is reasonable. And what of the questions put by curious scholars? How often they have started us on a train of thought or research which has resulted in great good to us. How often, with the most careful preparation, have we found ourselves at a loss to answer their inquiries. Nor, mark, are these always of little consequence. Very often, of course, the answer lies on the surface, but is frequently found only after most careful search away in the depths. Such questions display at once the desire for knowledge inherent in all, and the quickening influence of the teacher's mind.

I proceed now to say a few words upon the effect of teaching on the disposition of those who engage in it. Some begin to teach with far other than angelic tempers, and in the beginning the tendency, even in those who are by nature sullen, is, on provocation, to give way to passion. Many find that their temper often overcomes their better judgment, and causes them to make a sorry exhibition of themselves in the presence of those who know more and see farther than we give them credit for. But usually, the experienced teacher is the most patient of men. For he who has had to school his temper, to put restraint upon it, to hold himself thus with a strong will, finally overcomes, in

some measure, the tendency to fly into a rage when provoked; and so, it may be, that he will come to look upon the things which have worried him, and tried his temper to the utmost, as a discipline which has made him both better man and better teacher. The veteran who has been in many a battle, and has often faced the force and fire of the enemy, is more likely to be cool and collected in such circumstances than the raw recruit. And thus it may well be that the teacher will gather encouragement out of the midst of worry and difficulty. His future career may be bright and successful, and the trials of the present will, of a certainty, be not unimportant factors in the future success.

Let this suffice with regard to self-improvement. It certainly ought to encourage the teacher that while he benefits others he benefits himself in mind and disposition. And not only should he take the general view of this matter, that greater experience and severe discipline will fit him for a higher place and a greater work, but he should take encouragement *daily* out of all included in that discipline and experience, and which, as factors in them, give them their value. In passing, it may be well to say that this view of the result of the teacher's work is not altogether selfish. The gain of one is the gain of the world. The teacher who improves himself swells the volume of the mighty stream, yet to become mightier, of human attainment and excellence.

I pass on now to consider briefly some of what may be called the *objective* encouragements of the teacher. It were a pity that all should come from his own inner consciousness of having done his duty, and of having been improved by the performance of it. There is, further, the appreciation of the public, that is, of

that part of the public whose appreciation goes for much. There are always hypercritical people in communities, who don't know enough about the teacher's work, the incapacity or, it may be, the wickedness of their children, to judge fairly of the results of the teacher's efforts. It is a question, indeed, whether anyone who has not taught is really competent to criticise aright the work done in our schools. There are chronic grumblers. One has said of them:—"Every clock, and even the sundial, must be set according to their watches;" people who say hard things about the teacher and insinuate harder—this one is too strict, that one too lenient; this gives the children no work to do at home, that gives them so much that they have no time for the inevitable chores. Some grumble because the teacher does not develop the extraordinary talent of their children, others because of some story, true, but paltry, half true, or false altogether (for some children are capable of lying), of harsh treatment, probably when it had resolved itself into a question as to whether the teacher or scholar should bear rule. Such have the unhappy faculty of making the sensitive teacher feel, somehow, as if he had committed a grievous crime. No use trying to please them. They have a new teacher now; his faults are legion, while, strange to say, the old one, now they have got rid of him, was the "pink of perfection." One can't please a whole neighbourhood. "Remember the old man and his boy and the ass, and what came of trying to please everybody. Where whims and fancies sit on the seat of judgment, a man's opinion is only so much wind, therefore take no more notice of it than of the wind whistling through the keyhole. No piper ever suited all ears."

But there are persons as well who

appreciate the teacher's work and difficulties, and they are, as a rule, the sensible people of the district. Their children are by no means perfect. They listen to no tales out of school. The teacher always gets from them a hearty greeting. They second most cheerfully his efforts. If he fails now and again they have sense enough to excuse him. They find it hard enough to manage three or four, and like thoughtful men and women, as they are, they put themselves in his place, trying to keep in order and train thirty or forty. They are the first to advocate making an addition to his salary, for even *this* is done sometimes. They know it is right to be economical, but that there is such a thing as beginning economy at the wrong end, and they refuse to injure the teacher, and cripple for life the intellect of the children, for the sake of a few dollars, which had far better be saved on the roads and sidewalks. Better to have a rut unfilled in the road for a year than have a rut in a human mind for perhaps a long lifetime unfilled. No section is without these persons, and you may put the opinion of one such against that of at least a score of the others. The latter see through coloured glasses and don't know it, and of course the objects around, in the home, in society, the teacher and his work, too, present a strange appearance. The parents who train their children *best* are the friends of the conscientious teacher, as a rule, and most teachers know what encouragement and help the countenance and kindly words of these afford. Don't be discouraged. The best men and women around you and throughout the world honour your calling, recognize its power, and give *you* your place amongst the world's benefactors. The others, who take a different view, good enough men and women, it may be, have got a twist,

hereditary, or as the result of circumstances. They may be in the majority, but your friends have the ability to judge impartially, to say nothing of a great amount of good common sense and sympathy in their natures, which is more important. I remember well one poor fellow who had the hardest "row to hoe" I ever knew anything about, who was scowled at by the men who hired him because he dared work with his brain and not with his hands, in whom the life, the spirit, at least, was kept by an old Scotchwoman, not forgetful of what the parish school and schoolmaster had done for her lang syne. Many a good dinner, many a hearty handshake, many a kind word did she give the "maister" as he went his rounds, a week in this house, a week in that. Don't think because some speak harshly that you are wholly unappreciated. Is your work done, I shall not say thoroughly, but conscientiously? You have, then, more friends and greater encouragements than perhaps you are, or ever will be, aware of. The men who observe, but don't talk much, are with you. The world is God's, and conscientious work is appreciated by Him and the men and women who are like Him.

Again, and to conclude. You, teachers, may well feel encouraged as you contemplate the present and prospective result of your labours. As you work from day to day, you are laying the foundations, firm and sure, of what shall yet be a great nation. Education is the handmaid of all true religion. Without it there can be no real freedom, no real progress. And shall this thing and that make you despondent when you can contemplate the great influence you wield, and shall, even when your personal work is done, wield in this our country. Centuries hence, the generations to come shall be blessed by the work

you do or have done. The teachers of Ontario have done much for their Province and for the Dominion. This is the premier Province in many respects, and especially in educational methods and mental attainments. Our forefathers laid the foundations broad and deep, by establishing and endowing colleges and schools. And they were wise. Who so ignorant as to say nay?

"Educate the people" has been the earnest and oft-repeated cry of all the greatest men of the past, and "after years, which are the best witnesses," have proved that they knew whereof they spoke. In a speech delivered by Lord Macaulay in the British House of Commons in 1847, he shews what education had done for Scotland. He tells us that one hundred and fifty years before the time in which he spoke, Fletcher of Saltoun, a patriotic Scotchman, was in such despair about his countrymen that he advised shipping off some thousands of them to the West Indies to work in the sugar plantations, saying that nothing but the lash and stocks could reclaim the vagabonds who infested every part of Scotland. The Parliament which sat at Edinburgh took a different course and established a school in every parish. What was the result? I let the great historian tell the tale as he only can. "An improvement such as the world had never seen took place in the moral and intellectual character of the people. Wherever the Scotchman went—and there were few parts of the world to which he did not go—he carried his superiority with him. The Scotchman of the seventeenth century had been spoken of as we speak of the Esquimaux. The Scotchman of the eighteenth century was an object, not of scorn, but of envy. The cry was, that wherever he came he got more than his share; that, mixed with English-

men or mixed with Irishmen, he rose to the top as surely as oil rises on water. And what had produced this great revolution? The Scotch air was still as cold, the Scotch rocks were still as bare as ever. All the natural qualities of the Scotchman were still what they had been when learned and benevolent men advised that he should be flogged, like a beast of burden, to his daily task. But the State had given him an education. That education was not, it is true, in all respects what it should have been. But, such as it was, it had done more for the bleak and dreary shores of the Forth and the Clyde than the richest of soils and the most genial of climates had done for Capua and Tarentum."

The work which accomplished these results is the work in which the teachers of Ontario, of Canada, are engaged. Here surely is encouragement enough. You are working in the present and for the present, it is true, but you labour as well for the future. The progress, the intelligence, the freedom, the stability of our people depend largely on you. Your work, faithfully done, is our only salvation from the rule of the despot on the one hand, and the sway of the demagogue, on the other. We, an educated people, shall be free—free to pursue our prosperous course in that happy middle way which has been bequeathed to us by the freedom-loving people of the fatherland. From ocean to ocean our country stretches. From century to century the influence of the teachers of to-day shall go on, ever widening and deepening. You are a nation's tutors. Your influence shall be continent-wide, world-wide. The magnificence and the permanence of your work should nerve you for more earnest and faithful endeavour. The future will bless you, and in a niche of the nation's

temple of fame, in the time to come, shall be found, not perhaps your name and statue, but what is better, *you*, in the result and ever-extending influence of your work, as no inconsiderable factor in the coming greatness of our country. To this end let

the wise man of the best book admonish you, and in your work may the spirit of his words be found; "Whatsoever your hands find to do, do it with your might."

JOHN PRINGLE, M.A.,
"Georgetown.

REMINISCENCES OF CHARTERHOUSE—IV.

BY AN OLD CARTHUSIAN.

Being a series of Short Sketches descriptive of Public School Life in England.

(Continued from page 56.)

THAT many monitors abuse the power entrusted to them has frequently been urged as an unanswerable argument against the monitorial system. It is not my intention to discuss the question here; indeed such an argument requires no discussion, since it obviously does not touch the system at all. It is of course a warning to those upon whom the duty of selecting monitors devolves to use the utmost caution in their choice—but nothing more. Looking at the question from a practical point of view, the opposers of the system have but to look at the anarchy which reigns in schools where there are no monitors, and they will perforce confess that even though it may be an evil system yet it is a most necessary one. To check bullying and preserve order are the objects of the system; it must be obvious that in large schools masters can do neither of these things by themselves. The monitorial duties are not altogether of the pleasantest description; a boy, often loses his popularity by being strict, yet if he sticks to his duty he will soon regain what he has lost, and the privileges which belong to the position make up for much that is unpleasant.

At Charterhouse the system is in full force; the monitors there are entrusted with larger power and enjoy fuller privileges than at most other schools. Of the special duties of a Sixth Form boy may be mentioned the keeping of "Banco"—the term applied to the evening preparation of the lower school. The monitor for the week is present throughout Banco to preserve silence amongst the boys and to give them any necessary aid in the performance of their work. Any monitor may enforce his authority by boxing a boy's ears or "swinging" him, as it is termed in Carthusian phraseology; the head monitor alone of each house being allowed to "cock up." There are usually from four to six monitors in each house of fifty or sixty boys; they take upon themselves the special duties weekly. In return for their labours the monitors, together with many other privileges, are allowed that of fagging. Each monitor has usually three special fags, one to keep his study tidy, another to lay his place at breakfast and tea, and the third to make toast for him morning and evening. In addition to these there are other fags common to all the monitors, who

in turn wait upon them in Hall during their meals.

Corporal punishment by the head monitor is by no means an uncommon occurrence; I remember having enjoyed the sensation seven times in one quarter. Almost every offence against the rules of the house is thus punished, more or less severely. Any disturbance in the cubicles after the lights have been extinguished for the night almost always ends fatally.

During the summer nights when the excessive heat shuts out all ideas of sleep from our minds, a water-fight with the upper dormitory was often suggested. Besides the delight of drenching somebody with water, a keen sense of danger, from the fear of being caught, gave additional zest to the amusement. There were always six or seven volunteers ready for the expedition. H——l, a tall clumsy baby of about fifteen years of age, invariably figured among the number, and endeavoured to impress upon us the necessity of doing everything quietly and in order; we *must* come down the stairs quietly, and we must *not* bang our cubicle doors. And in plain contradiction to his advice, H——l was always the most excited, and in consequence made the most noise. A sheet thrown loosely over the body was all we wore; a jug full of water was all we carried. We leave our cubicles and meet in the passage running down the dormitory; "Go up quietly, throw your water on somebody or on his bed, and return as quietly as you went up; are you all ready, come then, don't speak!" Like so many cats we creep up the stairs, we must not alarm the upper dormitory, we each stand in front of a cubicle and together pour the contents of our jugs on the inmate. Shouts of laughter, shrieks of "cave," a rush from those drenched to be avenged, all help to turn the retreat into wild confusion, and helter skelter

we tear down the stairs to reach our respective cubicles, if possible, in safety. Maybe we do; the monitors are at the other end of the house! For a few minutes we listen breathless, and clutch at every sound, eager to ascertain the result of the stampede. "Listen! who is that coming up the stairs?" "No one!" "Yes, I am almost certain I heard some one! Stop!" We listen again, but all is quiet; we are unwilling to leave well alone and determine upon a second sally. We are again in the passage, and again we promise not to make such a noise as the last time. "Listen! there *is* some one there!" "No! Come." We are on the stairs, H——l turns round to beckon us on, an exclamation escapes him, we also turn round and see a *monitor!* I had not been mistaken then, some one *had* come up the stairs! N——n aroused by the noise, had crept up and hidden himself behind a study door, expecting another sortie from the dormitory. He also had not been mistaken. We started on seeing him, but said nothing. N——n smiled at our awkwardness; we caught the smile and laughed right out. For a few moments none of us spoke. "Each with a jug of water, eh? You may return to your cubicles, I will see you all to-morrow at nine o'clock." We went back to the dormitory, H——l slammed his door; a melancholy voice from the other end of the room exclaims, "I knew that's how it would end." Little P—— is much amused (he was not one of the number), and twits H——l's disgust.

