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THE CANADA
EDUCATIONAL MONTHLY
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SEPTEMBER, 1884.

THE PUBLIC SCHOOL CURRICULUM.*

BY THE HON. G. W. ROSS, M.P.P., MINISTER OF EDUCATION, ONTARIO.

WHEN appointed your President a year ago I had no expectation that I would, at the next meeting, be so burdened with official cares as to be almost practically debarred from delivering the annual message expected from your chief officer. It is, however, a source of considerable relief to believe that I can claim your indulgence, inasmuch as the time which might have been spent in preparing an address has been devoted to the interests of the profession in which you are so earnestly engaged.

The most noticeable feature in the educational activity of the day is the desire on the part of all civilized nations to educate the whole people, and everywhere the question is asked, "In what way can we most widely diffuse the benefits of a thorough elementary education?" With this end in view improved methods of teaching are carefully examined in the light of modern experience. Even scientific

tests are applied to the operations of the schoolroom, and by the aid of psychology it is believed the science of education will soon take its place among the other sciences, with the principles on which it is founded just as well defined. But while it is the province of the educator to study the laws of mental development, and the application of those principles by which the best results can be secured, it is the duty of the legislator to consider the various interests of the community for whose benefit those principles are to be applied. Any system of education that does not consider the social, and perhaps the religious organization of the people, their business life, their material resources and their political wants, is necessarily defective. Out of deference to the religious differences of the people, our school system is non-denominational. On any other basis it could not exist as a national system. It is the common property of every member of the State. Not that it is irreligious by any means; for it recognizes in the fullest degree the

* The President's address, delivered before the Ontario Provincial Teachers' Association, Aug. 12.

cosmopolitanism of Christianity without those denominational limitations by which, as society is constituted, its different families are now designated. Happily for us in Ontario, the unity of our system in this respect has been well sustained. Similarly our social organization has rendered us practically a homogeneous people. The distinctions which arise from the accumulation of wealth in the hands of the few, or, worse still, the distinctions which arise from what Tennyson calls "long descent," from fortuitous preferment and consequent assumption of superiority, do not appreciably interfere with the social equality of our people. It is easy, then, for us to establish a system which compromises no man's social position. To the rich man it is no reproach that his child sits on the same form with the child of his poorer neighbour. Nor does the poor man boast, that, in securing the education of his children without cost, he has obtained a socialistic victory over the rich. But when we come to consider a system of education adapted to the business life of a people, we are met with difficulties of no ordinary nature. What might suit a rural population, might not be as well adapted to an urban population, and so on through all the variations of trade and commerce.

In seeking the solution of this problem for ourselves there are certain considerations at least common to all systems of education. (1) Education is not *knowledge* but *power*. True, this power is to be acquired partly through knowledge, that is through discipline which the acquisition of knowledge gives, but after all the real purpose of the educator is to generate power. The function of the furnace, if I may use the word, is to generate the steam by which the engine is driven, but the furnace is not the *power* which drives the engine. It is not necessarily *what* the pupils learn,

as *how* they learn, that determines the value of any department of knowledge as an educating force. The classics may be as good a means of mental discipline as the sciences—a passage from Burke's Reflections as a problem in commercial arithmetic—and yet considering all the circumstances of the learner, the latter may be far more important from a practical standpoint than the former. The question then to be considered is, "How can we apply the educational forces which the various branches of knowledge contain, in such a way as to generate the greatest power and to secure the best results?" In other words can we frame a curriculum of studies which is educating, and at the same time useful? This is the question discussed by Prof. Eliot in his able address before the members of the Johns Hopkins University last February. After giving due credit to the classical course prescribed by all the continental universities, he asks, is it not possible to find in the study of English literature as good an educating force and at the same time many more of those practical elements of culture which would be available for everyday life? Let me quote the eulogium which he pronounces on our much neglected literature:—

"It cannot be doubted that English literature is beyond all comparison the amplest and most splendid literature which the world has seen; and it is enough to say of the English language that it is the language of that literature. Greek literature compares with English literature as Homer compares with Shakespeare, that is, as infantile with adult civilization. It may further be said of the English language that it is the native tongue of nations which are pre-eminent in the world by force of character, enterprise and wealth, and whose political and social institutions have a higher moral interest and greater promise than any which mankind has hitherto invented."

From this he argues, and who will say the contention is not a sound one, that English literature should occupy a higher place than it does in the liberal education of the English speaking peoples?

Let us now apply this principle of utility to the formation of the curriculum for our Public Schools. And first we would say—the useful should supersede the ornamental, and, secondly, the practical should supersede the theoretical.

In discussing these two propositions it must be borne in mind that in an ordinary Public School the teachers' time is divided among a great many classes. The amount of attention which he is capable of giving to each subject is necessarily very limited. The average rural school contains from ten to thirteen classes at least. How important it is then that no part of the teacher's time should be frittered away in idle embellishment to the neglect of the substantial and the necessary. It must be remembered that the school term of the average scholar is very short. Only 2 per cent. of our pupils ever enter the fifth reader. It may fairly be presumed that the majority of the half million attending our Public Schools leave before reaching fifteen years of age. Are we doing them justice, or are we doing justice to those who bear the burdens of taxation, if we fail to consider this circumstance?

Then what are the requisites of a Public School curriculum?

1. Every pupil should be taught to read intelligently the literature of the day—not merely to *know the words* but to understand their meaning, and to give to each word its proper force and vocal significance.

2. To write neatly and legibly, in proper form, an ordinary business letter.

3. To spell correctly, not, of course, all the words in the dictionary, but at least such words as are of common

use in commercial circles and in every day conversation.

4. To make such calculations in arithmetic, rapidly and accurately, as might be required in the daily business of the merchant, the farmer, or the artisan.

5. To know the history of his country minutely, and such general historical facts as may be said to have exercised a wide influence in shaping the destinies of other nations.

6. To have such a knowledge of places as would localize his knowledge of the history, climate, productions, and races of other countries.

7. To be so trained in the art of composition as to be able to express clearly, either on paper or orally, the knowledge he possesses.

8. To be able to delineate pictorially what cannot be as well expressed in words.

Now it may be said that there is nothing new in such a curriculum—that it is now in force in all the Public Schools of the Provinces. I admit there is little that is new in outline. There is much, I think, involved that is new in detail.

For instance, while in every school our pupils are taught to read, that is to name a certain number of words in the order in which they occur, how few are taught to read with expression and force. How few read with any appreciation of the author's sentiments—how few are able to express in their own words the sense of the author. Besides, the teacher utterly fails in doing his work properly while teaching his pupils how to read, if he fails to excite in them a love for reading. And it is here perhaps more than anywhere else that we must look for national results from Public School education. It is not what the pupil gets in school that makes the course valuable to him, it is what it inspires. He may get here and there a few scraps of knowledge coupled with a somewhat rugged dis-

cipline, all useful in their way, but if to knowledge and discipline could be added the inspiration for further acquisitions—if like the first shilling earned by Astor, which made him a millionaire, his school work could be made the inclination to steady, plodding effort for more information, then and only then might we say that the teacher has done his work well. To teach a child how to read, as I have indicated, is to give him the key not only to all the treasures of science, but to that literature described by Prof. Eliot as “The completest, most various and most splendid the world has ever seen.”

But reading is not only the key to literature, but also to history. By what species of national depreciation has it arisen that Canadian history is virtually excluded from our public schools? We study the history of Greece and Rome, of England and France, and yet we have failed so far to give a place even to the history of Canada on our examination papers. Apart altogether from the duty we owe to ourselves as a people, I think the study of history should occupy a higher place than it does in the school curriculum. Prof. Eliot says:—

“If any study is liberal and liberalizing, it is the modern study of history—the study of the passions, opinions, beliefs, arts, laws, and institutions of different races or communities, and of joys, sufferings, conflicts, and achievements of mankind. Philology and polite literature arrogate the title of the “humanities;” but what study can so justly claim that honourable title as the study which deals with the actual experience on this earth of social or progressive man? What kind of knowledge can be so useful to a legislator, administrator, publicist, philanthropist, or philosopher as a well-ordered knowledge of history. If the humanity or liberality of a study depends upon its power to enlarge

the intellectual and moral interests of the student, quicken his sympathies, impel him to the side of truth and virtue, and make him loathe falsehood and vice, no study can be more humane or liberal than history. These being the just claims of history in general, the history of the community and nation to which we belong has a still more pressing claim upon our attention. That study shows the young the springs of public honour and dishonour; sets before them the national feelings, weaknesses, and sins; warns them against future dangers by exhibiting the losses and sufferings of the past; enshrines in their hearts the national heroes; and strengthens in them the precious love of country.”

But it is not what this curriculum would include as much as what, rationally carried out, it would eliminate, I wish to consider. For instance in the study of arithmetic how much pain would be spared the pupil, and how much useless anxiety the teacher, if only what is useful were taught. Of what use are alligation, circulating decimals, single and double position, and “duodecimals” to the ordinary citizen? It may be said that mental discipline is got in this way. So it may be got by a Chinese puzzle, but should Chinese puzzles be put upon the programme. Give your pupils discipline in doing a greater amount of work if you like, but let it be work that is of practical value. The man who trained his son to work by compelling him to wheel stones from one part of the garden to another would have acted much more wisely if he had ordered him to pluck up the weeds and otherwise improve the surroundings. As Swett, in the *Pennsylvania School Journal*, says:—

“A teacher who keeps young pupils at work, term after term, upon complex or puzzling problems in mental

arithmetic, repeating long-drawn-out formulas in logical analysis, including statement, solution, and conclusion, before they have acquired readiness and accuracy in addition and multiplication, is only making them wheel stones. A country teacher who neglects 'the four rules' and 'the tables' in order to train big boys upon a Normal School analytical demonstration of the reason for inverting the divisor in divisions of fractions is wheeling stones; and if, added to this, he requires alligation, exchange, and progression, he is wheeling glacial boulders."

Now, all this superfluous, and in many cases useless, mental drudgery should cease, and the energies of teachers be directed to the task of imparting such knowledge of numbers as would be of service in ordinary business pursuits.

In the same way the study of geography should be reformed. We cannot, of course, dispense with a good general knowledge of the world—the resources, climate, and productions of different countries, the important rivers, mountains, physical features, etc., but then why be so microscopic in our map geography? Who cares about the names of every little hamlet in France, every cape on the coast of China, or every island on the Mediterranean? Why burden the memory with bald names, which in a few weeks it repudiates, and which, if retained, would add but little to the mental equipment of the scholar? Why not be rational, and give the pupil in conjunction with the name of the place such facts of an historical or topographical character as furnish the only reasons why the name should be remembered? We certainly require to teach fewer names of places and more of the facts from which the places derive their importance.

Another consideration interwoven throughout this curriculum of essen-

tials or rather forming its substratum, should be the constant effort to quicken the mental activities of the pupil, to train him in habits of observation, to rouse his curiosity, to strengthen his judgment, and to cultivate his taste. Having once entered the vestibule of the great temple of learning he should have such an attractive view of its vast interior presented to him that he would gladly seize every opportunity to proceed farther and, if fortune failed to favour him with the adventitious aid of an advanced teacher, he would, by his own unaided powers, explore every recess, and worship at every shrine which a refined intelligence had erected for the devotees of literature, science, and art. The next consideration in forming a Public School curriculum is simplicity. No greater mistake can be committed than to attempt too much. We must admit the child's power of absorption and assimilation is limited. The moment we exceed the range of that power all labour is wasted. Besides, the object of the Public School is not to teach many things, but to give the power and desire to learn many things. The first principles of a science may be easy and simple enough to an adult, but to a child they may be meaningless. Would it not be better then to exercise his powers within their natural range, than to perplex him with definitions, which to him are but a mere jargon of words? There is ample room within the area of essential subjects for the effort of which the child is susceptible, and to attempt more is to vitiate all. Let it not be supposed, however, that I object to such oral lessons in botany, natural history, and kindred subjects as appeal objectively to the child's mind. On the contrary, I value such lessons very highly. The boy learns largely

from the world of nature around him. To aid him in his investigations, to stimulate his desire for more information, or to classify and systematize his knowledge would certainly be of great advantage to him. What I protest against is text-book science, or technical science for the school-room—a course of science entirely unscientific in its mode of presentation and utterly valueless as an educational force.