"Never mind, H——l, its all right, by the bye, though, you were promised a good thrashing the next time you were caught; that was only last week, I wonder how many you'll get? About fifteen, I suppose! that little lot won't hurt you."

"Oh, you shut up P——, or I'll lick you."

H——l evidently means it too. Little P—— understands, and reserves his fun for the morning.

On waking, I tried to persuade myself that the uncomfortable feeling I had was the result of a troublesome dream, but that it was a reality and a most painful reality I soon realized in presence of the sickening feeling of suspense which came over me more and more as the events of the past night rose up before my mind. On these mornings I was always turned in my rep.

On returning to my house from first school, I feel less at ease than ever. I have no appetite for breakfast. I tell Tom to keep mine hot for me till all is over. In Hall there are five or six fellows examining the sticks; I join them.

"What a pile there are; how many do you say? fourteen? I wonder whether N——n thinks there are more fellows in it than there are?"

Little P—— construes the sight very differently, "No, not a bit of it. You will each get about fifteen cuts, and he has allowed for a few break-ages!"

"Consoling to say the least of it."

Coming out of Hall I see M——y——e standing by the fireplace with a semi-belligerent expression of eye and shoulder, intended to represent the carelessness of indifference. Yet he wishes it were over; we all do! D—— is looking out of the window, trying to hide his colourless face! In long-room we breakfast at 8.30, in Hall at 9. As the latter hour approaches, the monitors go into Hall! N——n has just gone in.

"Now H——l," shouts out little P——, "a few minutes and"—he did not finish his sentence. At that moment an ominous sound was heard.

We all knew it well! The tables were being moved aside to give room for the operation.

Pea-a-a-g!

Some one answers; all who were engaged in last night's performance are wanted in Hall! We go in.

"Shut the door!"

We were a little cheered when N——n seemed surprised there were not more fellows.

"I need not tell you why you are here; have any of you an excuse?"

"No!" (At least we could think of none at that moment!)

N——n takes up a stick, "Cock up in school-order!"

Meanwhile a crowd has collected in long-room, round Hall door, anxious to hear what is being said. I can hear some one, who has secured a position near the key-hole, reporting all he sees to those around; he holds up his hand, it's going to begin.

Whack, whack, whack, whack!

"Is that all?"

"No, its only the stick that has broken."

The whacking is resumed.

"Eight, nine, ten."

"That's all, he is coming out."

A movement in the crowd; the door opens and I come out. I run into the buttery to get my breakfast, and try to relieve myself of the pain by hard rubbing. By, Jove! Doesn't it sting! In a few minutes I am much better, and really enjoy my breakfast! The whacking is still going on; it is C——l——e's turn; "Why, how funnily it sounds on him! He has padded." "Yes, he's caught too! What a duffer he is!" C——l——e comes out of Hall in a passion. "What did N——n say?" I ask him. "He will see me again at twelve o'clock!" Poor C——l——e! I pity him!

(To be continued.)

NEW READING METHODS.

WHEN "Doctor" Burlibus, mounted on the biggest wood-pile in Hopkinsville, endeavours to shew the intelligent denizens of that flourishing village that the study of medicine throughout all past ages, and in every part of the world, has only proved to be the most miserable of failures, and that it has been reserved for him, after many years of profound study, to elaborate a pill which is the true panacea for every human ailment, we, who don't happen to be Hopkinsvillians, can afford to smile incredulously at the lofty pretensions of the impudent quack, and when we see Bill Grimes, eyes agog, and mouth agape, pushing his way to the front, and holding aloft his "quarter" for a package of soap pellets, we sigh, reflecting on the gullibility of so many fellow-beings on the one hand, and the gross deception practised by so many more on the other. Thus it has always been, and, we suppose, thus it will ever be. The quack earns a livelihood, his deluded patient swallows the physic, and the world wags on. But medicine possesseth not either all the humbugs, or all the humbugged. In every department of human knowledge the charlatan has made his presence felt, and, not unfrequently in such guise as to deceive the very "elect." In many instances, without a doubt, the deceiver is the subject of self-delusion, but in such cases, owing to the intense earnestness thereby engendered, the mischief entailed by his teaching is only the more serious and wide-spread.

It would almost appear as if Pedagogy had greater reason to groan under the infliction of the quack-plague,

than has the pursuit of any other occupation that engages our attention. Far be it from us to deny that room has existed and yet exists for vast improvements in the *art* of education, and it is only as an art that we intend to deal with it, despite the attempts of the quack to convince us that he holds *scientific* ground. Improved methods of teaching this, that, and the other subject crop up incessantly, and each nostrum has its day. In a few instances the "day" may be equal to "a thousand years," but only in a few. To parody a well-known line, plan after plan departs, who hath not lost a plan?

Just now, reading seems to be most grossly neglected in the public schools of Ontario, and we are treated (!) by a writer or two, to page after page of apparent wisdom on this really important subject. The most minutely-detailed directions are given as to how the pupils are to arrange their lips, tongue and teeth, and as to the exact quantity of breath that should be emitted in pronouncing every letter. That this is no exaggerated statement will appear evident by the following quotation from an article in a local contemporary of high (!) educational repute:—

"1. Let each child place a small piece of paper on its open hand.

"2. At a signal given by the teacher, let each one blow his paper from his hand. This should be done three or four times.

"3. Let each one pretend to blow off a paper without really having it on his hand. In doing this they should carefully watch the action of their lips.

"4. With the papers again on their

hands let them get ready to blow them off—pressing the air forcibly against their lips, but keeping them tightly shut until a signal is given.

"5. With all eyes fixed on the teacher, the pupils should be led in repeating the action of closing the lips, pressing the air against them, and then opening them suddenly. By moving his hands, the teacher can lead as many pupils as can see him in this exercise. When his hands are brought together, all lips should be shut and the air pressed against them; when the hands are separated, the lips should be opened so as to allow the air to escape.

"In this way every pupil will learn the sound of *p* in from one to two minutes in such a way that they will never forget it."

If this were not intended for a piece of seriousness, it might readily be taken (if we except the clumsiness and inaccuracy of the composition—notably in sections three and four) as a very fair attempt at burlesque.

In the name of Cadmus, how much wiser will a child be after such an exercise? But take another example: This time it is how to produce the Italian *a*.

"1. The mouth should be opened well.

"2. The lips should be drawn back at the sides.

"3. The tongue should lie at the bottom of the mouth, without being arched at all.

"The pupils will make the sound readily by imitation, if they are warned to open their mouths properly. After the class has repeated the sound a few times to impress it on their ears ('impress it on their ears' is good), and to give the teacher an opportunity of correcting any tendencies to *aw* on the one hand, or too sharp a sound on the other, the lesson should proceed in the following manner." After this comes an inverted cone of

p's and *a*'s, the apex being *pa*, and we are gravely informed that by-and-by, "several if not all of the pupils will discover the fact that they are saying the shortest name applied to their fathers." And that, "By using these letters twice the word *papa* will be formed." Would it astonish the writer to be told that there is no such word in English? The word is *papa*, and therefore, according to the "self-consistent phonic method," it would be necessary to make the patients, we mean the pupils, perform another series of lingual, labial, and facial contortions, and to construct another inverted cone to arrive at the value of the second *a*.

It is really sad to think of the untold suffering that is so often inflicted upon school children, sometimes thoughtlessly, and sometimes as the result of thought that has been woefully misdirected. Can it be doubted for a moment that any child able to pronounce *p* distinctly is "master of the situation?" We can very readily understand why an instructor of the deaf and dumb should insist upon such a course in training a class of mutes according to Professor Bell's system of Visible Speech, or, why any teacher should adopt such artificial methods with pupils of congenitally defective utterance; but, beyond this, exercises of the kind in question seem to us little short of a diabolically devised scheme for the mystification of the few ounces of brain that five or six-year old youngsters are usually provided with. It must be consolatory to the advocates of this "phonic method" to be assured in their own minds that it is "self-consistent." For, certainly it does not appear to be consistent with anything else.

Another writer, in the same journal, some time ago, undertook to tell us how *he* thought reading should be taught. This is one of his plans:—"Words," said he; "should be taken

to pieces, sounded letter by letter, backwards, forwards, every way, with marked distinctness and energy." It is more than doubtful whether this sentence can be matched for its absurdity amid the whole mass of rubbish that has ever been penned on this, or any other subject. The same writer goes on to say that, "There is always a tendency to run one word into another, so as to leave the preceding word unfinished. Thus in reading, 'safe from temptation,' the careless reader leaves out the *f* of *safe*, and sounds the words as if written, *safrom temptation*." Now, we contend that one of the prime factors in good reading consists in this very ability, "to run one word into another," except in a comparatively few instances where ambiguity is likely to arise. None but the mere pedant would ever think of so measuring his words as not to run them into each other. Standing upon 'Change, in a great maritime city, the untutored ear is struck with what is sometimes called the "interminable lingo" of foreigners; they, on their part, making precisely the same complaint about English, declaring that when we utter a sentence it appears to them *only one long word*.

Now, what is good reading but a close imitation of speech? This, and nothing more. Surely then, it should suffice that we teach pupils to read *naturally*—not finically, not mechanically, not pedantically. The writer, in the article from which we have quoted, says, "All teachers agree that the only way to teach *expressive* reading to young children is by giving them a correct example for imitation." But, not satisfied with this statement, which is scarcely original, he proceeds in the next sentence on this wise, "Unfortunately, however, many teachers throughout Ontario, even in the more prominent schools, have understood this statement to

mean too much. Imitation is everything with them." It is a matter of some curiosity to know just the position occupied by those who believe in both these *didca*. If, as "all teachers agree, the *only* way to teach expressive reading to young children is by giving them a correct example for imitation," how is it possible to understand this as meaning "too much?" The position is absurd. Let no teacher think the less of his own honest efforts to produce good readers, by even the oldest-fashioned plan, in consequence of perusing such apparently learned disquisitions as those to which we have made reference. Whether it be in arriving at the value of a given letter, apart from its name, or in the matter of modulation, accent, emphasis, tone, inflection, or general expression, there is not, nor can there be, any other way of bringing about the desired effect than simply to utter the required sound in the hearing of the pupil, and to labour persistently until a correct imitation has been secured. The teacher who is himself a bad reader need only expect to reap what he sows. It is as vain in this as in other respects to look for "grapes from thistles, or figs from thorns." Most of the twaddle that has seen the light on the teaching of reading, and other subjects, appears to have been written upon the assumption that young human beings are pretty much like lumps of clay—here is your mould, here is your mud, and there's your model! It is not venturing too much to affirm that, in proportion to the number of educated people ten or ten hundred years ago, the *percentage* of good readers was equal to what it is to-day, and that, unless something better than the "self-consistent phonic method," should turn up, the position will not differ materially, during similar periods, hereafter. To quote the writer again, and in this instance—if we understand him

aright—we fully agree with him: “The process of learning to read consists of two parts: *word-recognition* and *expressive reading*.” If we might venture to suggest a change to cover what we suppose this remarkably odd sentence means, we would say, The process of *learning* to read consists merely in *word-recognition*; but, what we call *good reading* demands expressive utterance. To say that “the process of learning to read consists of *expressive reading*” can hardly be what the writer intended. Well, what is *word-recognition*? Is the mental operation at all different in kind from the knowing of an old friend's face? Not a whit. Now, how many of us, easily as we recognize the lineaments of those with whom we daily come in contact, would undertake to describe minutely the colour of their eyes, or the shape of their noses, and give the number of wrinkles that furrow their brows? As a *tout ensemble* we know the face unmistakably, and that is enough. What more do we want in the matter of words so far as *reading* is concerned? The oftener we see the words the better we *know* them, and this brings us face to face with a very self-evident proposition, viz.: The *more* we read, the *better* we read; or, in other phrase, facility of word-recognition is the result of extensive practice in reading. It is wholly immaterial to the pupil who has been taught to speak distinctly, or even if he has not, whether the elements of a given word are formed by protruding his tongue, biting his lips, shewing his teeth, or by any other “self-consistent method.” All this time the teacher has been the model—the child the imitator. But with facility in the recognition of words, comes, almost invariably, a *pleasure* in reading, and, simultaneously with the pleasure, taste. We may rest fully assured that the latter can never exist where the former is wanting,

although it does occasionally happen that the reverse is true. The mention of *taste* leads us once more to the part played by the teacher. If he is really a good reader, at least a few of his pupils will do him credit. That they will all be proficient is, from the nature of things, more than any one has a right to expect. We have, in fact, no more reason upon our side in demanding that all one's pupils should reach a high standard in this branch than in spelling, in writing, or arithmetic. Dame Nature has too often had the start of the schoolmaster, and does not fail to maintain her ground. If the teacher has “No music in his soul” he will be totally oblivious to the thousand and one inaccuracies of careless readers, even though he were “steeped to the eyes” (this would include his ears) in the phonic or any other method.

It has already been remarked that the good reader is one who can most closely imitate speech, but this involves a good deal more than may at first sight appear. As in the case of actors, most of whom are fitted to play only in certain *roles*, readers who are regarded as excellent in rendering some kinds of composition, may be but medium, or very poor, in others. We should bear in mind, however, that the teacher is a general purpose man—one who should be able to do fairly well in all styles ranging from “Old Mother Hubbard” to Massillon “On the Death of the Wicked,” and such being the case he ought to be leniently dealt with even if he fail, by many degrees, to reach the standard of a Neilson, a Vandenhoff, or a Bell.

The teacher who wishes to make himself a good reader for school purposes, must not be limited in his choice of books. Text-books and an occasional work on education, occupy only a small portion of the ground, whilst treatises on *how* to teach read-

ing will prove almost totally useless. A good newspaper or magazine can hardly be surpassed as a *vade mecum*. To read well, that is naturally, one must not only know every word at sight, and be thoroughly conversant with the subject, but he must possess the faculty of being able to say one word and look at another, while he anticipates half-a-dozen more. This aspect of the question is rarely referred to by any Burlibus, nor is any *new method* suggested by means of which the three-fold power may be attained, short of persistent and repeated effort. When a child pauses between such words as "It is an ox," want of ability to recognize the combinations of letters only half explains the difficulty, the other half being accounted for by an incapacity to fix his attention on more than one word at a time or, to look at one, and say another. The best reader, other things being equal, is he who can see farthest ahead. For improvement in other respects, it would appear to us that the only advice necessary is comprehended in "constant watchfulness and close imitation." These, as a matter of self-culture on the part of the teacher, cannot fail, indirectly, of producing excellent results in the school-room; and if the parents would but provide interesting matter for the perusal of the children at home, we should hear fewer complaints than we do, of bad reading, and the species Burlibus so far as their self-imposed occupation is concerned, would find themselves in the position of Othello, a gentleman whose *timely* fate most of them might do worse than parallel.

The difficulties attempted to be surmounted by all the new-fangled systems are chiefly attributable to

what Max Müller characterizes as our "barbarous orthography," and nothing short of pure *phonetics* can ever accomplish the desired result. *Phonics* only makes "confusion worse confounded."

Let the teacher make himself a good reader by *any* system, and he need have no qualms of conscience about his want of success. As Dean Stanley said in an address some time ago: "The solution of all educational difficulties was to find really capable teachers. He wished to impress upon those who had to go out to commence the work, that it depended upon their exertions, on the amount of heart and soul which they could throw into their work, and on the amount of energy and the power of imparting energy, which they could bring to bear, whether the education of the children in their hands should be a complete success or a total failure. The solution of educational difficulties depended not so much upon the questions *talked about*, as upon the character of the teachers."

Heartily believing, notwithstanding our strictures on twaddle, iteration, verbiage, that much may be done on purely common-sense principles to improve the school rendering of English, we can enter fully into the spirit of the phonetic prayer (if we may be permitted to substitute just one word) in the following verse:

"God bless this land, and bless us all with wisdom we beseech;
And grant henceforth that *reading* be as fleet and free as speech."

For other reasons than to find out how to read, it is much to be wished that every teacher might have an opportunity of perusing the article we have here commented upon.

ARTS DEPARTMENT.

ARCHIBALD MACMURCHY, M.A., MATHEMATICAL EDITOR, C. E. M.

Our correspondents will please bear in mind, that the arranging of the matter for the printer is greatly facilitated when they kindly write out their contributions, intended for insertion, on one side of the paper ONLY, or so that each distinct answer or subject may admit of an easy separation from other matter without the necessity of having it re-written.

SOLUTION

by proposer, Professor EDGAR FRISBY, M.A., Naval Observatory, Washington.

168. Find the value of x and y in the following equations.

$$x^2 - y^2 = a^2 \quad (1).$$

$$x^3 + 3xy^2 = b^3 \quad (2).$$

$$x^6 - 3x^3y^2 + 3x^2y^4 - y^6 = a^6 = (1)^3.$$

$$x^6 + 6x^4y^2 + 9x^2y^4 = b^6 = (2)^3.$$

$$\therefore y^2(9x^4 + 6x^2y^2 + y^4) = b^6 - a^6.$$

$$\therefore 3x^2y + y^3 = \pm \sqrt{b^6 - a^6} \quad (3).$$

$$\therefore x + y = \left\{ b^3 \pm \sqrt{b^6 - a^6} \right\}^{\frac{1}{3}}$$

$$= \sqrt[3]{(2) + (3)} = (4).$$

$$x - y = \frac{a^2}{\left\{ b^3 \pm \sqrt{b^6 - a^6} \right\}^{\frac{1}{3}}} = (5).$$

$$x = \frac{1}{2} \{ (4) + (5) \}, \quad y = \frac{1}{2} \{ (4) - (5) \}.$$

Solutions to Problems in December and January numbers, by the proposer, J. L. COX, B.A., Math. Master, Collegiate Institute, Collingwood.

187. If the sides of a triangle be cut proportionally and lines be drawn from the points of section to the opposite angles, the intersection of these lines will be in the same line, viz., that drawn from the vertex to the middle of the base.

Let the sides AB, AC of the triangle ABC be cut proportionally in $D, F, H; E, G, L$ respectively, so that

$$AD:AE::DF:EG::FH:GL::HB:LC.$$

Join BE, BG, BL, CD, CF, CH ; these

lines will intersect each other in the line AK , drawn from A to K , the middle point of BC .

Join DE . Then since when any number of magnitudes are proportional, as one antecedent is to its consequent, so are all the antecedents to all the consequents;

$\therefore AD:AE::AB:AC$, and DE is parallel to BC . Join KO (BE and CD intersect at O), and let it meet DE in I . The triangles BOK, IOE are similar, and

$$\therefore BK:KO::EI:IO,$$

and for same reason

$$CK:KO::DI:IO;$$

$\therefore EI=DI$, and DE is bisected by KO , and it also is bisected by AK ; $\therefore AK$ passes through O . In same manner it may be shewn that BG and CF , as also BL and CH intersect each other in points which are in the line AK .

188. Given the base and perpendicular: to construct the triangle, when the rectangle contained by the sides is equal to twice the rectangle contained by the segments of the base made by the line bisecting the vertical angle.

Let AB be equal to the given base, and draw the indefinite line ED bisecting it at right angles at point C . Take CE, CD each equal to the given perpendicular, and through the points A, D, B describe circle. Draw EF parallel to AB , meeting the circle in F . Join AF, FB ; AFB is the triangle required. Draw FG perpendicular to AB ; it is equal to the given perpendicular. Join FD meeting AB in H ; since DC is equal to CE ,

DF is equal to twice DH ; therefore the rectangle DF , FH is double of DH , HF , *i.e.*, it is double of AH , HB contained by the segments of the base, made by DF which bisects the angle AFB . And AB was made equal to the given base.

Solutions by proposer, D. F. H. WILKINS, B.A., Math. Master, High School, Chatham.

194. If ABC be any plane triangle, and if the angle BAC be bisected by AD , meeting BC in D , then the rectangle contained by BC and CD is greater than, equal to, or less than the rectangle contained by BC and BD , according as the angle ABC is greater than, equal to, or less than the angle ACB .

Because angle B is greater than angle C ,
 $\therefore AC$ is greater than AB .

Cut off, from AC the greater, $AE = AB$, and join DE ,

\therefore the two triangles ADB , ADE are equal in all respects;

$\therefore ED = BD$,

\therefore angle $ADE =$ angle ADB .

Now, angle CED is greater than angle ADE , and also greater than angle ADB ; and angle ADB is greater than angle ACD ;
 \therefore *à fortiori*, angle CED is greater than angle ACD ,

\therefore the side CD is greater than ED , *i.e.*, CD is greater than BD . Similarly, if angle C be greater than angle B , BD is greater than CD .

195. AB , CD are two chords in a circle, intersecting in any manner in a point P . Prove that the sum of the squares upon AP and PB is equal to the sum of the squares upon CP and PD , if the arc AC be equal to the arc BD .

Let $ACBD$ be a circle, AB and CD the chords as required. Then, since arc AC equals arc BD ,

\therefore arc AB equals arc CD ,

\therefore chord AB equals chord CD ,

\therefore square on AB equals square on CD ,

\therefore square on AP , PB and twice rectangle AP , PB equals square on CP , PD , and twice rectangle CP , PD .

Now, rectangle AP , PB equals rectangle CP , PD ,

\therefore square on AP , PB equals square on CP , PD .

196. Construct a triangle, given the three angles, any chord of the inscribed circle, and the ratio of this chord to the diameter of the same circle.

Let AB represent the given chord, and C and D the lines whose ratio equals that of the chord to the diameter of the inscribed circle. Find a fourth proportional to the three lines, and describe a circle with half of this as radius. Let EFG be the circle, O the centre. At O make angle EOG equal the supplement of one of the angles at the base, and angle EOG equal supplement of another of the given angles. Through E , F and G draw tangents, and these shall be the sides of the required triangle.

NOTE.— EO may be any radius whatever.

CAMBRIDGE UNIVERSITY EXAMINATION PAPERS, 1881.

MATHEMATICAL TRIPOS.

EUCLID AND CONICS.

1. The opposite sides and angles of parallelograms are equal to one another, and the diameter bisects them, that is, divides them into two equal parts.

In a convex polygon of an odd number of sides the middle points of all the sides are fixed, except one which describes a curve; prove that the angular points of the polygon describe equal curves.

2. If a straight line be bisected, and produced to any point, the rectangle contained by the whole line thus produced, and the part of it produced, together with the square on half the line bisected, is equal to the square on the straight line which is made up of the half and the part produced.

Shew how to draw, when possible, through two given points on the circumference of a circle, a pair of parallel chords, so that the rectangle under the chords shall be equal to a given square.

3. The opposite angles of any quadrilateral figure inscribed in a circle are together equal to two right angles.

The sides of a triangle are cut by a circle concentric with the inscribed circle, and each vertex of the hexagon formed by the intersections is joined to the opposite vertex; prove that the triangle so formed is similar to the triangle formed by the points of contact of the inscribed circle with the sides; and if a similar construction be made with this triangle formed by the diagonals, and so on continually, the ultimate triangle is equilateral.

4. Inscribe an equilateral and equiangular quindecagon in a given circle.

Inscribe in a given regular polygon of any number of sides a regular polygon of twice the number of sides with its alternate sides coincident with the sides of the given polygon.

5. The sides about the equal angles of triangles which are equiangular to one another are proportionals; and those which are opposite to the equal angles are homologous sides, that is, are the antecedents or consequents of the ratios.

Describe a circle which shall cut three fixed right lines at given angles.

6. If a solid angle be contained by three plane angles, any two of them are together greater than the third.

A tetrahedron is cut by a plane so that the section shall be a rhombus; prove that the side of the rhombus is half the harmonic mean between a pair of opposite edges.

7. Prove that the tangents at the ends of a focal chord of a parabola intersect at right angles on the directrix.

Focal chords of a parabola at right angles to one another meet the directrix in T, t . shew that the bisectors of the angles between the tangents from either of the points T, t are parallel to the tangents from the other; and that every pair of the four tangents intersect at constant angles.

8. If from any point T in the tangent at P to a conic TM, TN be dropped perpen-

dicular to SP and the directrix, then $SM : TN :: SA : AX$.

The tangents to a conic at the ends of the latus rectum meet any ordinate PP' in Q, Q' ; shew that a circle on QQ' as diameter intercepts on the latus rectum a length equal to PP' .

9. PV is the ordinate drawn from any point P of an ellipse to the major axis AA' ; prove that

$$PN^2 : AN \cdot NA' :: BC^2 : CA^2.$$

Any point P on an ellipse is joined to A, A' ; and AF is drawn perpendicular to $A'P$. AP and AF meet the tangent at A' in K and L . Prove that $A'K$ is to $A'L$ in a constant ratio.

10. Tangents drawn from any point to an ellipse make equal angles with the focal distances.

Prove that the locus of the intersection of tangents to an ellipse which make equal angles with the major and minor axes respectively, and are not at right angles, is a rectangular hyperbola whose vertices are the foci of the ellipse.

11. Prove that if tangents at right angles can be drawn to an hyperbola they intersect on a fixed circle.

Four tangents to an hyperbola form a rectangle. If one side AB of the rectangle cut a directrix of the hyperbola in X and S be the corresponding focus, shew that the triangles XSA, XSB are similar.

12. Prove that the section of a right cone by a plane is a conic section whose foci are the points of contact with the plane of spheres inscribed in the cone to touch the plane.

If two sections of a right cone have a common directrix the latera recta of the sections are in the ratio of their eccentricities.

ARITHMETIC, ALGEBRA, AND PLANE TRIGONOMETRY.

1. A man has £1,583 17s. 11d. in 3 per cent. Stock, and £982 12s. 6d. in 3½ per cent. Stock; he transfers a certain sum from the former to the latter, when the Stocks are at 91 and 98 respectively, and thus makes

the income derived from each the same. How much has he finally in three per cent. Stock?