And this leads me to the next point—the Public School's curriculum should be progressive. It should keep pace step by step with the increasing capacity of the pupil. Nothing is more irksome than to pore over lessons already mastered. Each day's work should be a new discovery, each lesson should be a fresh tableau. Just as fast as his powers develop so should heavier demands be made upon his energies. And here I might say that no absolute rule can be laid down as to the exact age at which certain studies should be undertaken. The judicious teacher must decide according to the capacity of each pupil, and no curriculum however wisely framed can render him much assistance. But progressiveness involves another idea. The Public School is part of a system, which so far as it goes, ought to be complete in itself, but should also lead up to the next step in the great stairway of learning. Immediately above it is the High School, where work of a higher grade is done. And although we must not forget that we promote a greater number into active life than we do into the High School, still if the continuity of the system is to be preserved this step must not be overlooked. True, the pupil on this higher plane labours, perhaps,

with a different object in view, but even there we should not lose sight of these practical subjects which, when rightly considered, are the most valuable educating forces that can be employed.

Lastly, a Public School curriculum necessarily includes the agency of a loving, thinking, intelligent teacher. Nowhere is the law of Biogenesis more fully vindicated than in the school-room. *Omne vivum ex vivo*—no life without antecedent life. We may frame a curriculum as perfect in its mechanism as one of West's chronometers—we may equip our school-rooms till there is nothing more to be desired—we may lay down rules which for their wisdom would be commended by a Solomon, but if we cannot place in the school-house a teacher properly endowed the results will be disappointing. Whether the curriculum is simple or complex, progressive or retrogressive, unless the teacher understands his work, it is all the same. From him and through him must first come that life germ which is to be the beginning of a new creation for the child. By him doubts are to be dispelled, difficulties removed, and the mental sky so illuminated that the world around the pupil can be read as in the light of day. Is there a beauty in literature? then he points it out. Are there sermons in stones? he preaches them. Books in the running brooks? he reads them. Whatever of goodness and purity and inspiration there is in life, he imparts. Vitalizing with his own intellectual fervour every mind, he rouses dormant energies, encourages honest efforts, and stimulates into activity, forces which leave their impress upon society, when he has passed away.

SOME FALLACIES CONCERNING EDUCATION.*

BY THE VERY REV. PRINCIPAL GRANT, D.D., QUEEN'S UNIVERSITY, KINGSTON.

I PROPOSE not so much to lecture, as to give an informal talk on this subject. Fallacies with regard to education are so numerous that I might speak till midnight without exhausting such a subject; and, therefore, I have only undertaken to touch upon some fallacies, so that I may conclude when it looks as if I had exhausted you. I propose also to confine my remarks to fallacies—less or more widely entertained, instead of indicating all my opinions on educational matters. For instance, it seems to me desirable to separate education from party politics, and therefore that, *in the present condition of things in Ontario*, it would be expedient to have a non-political superintendent at the head of the department rather than a politician with whom party interests must necessarily be supreme. In order to combine direct responsibility with the advantages of long tenure of office and a thorough mastery of the subject such as it is impossible for the ordinary politician to have or to acquire, I would suggest that the Superintendent have a seat in the Legislature with the right to speak, though not to vote, on educational matters and measures. The House would thus have all the knowledge required, and the Superintendent would be responsible to the House as a whole. But, I shall only state and not argue this opinion, as there will be no opportunity of discussing it on this occasion.

Suffer another prefatory remark.

The fallacies to which I intend to refer are not peculiar to Canada, though, to judge by our practice, they are entertained by a good many Canadians as well as by the people of other countries. I shall speak frankly, because addresses delivered here should have a practical heading. Their aim should be to give us more light, and to emancipate us from the domination of theories and of conceit. The theory-ridden mind is almost debarred from progress. And, while on the one hand, it is well that we should be proud of our country, and ready to stand up for it, especially when abroad, be sure of this on the other hand that we shall never make progress so long as we entertain the delusion that we are models to the world. Several concurring causes have fostered this notion to a perfectly ridiculous extent in some parochial minds. At foreign exhibitions, medals have been gained and honourable mention has been made of the Province, because of models of Public School building and of apparatus that have been exhibited. This has led some of our people to fancy that the whole world is looking with admiration on our system. Those of us who know what the actual condition of things is, as regards our schools, know well enough that the real buildings and apparatus, are as our neighbours would say, "hardly up to sample." Intelligent strangers sometimes visit us, and after they have studied the country and our institutions for a whole day—are interviewed by intelligent reporters. The strangers desire to be civil, they say nothing about

* An address delivered before the Ontario Provincial Teachers' Association, August, 1884.

our defects or weak points, and every complimentary expression they drop is eagerly caught at and accepted as gospel. Some Canadians have thus actually come to believe that England and Scotland are compared with us—far behind educationally. Why, Scotland has had for three centuries what is on the whole a better, more elastic and more economical school system than ours, whereas, though common schools were neglected in England, till this generation we have nothing that can touch their intermediate and college and university institutions.

1. How shall we determine whether a current notion on education is or is not a fallacy, or whether a common practice is based on a fallacy? We must in the first place have a clear conception of what is the great end and object of education. What is the object? To awaken, guide, discipline, strengthen and make elastic the mental powers, so that these shall be at their best, and in a position, and fitted to do all that they are naturally adapted to, whenever the learner goes out from school or college to face the world, and do the work that may be given him to do. Of course, education may be taken in a wider sense; and then its object may be said to develop everything that is in man to all its rightful issues, or in a word the formation of character. But while the mental training must be such that it will not injure the physical, emotional, æsthetical, moral or spiritual sides of our nature, but rather exert at least reflex and indirect beneficial influences on them all, the work of school, academy and college, is directly with mind as an organ for acquiring truth. And, the great object of education is to put that organ in the best possible state to assimilate and utilize truth; to assimilate all the food, in the shape of facts and thoughts—the highest kind of facts—with which it may come in contact.

The better it can methodize, the more it can assimilate. The more it assimilates, the more useful and powerful will the man be. It is therefore clear that no education at all would be better than an education that acts injuriously on the native vigour and elasticity of the intellect; and that a true educational system should aim at sending out our youth into the world with minds eager, strong and flexible.

In the light of this position, we can see a whole crop of fallacies that are less or more widely prevalent.

1. It is a fallacy to aim at absolute uniformity over a whole country. True, there is a general similarity of mind not only in all men, but in men and women alike, but we are not made like bricks in a brickyard. Fair play should be given to the various types of mind in a country. Room should be left for the free play of national varieties. These varieties may be occasioned by differences of race, scenery, modes of life, the industries peculiar to districts, and the general environment. But, we have a craze for uniformity, for that excessive simplification or the reduction of all things to unity of form against which Bacon has warned us, in his enumeration of the "Idols" of the mind. Connected with this is the craze for centralization, or what is called in England by the expressive name of "Red-tape." Civilians favourably situated become affected by this craze, but it especially dominates the military mind. The military man of the bureau believes that the country could be saved, if the whole population were regimented, not otherwise. Hence it is that our military system always breaks just when it is attempted to put it in practice. When the country calls for it, then it is not there. This fallacy that absolute uniformity is requisite demands enormous amounts of tabulating, and of gather-

ing statistics of all kinds, to contain which vaults as big as graveyards, will yet have to be built, vaults that no human being will ever explore. The idea at the base of this fallacy is that a thing is not done at all, unless somebody in a central department has seen on official foolscap that it has been done, and done too in the prescribed way and measure. It means faith in machinery, a thorough dislike of natural development, and a distrust on the side of the department of people at a distance, though these people are the very ones most interested in having the work done and done well. Depend upon it, any kind of rigid uniformity is bad, and uniformity of badness is the abomination of desolation.

2. It also follows that it must be a fallacy to over-stimulate the young mind. Startling results may be produced by over-stimulation, but there is no surer way of exhausting material, mental or moral soil. What becomes of our infant prodigies, of the innumerable admirable Crichtons of every institution, of the countless medallists, double-firsts and senior wranglers? "The hope of the country is in its stupid boys," simply because they have not been unduly forced. We know that in every properly written Sunday School book, the model or rather the goody-goody children die in their infancy. And so they should. And it is an old proverb, that "whom the gods love die young." They die often because the young, tender, delicate, unstable, imaginative brain has been over-stimulated. Hence the evil of early competitive examinations, of frequent promotion examinations, especially where the promotion of the teacher depends on the results. Poor man! he must live, though the children die. Hence the evil of payment by results. In a word we can see the evil of all written examinations for young chil-

dren, and of every kind of forcing process by which infants are pressed, pushed, or coaxed to over and premature exertion. Their minds are left in a withered, wilted, exhausted state.

3. We can also see that it must be a fallacy to overload the mind. This is done by the *cram* system. Mr. Lowe, when administering the English Privy Council grants, defined *cram* as "what I know and you don't know." Mr. Lowe had a turn for epigram, but he knew well that he was not defining *cram*. The word has a perfectly definite meaning. It means the same mentally that over-eating means physically. *Cram* consequently leaves the mental powers in a congested state, permanently weakened as regards their assimilating capacity. When the lad goes to college, his one anxiety is to get through with as little intellectual effort as possible. He tells over what examinations he has passed, and asks anxiously if he is not to get credit for every one. And he leaves college, not possessed of mental flexibility and activity, but in a condition of inertia, perhaps able to read nothing more trying than the daily newspaper. He has been gorged over and over again to pass examinations and when these are over he disgorges, and in the end he goes off into mental sleep, so profound that it is equivalent to death.

4. Evidently, it is also a fallacy to dissipate the mind among so many studies that it has never been able to learn practically the right methods of mastering any subject. Here, the motto ought to be, "*Multum non multa.*" In drawing up a curriculum of study, the rule often seems to be that every subject must be put on it that is admitted to be important. As a consequence, we get in our schools the three R's badly done, and a whole host of ologies not done at all. Perhaps one man in authority has a fad about arithmetic, and he runs it to death.

Every boy and girl must go through that terrible mill of arithmetical quibbles and puzzles. And yet who can deny that arithmetic is necessary? Another makes the discovery that grammar is necessary, and analysis with all its abominations is forced on the poor little infants. Another authority comes along and points out that no one can be said to be educated who does not know botany. What! let a child go through the fields without knowing botany. And so he must learn lists of long Latin words infinitely more burdensome than the old Latin doggerel in which rules were committed to memory. Another has a fad about physiology, and down it goes on the list. Another adds music, for should not every one be able to sing? Another is sure that every one is a born artist, and, therefore, should be taught drawing. And so it goes on year after year, one fad added to another, and the whole weight of all those subjects is pressed down on the poor little shrinking brains, that after the usual grinding are turned out unable to read and especially unable to spell.

Evidently a clear determination is required as to what should be the subjects of study. As the great majority of children must leave school early, the chief thing is to teach them to read well, to read distinctly, easily, naturally, intelligently. You sneer at this as little. How many can do it? You have given them, if you do this, the key that unlocks all the storehouses of knowledge, and if you have taught them aright, they will delight in reading, and reading will be simply thinking aloud. It is as great a pleasure, too, to hear good reading as to hear good speaking. For the scholars who are to continue their studies, attend to two fundamental principles;—(a) Choose what universal experience has proved to be the subjects that are of the highest gym-

nastic value; (b) draw up optional courses, and have, therefore, different types of intermediate schools and also of colleges in the country. Look at the system in Germany. Besides normal, agricultural, mining, commercial and art institutes, they have three great classes of Intermediate or High Schools;—the *gymnasia* with a course the foundation of which was Latin, Greek and Mathematics, and where classical training was carried farther than in any of our collegiate institutes; the *realschulen*, where modern languages were substituted for Greek, and which taught more mathematics and also elementary science; and the technical or industrial schools which did not, like the other two, lead to the universities, in which Latin as well as Greek was dropped, and training in the mechanic arts, substituted. Now, after a sufficient experience of the results of the *gymnasia* and the *realschulen*, you know that the professors of Berlin University, the greatest in Germany, including professors in physical science of every kind and description, in natural history, philology, literature and history, have unanimously testified in favour of the *gymnasia*, even for those students who intend to devote themselves to the study of physical science. You may say that their judgment does not settle the question. It does not. But, let me ask, has any other tribunal of equal competency pronounced judgment?