2. Divide $(4x^3 - 3a^2x)^2 + (4y^3 - 3a^2y)^2 - a^6$ by $x^2 + y^2 - a^2$.

Establish the identities—

$$\begin{aligned} &(a^2 + b^2 + c^2 + bc + ca + ab)(bc + ca + ab) \\ &\quad - 2(a + b + c)abc \\ = &(b^2 + ca)(c^2 + ab) + (c^2 + ab)(a^2 + bc) \\ &\quad + (a^2 + bc)(b^2 + ca), \\ &(x^2 + 2yz)^3 + (y^2 + 2zx)^3 + (z^2 + 2xy)^3 \\ &\quad - 3(x^2 + 2yz)(y^2 + 2zx)(z^2 + 2xy) \\ = &(x^3 + y^3 + z^3 - 3xyz)^2. \end{aligned}$$

3. If α, β be the roots of $ax^2 + 2bx + c = 0$, prove that $ax^2 + 2bx + c = a(x - \alpha)(x - \beta)$.

Solve the equations—

(1) $a(b - c)x^2 + b(c - a)x + c(a - b) = 0$.

(2) $\frac{x^2}{a} + \frac{y^2}{b} = \frac{a^2}{x} + \frac{b^2}{y} = a + b$.

4. If $\frac{a_1}{b_1} = \frac{a_2}{b_2} = \dots = \frac{a_n}{b_n}$ then each fraction is equal to

$$\frac{\left\{ \frac{p_1 a_1^m + p_2 a_2^m + \dots + p_n a_n^m}{p_1 b_1^m + p_2 b_2^m + \dots + p_n b_n^m} \right\}^{\frac{1}{m}}}{P} = \frac{R}{pac + q(bc - a^2) - rab} = \frac{R}{pc^2 - 2qcu + ra^2}$$

prove that $P, p, Q, q,$ and R, r may be interchanged without altering the equalities.

5. Write down the general term of the expansion of $(1 - x)^{\frac{p}{q}}$ in powers of x .

If x be small compared with N^2 , prove that $\sqrt{N^2 + x}$ is approximately equal to $N + \frac{x}{4N} + \frac{Nx}{2(2N^2 + x)}$ and shew that the error is of the order $\frac{x^2}{N^2}$.

Ex.—Shew that $\sqrt{101} = 10.0498756$ to eight places of decimals.

6. Find the number of combinations of n things taken r together, without assuming the formula for permutations.

A man goes in for an examination in

which there are four papers, with a maximum of m marks for each paper. Shew that the number of ways of getting half marks on the whole is

$$\frac{1}{2}(m + 1)(2m^2 + 4m + 3).$$

7. Explain, and state the several advantages of, the chief systems of angular measurement in use.

Prove that the circumferences of circles vary as their radii; and mention the approximations to their constant ratio which are practically employed.

Shew that there are eleven pairs of regular polygons which satisfy the condition that the measure of an angle of one in degrees is equal to the measure of an angle of the other in grades; and find the number of sides in each.

8. Define the sine of an angle; and find the value of the sines of angles of $135^\circ, 240^\circ, 292\frac{1}{2}^\circ, 432^\circ$.

Shew that, $\sin^2 10^\circ + \cos^2 20^\circ - \sin 10^\circ \cos 20^\circ = \sin^2 10^\circ + \cos^2 40^\circ + \sin 10^\circ \cos 40^\circ = \frac{3}{4}$.

9. Prove geometrically that—

$$\sin x + \sin y = 2 \sin \frac{x+y}{2} \cos \frac{x-y}{2}$$

Solve the equation—
 $\cos x + \sin 3x + \cos 5x + \sin 7x + \dots + \sin (4n - 1)x = \frac{1}{2}(\sec x + \operatorname{cosec} x)$.

10. Find an expression for $\cos(x_1 + x_2 + x_3)$ in terms of sines and cosines of x_1, x_2, x_3 . State the corresponding theorem for the case of n angles x_1, x_2, \dots, x_n .

If $\cos(y - z) + \cos(z - x) + \cos(x - y) = -\frac{3}{2}$, shew that

$$\begin{aligned} &\cos^3(x + \theta) + \cos^3(y + \theta) + \cos^3(z + \theta) \\ &\quad - 3 \cos(x + \theta) \cos(y + \theta) \cos(z + \theta) \end{aligned}$$

vanishes whatever be the value of θ .

11. Shew how to solve a triangle, having given the three sides, proving from the formulæ obtained that there cannot be more than one triangle, though there may be none, with the given parts.

The perpendiculars from the angular points of an acute-angled triangle ABC on the opposite sides meet in P , and PA, PB, PC are taken for the sides of a new triangle. Find

the condition that this should be possible; and, if it is, and the angles of the new triangle are α, β, γ , shew. that—

$$1 + \frac{\cos \alpha}{\cos A} + \frac{\cos \beta}{\cos B} + \frac{\cos \gamma}{\cos C} = \frac{1}{2} \sec A \sec B \sec C.$$

12. Find the radii of the inscribed, the circumscribed, and the nine-point circles of a given triangle.

If O be the centre of the first, O' of the second, and P the centre of perpendiculars, shew that the area of the triangle $OO'P$ is

$$-2R^2 \sin \frac{B-C}{2} \sin \frac{C-A}{2} \sin \frac{A-B}{2}$$

where R is the radius of the circle circumscribing ABC .

UNIVERSITY OF LONDON.

MATHEMATICAL EXAMINATION,
JANUARY, 1881.

ARITHMETIC AND ALGEBRA.

1. Express $\sqrt{\frac{0.00456 \times 0.987}{6.54}}$ as an ordinary decimal fraction, correctly to three significant figures.

2. Express $\sqrt{1.27 \times 1.571428}$ as a vulgar fraction, reducing it to its simplest form.

3. What is one shilling and sixpence a gallon in francs per litre? Express the result decimally correct to four significant figures.

[A gallon of water weighs 10 pounds; a litre is a cubic decimetre; a gramme is the weight of a cubic centimetre of water; and you may assume that a kilogramme is 2½ lbs., and that £1 is equal to 25 francs.]

4. Assume that 4 English navvies can do as much work in a day as 5 French navvies, that 4 French navvies can do as much as 7 negroes. It is found that 13 English and 12 French do a piece of work in 3 days. How long will it take 10 negroes? Express your result decimally to three significant figures, and use none but arithmetical symbols in your work.

5. A milk dealer buys pure milk at 11½d. per gallon. How much water must he add that he may sell at 5d. a quart and obtain a gross profit of 100 per cent.?

6. Find a geometric progression of which the first term is 4 and the fifth 100.

7. The army of an enemy consists of infantry, cavalry, and artillery. It is known that his cavalry have 105 horses to every 100 men, that in the artillery there are twice as many men as horses, and that in the infantry there is one horse to every fifty men. It is ascertained that the army consists of 10,000 men with 2,740 horses; also that the infantry are as numerous as twice the cavalry and three times the artillery together. How many are there of each arm?

8. A reduction of 10 per cent. in the price of iron would enable a purchaser to obtain one hundredweight more for a sovereign. What may the present price be?

9. Find the greatest common measure of the expressions.

$$\begin{cases} x^6 + 6x^2 + 9x + 4, \\ x^4 + 9x^3 + 28x^2 + 36x + 16, \\ x^4 + 8x^3 + 21x^2 + 22x + 8. \end{cases}$$

10. A tobacconist pays 4s., 3s. 6d., and 2s. 6d. per pound for three kinds of tobacco. He mixes them, and by selling at 4s. per pound obtains a gross profit of 25 per cent. on his receipts. If he omitted the most expensive tobacco from his mixture, keeping the others in the same proportion, his profit would be 45½ per cent. on his outlay; whereas if he omitted the cheapest his profit would be only 2½d. per pound. What was his mixture?

GEOMETRY.

1. A number of equal triangles stand on the same base and at the same side of it; prove that their vertices are all situated on the same right line, which is parallel to their common base.

2. By aid of the preceding, or otherwise, find a point such that the two triangles having it for a common vertex, and standing on two given right lines as bases, shall be each of a given area.

3. Divide a given right line into two parts so that the square on one part shall be equal to the rectangle under the whole line and the other part.

4. Apply the preceding construction to the division of a right angle into ten equal parts.

5. If two circles touch each other, prove that their point of contact and their centres are situated on the same right line.

6. If from a point outside a circle two right lines be drawn, one cutting the circle and the other touching it; prove that the square on the tangent shall be equal to the rectangle under the whole secant and its external part.

7. Apply the preceding to describe a circle passing through two given points and touching a given right line, and point out the number of solutions of the problem.

8. If one pair of the opposite sides of a quadrilateral inscribed in a circle be parallel, prove that the other pair are equal in length.

9. If a right line be divided into two equal parts and also into two unequal parts, prove that the rectangle under the unequal parts together with the square on the intermediate part is equal to the square on half the line.

10. Divide a given right line into two parts so that the difference between the squares described on the parts shall be equal to a given rectangle.

ENGLISH LANGUAGE.

[Not more than *ten* questions are to be attempted in addition to the exercise in dictation.]

1. Write out and punctuate the passage read by the examiner.

(Candidates will bear in mind that it is not allowable to make a fair copy of this exercise in dictation.)

2. At what different periods has a Latin element been introduced into our language? Give examples of Latin words introduced in the several periods mentioned.

3. What is meant by *Runes*? Tell whatever you know concerning any Runic letters admitted into the English alphabet.

4. What is meant by *English roots*? What

letter-changes from the English root have occurred in the following words:—*each, thunder, speak, crumb*?

5. Define the grammatical term *gender*. What is the original force of the suffix in *hunter, maltster*? Account for the gender of *sun* and *moon* in modern English.

6. Mention any English nouns which form their plurals by processes generally obsolete. Which of the following are genuine plurals, and how do you account for the forms which are not such?—*alms, summons, barns, sessions, costs, eaves, weeds, riches, dice*.

7. What is the origin, and what is the meaning in English grammar, of the term *case*? Of what lost case-endings are the traces still discernible in our language?

8. Enumerate and explain the origin of the various kinds of suffixes employed in the formation of English ordinals. Give the etymology of *foremost*.

9. What do you know concerning the origin and history of English possessive pronouns? Account for the form *ours*.

10. Which are the English auxiliary verbs properly so called? Explain the forms of the preterites of the verbs *have, make, can*.

11. Discuss the words italicised in the following:—

“Long ago we were *wont* to let plain *living* accompany high *thinking*.”

“*Metinks* you *might* have spoken, but you *durst* not,”

12. Distinguish between co-ordinating and subordinating conjunctions. Which are the various uses of the word *but* in English?

13. Give instances of the use of *proper* nouns as *common* nouns in English. What is the derivation of *dunce, copper, tramway, gipsy*?

14. State clearly the rules of English syntax with regard to the use of *will* and *shall*.

15. Give examples of grammatical pleonasm and ellipsis in English.

Analyze grammatically the following sentence; point out any defects or deviations from modern usage which you may notice in its construction, and rewrite it accordingly:—

“By our common law, although there be for the prince provided many princely prerogatives and royalties, yet it is not such as

the prince can take money or other things, or do as he will at his own pleasure, without order, but quietly to suffer his subjects to enjoy their own, without wrongful oppression: wherein other princes by their liberty do take as pleaseth them."

ENGLISH HISTORY AND MODERN
GEOGRAPHY.

[Of these questions *ten* only are to be answered: and of the ten *two* must be geographical.]

HISTORY.

1. What was the constitution of the Witnagemot, and what were its powers?
2. How did William the Conqueror provide in England for maintenance of the power of the Crown?
3. Write a short account of the chief historical events in the reign of John.
4. Of each of the following battles say when it was fought, who were the combatants, and what was its result:—Lewes, Evesham, Falkirk, Bannockburn, Poitiers.
5. Trace the descent from Henry III. of Richard II. and of each parent of Henry IV. Tell the chief causes of the deposition of Richard II.
6. Trace the descent from Edward III. of successive heads of the houses of York and Lancaster as far as is necessary to explain their rival claims to the throne.
7. Give the date, and tell briefly the immediate cause, of each succession to the English throne from the death of Henry IV. to the establishment of the Tudors.
8. Shew what advance was made in the development of Parliamentary Government under the Lancastrian kings.
9. Tell briefly the chief historical events associated with the life of Thomas Wolsey.
10. Tell briefly the chief events in the life of Mary Queen of Scots from the year 1561 until her execution.
11. Explain the occasion and the manner of what is called the "Plantation of Ulster."
12. Give some account of the history of the Court of Star-Chamber. Why was it so called?
13. Describe any event of the year 1629 that has a prominent place in our constitutional history.

14. Tell—without entering into detail—the chief facts in the political life of the first Earl of Shaftesbury.

15. What led to the trial of the Seven Bishops, and what was its result?

GEOGRAPHY.

1. Sketch the geography of the great North American Lakes, and of the River St. Lawrence.
2. Account for the geographical limits of the Trade Winds and of the Monsoons.
3. A pedlar tramps from Penzance to Lincoln, or from Carlisle to Lincoln, by the shortest way, visiting as many towns as he can, without adding much to the length of his journey. Take one only of these routes, the southern or the northern, and name in their order the chief towns through which he could pass.
4. Write a geographical description of any county on the English coast.
5. Tell in a few words the situation of each of these towns:—Antwerp, Amsterdam, Hamburg, Dantzic, Stockholm, St. Petersburg, Astrakhan, Hyderabad, Bombay, Calcutta, Rio Janeiro.

NATURAL PHILOSOPHY.

[Only *eight* questions are to be attempted, of which *two* at least must be from section A.]

A.

1. Define acceleration, and explain how it is measured. What is the relation between the measure of a force, the mass on which it acts, and the acceleration which it produces?
A body resting on a smooth horizontal table is acted on by a horizontal force equal to the weight of 2 ounces, and moves on the table over a distance of 10 feet in 2 seconds. Find the mass of the body.
2. Explain the meaning of the proposition known as the "Parallelogram of Forces."
Three forces act along three of the sides of a parallelogram $ABDC$, one from A to B , one from A to C , and the third from B to D ; each force being proportional to the side along which it acts; the parallelogram is such that the diagonal AD is perpendicular to the side BD . Find the line of action of the resultant force, and shew that its

magnitude is equal to one of the given forces.

3. Describe some form of balance in which the beam is below the scale-pans.

A body appears to weigh 24lbs. when placed in one scale-pan, and 25lbs. when placed in the other. Find its real weight to three places of decimals.

4. Shew that the centre of gravity of three equal weights placed at the angles of a triangle coincides with the centre of gravity of the triangle.

ABC is an equilateral triangle of 6 inches side, of which O is the centre. If the triangle OBC be removed, find the distance from A to the centre of gravity of the remainder.

5. A smooth inclined plane, whose height is one-half of its length, has a small pulley at the top, over which a string passes. To one end of the string is attached a mass of 12lbs., which rests on the plane; while from the other end, which hangs vertically, is suspended a mass of 8lbs.; and the masses are left free to move. Find the acceleration and the distance traversed from rest by either mass in 5 seconds.

B.

6. What is the resultant pressure of a heavy fluid on a body immersed in it?

An empty balloon with its car and appendages weighs in air 1200lbs. If a cubic foot of air weigh $1\frac{1}{2}$ oz., how many cubic feet of gas of specific gravity .52 must be introduced before the balloon will begin to ascend?

7. How may a hydrometer with a short and slender stem be adapted for the determination of the specific gravities of liquids which differ widely from one another; as, for example, alcohol and concentrated sulphuric acid?

Describe Sikes' Hydrometer.

8. The cylinder of a single-barrelled air-pump has a sectional area of one square inch, and the length of the stroke is 4 inches. The pump is attached to a receiver whose capacity is 36 cubic inches. Compare the pressure of the air in the cylinder after eight complete strokes of the pump with the pressure before commencing the operation.

What conditions limit the amount of exhaustion which an air pump can effect?

9. Describe fully the adjustments you would make before reading a standard barometer; and state clearly how you would adjust the vernier scale for reading the upper surface of the mercurial column.

10. How would you experimentally verify the laws of Refraction?

What condition is necessary in order that a ray of light may be able to emerge from the plane surface of a refracting medium?

11. Shew by a drawing how you would employ a right-angled isosceles glass prism to bend a beam of light at right angles. Will any light be lost at the hypotenuse? State fully the reasons for your answer.

12. Explain the formation of an image by a convex mirror.

The radius of a convex mirror is 6 inches. If the linear dimensions of an object be twice those of its image, where must each be situated.

13. Why do we generally speak of *degrees* of temperature but *quantities* of heat?

"If two bodies are in thermal equilibrium with the same body, they are in thermal equilibrium with one another." How would you prove this statement experimentally?

14. Define latent heat, specific heat, capacity for heat, coefficient of cubic expansion, and thermal conductivity.

How would you determine the capacity for heat of a copper vessel?

15. Distinguish between evaporation and ebullition. What condition determines whether a liquid will boil or evaporate?

A closed vessel is half full of water, and half full of dry air, all at 0°C and at ordinary pressure. On heating the vessel the pressure is found to rise to two atmospheres, though the temperature is several degrees below 100°C . Account for this.

16. Explain the formation of dew, stating the conditions which are favourable to its deposition, and why they are so.

How do you account for the efficiency of a glass fire screen, while the interior of a green-house is rendered much hotter than the air outside by the sun's rays alone?

SCIENCE DEPARTMENT.

[A series of Examination Questions upon Botany and Human Anatomy and Physiology, prepared for THE MONTHLY by Henry Montgomery, M.A., B.Sc., Lecturer on Zoology and Botany in Toronto School of Medicine.]

BOTANY.

(Continued from page 86.)

32. What kinds of stem, with regard to structure, do we find in the clover, pea, tulip, beech, fern, mushroom, scouring-rush, lichen, geranium, asparagus, apple and horse-chestnut?

33. Define rhizome (root-stock), tendril, runner, stolon, sucker, offset, tuber, corm, bulb, scape, calamus and culm.

34. Shew the differences between thorns and prickles, giving examples.

35. Write brief notes on cork, lenticels and cambium.

36. Under what circumstances may the rings of growth of an exogenous stem be depended upon as an indication of its age?

37. Give the minute anatomy of an ordinary foliage leaf.

38. Mention three important differences between the guard-cells and the remaining cells of the epidermis.

39. What are all the known functions of the stomata?

40. Give an account of *cotyledons* and *covering-leaves*.

41. Explain the signification of *leaf-cycle*, *distichous*, *quincuncial* and *phyllotaxis*.

42. What do the botanical terms *decussate*, *verticillate* and *opposite* denote?

43. Give some account of the *special forms* assumed by foliage leaves.

44. What are *trichomes*?

45. Distinguish cordate, obcordate, mucronate, acuminate, dentate, serrate, peltate, sagittate, hastate and auricled leaves.

46. What are *stipules*?

47. State the peculiarities of endogens with respect to the seed-lobe, stem and leaf.

48. Name and describe the different varieties of netted-veined (reticulated) leaves in accordance with the distribution of the vascular bundles. Give examples.

49. Make drawings to shew the external form of the leaf of the sugar maple, the leaf of the dandelion and that of the lilac.

50. Tell whether the stem is twining or climbing in each of the following:—Grapevine, morning glory, bean, and hop.

PHYSIOLOGY AND ANATOMY.

(Continued from page 87.)

19. Name some of the intestinal secretory glands, and tell the kinds of food affected by their secretions.

20. What are the lymphatics?

21. Give position and function of the thoracic duct.

22. If blood be drawn from the body and allowed to stand for a short time, a clot or coagulum will be formed in it. Explain this clotting or coagulation.

23. Enumerate the circumstances by which the clotting of blood may be (1) hastened, and (2) retarded.

24. Minutely describe a human red blood-corpuscle, and relate the principal points of distinction between it and the red blood-corpuscle of a bird.

25. What is meant by the *plasma*? What by the *serum*?

26. Distinguish between arterial and venous blood.

27. Define the terms *vein* and *artery*.

28. Which kind of blood (arterial or venous) is carried by the pulmonary artery?

29. Give the average specific gravity of the blood.

30. How many pulmonary veins are there?

31. Describe the walls of an artery.

32. What are the capillaries?

33. State the average velocity of the blood in the arteries, capillaries and veins respectively.

34. Why is it easier to stop bleeding from a torn wound than from a wound made by a sharp, cutting instrument?

35. Where should the pressure be exerted in order to stop bleeding from a vein?

36. Describe white blood-corpuscles, and give their proportional numbers (relatively to the red) in man.

37. Give a detailed description of the heart and its action.

38. What is the *superior vena cava*?

39. What is the average number of pulsations per minute in a healthy individual?

PUBLIC SCHOOL DEPARTMENT.

[Contributed to, and under the management of, Mr. S. McAllister, Headmaster of Ryerson School, Toronto.]

THE SUPERANNUATION FUND.

[As the Superannuation Fund is occupying a large amount of attention amongst the teaching profession throughout the Province, it is desirable that it should have the fullest discussion, and we therefore gladly insert the following communication from a valued correspondent :—]

The Superannuation of Ontario Teachers is a subject now attracting considerable attention. Various opinions are held about it, not only by the general public, but by the teachers themselves. Some contend that our whole system of pensions should be done away with, and that those who in the heyday of their lives have not been prudent enough to provide for their declining years, should be satisfied to take the consequences of their improvidence, and depend upon cold charity for a support. This opinion is not confined to the unthinking masses, but is entertained by those whose enlightenment would lead us to expect better things from them. That men, and women too, should be sufficiently prudent to lay up for a rainy day, no one for a moment will deny. But circumstances alter cases, and we should, in discussing the pension question, consider it carefully in all its bearings, and endeavour to arrive at a reasonable conclusion. Before we proceed further we must state that under our present educational system the teacher is as

much a servant of the State as any Civil Service employé. Now the State has always recognized the necessity of providing for its worn-out servants, either by a gratuity or by an annuity at the end of a certain term of service. 'Tis true that the beneficiaries are required to contribute to the fund from which these gratuities or annuities are drawn. To a certain extent the present "Superannuation Fund" for teachers is of this character. But the position of the teacher entitles him to more consideration than the Civil Service employé receives. His qualifications are higher, the amount of work demanded of him is greater, and his duties are far more important than those of the average Government clerk. Yet his remuneration is far inferior, and his tenure of office is very uncertain. Permanence in the profession is necessary for the good of education; and a respectable pension would be a great inducement to many to remain in it, who now only follow it as a makeshift till such time as they can secure some more lucrative and less onerous and harassing employment. The fund, in our estimation, might easily be put upon such a basis as to render it a comparatively easy matter to grant to each teacher, after twenty or thirty years' service, a decent annual pension. Suppose, for instance, that every certificated teacher in the Province had to pay an annual license fee of, say, five dollars for a third class license, ten for a second, and

twenty for a first, and that each teacher also pay into the fund an annual sum proportioned to his or her annual salary. Here alone we would have a large annual revenue, and as each one who contributes should be debarred the privilege of withdrawing any contributions, he would have a strong incentive to remain in the profession. Examination fees should also be charged, any balance from which after meeting the expenses of the examinations should be handed over each year to the Superannuation Fund. These sources of revenue supplemented by a moderate Government subsidy would soon put the fund on a footing which would make it at least respectable instead of being as it is now, a disgrace and a by-word even amongst its present beneficiaries. The whole matter, we think, is to a very great extent in the hands of the teachers themselves; and if we would only sink our petty differences, and unite heartily in elaborating a feasible scheme, we should soon have what is much to be desired, a large and useful pension fund. Interviewing a patronizing Minister of Education is not sufficient. Work—steady and energetic—and a liberal-mindedness amongst the members of the profession, are what we need. Numerically we are strong enough to accomplish much more than we at present do for our own benefit. Let us not lack the disposition, the earnestness of purpose, and the independence of spirit which are needed to accomplish any great work. A.M.

SCHOOL-ROOM WORK.

TEACHING SPELLING.

NUMEROUS plans are adopted to teach scholars those words that are difficult for them to spell. One of the commonest is to require them to write the misspelled words many times over. This very often fails of its purpose because, after writing the words once or twice, the operation becomes mechanical. A better plan is to require the words to be written once a day—for five or six days. Another plan is to keep the words before the scholars on the blackboard until their eye becomes familiar with them, and a good way of test-

ing their mastery of the words finally, is to make them up into a dictation lesson. Of course in a task like this neither the sense nor the composition can be expected to be very superior, but if it serves the purpose intended the main point is gained. We subjoin an exercise of this kind, and our readers will find it an admirable one to give to Fourth or Fifth Book scholars:—

"The great desideratum for nomadic tribes is the possession of a region endowed with rich pasture fields which may be separated by tracts of desert.

"If their flocks do not become satiated with the herbage in one spot they can migrate to another. The exigencies these tribes are subjected to engender and disseminate a beneficent hospitality, which is not characterized by hypocrisy and is as sacred as any religious dogma that governs our sublunary concerns.

"Notwithstanding this they shew little squeamishness in gratifying their animosities and a spirit of vengeance during a period of dissension, and this often leads to shocking catastrophes. It may seem a little incongruous to say that these tribes are usually neither sceptics nor unbelievers in religion; on the contrary they are often most devout as worshippers of their deity; whether that be Jehovah with the whole earth as His Temple, or Buddha in his shrine, or Jove on his pedestal."

PROMOTION EXAMINATION TO FOURTH CLASS.

FEBRUARY.

*Set for Public School, Section No. 3, Barton
—Henry Brooke, Teacher.*

ARITHMETIC.

I. Write in figures the following number: Three hundred and forty-five trillions, seventy-one millions, three hundred twenty-one thousand and four.

II. Add together $\frac{17}{\frac{1}{2} \text{ of } 2\frac{1}{2} \text{ of } 2\frac{1}{2}}$, $\frac{19}{3\frac{1}{2} \text{ of } 4\frac{1}{2}}$ and divide the result by $10\frac{1}{2}$ of $(1\frac{1}{2} - \frac{1}{2})$.