It follows from this that the notion that science should be taught in all our High Schools is a mistake. It is also a mistake to suppose that training in mathematics is as good as training in literature. Training in literature is best for those who can go farther than the common school, and for those who cannot. I do not therefore mean that grammar, or still less analysis, should be taught in the common school. Analysis

is dry, tasteless, meaningless and useless. As a rule, it is done mechanically. It is based on a false idea. The sentence is a unit, the expression of a thought. Tear it in pieces, the thought disappears, and you have before you abstract expressions, called subject, predicate, copula, along with a great many other expressions recently added, each one of which makes the whole business more and more cumbersome and dry-as-dust. All this dissection may be undertaken by students with some little profit, in a leisure hour at High School or College.

Literature, I say, gives the highest kind of mental training, because it brings the mind of the learner into contact with the thoughts of the best minds. Language expresses thought, and literary studies, therefore, always tend to make us familiar with thought. Besides, language stimulates thought. Words and thought act and react. So it is that the mind that has been trained to appreciate words is fit for anything. It has been dealing not with words, but with things, and has been taught to weigh, discriminate and value them. Then, you get a higher training when you learn another language. "He who knows only one language knows none." And the more perfect in form the new language is, the more it exhibits the intellectual life of a vigorous race and the loftiest minds, the more it has influenced the growth of our own literature, the higher its educational value. Hence, I believe that the old training, with all its grievous defects of verse-manufacture and gerund-grinding, gave more flexible and powerful minds than we are now getting from the elaborate spoon-meat system that is in favour now, but the knell of which is I think beginning to sound.

II. We must have a clear conception not only of the object of education, but of the best means of

attaining the object. The means used, sometimes in a halting and inconsistent fashion, is the bringing of unawakened plastic minds into contact with awakened and trained minds. This is a roundabout way of saying that the best method is to put scholars in the hands of a teacher, and to encourage him to use the old *viva voce* ways. It follows from this that the better the teacher the better the school, the better the teacher the better the institute, the better the teacher the better the college or university. Here then the great questions are how shall we get, how shall we prepare, how shall we retain the best teachers, how shall we get the most out of them when teaching, and how shall we best smooth the way so that every promising child in the country may have an opportunity of coming in contact with the best teachers in the country? In connection with each of these questions there are popular fallacies.

How shall we get the best teachers and get most out of them? Only by paying them well, it is sometimes said. I decline to accept that answer. Man does not live by bread alone. The best way is not to appeal to ignoble or semi-ignoble motives. The case of the Scottish Parish Schoolmasters, who had miserably small salaries for centuries; the case of the German Professors, many of whom have the merest pittance; the case of the clergy whose stipends are honoraria rather than salaries prove that the true way is to make the profession thoroughly honourable. How shall we do that? Follow the analogies of other professions.

Are you likely to induce the best men to enter and to stay in the profession if you hire them by the year? Are you likely to get the best work out of them by not trusting them; by leaving nothing to their initiative; by repressing their individuality; by

putting official straight-jackets on them, and even when they have become habituated to these, subjecting them to new torture by changes in the pattern that induce new sore spots; or, by treating with contempt the experience they have gained in special spheres? Everything should be done to inspire scholars and parents with respect for the teacher. In my youthful days, boys had too much care for their physical comfort to complain to parents of their teachers. The only result was a sound flogging. The teacher should be in a position to preserve his own self-respect. He is not always in that position in our day.

Take illustrations from the two ends of the scale of two of the fallacies to which I have referred. First, note how completely experience is despised in our treatment of third-class teachers. Is there any analogy to it in any other profession? Why let him into the profession at all if he is unfit to teach? Why turn him out when he has had three years experience and is therefore better than he was? Why act so, when his place has to be taken by another tyro, who in his turn is excommunicated unless he passes a more difficult examination? It is said that those teachers may get permits. That just means that the rope is round their necks, that it may be tightened at any moment, and that their pupils and the boards are acquainted with the fact. An effectual way certainly of inducing respect for the teacher! Secondly, why is it a statute that professors in the State institution may not examine their own students for degrees? Are they not to be trusted? Then, why are they trusted to teach? May not the outside examiners be also distrusted? Should we not have examiners to examine the examiners, and so on to an infinite series? Besides, who can examine so well as the man who

knows the students? If you wish by examination to find out the student's ignorance, the system of outside examiners is good. If it is desired to find out what he really knows the system is bad. Either the Scottish or English University system is good. In Scotland, the professor has outside examiners associated with him, but he generally sets the questions and has most to do with the whole examination. In Oxford and Cambridge, the examiners are selected by the university senate from the colleges, and consist thus of the men who have taught the students. Toronto follows the London University plan, which is now considered obsolete by the most competent authorities.

I have asked how should we manage so that the poorest child in any part of the country shall be enabled, if he has brains, to come in contact with the best teachers in the country? Does not our system accomplish that? No, it does not, greatly to the injury of teachers and scholars. With us a boy, if he desires to get a college training, cannot get the preparatory training in the public or parish school. He can in Scotland. The number of parishes there in which there is not a school where boys can be fairly prepared for college is small. Here the boy must go to a High School. But, that is out of the question for thousands. It is as expensive to board five miles from home as five hundred. When he is big enough to go to college, he can earn something. But, what can a boy earn? Besides, those who can afford to go to the High School cannot afford to stay long. They thus get a smattering, and are miserably prepared for college. Mr. Mundella, in a recent speech in Manchester, pointed out that, on the contrary, in the poorest schools in Scotland, the right is claimed to teach Latin, Greek and Mathematics, and that hundreds go up annually from

these schools to the universities; and that consequently Scotland gets a great deal more from the Education Grant than England, every Scotch child drawing two shillings extra. "It is to that fact," he says, "that Scotland owes her pre-eminence, and which has enabled Scotsmen with the smallest resources and the poorest land in the United Kingdom, to become the richest and most powerful people in proportion to numbers in the United Kingdom." All this dates from John Knox, the greatest statesman Scotland has ever produced, and who laid down that the country required "a school in every parish, a grammar school in every burgh, and a university in every principal city." His system included also religious teaching, local and unpaid inspection rather than centralization, and security of tenure for the teacher. It was economical, elastic and comprehensive. Our rigid system prevents thousands of clever boys from getting to college. This is bad for the boys. It is bad for the teacher too. No encouragement is given him to lift his thoughts above elementary work. He is forbidden to lift thought or eye above drudgery. If he has scholars that would do him credit, the rich are sent away from him, those who have a little money go to the High School for a few months, and the poor he is forbidden to teach. The Public School teacher may never see the best fruit of his labour, nor eat from the orchard he has set out.

Now, is this rigid system the way to make capable men or martinets? Is all this checking, snubbing, dismissing, harassing, excommunicating, the way to develop enthusiasm in teachers? And, insult may be added to injury. After everything has been done to cramp and stifle and disgust him, parent or inspector may solemnly assure him that the one thing needful in a teacher is enthusiasm. No won-

der that he then internally thanks God that he has enough life left in him to consider how soon and how best he may get out of the profession.

Fallacies, too, bristle about the question of how best to prepare teachers for their work. What is the rational method? Let them be brought under the influence and methods of the best professors in the country; after that, a study of one or two good Normal School manuals, experience, and common sense must do the rest. I have no faith in short-cuts, or snips of teaching on philosophy or pedagogy though a thorough university course on philosophy is better than almost anything else. Ontario is very like Scotland, and therefore the following testimony from one of Her Majesty's Inspectors of Public Schools in Scotland, himself not a graduate, may be suggestive. "In our Public Schools, the ratio of university trained teachers is steadily rising. It is already almost hopeless for a non-university man to aspire to the mastership of a school where the salary exceeds £100, and graduates of fair standing are willing to enter the profession for less." This does not mean that we can do without Normal Schools any more than the fact that boys ought to be allowed to prepare for college in the Public Schools, means that we can do without High Schools or Collegiate Institutes.

Fellows of the teaching craft, for so I may speak, seeing that it is now more than thirty years since I began to teach, and that since that time I have taught in Public Schools, Private Schools, Sunday Schools, High Schools, and that I am now teaching and examining in a university, I have spoken these words to you out of truest sympathy. We have glorious work. What material and what work like ours! Not on dull soil or dull marble, not on canvass or dead metals have we to spend our time, but on

minds made, as we are told on the first page of Holy Writ, "in the image of God." And, our special material in this Province is of the best quality. No better raw material anywhere. The grandeur of the work should make us great.

So, notwithstanding difficulties and discouragements, let us work on, not without hope. I have looked to-night at one side only. Had the subject been our special encouragement, it could properly have been very different.

We have encouragements and advantages far beyond what our fathers enjoyed. Remember that every profession has its difficulties, known only to those who are inside. Remember that no duty done ever fails of securing its reward. Your rewards shall be according to your devotion and service, that is, according to your faith. God bless you! The future of the country depends on you perhaps more than on any class in the community.

THE ONTARIO SCHOOL SUPERANNUATION FUND.*

BY JOHN CAMPBELL, HEAD MASTER OF JOHN STREET SCHOOL, TORONTO.

IN undertaking to open the discussion on a subject so important as that of the Teachers' Superannuation Fund—a subject affecting not only the well-being of the teachers themselves, but likewise the best interests of the Province at large, I could wish it had fallen to the lot of some one more competent to deal, at this stage, with so interesting a question. I presume that few, if any, will question the expediency, at the present juncture, of reviewing this subject, and of presenting its more salient points, however inadequately. This becomes all the more imperative, because, of late, a disposition has been unexpectedly evinced in certain influential quarters to withhold the support hitherto given this fund on the mistaken ground that the legislative appropriation in support thereof is excessive, considering the resources of the Province, and that for this, and other reasons equally untenable, the fund should be abolished. Such a

movement, if successful, must seriously impair the efficiency of our Public Schools.

Let a retrospective glance carry us back just thirty years. In 1854 the Legislature inaugurated a benevolent scheme for the formation of a fund out of which to pension off the worn-out members of the teaching profession. It provided that teachers should contribute four dollars per annum to a superannuation fund, the legislative body to supplement such contributions by a liberal annual grant. The Legislature performed its part generously, but the teachers, except in a few cases, failed to do theirs. This, the teachers themselves seemed to have felt, for in 1869 they suggested to the Legislature that each person, on entering the profession of teaching, should pay a fee of \$10 into the Superannuated Teachers' Fund for his certificate. It may be remarked, in passing, that in the State of Illinois, the fee for a certificate of qualification is \$5. The Chief Superintendent of Education, speaking of this proposal, states: "In the draft of the Bill, as

* Address delivered before the Ontario Provincial Convention of Public School Teachers, August 13th, 1884.

submitted by me to the Government in 1869, I modified this proposal and provided that no certificate of qualification should be valid any longer than the holder thereof should pay \$4 per annum into the fund for the support of superannuated or worn-out teachers, as provided by law." This proviso embodied an equitable principle of the English Civil Service Acts, and was designed to do much to provide permanency in, and elevate, the teachers' profession, while the salaries of teachers in their agreements with trustees, would, no doubt, in most cases, be augmented in proportion. During the passage of the Bill through the House, this section of the Act was again modified as follows: "Each male teacher of a public school holding a certificate of qualification under the School Acts of this Province shall, and each female teacher may, pay into the fund for the support of superannuated school teachers, the sum of \$4, annually, and each Inspector of Schools is hereby authorized and required to deduct one-half of such sum semi-annually from any payments made by him to any male teacher under his jurisdiction, and transmit the same to the Education Department. Provided always that any teacher retiring from the profession shall be entitled to receive back from the Chief Superintendent one-half of any sums thus paid in by him to the Fund, and provided further that on the decease of any teacher, his wife or other legal representative shall be entitled to receive back the full amount paid in by such teacher, with interest at the rate of seven per cent. per annum." "Under the new Act, additional provision is thus made which will more than double the Fund for the assistance of disabled or worn-out teachers of public schools. The Bishop of Manchester, in his report on the Schools of Ontario, after giving the facts, speaks of the Fund as fol-

lows: 'The whole plan does credit both to the wisdom and liberality of its framers.'