III. Find the H. C. F. of 9864 and 9873, and L. C. M. of 48, 136 and 1728.

IV. A man sold two city lots for \$800 each, on one he gained $\frac{1}{4}$ of the cost, on the other he lost $\frac{1}{4}$ of the cost; find his gain or loss.

V. A man invests $\frac{2}{3}$ of his capital in real estate, $\frac{1}{3}$ of the remainder in bank stock, and the balance, minus \$80, is \$6,200; find his capital.

VI. Add together

3.234, 6.24, and 7.24837;

and subtract 4.836729 from 9.326.

VII. What part of one florin is

$2\frac{1}{2}$ of $\frac{2\frac{1}{2} - \frac{1}{3}$ of $1\frac{1}{2}$
 $\frac{1}{3}$ of $3\frac{1}{3} + \frac{1}{3}$ of 7 guineas?

VIII. A farmer laid out \$71,778 in buying an equal number of sheep, hogs, and cows; each sheep costing \$6, each hog twice as much as a sheep, and each cow $3\frac{1}{3}$ as much as a hog; find the number he obtained of each.

GRAMMAR.

I. Write the abstract nouns which correspond to the following adjectives: pious, obstinate, jovial, poor, innocent, cheap, dear, wise, long, brief.

II. Write the adjectives corresponding to these nouns: sonority, senility, suppleness, dependence, magnanimity, gratitude, folly, Holland, Norway, perpetuity.

III. Give the masculine or feminine, as the case may be, of: vixen, nephew, lass, author, bachelor, belle, colt, gammer, swain, executor.

IV. Give the plural of: lady, money, court-martial, commander-in-chief, governor-general, potato, man-servant, genus, phenomenon.

V. Compare thievish, first, chief, square, perfect, bad, good, beautiful, many, few.

VI. Parse, "He said, the other day, that running was the best exercise in the world."

VII. Correct, giving reasons:—

Don't he know I would like to have went with him.

The tapestry with the cords and tassels were there.

The tenth and the eleventh boys in the class.

I seen six cows this morning.

I have drank four glasses of water.

They have saw this several times.

Let thou and I the battle try.

The kind of books they call dime novels is very trashy.

GEOGRAPHY.

I. Name and localize the provinces of the Dominion, and their capitals.

II. How can you tell how a country slopes? Give the drainage of the North-West Territory.

III. Name six railways in Ontario.

IV. Draw a map of Ontario, putting in all the cities, the six railways you name above, the Thames, Grand, Trent, and Moira Rivers, and the Towns of St. Thomas, Southampton, Sarnia, and Goderich.

V. Name the bodies of water through which you would pass on a voyage from Hamilton to London, England.

VI. What and where are: Pelee, Brown, Pembina, Sitka, Miscou, Fundy, Chidley, Champlain, Fuca and Battleford?

Pupils are to tabulate their answers as much as possible.

THE use of newspapers as an auxiliary to reading books in the schools is being urged with some persistence among our United States neighbours. The chief benefit of this would be that our scholars would become acquainted with current events. Its merit would certainly not be that it familiarized the scholars with the best specimens of English. Yet this should be the aim of every cultured teacher. By all means let newspapers be introduced into the school-room to serve as auxiliaries to good reading books, but not to supersede them.

HIGH SCHOOL DEPARTMENT.

UPPER CANADA COLLEGE.

WE this month give in greater detail the statistics contained in the Special Report on Upper Canada College, submitted last session to the Local Legislature. In the contest for the right on which the opponents of this institution must now enter they may prove useful for reference, especially to such as do not possess the Report itself.

I. The amount of 358,427 acres, the residue of a larger grant for educational purposes, was regarded by the Government of 1823 as applicable to the support of a University. Of this amount, 63,996 acres were afterwards set apart for the maintenance of Upper Canada College.

The present endowment of the Upper Canada College, is, therefore, admitted even by its supporters to have been part of what was intended by the donors as an endowment for our Provincial University.

II. Present state of the endowment, etc.

Amount of capital in debentures, etc.....	\$236,658
Income from endowment.....	14,677
Income from tuition fees.....	10,000
Total annual resources.....	24,677

EXPENSES.

Salaries for Principal, Masters, etc.	\$16,168
Pensions.....	1,800
Other charges.....	15,648
Total expenditure.....	23,616
Apparent surplus.....	1,058

SCALE OF FEES.

Residents of Toronto.....	\$50
College residents.....	30

NUMBER IN ATTENDANCE IN 1879-80.

Pupils from Toronto, 139; other parts of the Province, 130; Quebec, 6; United States 5; elsewhere, 2; total 282. The résumé of the attendance for the last few years shews that it is falling off.

HONOURS AND SCHOLARSHIPS, ETC.

Under this heading we have a statement of the Honours won by pupils and ex-pupils until 1877, amongst which such items as the following are made to do service: Shakspeare Prize Balliol College, Oxford; Emperor of Russia's First Prize for "History of Cavalry." (III)

The record counts from 1858, and as during the greater part of this period—until 1876 when the High Schools began to look up—it had practically no competitors, it took most of the scholarships, etc. Since 1876, however, the record of the College has steadily diminished.

The compiler of Mr. Crooks's Report, for we cannot believe the Minister intentionally guilty of the attempted deception, has in the record for 1878 to 1880 included not only the Matriculation Scholarships obtained by the pupils of Upper Canada College, but those won by ex-pupils—a mode of compilation that no respectable High School Master would be guilty of. To illustrate: in 1880 the College is credited with seven Scholarships, whereas it obtained but one at the Matriculation Examinations; and in 1879 when it carried off but one—and that a low one—it is credited with nine.

The author of this part of the Minister's Report couldn't afford to speak the truth, the whole truth, and nothing but the truth.

The Report contains also an examination of the high positions now and formerly occupied by ex-pupils of the College.

This is the most respectable part of the Report; but we cannot credit the success of its former pupils, to the educative influences of Upper Canada College *per se*. It is simply the truth that until recently nearly every bright boy was sent to the College before taking up a University course, and it has always been the special resort of the richer

class of students. The arithmetism is, however, very creditable to the instincts of the compiler, though there are few outside of the sentimentally inclined who will attach weight to it as an argument.

COURSE OF STUDY.

The entrance qualification of the First Form is that the pupil should possess a fair knowledge of English, reading and spelling, writing, and the first four rules of Arithmetic(!!!), the usual age of the pupil being ten. Latin and French commenced in this Form. In the Second Form the College boy takes off his bib and tackles the mysteries of "decimals," while in the Third Form, we presume, he may be regarded as the educational equivalent of the ordinary High School entrant. The Fifth and Sixth Forms seem to correspond to our Upper School "more or less."

The system of Scholarships which is now rampant amongst the more ambitious of our High Schools and Institutes may, we believe, be laid historically at the door of Upper Canada College. These are apparently of the value of from \$130 to \$90. They are apparently open to the whole Province and tenable in Upper Canada College or elsewhere, but outsiders do not seem to venture on competition. Perhaps it is not generally known that they are open. This is one of the matters that the College authorities hide under a bushel.

MANAGEMENT.

By this Act of 1853, Upper Canada College was placed under the control of the Senate of the University, with power to make statutes for its good government. The present Committee of the Senate consists of the Chancellor, Hon. Ed. Blake, the Vice-Chancellor, Mr. Mulock, Hon. Mr. Justice Patterson, Colonel Gzowski, and Judge Boyd. These gentlemen report to the Senate, which reports to the Government.

SALARIES.

Principal, \$3,760, with residence, etc., worth at least \$500. First Classical, \$1,696, and residence; First Mathematical, \$1,696, and residence; Second Classical and Superin-

tendent of Boarding House, \$2,812 and residence; Second English, \$1,160 and residence; Modern Languages, \$1,360 and residence; and so on with five or six others. A former Principal comforts his declining years with an annual pension of \$1,000, and an English Master, who now lives in retirement, gets \$800.

The Report goes on to compare Upper Canada College and the High Schools, and it is just here that the intentional unfairness shews itself most glaringly. The contrast is made between Upper Canada College and *all* the High Schools; not, as in all fairness it should be, between Upper Canada College and those that profess to cope with it. A comparison between the College and one of the Collegiate Institutes of the first rank alone would prove disastrous to the former: This part of the Minister's Report is worthless, except as a monument of misdirected industry. It was shewn, in the very desultory debate on this subject in the Local House, that, in comparison with three Institutes at least, Upper Canada College has slight claims for public favour. It was clearly demonstrated that since the passing of Dr. Ryerson's Bill, which gave High School Boards the right of taxation for the maintenance of their schools—and it is from this, and not, as is sometimes erroneously supposed, from the Intermediate, that the rapid growth of the High Schools dates—education at Upper Canada College has been less efficient and much more costly than at the best High Schools and Institutes. Even as a Provincial School it has inferior claims, for it was shewn that in one Institute, out of a total attendance in February last of 399, 227 were non-residents.

Mr. Crooks goes on to state that in the matter of the subjects of study the percentage of pupils in Classics and Modern Languages is much larger in the College than in the Collegiate Institutes and High Schools, while in Algebra and Geometry it is lower; that the cost per pupil in the College, from the income of the endowment, is \$42, while in the Collegiate Institutes and High Schools it is \$38, from receipts from all sources, ex-

clusive of fees; that the College contributes in tuition fees \$10,333, or 45 per cent. of the total receipts, and the 104 Collegiate Institutes and High Schools 5 per cent.; and that the cost per pupil from public sources is \$4 in the College in excess of the cost per pupil from the like sources in the Collegiate Institutes and High Schools; while in the College 40 per cent. more is paid directly by parents of pupils, "who, moreover, as ratepayers, contribute, in common with all other ratepayers, according to the amount of their assessment, to the support of the Public Schools, Collegiate Institutes, and High Schools throughout the Province."

Such is a brief digest of the *material* of this very surprising Report. We say "surprising," for we should have expected a fair statement of facts from the Minister of Education, and not a specious defence of what in his heart he knows cannot be defended. To say nothing of the uselessness of the Institution, it is evident that there exists in its management abuses which an ordinary Board of School Trustees would not tolerate for a day. The salaries are out of proportion to the quality and quantity of the work. The Principal of this second-rate Collegiate Institute actually gets more a year than the President of University College, and many of the masters more than the Professors of University College.

But, in discussing the "General Remarks" in the Report, which we shall do next month, we intend to take up the case against the College *seriatim*. The Provincial Press is almost unanimously in favour of the extinction of this huge excrescence on our educational system, and several of the Toronto papers, to their credit be it said, admit that the College must go. There may be various opinions as to where the endowment should be bestowed, but there cannot be any differ-

ence of opinion as to the necessity for its sequestration to more legitimate uses.

The surprising part of the matter is that an honourable and honest man like Mr. Crooks has allowed himself to be bamboozled into taking the position he has assumed—that a man, whose whole course of life should have developed the practical side of his nature, has allowed a mere sentimental attachment to carry away his judgment. We hope that during the recess wiser councils may prevail, and that the extinction of this abuse may be placed to the credit side of the Minister's account.—*Communicated.*

THE LAST SESSION OF PARLIAMENT.

So far as the High Schools, and, indeed, the Public Schools, are concerned, the session of the Local House just ended has been barren of results; but the fact that the High Schools and Collegiate Institutes will be put on another footing during the recess renders it of considerable importance. The debate on this question was an able one, and the feeling of the House and the Ministry seemed to be that, while the position of the Institutes was an anomalous one, it is in the interests of higher education to maintain a better class of school than the ordinary High School. How the matter will be finally settled it is hard to say, but let it be settled once and for all. There has been too much pottering done in the case of our High Schools.

High School representation in the Senate remains in *statu quo*, and the doctors and lawyers of Toronto, will, as before, arrange matters to suit themselves. The High School influence in the Senate is too small—we should have more than one representative. At the approaching election of three new members this matter should be borne in mind.

CONTEMPORARY LITERATURE.

REPORT OF THE MINISTER OF EDUCATION OF THE PROVINCE OF ONTARIO FOR THE YEAR 1879 (printed by order of the Legislative Assembly). Toronto: C. Blackett Robinson, 1881.

THE Report of the Minister of Education for 1879 lies before us, and as we look over its antiquated contents we have some difficulty in bringing our mind to the task of examining into matters many of which have been consigned to forgetfulness, and others rendered musty by lapse of time. We have year after year represented the utter worthlessness of much that appears in these annual documents of the Department, owing to their lack of freshness, and we know of no better plan to take away this reproach than by issuing, the Report, say, at the beginning of July, or, if the Legislature *must* see it first, let it still cover the first six months of the year, and then we shall have some approximate notion of our condition, educationally, when it sees the light of the Legislative chamber.

The total receipts for all Public School purposes for the year 1879 amounted to \$3,226,730, shewing a decrease of \$20,591 upon the receipts for the previous year. This is caused mainly by the great diminution in the receipts from Clergy Reserves and other sources, amounting to \$40,934. As there was a decrease in the same item in 1878 of \$35,702, we have the serious falling off from this source in two years of \$76,636. It would be interesting to learn if this is to continue, since, if it does, the amount levied by trustees must be proportionately increased. It is of some value to know that the total receipts for 1879 were about double those for 1867.