Among the clergy of different religious persuasions, funds are established by subscriptions for their relief or partial support in old age. In the Wesleyan body, for example, every one of the ministers is required to pay \$10 per annum towards the support of superannuated ministers and their widows—a regulation which has been in force for more than a quarter of a century. In the report of the committee on the Aged and Infirm Ministers' Fund in connection with the Canada Presbyterian Church for 1882, I find that each minister pays at the rate of fifty cents on every \$100 of stipend received, and twenty-nine ministers of this church receive an annual amount of \$220 each from this fund. It also appears that the contributions from congregations, bequests and donations amount to more than eighty per cent. of the whole source or revenue toward the fund in this body. If it is necessary for the clergy, who receive nearly double the average salary drawn by the public school teachers of this Province, to make provision for worn-out and infirm ministers in those bodies, it is much more the duty of teachers to provide for the support of the worn-out of their own profession. If congregations who pay their clergy much more liberal salaries than teachers receive, regard it as a sacred obligation to supplement their own contributions so liberally, is it not the duty of the State to provide for the support of those who have been merely existing on such low salaries, but rendering services equally important when they have approved themselves faithful instructors of the rising generation?

In the English Civil Service from two to five per cent. is deducted from the annual salary of each officer or clerk in the employment of the Gov-

ernment, towards the support of such officers and clerks in old age. A somewhat similar, but more liberal, provision is also made by the Parliament of the Dominion for members of the Canadian Civil Service, whose qualifications, in most cases, are not so high, and whose labours are not so important to the State as are those of the teachers. The employés of the Grand Trunk and Great Western Railways have a similar fund liberally supplemented by the company. They pay two per cent. into the fund and receive one-sixtieth of their whole salaries as a pension, or they retire on half pay after thirty years' service. In the Civil Service of India, retiring pensions are also provided, partly by compulsory subscriptions to a superannuation fund. Among the parochial teachers of Scotland, a fund, similarly raised, exists for granting pensions to teachers and annuities to their widows. The teachers of Baden and other German States enjoy the benefit of a like scheme. In Sweden and Norway, qualified teachers of the Elementary Schools, on attaining sixty years of age, receive, on retiring, after thirty years' service, three-fourths of their annual income as a pension. Pensions are also granted there, in some cases, after twenty-five years' service, but with some deductions in amount.

Now, as to the necessity for the fund, it may be urged that so long as teachers devote their lives to a profession so generally underpaid, so long will there be a necessity for their friends or for the teachers themselves to provide for the comfort of the declining years of their brethren who, in less prosperous days and with scanty remuneration, led the van in that calling which they feel proud to follow. Even now, at the salary given to teachers (considering the increased cost of living), it is almost impossible to lay by a sum which would realize more than a few dollars a year, hence

the necessity for such a fund supported by the mutual co-operation of the teachers and the government, and instead of abolishing it, it should be made more efficient, by the same co-operation, so as to be of more service, especially in cities and towns where the cost of living is so much higher. The late Dr. Ryerson must have felt the inadequacy of the Fund, on retiring from his onerous duties as Chief Superintendent of Education, when he applied to the Government for special legislation in his own case; and that application was not in vain. He received a liberal retiring allowance, equal to nearly one-tenth of the whole amount granted to the 422 teachers on the pension list in 1883, and which, we are told, is becoming a burden to the country, a *very* heavy burden, forsooth! If the total amount paid by the Department to the Fund was spread over the half-million children who attend our Public Schools, it would cost them about eight cents each, annually. This would be a heavy burden on the children! If worn-out teachers were receiving an average pension of \$200 or \$300 annually—the amount paid to clergymen on retiring—instead of \$100—the average sum now paid to retiring teachers—it might be considered a little burdensome. I hold that no annuity or gratuity should be paid to any teacher for a less period of service than ten years, and that any teacher retiring from the profession shall not be entitled to receive any sums paid in by him to the fund unless he has taught ten years in a Public School in Ontario, or unless incapacitated during that time. The male teachers of this city are a unit in favour of retaining the Fund, not abolishing it, and would be willing to contribute more to it, annually, in order to make it more efficient. They feel that the average pension would not go far in supporting them-

selves and their families here, should they become worn-out or incapacitated. They would be willing to pay ten, or even twenty dollars annually, into the Fund, provided they were allowed a like amount for each year's service, or, on retiring from the profession, on a basis similar to the scheme in force in Sweden and Norway, as above referred to.

"The objectors to such a Fund are chiefly those teachers who do not intend to make teaching the profession of their life, but who make it, for the time being, a stepping-stone to some other pursuit or profession, together with those among them who are penurious or selfish. These classes lower the tone and *esprit* of the profession, and are a fruitful cause of frequent changes of teachers; they give a temporary and fugitive character to teaching, and thus bring discredit upon the profession and the schools."* A few estimable and devoted members of the profession have, without due consideration, unwittingly given their countenance to this unwise agitation against the Fund. I hope they will yet see the error of their way and repent.

An article in the editorial columns of the *Globe* of the 12th of July lays down certain conditions on which, in the view of that newspaper, the Superannuation Fund could be fairly abolished. These conditions are:—

1. That all those already superannuated would be permitted to receive their present allowances so long as they were entitled to do so under the law as it now stands.

2. That those who have continued in the profession in the expectation of retiring on a pension should be allowed at their own option to make such payments into the fund as the Education Department might require.

3. That those who were obliged by

law to contribute to the fund should have their contributions returned if they so desire.

4. That no contribution be received from any person after due notice that the fund was to be abolished.

This article called forth a reply, from which I make the following extracts:—

"The second of the foregoing clauses requires some modification. When this fund was first established, all who continued in the profession were constrained to pay a certain sum yearly to the fund, to be supplemented by a stipulated amount from the Educational Department. Now the fact of being required to make such payments into the fund as the Department might require, or on a scale different to that originally fixed, is tantamount to making a second bargain with such as were growing old in the profession, and virtually a breach of contract.

"As regards the third clause: Few, if any, who intend continuing in the profession, will be likely to demand that their contributions to the fund in question be returned; and for reasons which might be stated—did space permit—it is questionable whether it ought to be returned. Clergymen who contribute to a similar fund are never known to have such moneys refunded, should they resign their functions. Why then deal differently with teachers? The fourth and last clause contains a very objectionable condition, a notable sample of suggested vacillating legislation. In 1870, when teachers were obliged to contribute to the Superannuation Fund, they had thereby a strong additional inducement to remain in the calling. They were encouraged to hope that in virtue of this contract they could have wherewithal to keep the wolf from the door, when incapacitated by age or infirmity. Should the proposition now offered become law, it will sweep away at one fell swoop the

* Education Report, Ont.

foundation on which the teacher had built his hopes. It will do more. It will induce many to leave the profession who otherwise would remain under the existing provisions of the Act; and viewed, as it assuredly will be as a breach of public faith, it will deter many young persons now training, or looking forward to do so, from taking up the *role* of school-teaching at all.

"The writer of the *Globe* article could not have taught a Public School in 1854, when £40 or £45 was the average yearly amount of salary received—without board or washing, nor is he probably at present in the business, flourishing on an average annual salary of \$400. For the past thirty years the teacher's average salary has been calculated at about \$280 a year. How much can he save from such a pittance, especially if a benedict, and struggling to maintain an average Canadian family?

"Will any sane person venture to assert that such a provision as this is a fair equivalent for the important services rendered to the State by the faithful instructor of the rising generation, taking into consideration the expenditure of labour, time, and money necessary to qualify him for his arduous calling? Compare the comforts and prospects of the pioneer teacher with those of the farmer, mechanic, or merchant, at the close of a life of labourious duty, respectively, and then ask whose condition is the most enviable, whose prospects the brightest, and whose families are best provided for. The least intelligent member of the community would not hesitate to answer that the teacher is in all respects the worst provided for. If judges, ministers of the gospel, and veterans of the war, have provision made for infirmity or old age, and do not hold it antagonistic to 'manly self-reliance or independence' to receive a pension, why should the

teacher who has warred all the best years of his life against the common foe of the community—ignorance—be singled out for the unworthy comparisons of the *Globe* scribe? It was not by legislating in the spirit of the article under review or by adopting its suggestions that the standard of education is to be elevated, or the boasted school system of this fair Province is to take deep root in the confidence and affections of the people."

Permit me, before concluding, to advert briefly to one more movement in connection with this subject. The Head Masters of the Toronto Public Schools, learning from the reports of speeches of a few members of the Local Legislature that they desired a change in the Fund, if not its entire abolition, issued in May last a circular to the teachers of Ontario with the object and desire of having it discussed at the various county conventions. This paper is suggestive, rather than assertive, of the opinions of its framers, as may be seen from the following extracts; and it rests with this intelligent assemblage to say whether this circular in connection with the interesting subject, of which it forms an important part, be now taken up and discussed at this meeting:—

1. Was not the Fund established (1st) to encourage teachers to remain in the profession; (2nd) to compensate teachers in some measure for the inadequate salaries they received, by making some provision for them when they became incapacitated for duty?

2. What effect will the abolition of the pension grants have on the educational interests of the Province?

3. As it is admitted that the labours of teachers are indispensable to the public good, are their claims for aid, in their declining years, unusual, or are they derogatory to their dignity or self-respect, in view of the fact that

Ministers of State, Judges, and other public functionaries, receive similar compensation for their services, and that churches regard it as a sacred obligation to superannuate their clergymen, to whose duties, in their moral aspect and influence, those of the school teachers bear a close analogy?

4. Is it probable that the existence of the teachers' pension grant tends to prevent an increase of salaries, and that its abolition would induce the public to compensate them adequately for the loss thus sustained?

5. Would it not be more just to act on the merits of the case by a con-

sideration of the services and claims of those teachers who spend their lives in the profession, rather than to be guided by the decision of those who engage in school teaching only until they can enter upon more lucrative employment?

6. Are any teachers, whether they remain in the profession or not, justified in objecting to pay the small amount levied, in view of the advantages they receive, and of the claims of those who remain until incapacitated by age or infirmity?

[See Resolution in Report of Convention.—Ed.]

A COMMERCIAL DEPARTMENT IN HIGH SCHOOLS.*

BY JOHN E. BRYANT, M.A., PRINCIPAL COLLEGIATE INSTITUTE, GALT, ONT.

I PROPOSE in this short paper to be as practical as possible. I shall first sketch what has been done in the way of establishing a distinctively commercial department in institutions with which I have been connected, and then sketch what, it seems to me, our Provincial Education Department ought to do to make what I shall call "commercial courses" more general and more efficient. But first I shall say a few words in reference to the necessity of a commercial course in our secondary schools. In relating my own experience and observation, I am relating perhaps what every Head Master has experienced and observed for himself. If so, I shall be glad, for then a united effort to obtain from the Education Department the encouragement and legislation necessary for the general establishment of commercial forms will be all the more easy.

I had not been long engaged in High School work before I saw that there were many High School pupils who did not wish to be prepared for any of the so-called learned professions. Least of all did they desire, or did their parents desire them, to prepare for teaching. They intended to enter business, to follow some occupation connected with trade or commerce, and they wished simply such an education as should best fit them for this life-work. Now, we all know that the system of examinations so much in vogue in our Province shapes the work done in our High Schools. It is the Teachers' Examination, or the Matriculation Examination, which determines the subjects studied, the minuteness of detail with which they are studied, and the relative stress put upon each. I have no desire to pass any criticism here upon the curricula of these examinations. I simply state that my experience justifies me in asserting that the

* A Paper read before the H. S. Masters' Section, Ontario Teachers' Convention, August, 1884.

methods of teaching and study necessary for the successful preparation of these examinations are not, as a rule, suited to the needs of those who desire to be prepared for business. I make no reference here to the study of the languages. I refer only to the ordinary non-linguistic subjects which boys preparing for business now take, such as Mathematics, English, Science. I do not dispute the merits of the present mode of study of, Mathematics say, as discipline of the mind, such as training the reason, strengthening the memory, etc. But I am sure you will agree with me—I am sure the practical business men of the country will agree with me—in saying that, for a young man who wishes to go into business life as soon as possible, and with the best educational equipment he can get—who has, as a rule, but two years, after entering the High School, to devote to his education—the teaching and the studying necessary for the mastery of—say the Algebra paper in our late Intermediate Examination, or the paper on the same subject in the recent Junior Matriculation Examination, are misspent effort. And what is true of Algebra this year is sometimes equally true of Arithmetic, and is always true of it to some extent; and so for English and other subjects. I recognize as clearly as any one the value of mental training, of what is called higher education, to all—farmers, mechanics, tradespeople, business men included—and I recognize the part mathematics should play in that training. I should be glad, as no doubt every believer in the wholesome influence of education would be glad, if every man in the country went as far in the cultivation of his mental powers as at least to be graduated from our High Schools; but we know that public opinion does not sustain us in this view. It is, perhaps, an impossible ideal—to be aimed at,

not realized. As I have said before, the average boy does not remain at a High School for more than two years. The question is, what is the best course for him to pursue during that time? I do not wish to propose any course so distinct in itself as to necessitate the division of the school-work into two divergent lines—one for those preparing for teachers and for the professions, and one for those preparing for business. This would be a waste of force not necessary. But what I think should be done is this: that after the ground which may be considered common to all courses has been covered, then the claims of those proposing in a short time to enter business should be recognized, and that thereafter they should be taught those subjects only which would have a direct bearing upon their intended pursuits in life, and their position as citizens of a free country where every one has to assume some share in its government; and, too, that these subjects should be taught in such a way as to be most useful to them, due consideration being had for what it is intended they shall be when they leave school.

I shall indicate what I mean by referring to one subject, say Arithmetic. We all know the sort of questions which has been common in examination papers at teachers' examinations for many years. As a result, the study of Arithmetic has made in this Province an advance perhaps unequalled on the continent. As an example, I shall take a question from a recent paper, actually the first question that my eye has lit upon out of a large bundle of papers lying before me:—

“The hour, minute and second hands of a watch are on concentric axes. When first after twelve o'clock, will the direction of the second hand produced backwards bisect the angle between the hour and the minute hand?”

No objection can be taken to

tion's question on a teachers' examination paper. We have a right to expect from teachers mathematical power and equipment far beyond what their pupils are to have. It is, in such a paper, a fair question, we will say. But all mathematical teachers know that for the average boy or girl the solution of such a question is unattainable without direct teaching, and, too, an amount of teaching out of all proportion to the educational value of the result. Now, if it be remembered that our boys and girls who are not to go up to any professional or teachers' examination are taught arithmetic along with those who are to go, and that questions of an alike impractical character have been the rule rather than the exception, it cannot be wondered that ordinary people complain that our High School work is too refined and too theoretical to suit the wants of those who are intended for trade or business.

I should not like to be understood as making a complaint of arithmetic specially, or of algebra, or mathematics in general, though I believe that the tendency to refine and specialize has been greater in this department than in others. Similar objections may be taken to the study of English as greatly in vogue of late years, and to the study of geography, history and science.

Again, the stringency of our written examinations, especially on their mathematical and scientific sides, has largely interfered with practice in reading, writing, and composition. Complaints in these matters are very general, and, to my mind, well-founded.

That which those pupils wanted who intended to be neither professional men nor teachers, being brought more directly before me when I became a Head Master, I set about endeavouring to do what I could to supply the want, and I have ever since been

doing what I can to meet the want more effectually. I have heard of other Head Masters making similar attempts, and I have been frequently written to to describe what I had done, and state the practical results; but I confess I have not attained the fulfilment of my own hopes, and that there has been that failure which must ever follow individual effort. I first established in the school a separate department, called the Commercial Department. I did not do as I should have done could I have controlled the quality of the demand. The course I laid down was too narrow, but it was as wide as I could make it, unaided by outside authority. A pupil in the Commercial Form was required to take no other subjects but Commercial Arithmetic, Book-keeping, Penmanship, Business Composition, and Commercial Geography. The teaching was as practical, the study made as thorough as possible. There were frequent written examinations, and great stress was laid upon the neatness and accuracy of the pupil's work. But it was soon found that pupils in the commercial Form had not, as had those in other forms, anything to work for. There was no government examination, and no certificate testifying to merit and accomplishment. Later on, however, with the consent and encouragement of my Board, I established a definite curriculum, and appointed certain examinations to be passed, with minimum percentages. The pupil who complies with all the requirements of the course is granted a certificate and a diploma, the certificate to be used in making application for employment on leaving, the diploma to be kept as an evidence of successful study in his school-days. At the risk of being thought by you too desirous of retailing my own doings, I shall read from the announcement of Galt Collegiate Institute that part which refers to our commercial course.

COMMERCIAL COURSES.

While every pupil desiring to enter business will be counselled to take as *wide and liberal* a course as possible, yet it has been thought advisable to institute a special course of studies appertaining to business pursuits. Pupils pursuing this *commercial course* will constitute the *Commercial Form*. The work of the course has been divided into parts, and for each part there is an examination; and, while no pupil will be hindered from passing these examinations as rapidly as he may be able, yet no pupil will be allowed to proceed to the work of a part until he has succeeded in passing the examination of the previous part. These examinations will be conducted by the Commercial Master, with the assistance of the other masters, and will be under the supervision of the Principal. In addition, to complete the course, each pupil must have worked through (1) twelve sets of *Beatty and Johnson's Canadian Accountant*, (2) *Johnson's Joint Stock Company Book-keeping*; and his neatness and accuracy in this work must be satisfactory to the Principal and the Commercial Master.

COMMERCIAL COURSE—SUBJECTS OF EXAMINATION AND PERCENTAGES REQUIRED.

The following is the distribution of the work required for the successive examinations of the Commercial Course, and the minimum percentages therefor:—

MAXIMUM VALUE FOR EACH EXAMINATION, 100.	MINIMUM FOR PASSING.
1. Book-keeping—simple sets.....	75
2. Book-keeping—Bills, Invoices, Receipts Orders, etc.....	75
3. Book-keeping—Checks, Notes, Drafts, etc	75
4. Arithmetic—Simple Rules, Fractions, Reduc- tion and Interest.....	75
5. Book-keeping—Single Shipments.....	90
6. Geography—Canada and United States.....	75
7. Book-keeping—Joint Shipments.....	90
8. Grammar.....	66
9. Book-keeping—Shipment Invoices, Ac- count Sales, etc.....	75
10. Book-keeping—Cross entries, Renewals Writing off Bad Debts, etc.....	90
11. Book-keeping—Mortgages, Bonds, De- bentures, etc.....	75
12. Book-keeping—Partnership Openings and Settlements.....	90
13. Arithmetic—Commercial Transactions.....	75
14. Correspondence.....	90
15. Composition and Penmanship.....	75
16. Geography—Europe and North America. Exports, Imports, Products and Com- mercial Facilities.....	75
17. Reading.....	75
18. Book-keeping—General Theory.....	75
19. Grammar—Correction of False Syntax.....	75
20. Book-keeping—General Practice.....	75

COMMERCIAL COURSE—CERTIFICATES AND DIPLOMAS.

To every member of the Commercial Form, who is a regularly admitted pupil of the Institute, and who shall have passed all the examinations, and gone through all the work pertaining to the Commercial Course as prescribed above, and whose conduct shall have been approved by the Principal and Masters of the Institute, a Certificate and a Diploma will be granted by the Board of Trustees under their corporate seal.

It will be noticed that the course is wider than that first laid down, and that the percentages for passing in the various subjects are high. But it will also be noticed that in comparison with the others the subject of book-keeping has a very large importance, and that in other respects the curriculum is narrow. Yet under the circumstances, these things could not be otherwise. With young men, and unfortunately, with too many of their parents, the notion is prevalent that a knowledge of book-keeping alone is necessary for business. Young people are always utilitarians, and the utility of book-keeping they recognize at once. Hence there is never any difficulty in getting pupils to work at book-keeping, but there is always more or less difficulty in getting them to work at the other subjects of the course. But a worse thing is that they desire to go on with the study of the more difficult parts of their favourite subject before their minds are sufficiently expanded by experience or study to understand them. This is because so much of the work is mechanical and easily accomplished, that they fancy the whole quite as easy. I do not know of a subject where it is more difficult to discriminate between real knowledge and progress, and their counterfeits; and hence none where it is so hard for a pupil to be kept down to his proper level of attainment. The system of examinations outlined above, has with

us helped to obviate the difficulty but has not overcome it.

There has been, too, another difficulty which has tended to retard the success of the working of the department. The fact of the existence of the department being known to parents, they frequently wish their sons to apply for admission before they are sufficiently advanced in general subjects to have the study of a course in which book keeping is so predominant of real benefit to them, for as I have stated above, success in the study of anything but the most elementary kind of Book-keeping requires a maturity of mind which can be had only from previous study or experience in actual business. Hence I have had to establish a preparatory Commercial Form, but I have not yet seen my way clear to the laying down of a specific curriculum for it. I work it in connection with the other Forms of the School.

The granting a diploma has done something toward establishing a goal to which pupils can be incited to struggle to reach; but I have never been satisfied with what is merely a local, and as I have hoped, but temporary certificate of attainment. We have endeavoured to sustain a high standard of excellence in the work required for the diploma. In three years out of an annual average of membership of the Form of from twenty to twenty-five, but six have obtained the diploma, and with each examination the standard has been raised. But in my opinion, the diploma of this school or that, should go for little. There should be a provincial organization of the department, a provincial control of it; then the certificates granted would have that recognition and importance which a provincial seal alone can impart. I shall now give an outline of the department as I should like to see it dealt with by our education authorities:

1. The programme for High Schools and Collegiate Institutes to be modified so as to contain a course or curriculum to be called, say, the Commercial or Business Course.

2. The subjects and requirements of the course to be detailed in full, the text-books to be used assigned, and the range of work to be taken to be specifically mapped out, while the nature of the teaching in the subjects and the standard of examination required should be accurately described.

3. An examination, somewhat like the present intermediate examination to be established, conducted under departmental supervision by competent and experienced examiners. This examination to consist of practical rather than theoretical questions, such questions being constructed with special reference to the knowledge required by the people in their every-day life—and moreover to be of a simple rather than of an intricate character. As the questions would be simpler than those now usually proposed, so the standard for passing them should be higher, from 50 to 75 per cent. being the minimum. As neatness, order, method, are essential to every sort of success in life, the manifestation of these qualities should be rigidly exacted of all successful candidates. To this end, *ample time* should be given to the examinees to put their work down in proper shape. Speed, which is also an indispensable quality in the business man, is something which comes from practice only, and can be obtained but partially at school, and so may be disregarded. It will follow that Penmanship will have an importance in this Commercial Course Examination, that it has in no other; as any experienced examiner can testify; but not an importance which is disproportionate, if one considers its usefulness to a young man entering business.

4. The Course to be, for a beginning, somewhat like the following.

(a) *Arithmetic*, to include manipulation of numbers, the calculation of areas and volumes, the making of extensions in invoices, and such a knowledge of percentages, interests, discounts, as a business man would likely need.

I need scarcely say that a great part of our teaching of Arithmetic is taken up with the working of problems, which though presumably commercial transactions, are in reality mere hypothetical statements proposed for the exercise of a refined and intricate mathematical analysis. They have their place in higher education as mathematics must always have its place, but it seems to me that in the simple two years' course which the ordinary boy has at High School, they displace other things of more importance.