Of the receipts from assessment, \$1,433,153 were levied by trustees for the support of rural schools, and but \$874,071 by municipal assessment for schools in cities and towns. These figures indicate to what extent atten-

tion should be directed to the education of our rural population by the governing authorities, seeing that there is such a decided preponderance in the money contributed for their behoof. The total expenditure for all Public School purposes was \$2,833,084—a decrease of \$56,263. This amount includes \$2,072,822 for teachers' salaries—an increase of \$61,614; \$32,622 for maps, globes, prize books and libraries; \$306,025 for sites and buildings—a decrease of \$107,367; \$421,613 for rent and repairs of school-houses, collectors' fees, etc.

The total school population between the ages of 5 and 16 years as reported by trustees was 494,424. The total number of scholars attending school between the ages of 5 and 21, was 487,012; comprising 259,056 boys and 227,956 girls. The average daily attendance was 219,442. These numbers shew an increase of 2,064 in the school population, a decrease of 2,003 in registered attendance, and a decrease of 5,146 in average attendance. We have, therefore, brought before us the fact that while the school population is increasing, the attendance at school is decreasing. It may be said that little significance should be attached to this, owing to the smallness of the numbers that indicate it; but however trifling these may be, they shew a tendency in the wrong direction, particularly when we find the decrease in the average attendance the largest. The number reported as not attending any school during the year is 27,409, or between five and six per cent. of the whole school population. This number is made up of 15,361 from the counties, 6,363 from the cities, and 4,855 from the towns and villages. The general impression is that the cities contribute the largest proportion, though, as appears above, not the largest absolute number, to our uneducated classes. And this is correct, for while only four per cent. of our country

school population attend no school, nine per cent. of the town, and no less than twelve per cent. of the city school population receive no education.

Comparing the average with the registered attendance, we find that 45 in every hundred attended school every day; this is a slight decrease upon the previous year, and is very much less than it should be. It is far from satisfactory to know that with the greatly increased expenditure upon our schools the regular attendance of scholars has not proportionately increased.

Here then are two serious blots upon our educational system—the large percentage of children that attend no school; and the small percentage that attend school regularly; and these are matters that urgently call for the consideration of the Minister. It cannot be considered satisfactory to find nearly one-half of the registered scholars absent from school for more than one-half the time, as is shewn by this Report. The more thoughtful of the Inspectors have year after year directed the Minister's attention to this, and we hope they will continue to do so until some effective remedy is applied. As usual, the counties stand lowest in average attendance, having only 42 out of every 100, while the towns have 55, and the cities 58. These numbers shew an increase of one per cent. in the cities, and a decrease of two per cent. in the counties, upon the average attendance of the previous year. This low percentage in counties affects the results as regards expenditure in a very curious way. The popular impression is that the cost of education in counties is far less than in cities, owing to the less expensive buildings, and the lower rate of salaries in the former. But while we find that each pupil in average attendance costs the Province \$12.91, the cost per pupil in counties is \$13.33, in cities, \$11.93, and in towns, \$11.34.

Comparing the average attendance of the various counties, we find that Middlesex and Waterloo stand first, with an average of 51 per cent.; and Haliburton last, with 33 per cent. We ventured to point out mistakes in the statement of the average attendance in Simcoe and Brant in the last Report—these

are acknowledged in a foot note of the present one. The table before us is, however, not free from error, for Wellington is credited with an average attendance of only 4,069, or 25 per cent., out of 16,917 registered. There is internal evidence to shew that the percentage should be about 45 per cent. One other curious result these tables shew—Lanark, which was credited with an average attendance of 60 per cent. in the last Report, can claim in the present one only 45 per cent. It would tend to diminish the possibility of such errors in these tables, and would make them much more intelligible to the public, were the percentage of average attendance stated. Among the cities, Toronto and Hamilton take the lead, with an average of 62 per cent. each, and Kingston is lowest with only 50 per cent. Were the statistics that we are now giving supplied in the Report, it might stimulate the various school districts to a little wholesome rivalry in securing a better attendance. Perth stands first among the towns, and is ahead of the cities with an average of 68 per cent, while Niagara, one of the oldest towns in the Province, is the lowest in the scale, having an average of only 42 per cent.

Mr. Crooks has shewn some flickerings of intellectual life in drafting this report by introducing two new statements into it,—one of the percentage of scholars in each class, and the other of the percentage of scholars in each subject. From the first we find that 32 per cent. were in the first class, 22.6 per cent. in the second, 26.7 per cent. in the third, 15.27 in the fourth, and 3.21 in the fifth. It will thus be seen, that the three lowest classes comprise above 81 per cent. of our entire school population. To teach these classes, and teach them well, requires very careful preparation, not only of the head, but of the heart. With that one-sidedness that proclaims their narrowness of vision, the Central Committee and Education Department almost shut the latter out of view by the prominence they gave to the former. Now, there seems to be a great awakening to the necessity of supplementing book-knowledge by practical experience in the school-room for those who have to be trainers not alone

of the intellect but, what is far more important, of the character of our children.

The number of schools was 5,123—increase, 133; number of teachers, 6,596—increase, 123. Of these, 3,153 were males—

30. Dividing the number of teachers into the number that denotes the average attendance, we get an average for the Province of a little over 33 pupils to each teacher. The counties have a little over 30 to each teacher, the towns 44, and the cities 45.

(*To be continued.*)

SPRING.

[NOTE.—Some time since my friend, Dr. Kelly, Inspector of Public Schools for Brant County, set "Spring" as a subject for English composition in one of the schools in his division, and finding the productions of the pupils rather trite, subsequently read the following stanzas to them as exhibiting a more free treatment of the subject. I have thought them worthy of a wider circulation.—J. E. HONGSON.]

I.

O tropic-born, in emerald vesture clad,
Fair daughter of the far off sunny isles!
Our mother, Nature, welcomes thee with smiles,
And even the gay blue heavens themselves look glad.

II.

At thy approach hoar winter flies apace,
And with a sigh resigns his chilling sway,
Speeding to polar haunts his cheerless way,
Fearing thy elfin pranks and sunny face.

III.

The embattled forest, erewhile shorn and bare,
Now gay with banners flouts the hostile breeze,
And 'mid the leafy coverts melodies
Of myriad songsters thrill the ravished air.

IV.

The streams that now rejoicing to be free,
Late mute, enchained, in icy fetters bound,
Stern winter's captives, with exulting sound,
Their shackles reft, leap laughing to the sea.

V.

Along the verdant meads the lambkins play,
Skipping from mound to mound in sportive glee;
Full-uddered kine explore the upland lea,
The flow'rets sweet and tender grass their prey.

VI.

O birth of nature, sweetest season, hail!
From thee this useful lesson let us draw,
(A time-worn maxim taught of Nature's law,
Youth is the time for action, age is frail.)

EDITORIAL NOTES.

HIDE-BOUND EDUCATIONAL SYSTEMS.

It will startle no one to affirm that our systems of education are too much based upon theory and tradition. Enslavement to the doctrines of the past is as much the sin of the educationist as of the theologian. Fortunately a New Reformation has dawned for both, and the dogmatic utterances of the past are to be looked at anew in the light of the present. Education is a Science as well as an Art, and while it seeks in the latter the best means of attaining a given end, it must in the former analyze the methods, and place on a rational basis the rules, by which this is accomplished. It is the *rationale* of their art that modern educators are now looking at, in the hope of solving, in a more satisfactory manner, the complex problems of teaching. The new movement, however, first concerns itself, not so much with the methods and processes of education, as in considering afresh the primary question of what it shall consist. Hitherto, we have thought that we had done with "first principles," and have gone on piling subject upon subject, feeling sure that the tramway was laid on the right road, and that all we had to do was to add to the load as we went over the ground. But we are awaking, in some degree, from this delusion; and the individual teacher is here and there beginning to express himself, not only in regard to the way subjects should be taught, but emphatically as to what should or should not be the subjects of instruction. And it is time that, as a body, teachers should be taking this matter a little more into their own hands. They are as much, or more, concerned in what is taught, so as to arrive at successful results, as those that are the objects of their teaching. The question what studies our youth shall take up,

and what the time respectively apportioned to them, ought primarily to be determined, of course, by the circumstances and wants of the country. The answer must also be given in view of the short time Canadian youth, as a rule, remain at school. Giving consideration to these matters, it is obvious that, for the mass of our school population, anything but the rudiments of what should be a plain, practical education cannot be thought of. Even for High School pupils it is doubtful whether the curriculum of what is termed a liberal education can for many be much more than entered upon. How foolish, then, to charge our school programmes with all the studies taken up in a leisured and wealthy community, or to import fashions in education, without respect to our circumstances, which are both profitless and unsuitable. Still greater is the mistake when the less practical studies occupy time in the school disproportionate to their value, and to the detriment of those whose claims should be paramount. The disciplinary value of some subjects—Mathematics, for instance—must, of course, be considered when we are reviewing the studies which more sharply compete with them in practical life. But, in our Ontario school system, Mathematics, it is notorious, have been given a prominence altogether out of proportion to their rightful claims. Moreover, in a great measure, they have been taught as the art of a conjurer rather than the mental exercise of a sober logician. Classics, too, have had undue attention in our school system, unmindful of the circumstances of the pupil, in regard to his age, his mental capacity, his tastes, the vocation he is to follow in life, or to the length of time he is permitted to give to his education. Both Classics and Mathematics, moreover, are taught in disregard of the sex of the pupil, the former being frequently imposed upon

girls without aptitude or taste for the subject, merely to enable the school to qualify for the Government grant. Were the studies pursued with any appreciable gain to the pupil, and not, as is often the case, from mere traditional respect for them, there could be little to say against the time which they monopolize on the school programme. But, as a matter of fact, how small a proportion profit by them, or receive from their study anything that may truthfully be said to represent valuable educational results. Meanwhile, despite all we are spending on our school system, education in other countries is achieving results of which our education as yet shews little or no signs. That our College Chairs have to be filled by an importation, is, of course, not to be wondered at, though the inability of a College graduate to write a magazine article in good literary form is a circumstance to occasion surprise. In truth, our progress, educationally, however much we are in the habit of eulogizing it, is far from a gratifying one. In Science, Modern Languages, History, and English Literature our school records have nothing to boast of. The first and simplest result of liberal culture—a desire for mental food in the shape of books—is only now slowly and modestly shewing itself. So little is the reading taste developed, and so meagre the sympathy with learning, that our school libraries have proved utter failures. The indictment might be continued indefinitely; but we have, perhaps, said enough at present on the subject. Let us henceforth look critically on our failures, and devise wise things for the future. These will not be found, we imagine, in either the methods or the studies of mediævalism. A modern age wants a modern education. Let us have that!

TECHNICAL EDUCATION.

IT has of late been frequently observed that our methods of teaching the young are still on trial. In regard to industrial education, curiously enough, we have not yet got the length of making an experiment. In some of the asylums and eleemosynary in-

stitutions of the Province, trades are taught and handicraft is made an occupation. But in our school system the education of the hand has not yet been combined with that of the mind; nor has there been much effort made to give industrial science any prominence, even theoretically, in the curriculum of studies. In recent years some recognition has been made of the claims of elementary science, and a few primers have been authorized, and their subjects given a place in the school time table. But this is all we have done, and in our ordinary school course, perhaps this is all that has been hitherto possible. If Canada, however, is to take any rank as an industrial nation, and to achieve success in manufactures, or in the development of the mining wealth of the country, something more must be attempted in technical education than has heretofore been given consideration. Now-a-days there is a more generally diffused appreciation of art, and throughout the Dominion there has been of late a perceptible development of our native industries. If we are to profit by the growth of the art-taste of the community, and by the stimulus given to our manufactures, our youth must have the skilled training and the expert knowledge, necessary to the fostering of the one and the practical development of the other. But to teach science in its application to industry, and with a special view to the needs of the skilled artisan, we must have the special machinery of instruction. In other countries the facilities given to technical training are manifold. Among our neighbours, Schools of Mechanic Arts have for years been established. In England Trade Schools, and in Switzerland and in Germany, Technical Institutes have long been in operation. France, too, in the "Écoles d'Apprentis," has her machinery of instruction, and Belgium has her Institutes of Technology. In these schools pupils are put through a system of the most diversified manual education, and are conducted through all the essential features of actual construction, in wood and iron work, and in many varieties of textile manufacture and designing. In most of these institutions the tech-

nical training is combined with the gymnastic education—the cultivation of the mind going on with the simultaneous skilled training of the hand—and the results have been of the most satisfactory and encouraging character. It is to be hoped that something will soon be done in Canada for technical education. The curriculum of our schools has only had in view training for the professions or for business. The Agricultural College is doing something for the farmer; and the Toronto School of Practical Science, if it were recruited from some preparatory schools of trade, would be of service to the end for which it was founded. In some of the industrial centres of the Province an experiment might be made in one of the schools to give instruction in manual arts, and, with the necessary equipment, to direct this to practical ends. When the importance of technical education is more generally apprehended, as it must soon be, the experiment may be extended. In this desirable and practical matter let us at least make a beginning.

BIRCH EDUCATION.