(b) *Grammar*, which should be taught on its practical rather than its scientific side. Most of us perhaps are not unaware of the revulsion of public feeling in regard to this subject. Grammatical definition and analysis afford a capital ground for the exercise of the intellect; but everywhere people are beginning to see that what is wanted in a two years' course is not that exercise to the exclusion of practice in the detection and correction of improper methods of speaking and writing, and similar practice in proper diction and chaste composition; but the practice in these things to the exclusion, if need be, of the other.

(c) *Geography*, a subject which has been much neglected and much mistaught. It should include Physiography, which Mr. Huxley, quoting Kant, calls the threshold of science, the avenue through which the young mind should enter the realm of natural knowledge. It means simply information concerning the common phenomena of the material world about

us, obtained and stated with scientific precision. It will include nothing more than that knowledge of the make-up of our earth, its crust and its atmosphere, its distribution of land and water, its geologic, and botanic aspects, its climate and varied successions of heat and cold, its useful products and natural facilities for trade and commerce which every well-informed man ought to know. In addition there should be Political Geography of our country, of our mother country, and the great country to the south of us, with the artificial facilities for commerce found in them, and the distribution of their populations, agriculture and manufactures. It has always seemed marvellous to me that a subject so full of human interest and practical importance as the study of our earth and the people and things upon it, should be considered of little value; a failure in it being thought no great matter, while a failure in the hypothetical science which now goes by the name of arithmetic, or a failure to make 50 per cent. in the parsing and analysis of a difficult piece of poetic composition should be considered unpardonable.

(d) *History*. For a beginning the history of England from the time of the Tudors, and a history of Canada from the English conquest of Quebec, would be sufficient. The political situation of to-day being but an evolution from the political situation of yesterday, and so on throughout all time, it is essential that the people of a self-governing nation should be acquainted with its own past. I have long been of the opinion that history is a much neglected study, though it is fair to say that for the little time given to it, it is as rationally taught as any in our programme, though not always as rationally examined. I should like to see its importance vindicated, and its true place given to it in all our examinations.

(e) *Composition.* If grammar is taught in the way suggested, the teaching of composition becomes an easy matter.

The main requisites are (1) a judicious teacher, ready in the assignment of easy and well-graded themes, and fertile in suggestions for their treatment; and (2) sufficient time in the school time-table for constant practice. There is no subject in the school curriculum more useful nor any that can be made more interesting. When one sees the sort of writing that is done in our High Schools and Colleges, by many otherwise well educated young men, one is often astonished at the poverty of the intellectual result of our system of education.

All I wish to say here is, that the graduate of our proposed Commercial Department should be required to give evidence that he can put down his thoughts on any simple theme with a fair degree of accuracy or language and elegance of expression.

(f) *Correspondence.* This subject is included in the preceding one, but as there are many forms of expression peculiar to letter-writing, correspondence should be separately examined.

(g) *Drawing.* The Department of Education is at last recognizing the importance of this subject, and making proper provision for its teaching. Freehand and Mechanical drawing should be obligatory in a business course, with perhaps geometrical drawing. Here, as in every sub-department of this course, neatness and accuracy should be insisted upon and ample time given in the examination for candidates to do their best.

(h) *Reading.* Successful candidates should be required to read any fair passage from a fourth or fifth book with accuracy and ease. Oral reading, once thought so important in our High Schools, has long been lost sight of. It should be no longer neglected, nor perhaps will be. A

man cannot be considered educated unless he can read without mistakes an ordinary piece of English composition to a dozen people sitting around him, and so that his hearers can understand what he reads. Only a small percentage of our High School graduates can do this.

(i) *The Forms of Municipal, Provincial, and Dominion Government.* A small manual should be prepared on this subject, and all candidates required to give evidence of a knowledge of government, and of the simpler duties of citizens, magistrates, councillors and legislators, and of trustee boards, councils, legislatures and cabinets. A self-governing people cannot be too careful in the training of its youth in all that pertains to citizenship.

(j) *Penmanship.* The standard should not be lower than this: a legible and careful hand in all the written work of the examinations; and besides, an exact, neat, and regular hand in all work sent to the department for inspection, as set forth in the next section.

(k) *Book-keeping.* A thorough knowledge of this subject so far as it relates to general business; the special departments of it, such as those relating to banking, railroading, steamboating, etc., not being included. As the subject is a large one, and very important to young men, some two or three examinations should be made of it, in which ample time should be given to the candidates to do their work in a neat and methodical manner. In fact in a training for business I do not think too much stress can be put upon pupils, to secure a clean, clear, accurate and finished style of doing all work with pen or pencil.

As I have said before, however, at the beginning of this paper, a written examination is not sufficient to test the merits of candidates for this pro-

essional diploma. A boy may, by luck or cleverness, pull through an examination and yet be lacking that long careful training which is essential to business-like methods of doing work. Hence, some half-dozen sets of business transactions should be required to be worked out by each candidate, and these should be sent to the Department, and with them a declaration from the Head Master that they were the work of those candidates whose names they bore. These worked-out sets should be examined with special reference to penmanship, neatness, clearness of work and accuracy. A similar requirement should be made of candidates in regard to drawing, and the work should be examined with much the same references.

(1) *Literature.* No graduate of a High School, whether of the Commercial Department or of any other, should be exempted from a training in the literature of his mother tongue. But here again, in the department we are considering at least, consideration must be taken of the future occupation of the pupil. What is desiderated is that the pupil shall acquire a *taste* for good literature; a *knowledge* of it he will acquire for himself afterwards. I do not think that there should be any examination established except that which would test mere general knowledge. But a good course of reading should be assigned, which candidates for graduation should be required to go through. That he had done this could be certified by the candidate's head master, and tested in a general way, as I have said, by an examination—as by themes set for composition. The course might be something like this:—a play of Shakespeare's, say *The Merchant of Venice*; a novel of Scotts, say *Ivanhoe* or *The Talisman*; some of Burns' lyrics; some of Wordsworth's simpler poems; and ay Tennyson's *Enid* or *Enoch Arden*.

It will be remembered that this is for two years work.

To the candidate who successfully passes all the examinations set forth above, and whose work transmitted to the Department is found satisfactory, a certificate should be given under the seal and signature of the Minister of Education.

I am of the opinion that if a Commercial Department were established and conducted in accordance with this outline, which indeed may be simply expressed as (1) a *curriculum* of practical subjects suited to the wants of a busy practical people; (2) *examinations* in which simple, fair, practical questions will be submitted, but a high standard in answering be exacted, and where neatness and penmanship will count for a great deal, since ample time will be allowed; and (3) the *requirement* of a certain quantity of work to be done for Departmental inspection and approval to evidence industry and method, and a certain cultivation of the taste—it the department were established and conducted according to this outline, then it would be highly appreciated by those parents who now send their boys to the Business Colleges, or take them away from the High School before their time; and appreciated too, most highly by many of our youth who now find much of our school work supremely distasteful; and lastly appreciated by our commercial houses, who in engaging young men just entering business, would naturally deem the holder of a Provincial certificate testifying to a business training, more likely to succeed than one without it.

I believe, too, that if our High Schools and Institutes did this work, and did it well, they would be more highly esteemed than they are now and would receive more largely that moral and material support from the people, so necessary to them and now unfortunately so much denied.

UNIVERSITY WORK.

MATHEMATICS.

ARCHIBALD MACMURCHY, M.A., TORONTO,
EDITOR.EDUCATION DEPARTMENT,
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JULY EXAMINATIONS, 1884.

First Class Teachers—Grade C.

ARITHMETIC.

Examiner—J. C. Glashan.

ELEMENTARY MECHANICS.

Solutions by Wilbur Grant, Toronto C. I.

1. Show how to find the resultant of two uniform rectilinear motions compounded into a single motion.

The drops of a shower are falling straight down, but to a person sitting in a railway carriage moving at the rate of $22\frac{1}{2}$ miles per hour, they appear to fall at an angle of 30° from the vertical. At what rate in feet per second are the drops falling?

1. $33\sqrt{3}$ feet per second.

2. If a body in motion be acted on by a constant force in its line of motion, what will be the effect on the motion during the time the force continues to act? What would be the effect on the motion if the force were suddenly to cease acting?

A body thrown vertically upwards returns to earth again in five seconds. How high did it rise, and what was its initial velocity?

Had the body been thrown at an angle of 60° elevation and returned to earth again in five seconds, what would have been the greatest height to which it would have attained, and what would have been its initial velocity?

$$2. (a) \text{ height} = \frac{25}{8} g,$$

$$\text{initial velocity} = \frac{5g}{2}.$$

$$(b) \text{ height} = \frac{25}{8} g,$$

$$\text{initial velocity} = \frac{5g}{\sqrt{3}}.$$

3. State the Principle of Conservation of Energy. Explain fully how energy is measured.

Two weights whose masses are 10 and 6 respectively, are connected by a weightless string passing over a smooth pulley. Find the kinetic energy of the system five seconds after the beginning of the motion, and obtain therefrom the acceleration of the common centre of gravity of the weights.

4. Deduce the Parallelogram of Forces from the Parallelogram of Velocities and the Laws of Motions.

At one of the angles of a regular hexagon forces are applied acting towards the other angles and proportional to the distances of these angles from the point of application. Determine the magnitude of the resultant.

4. Rt. = 6 (times the side of the hexagon).

5. Deduce the Principle of Moments (of a force about a point) from the Parallelogram of Forces.

A boy of weight W standing on one end of a rough plank of weight w and length l , walks slowly to the other end of the plank. Find the distance through which the common centre of gravity of the boy and the plank is displaced by this change of position.

$$5. \frac{W}{W+w} \cdot l.$$

EUCLID.

Examiner—J. A. McLellan, LL.D.

1. "Magnitudes which exactly coincide with one another are equal." "Magnitudes which coincide with one another, that is, exactly fill the same space, are equal to one another."

Which of these modes of stating the axiom do you prefer, and why?

Write a short note on the application of the principle of super-position, illustrating your remarks by reference to a proposition in Book III.

2. The sum of all the interior angles of a triangle is equal to two right angles.

(1) What are the regular figures whose angles can be used to fill up the space round a point in a plane.

(2) If n represents the number of sides of a polygon, the sum of its interior angles is $2(n-2)$ right angles.

3. Triangles on the same base and between the same parallels are equal.

BC , the base of a triangle ABC is produced to D , construct on BD a triangle equal in area to ABC .

4. In any right-angled triangle the square described on the side opposite the right angle is equal in area to the sum of the squares described on the sides containing the right angle.

(1) Construct a square equal to half a given square.

(2) Construct a square equal to the difference of two given squares.

5. Describe a square which shall be equal to a given rectilinear figure.

Divide a straight line into two parts, such that their rectangle may be equal to a given square.

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

7. To inscribe a circle in a given triangle.

Having given the hypotenuse of a right angled triangle, and the radius of the inscribed circle, it is required to construct the triangle.

8. If a straight line be drawn parallel to one of the sides of a triangle, it shall cut the sides, or the sides produced, proportionally and conversely.

Apply this to trisect the diagonal of a parallelogram.

9. Similar triangles are to one another in the duplicate ratio of their homologous sides.

Second Class Teachers.

ALGEBRA.

Examiner—J. C. Gashan.

Solutions by Wilbur Grant, C.J., Toronto.

1. Show that $(x+y+z)^2 - x^2 - (y+z)^2$ is exactly divisible by $x(y+z)(x+y+z)$.

1. Shown by putting $x=0$, $(y+z)=0$, $(x+y+z)=0$, successively in given quantity.

2. Write down the factors of $x^3 - (a+b+c)x^2 + (ab+bc+ca)x - abc$, and apply your result to obtain the factors of

(a) $(a+b+c)(ab+bc+ca) - abc$;

(b) $2(a+b+c)^2 + (a+b+c) \{ a(b+c) + b(c+a) + c(a+b) \} - (a+b)(b+c)(c+a)$.

2. $\overline{x-a}, \overline{x-b}, \overline{x-c}$,

(a) Writing this in form $(a+b+c) - x(a+b+c) - x^2(a+b+c) + x^3(a+b+c) = (a+b+c)(a+b+c) - abc$ factors are $(b+c)(c+a)(a+b)$.

(b)

3. If $3x = 2(q+r) - p$, $3y = 2(r+p) - q$, and $3z = 2(p+q) - r$, then shall $x^2 + y^2 + z^2 = p^2 + q^2 + r^2$, and $xy + yz + zx = pq + qr + rp$.

3. $3x = 2(q+r) - p$

$3y = 2(r+p) - q$

$3z = 2(p+q) - r$,

from which equations we get

i. $(x+y+z) = p+q+r$

ii. $x - y = q - p$

iii. $y - z = r - q$

iv. $z - x = p - r$

(i.)² $\{ (ii.)^2 + (iii.)^2 + (iv.)^2 + (ii.) \times (iii.) + (ii.) \times (iv.) + (iii.) \times (iv.) \}$

gives $xy + yz + zx = pq + qr + rp$, and hence follows $x^2 + y^2 + z^2 = p^2 + q^2 + r^2$.

4. If $\frac{ax}{b-c} = \frac{by}{c-a} = \frac{cz}{a-b}$, then shall $ax + by + cz = 0$, and $a^2x + b^2y + c^2z = 0$.

4. $\frac{ax}{b-c} = \frac{by}{c-a} = \frac{cz}{a-b}$, put this = K , results follow easily.

5. If $a = -\frac{1}{2}(1 - \sqrt{-3})$, then shall

$\frac{1}{a} = -\frac{1}{2}(1 + \sqrt{-3})$, and $a^3 + \frac{1}{a^3} = 2$.

5. Mere matter of surds.

6. Solve

(a) $\frac{4}{x-1} - \frac{1}{x-4} = \frac{9}{x-2} - \frac{6}{x-3}$;

(b) $\left(\frac{x}{a} + \frac{x}{b} - 1\right) \left(\frac{x}{a} - \frac{1}{b} + 1\right) + \left(\frac{x}{b} + \frac{x}{c} - 1\right) \left(\frac{x}{b} - \frac{x}{c} + 1\right) + \left(\frac{x}{c} + \frac{x}{a} - 1\right) \left(\frac{x}{c} - \frac{x}{a} + 1\right) = 1$;

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

6. (a) $x=5$; (b) $x = \frac{2abc}{ab+ac+bc}$;

(c) $x=1, -\frac{3 \pm \sqrt{-15}}{4}$.

7. Solve the simultaneous equations

$x^2 - y^2 = xy + 1$

$x^2 + y^2 = 2(xy + 2)$.

7. $x = \pm 5, \pm 1$

$y = \pm 3, \pm 1.$

8. A boy spends his money in oranges. Had he got five more for his money they would have averaged a cent each less, but had he got three less they would have averaged a cent each more. How much did he spend?

8. 60 cents.

9. Find a number such that if it be divided into any two parts whatsoever, the square of one of these parts added to the other part will be equal to the square of the latter added to the former.

9. Is an indeterminate equation, and is applicable to any number.

ARITHMETIC.

Examiner—J. A. McLellan, LL.D.

1. Simplify—

$$\frac{(1\frac{1}{2} - 1'002) \div (\frac{3}{4} - '006)}{'002 \div '06} + '299 + 3.6.$$

1. 10'774.

2. A man mixes 28 lbs. black tea with 36 lbs. of an inferior quality, which cost 20 cents a pound less, and by selling the mixture at 58½ cents a pound, gained 20 per cent. Find the cost of each kind of tea.

2. 60 cents and 40 cents.

3. When the temperature of a cube of zinc is raised from 32° F. to 212° F., each dimension is increased .3 per cent. Find the percentage of increase in the bulk.

3. 1 2 per cent.

4. On a quantity of tea a grocer fixed a price to make a gain of 25 per cent., but ¼ of the quantity was found to have been damaged, and he had to reduce the price on this 25 cents a pound, and so his whole gain was 48½ per cent. less than the sum he had expected to gain. What price did he pay for the tea?

4. 51½ cents per lb.

5. In a mile race between a bicycle and a tricycle their rates were as 5 to 4; the latter had half a minute's start and was beaten by 176 yards. Find the actual rate of each.

5. Bicycle 440 yards per minute, tricycle 352 yards per minute.

6. If 8,000 metres be equal to 5 miles, and

if a cubic fathom of water weigh 1,344 lbs., and a cubic metre of water 1,000 kilogrammes, find the ratio of a kilogramme to a pound avoirdupois.

6. $21 \times (11)^2 : (50)^2.$

7. A tradesman marks his goods at two prices, one for ready money and the other at a credit of six months. What is the ratio of these prices if money is worth 10 per cent.?

7. 20 : 21.

8. The external dimensions of a rectangular iron chest are 2 ft. 3 in., 1 ft. 8 in., 1 ft. 2½ in., and the sides, lid and bottom are one inch thick. Of how many cubic inches of iron is it formed?

8. 2205 cubic inches.

9. What amount of American currency is equal to £500 14s. 6d., if g. ld is quoted at 15½, and the course of exchange is 489?

9. \$2,448.55 nearly.

10. A dealer has three prices for his goods—a year's credit price, a six month's credit price, and a cash price. The year's credit price is 35 per cent. in advance of cost, his six months' price is 6 per cent. off his year's credit price, and his cash price 10 per cent. off his year's credit price. At what advance on cost must he mark a six months' credit price on an article whose cash price is \$12?

10. \$2.65½.

NATURAL PHILOSOPHY.

Examiner—J. C. Glashan.

1. How are statical forces measured?

Explain clearly how a pressure can be completely represented by a straight line.

A downward pressure of 5 lbs. applied at the point *P* is represented by a straight line an inch and a quarter long, drawn from the point *A* from left to right. How would an upward pressure of 7 lbs. applied at *P* be represented?

1. By a straight line from *A* from right to left 1½ inches long.

2. Enunciate the parallelogram of force and the "triangle of forces," and deduce the latter from the former.

Draw a diagram to represent three forces of 3, 5 and 7 units respectively, acting at the

point P and in equilibrium. Draw the corresponding "triangle of forces."

3. Show how to determine the magnitude and the point of application of two forces acting on a rigid body along parallel lines.

$ABCD$ is a square. A force of three pounds acts from A towards B ; a force of four pounds from B towards C ; a force of five pounds from D towards C ; and a force of twelve pounds from A towards D . Determine the magnitude of the resultant.

3. Join AC and resolve the forces along and perpendicular to AC . Magnitude of resultant = $8\sqrt{5}$

4. Three parallel forces acting on a rigid body are in equilibrium. Prove that the moment of any one of them is equal and opposite to the algebraic sum of the moments of the other two.

A body B suspended from one end of a uniform lever of 4 lbs. weight, is balanced by a weight of one pound at the other end of the lever; but when the fulcum is removed through half the length of the lever, it requires 24 lbs. to balance B . Determine the weight of B

4. Impossible.

5. Show how to determine the whole pressure which a liquid exerts on an immersed plane surface.

A rectangular flood-gate is 8 feet wide and 6 feet deep. What is the total pressure on it when the water is level with the top?

5. $4\frac{1}{2}$ tons.

6. Describe the siphon, and explain the principles of its action.

Over what height can a liquid of specific gravity .85 be carried by a siphon when the height of the barometer is 29.5 inches, the specific gravity of mercury being 13.6?

6. $39\frac{1}{4}$ feet.

EUCLID.

Examiner—N. F. Dupuis, M.A.

(Commonly employed symbols will be allowed.)

1. What is a Theorem, a Problem, an Axiom, a Postulate? Give examples.

2. Show how to draw through a given point a straight line which shall be perpendicular to a given straight line.

If a line drawn from the vertex of a triangle to the middle of the base be perpendicular to the base, the triangle is isosceles

3. Define a parallelogram, and prove that its opposite sides are equal.

The diagonals of a parallelogram bisect each other.

4. If a straight line be bisected and also divided unequally, the rectangle under the unequal parts, together with the square upon the line between the points of section, is equal to the square upon half the line. (Euc. II. 5)

A, B, C is an isosceles triangle, with the angles at B and C equal. AD is a line from the vertex to the base, show that $BA^2 - AD^2 = BD \cdot DC$, and examine the relation when D is a point in the base produced.

5. If a straight line be divided into any two parts, four times the rectangle under the whole line and one of the parts together with the square on the other part, is equal to the square upon the line made up of the whole line and that part. (Euc. II. 8.)

Show that this proposition is the application of the algebraic formula $(a+b)^2 - (a-b)^2 = 4ab$ to geometry.

6. In any triangle the square on a side subtending an acute angle is less than the sum of the squares on the side containing that angle by twice the rectangle contained by one of these sides, and the line intercepted between the acute angle and the foot of the perpendicular let fall upon the side from the opposite angle. (Euc. II. 13.)

Two sides of a parallelogram are 8 and 10, and one diagonal is 14. Find the other diagonal.

Intermediate and Third Class.

ALGEBRA.

Examiner—J. C. Glashan.

1. Divide $(a^2 - b^2)(x^2 - y^2) - 4abxy(b^2x^2 - a^2y^2)$ by $a^2(x^2 - y^2) + b^2(x^2 + y^2) + 2abxy$.

1. $a^2(x^2 + y^2) - b^2(x^2 - y^2) - 2abxy$.

2. Simplify

$$(a) \frac{\frac{n+m}{n-m} - \frac{m+n}{m+n}}{\frac{m}{n-m} + \frac{m-n}{n}}$$

$$(1) \frac{(a-b)(b-c)(c-a)}{abc} + \frac{b-c}{a} + \frac{c-a}{b} + \frac{a-b}{c}$$

2. (a) $\frac{n-m}{n+m}$. (b) 0

3. Resolve into linear factors

(a) $12(3x-2y)^2 - 44(3x-2y)(4y-2x) - 45(4y-2x)^2$;

(b) $4(xb+cd)^2 - (a^2+b^2-c^2-d^2)^2$.

3. (a) $\{6(3x-2y) + 5(4y-2x)\} + \{2(3x-2y) - 9(4y-2x)\}$

- $64(x+y)(3x-5y)$.

(b) $(a+b+c-d)(a+b-c+d)(a-b+c+d)(b+c+d-a)$.

4. Show that $(a^2x+ay+z)(b-c) + (b^2x+by+z)(c-a) + (c^2x+cy+z)(a-b) = (a-c)(c-b)(b-a)x$.

5. If $y+z=2a$, $z+x=2b$, $x+y=2c$, find the value of $(x+y+z)(xy+yz+zx) - xyz$ in terms of a , b and c .

5. Factors of $(x+y+z)(xy+yz+zx) - xyz$ are $(x+y)(x+z)(y+z)$, value = $8abc$.

6. If $\frac{a-b}{y-x} = \frac{b-c}{z-y} = \frac{a+b+c}{2(x+y+z)}$,

prove that $\frac{a}{y+z} = \frac{b}{z+x} = \frac{c}{x+y}$.

6. See Todhunter.

7. Solve

(a) $\frac{x-1}{x-2} - \frac{x-2}{x-3} = \frac{x-5}{x-6} - \frac{x-6}{x-7}$;

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

(c) $(x^2-9)^2 - 11(x^2-9) = 80$.

7. (a) $4\frac{1}{2}$; (b) $\frac{ab}{a+b+c}$; (c) ± 5 .

8. Find the values of x and y that will satisfy both $\frac{3}{x} + \frac{2}{y} = 2$, and $\frac{2}{x} + \frac{3}{y} = \frac{1}{2}$.

8. $x=1, y=2$.

9. A boy has a bag of nuts. He gives three more than two fifths of them to his sister, six more than a quarter of the remainder to his brother, and eats three-thirteenths of what then remains, and finds he has exactly two-sevenths of the original number left. How many had he at first?

9. 105 nuts.

NATURAL PHILOSOPHY.

Examiner - J. C. Glashan.

1. State the conditions of equilibrium of two forces acting on a rigid body.

If the ends of a short rope be pulled in opposite directions by two men, each exerting a force of 25 lbs., what will be the tension of the rope?