CHANCE brought to our notice the other day a recent issue of the *Niagara Falls Review*, in which we found a letter from the Master of the Public School in that town, in reply to some correspondent, who, under the signature of "An Old Lady," had evidently "rushed into print" to denounce as a relic of barbarism the use of the rod in the school. We know nothing of the circumstances which elicited the letter we speak of, save what we can gather from the rejoinder of the principal; and we may add that the latter, Mr. J. Dobbie, is unknown to us. The communication, however, is so sensible, and so temperately does it answer the seemingly exaggerated complaint which had called it forth, that we transcribe it for publication in our columns. In doing so we do not wish to be understood as endorsing corporal punishment, the "*ultima ratio*," as it has been called, "of the puzzled and baffled schoolmaster when all other means fail." The contrary, indeed, is our desire, for we hold that the arbitrament of

the birch should be the last, and always a rare, resort, and are further of the opinion that the greatest triumph of school discipline is to be found in the utter and absolute disuse of the practice of personal chastisement. The case here presented, however, would seem to be one of those that so frequently come before the public in the name of outraged humanity, and clamour so vindictively for the teacher's dismissal, under the impression that our schools are given up to all sorts of barbarity, and that the most unrestrained license to flog is at once the wild indulgence and the proud prerogative of the teacher, that we are fain to call attention to the matter as an act of justice to the profession, and in the hope of abating the nuisance and wrong which so often mark the publication of these complaints. From the letter, unfortunately, we cannot gather what was the transgression that merited the punishment complained of, nor can we quite make out what was the nature or extent of the punishment itself. Unapprised of the facts, it is obviously more difficult to speak of the matter. If we may trust the Master's statement, however, there has evidently been the usual hasty jumping at conclusions, on the part of the protesting correspondent, and the erroneous supposition that education is pursued amid a riot of torture. The reply to this is the Master's manifestly sincere avowal of sympathy with his pupils, and his assertion of the infrequency of the occasions when punishment was inflicted. But the disciplinary effect of the rod is frankly avowed, and a little homily is indulged in as to its wholesome corrective uses when applied by the parent himself. There is a touch of humour, too, in narrating the conflicting parental orders given to the writer to thrash, and to abstain from thrashing, those under his charge, which finds a happy climax in the citation of the scriptural injunction: "Whatsoever thy hand findeth to do, do it with all thy might." One word of protest, however, is called for, which Mr. Dobbie will perhaps allow us to make for his own and other's behoof, viz., Do not "strap" for intellectual faults. Mistakes in spelling should *never* carry corporal punishment. If the latter is at any time resorted

to, let it only be for vices, or for acts morally degrading. Here is the letter :

Editor Niagara Falls Review.

SIR,—Permit me to inform "An Old Lady" that her statement in your last issue reminds me of another old lady, a little deaf by the way, who related to her friends that Dr. so and so had prescribed four table-spoonfuls of castor oil to a child (how cruel!), omitting the fact that the Dr. had said in separate doses. Now I have not been a teacher for twenty-one years without discovering before this that an overdose of punishment, as in medicine, is bad, and therefore my prescription is given in four instalments with intervals between, of from twenty minutes to seventeen hours. Her statement regarding the position is tintured with the same quality, as one half the time is expended in the classes, like the other pupils, and the other half at a chair or desk, in any position the delinquent prefers. Permit me also to inform "An Old Lady" that this penalty is exceptional, in fact, it is the last resource, and is only inflicted on pupils liable to suspension, who, after due notice being given, and their names written on the black-board, persist in disobedience or in breaking the rules within two days after such notice. A boy may be found now and again undergoing this penalty, but years may elapse without one single case of a girl. I will illustrate this by a fact. About eight years ago, I laid down a rule, that if any pupil had over three mistakes in spelling, the name would remain on the black-board for two days, and if, on any of these days the pupil had over four mistakes, I would use the strap. In eight years I have not broken this rule once; and what result do I find? That three years have elapsed at one time without requiring to strap a girl, and months without a single boy. Some boys and girls have their names down frequently, but careful preparation is the order of the day until the names are rubbed out. Now I find this other penalty working in the same way, lessening the number punished, and producing the result aimed at, quietness and diligence. However, as usual, some love talking and doing their own sweet will best, and finding my prescription disagrees with such desires, fly to their ma or grandma for sympathy, and in some cases find it. Children properly trained at home seldom trouble the teacher, or persist in breaking the rules, as they have no backing. As regards the term "relic of barbarism," teachers have become accustomed to such opinions, and file them away. For instance, even in this Niagara Falls of ours, one parent tells me, moral suasion is a humbug, thresh 'im well. An-

other sends me a note to the effect not to touch his boy or it won't be good for me. Another considers a detention of fifteen minutes an outrage. Well, what can a poor teacher do under these conflicting opinions, but, as the poet says: "Hold on the even tenor of his way," and practise the admonition, "Whatsoever thy hand findeth to do, do it with all thy might"?

There is one relic of barbarism, however, the rod, which if some parents were to use a little more frequently at the present day, accompanied by the wise man's advice intended for too sympathetic people, "Chasten thy son while there is hope and spare him not for his crying," a marked change would soon be noticed at our public meetings and on our streets, and less necessity for coercion on the part of the teacher. I hope "An Old Lady" will visit the school, and get better acquainted with the teacher, and she may find that he sympathizes with the children, like herself, and considers punishment a hard duty.

J. DOBBIE,

Master, Niagara Falls Public School.

THE NEW CENTRAL COMMITTEE.

It is understood that the Advisory Board of the Minister of Education has been reconstituted and placed in commission, though as yet no public announcement of the fact has been made by the Department. The changes in the *personnel* of the Committee, we believe we are right in saying, consist in the removal of the two obnoxious Inspectors, Dr. McLellan and Mr. James Hughes, whose self-seeking intrigues and the unseemly commercial relations they maintained with a Toronto publishing house, roused a storm of public indignation against them, to which the Minister has now properly, if tardily, paid respect. With the removal of these Inspectors, Mr. G. W. Ross, we believe, withdraws, their places being filled by the appointment of Prof. Watson, of Queen's University, Kingston, Prof. Haanel, of Victoria University, Cobourg, and Mr. Alfred Baker, the new Registrar of University College, Toronto. Four of the old members of the Committee, it is understood, are reappointed, viz., the Chairman (Prof. Young), Inspectors Buchan, Marling, and Glashan. With the cleansing of the Committee, and the infusion of fresh blood, no

doubt the Board will now give a good account of itself, and do substantial service to the cause which it is called upon, zealously and faithfully, to serve.

EDUCATION FOR WOMEN.

THE higher education of women has just won, in Canada and in England, a significant victory. The Senate of the University of Cambridge, England, has recently declared, by a vote of 398 to 32, the sentiment of that old-world institution in favour of admitting women students to the regular examinations held by the University, and of according to them the same degrees and honours which have hitherto been the exclusive possession of the sterner sex. Here, the Senate of the University of Toronto has extended them similar privileges. The following recommendations, drawn up by the committee on the admission of lady candidates, were submitted to and approved by the Senate on the 4th instant, and will at once be acted upon:—

“That in the Faculty of Arts the examinations, together with the medals and prizes, the certificates of honour, scholarships and degrees, shall be open to women on the same conditions as to men, excepting that it shall not be imperative on them to attend lectures in an affiliated college; and that any woman gaining a scholarship, before receiving the same, shall sign an engagement that the money shall be expended by her in the further prosecution of the studies prescribed by this University as necessary for the degree in Arts.”

The result of these decisions of the authorities of Cambridge and Toronto Universities is not, of course, to open the class-rooms of the institutions to both sexes. The practical effect, however, is to secure to co-educationalists what they have long clamoured for—a common standard for the education of both sexes, and the machinery of university examination by which women shall be enabled to attain to the academic status of men, with the honours and prizes appertaining. Now the sexes will start fair, and women be relieved of the disabilities which have hitherto handi-

capped them in the running, with what results we shall look expectantly to the future to declare.

WENTWORTH SCHOOL TRUSTEES IN CAUCUS.

THE zealous and intelligent interest in educational matters of Mr. J. H. Smith, Public School Inspector for Wentworth, recently prompted him to invite Trustees of Schools within his jurisdiction to join him in a conference on matters affecting the well-being of the schools of the county, and with the further object of arousing a more active interest in their behalf on the part of the Trustees themselves. In response to the invitation a large number of the Trustees met the Inspector and spent several hours in discussing the subjects indicated in the following programme:—

1. What can be done to improve the attendance of pupils at our Public Schools.
2. The text books to be used.
3. The desirability of holding uniform provincial examinations throughout the county.
4. The time and manner of employing teachers.
5. The method of keeping school accounts.
6. And such other business as may be suggested by any Trustee or representative present.

The practical result of the meeting, after a fruitful interchange of thought on the several topics brought forward by the Inspector, was the appointment of a Committee, consisting of eight Trustees, eight Public School Teachers, and the Inspector, to consider and report upon a revised list of text books for use in the schools of the county, and to deal with other matters deliberated upon at the meeting in the best interests of education and for the advancement of the schools within the Inspectorate. Mr. Smith is to be congratulated on the success of his Trustees' Conference, which, no doubt, he will have found serviceable to himself, and prove beneficial to the interests which he so warmly has at heart. Inspectors of other counties might find it of advantage to hold similar counsel with their Trustees.

WE have much pleasure in announcing that in our next issue we shall begin to publish a series of three or four papers from the pen of the Rev. Dr. Scadding, Toronto's learned and gossipy historiographer, dealing with the characteristics of the school books of our grandfathers. The series will be entitled, "A Boy's Books, Then and Now—1818-1881," and will discuss the scholastic literature represented by the renowned classicists and pedagogues, Valpy, Ruddiman, Lindley Murray, Alexander Adam, Cobbett, and a host of other "makers of books" dear to the youth of a bygone generation. Our exchanges will oblige us by giving this paragraph a wide currency.

AT a recent meeting of the Senate of the University of Toronto a scheme for the affiliation of St. Michael's (R. C.) College with the University was submitted and approved of, Vice-Chancellor Muloch giving notice of a statute to give effect thereto. We append the memorandum of affiliation drawn up by the authorities of St. Michael's College whom we take the opportunity of congratulating upon the step they have taken, which we trust will prove beneficial to the students of the College, and attest the wisdom and liberality which have suggested the course and given it practical effect:—

Scheme of Affiliation of St. Michael's College with the University of Toronto.

1. St. Michael's College is to be a college in affiliation with the University of Toronto.

2. In the sub-department of history (medieval and modern) no authors are to be specified in the University curriculum. The periods of history embraced in the curriculum are to be the subjects of examination without necessary reference to any particular authors, and examiners are to be instructed by the Senate to so conduct examinations as to carry out the spirit of this memorandum.

3. In the department of mental and moral science and civil polity no authors are to be specified in the University curriculum. The questions will have no necessary reference to any author or school of authors. In matters of opinion matters will be judged according to their accuracy of thought and expression.

(Signed) J. J. CASSIDY, M.D.,
J. M. TEEFFY,
D. A. O'SULLIVAN, M.A.

CARLYLE, by his will, it seems, has bequeathed to the University of Edinburgh, for the establishment of ten bursaries for deserving students, his estate of Craigenputtock,

in Dumfriesshire, which came into his possession through his wife, and will yield to the University some \$1,500 a year. The bursaries are to be named after Carlyle's father-in-law, John Welsh, in whose family the estate has remained since the days of Knox. Five of the bursaries are to be awarded for proficiency in mathematics, and especially pure geometry, and five for proficiency in classics—Latin, Greek and English. The document conveying this gift to his old University, of which he was once Lord Rector, characteristically closes with these words: "And so may a little trace of help to the young heroic soul struggling for what is highest, spring from this poor arrangement and bequest. May it run, for ever if it can, as a thread of pure water from the Scottish rocks, tinkling into its little basin by the thirsty wayside for those whom it veritably belongs to. Amen. Such is my bequest to Edinburgh University."

PENS AND INK!—A theme for a volume! To the journalist, however, as they are good or bad, they either make for righteousness or beguile him into sin. A bad pen will in a given time provoke more profanity than anything we know of; yet a good one, such is the ingratitude of man to pen, most of us will be unconscious of. "The tools," of course, "for him who can use them." For us, let it be a *Pickwick* pen, and no task, whether it be the Central Committee, the Education office officials, or the Minister himself, will daunt us. With the pen, we must, of course, have the ink, and with a bottle of *Shuttleworth's* fluid, though we should be ordered to prepare a catalogue of the literary treasures of the Education Depository (sawdust to the masthead, as Carlyle would say), and have the whole menagerie of the adjoining museum looking on, we should be happy. Seriously, however, in the matter of ink, if any scribe in the profession wants a good, genuine, faith-keeping article, let him communicate with Shuttleworth, Toronto. Heretofore, we have only admitted "Stephens" into our sanctuary, and have until now found nothing satisfactory of native manufacture. Shuttleworth's inks, however, may be exported to England and command a sale, on the veracities of the whole Pacific Scandal Cabinet, alongside the brand of "Stephens." Like the latter it is the manufacture of a chemist, and only a chemist can give us good ink. No school will do wrong by trying it; and many a teacher whose heart cries out for a demijohn of the real blue-black stuff, a genuine limpid fluid, will thank us for bidding him "try Shuttleworth!"