1. Book-work. 25 lbs.

2. What is meant when a line is said to completely represent a force?

State the conditions of equilibrium of three forces acting at a point.

Three forces of 10, 24 and 26 units respectively act at the same point. Draw a diagram showing how they must be adjusted to maintain equilibrium.

2. Book-work. Euclid I. 22.

3. When are two parallel forces said to act in the same and when in opposite directions?

Give the rules for finding the resultant and the centre of two parallel forces acting on a rigid body.

Draw a diagram showing how *parallel* forces of 3, 5 and 8 units respectively must be arranged to maintain equilibrium. Mark in the diagram the relative distances between the lines of action of the forces.

3. Book-work. As 5 : 3.

4. State the principle of moments.

Find the centre of gravity of five equal weights placed at five of the angular points of a regular hexagon.

4. Book-work. At the position of the third or central equal weight.

5. What power must a man weighing 160 lbs. exert to support himself by means of a tackle of two pulley-blocks, each containing two wheels and each weighing 12 lbs.?

5. 43 lbs.

6. Show how to find the specific gravity of a liquid by weighing a solid in it.

A body weighs 8 oz. in water and 12 oz. in a liquid whose specific gravity is $\frac{7}{9}$. Determine the specific gravity of a liquid in which the body weighs 15 oz.

6. Book-work. 475.

7. Describe the hydraulic press.

Through the flat lid of a closed vessel goes

a pipe which reaches to a vertical height of 24 ft. The lid has an area of 25 sq. in., and the pipe a cross section of 1 sq. in. Suppose the vessel and pipe to be full of water, what is the force tending to burst off the lid?

7. Book-work. 1064 07.

TO LID

Examiner - N. F. Dupuis, M.A.

1. Define a triangle; name its parts; classify the kinds of triangles.

Three indefinite straight lines, of which no two are parallel, drawn in a plane, form a triangle.

Show that they can form only one triangle, and that in a particular case they will not form any.

2. If a side of a triangle be produced the exterior angle is equal to the sum of the opposite interior angles.

If all the sides be produced, how many angles *different* in magnitude are formed, and what is the sum of these?

3. Triangles upon equal bases and between the same parallels are equal to one another.

A, B, C is a triangle, and D, E, F are taken upon the sides BC, CA, AB respectively, so that BD is double DC , CE is double EA , and AF is double FB . Compare the area of the triangle DEF with that of the triangle ABC .

4. In any right-angled triangle the square upon the side subtending the right angle is equal to the sum of the squares upon the sides containing the right angle.

The sides of a triangle are 33, 56, 65; determine whether it is right-angled.

5. If a straight line be bisected and produced to any point, the rectangle under the whole line thus produced, and the part produced, together with the square upon half the line, is equal to the square upon the line made up of the half and the part produced.

Show that this problem is the application of the algebraical theorem $(a+b)(a-b) = a^2 - b^2$ to geometry.

Owing to pressure on our columns the Classical, Modern Language and Science Departments are this month omitted - EDITOR C. E. M.]

SCHOOL WORK.

DAVID BOYLE, TORONTO, EDITOR

READING IN THE PRIMARY SCHOOLS.*

PRINCIPLES AND METHOD.

Reading may be defined as to the act of the mind in getting thought by means of written or printed words arranged in sentences.

This act of the mind may or may not be followed immediately by the oral expression of the thought. In the former case it is oral reading, in the latter it is silent reading, or study; but in neither case is there any real reading unless the reader's mind grasps the thought. The mere pronunciation of words, however correctly and readily done, is not reading as here defined. The teacher who concentrates effort upon the vocal utterance only, or upon the vocal utterance first and the thought afterwards, is leading her pupils astray. Her teaching is formal, and not real. The all-important habit for the child to form is that of never supposing that a sentence has

been read before the thought it suggests is clear in his mind.

The main point, therefore, to which the attention of the teacher should be directed at every step, from first to last, in the teaching of reading, is this: *Are the pupils led to get the thought?*

If the thought be first grasped, the proper oral expression of it will be a comparatively easy matter; for then inflection and emphasis will naturally spring from the thought, just as in talking; but if, on the other hand, the thought is not in the mind, the inflections and emphasis will be only weak imitations of those given by the teacher. The skill of a good teacher is strikingly seen in the various devices to which she resorts for inciting thought to control expression in her pupils' reading. Indeed, it should be considered that the principal function of oral reading in the schools is to afford the teacher the means of knowing whether the thought is fully and correctly in the mind of the pupil. It is true that time and effort must be spent upon the mere mechanical work of improving the articulation, pronunciation, and tones of

* Prepared by the Board of Supervisors for the Public School's of Boston. Contributed by Mr. Inspector McLintish, Madoc.

vice ; but, after all, this is only clarifying the medium, so to speak, through which the teacher looks into the child's mind. In this mechanical work of training the vocal organs, imitation very properly comes into play ; but, beyond this, imitation should not go. When children are trained to utter sentences by merely imitating the tone, inflections, and emphasis given by the teacher, not only is there left no means of knowing whether the children have rightly grasped the thought, but there is established the vicious habit of *uttering words without perceiving their sense*,—a habit which is broken up later with extreme difficulty.

A written or printed word is used to recall an idea ; it has no other use. A word which has been associated with a particular idea in the mind will, when seen, recall that idea, faintly if the association is weak, vividly if the association is strong. An association grows stronger by repetition of those acts which first produced it. A word is learned only when this bond of association has grown so strong that the word instantly at sight recalls its appropriate idea. It follows that the teaching of reading consists essentially in evoking acts of association between written or printed words and their appropriate ideas. *That teaching which assists these acts of association assists the child in learning to read ; that which does not assist these acts is useless.* If this be so, the best method of teaching reading will include all those devices, and only those, which aid efficiently in causing associative acts between ideas and written or printed words.

THE CHILD'S EARLY KNOWLEDGE.

To begin this work of causing associative acts in the mind of a child, the teacher must know something of the child's mental outfit when he first enters school—what he already knows, and what his habits of learning have been. This may be summarily presented as follows:—

1. He has a certain range of ideas, which have come to his mind through the senses.
2. He has all these ideas related in various ways ; that is, he has thoughts.
3. His ideas are associated with spoken words ; and the association is so strong that the word readily recalls the idea, and the idea the word.
4. The relations of ideas with one another have been associated with certain definite forms of expression (idioms), which are, in general, co-extensive with his power of thinking.
5. He has learned to express thought by imitating the spoken words and idioms he has heard others around him use ; that is, he has learned to talk.

Up to the time of entering school, the child's method of learning the use of language has been natural and easy. It consisted *first* in associating spoken words heard by him with certain ideas in his mind ; and, *secondly*, in imitating spoken words and idioms until he could use them in speech. This suggests very distinctly the course to be pursued after he has entered school. In learning to read, he has merely to learn to use written or printed words for the same purpose as that for which he has already learned to use spoken words. He will *first* associate the written or printed words which he sees with the corresponding ideas in his mind ; and, *secondly*, he will imitate written words (copy them with the pencil) until he can use them to express his ideas and thoughts.

THE IDEA AND THE WORD.

The effectiveness of an act of association depends, up to a certain point, upon the stimulus given to the act. Therefore, the number of repetitions of an associative act necessary to the learning of a word depends on the amount of stimulus received by the mind in each separate act. To what shall we look for this stimulus? The written word is, to the beginner, a new, strange, meaningless form, not in itself fitted either to excite curiosity, or even to impress the senses ; it is more apt to repel attention than to attract it. The written word, then, will afford no effective stimulus.

On the side of the idea the case is otherwise. Here is a familiar or interesting mental picture. When a child's attention is engaged by some interesting object, his first desire is to know its name. He at once desires to associate his idea of the object with a spoken word, and this desire finds constant expression in the question, "What is that?" This strong desire has been the efficient motive in learning to talk. Now the same efficient motive can be used in learning to read. Once lead a child to see that the written word will do for him just what the spoken word does, and he will soon have as strong a desire to use written words as he has had to use spoken words. The desire to know the written word will be stimulated by the idea, just as soon as the child sees that the written word is only another sort of name—another form of answer to his habitual question, "What is that?"

The stimulus derived from the idea should be greatest when the difficulty to be overcome is the greatest ; and that is at the beginning, when the lack of interest in the written word is greatest. Therefore, at the beginning, it will be necessary to adopt such means as will bring up ideas in the child's mind vividly and clearly ; for, within certain

limits, the more vivid the idea the stronger the impulse to associate it with some spoken or written symbol. Now, that which brings up an idea most vividly is the object that originally produced that idea. Next to natural objects in the degree of stimulus afforded come models, pictures, sketches on the blackboard, and conversations about familiar things. As the interest in the use of written words increases, the difficulty in causing the desired associative acts becomes less and less, until, finally, associations are effectually brought about by the simplest presentation of word. When this has come to pass no other means need be used; for then objects and pictures tend to divert the attention from, rather than to concentrate it upon, the associative acts. The proper time to dispense with outside stimulus will be plainly evident in the pleasure and avidity the children show in reading new matter.

THE WORD AS A WHOLE.

Spoken words are learned as wholes. That is, there is no conscious analysis of the word into its elementary parts, or sounds, in learning to talk. Indeed, most people use words all their lives without a knowledge of phonic analysis. Again, in respect to written words, it is to be remarked that they are first visually grasped as wholes. Any attempt to fix the attention upon a part before the whole is seen only weakens the mind's power to take in the whole. A too early struggle with the parts of a word, whether spoken or written, absorbs the attention, and thus prevents the only act of importance—the act of association between the word and the idea—from taking place.

The written word, to be effectually associated with its idea in learning to read, must be taken as a whole, just as the spoken word is taken as a whole when first associated with its idea in learning to talk.

THE SENTENCE AND THE THOUGHT.

Words arranged in sentences recall ideas in their relations. In reading a sentence each word recalls its appropriate idea, and the ideas are apprehended in the relations suggested by the forms and positions of the words.

To read a sentence there are two things necessary: (1) the words which directly suggest mental pictures must be known, that is, must vividly call up these pictures in the mind; (2) the idiom must be known; that is, words and positions of words suggesting, not ideas, but relations of ideas, must have been associated with those relations.

Words of the former kind may be taught singly, as already pointed out, by direct association with the corresponding ideas. Words of the latter kind, since they recall

no ideas except in their connection with other words, should always be taught in phrases or sentences.

The use of the sentence, as an aid to association, may be seen by considering that ideas are most easily recalled in their relations. If a sentence presents three or four ideas in certain mutual relations, the words in the sentence call up the ideas more readily than would the same words detached from the sentence and isolated from one another. The use of sentences should begin after a few single words and phrases have been taught.

WRITING.

As soon as the child has associated an idea with the written word, he should be directed to copy the word. Just as he learned spoken words by imitation, for the purpose of expressing his ideas, so he will learn written words by imitation, for the same purpose. The careful copying of a word fixes it in the mind as it can be fixed by no other means.

To be sure, the first attempts will yield very crude forms, just as the first attempts at talking do; but constant encouragement—praise of all genuine efforts however crude the result—will rapidly work improvement. By reading what he writes the child associates the copied word directly with its idea, and very soon comes to feel that he possesses a new means of communicating thought—the pencil. He learns "to talk with the pencil."

This copying of words is the beginning of spelling. It soon passes to the writing of pronounced words and sentences, and thus becomes spelling in the usual sense—orthography. Thus reading, spelling, use of capitals, punctuation, and handwriting are all begun at the one and the same time and in a way to economize time. The copying of words and sentences furnishes a large amount of good "busy work."

THE BLACK-BOARD

The writing of words on the black-board presents them to the child's vision, just as the speaking of words presents them to his hearing. Thus the child may be led to feel that writing is only another way of talking. The analogy is perfect. Moreover, one word written in a large hand on the board can be made a much better centre of attention for a group of beginners than can the small letters of a book. Besides, the repetitions in many different sentences necessary for learning the first words taught are not found in books or charts; but the black-board affords the means of making an unlimited number of repetitions. The use of the black-board in teaching the first steps of reading is well-nigh indispensable.

PHONIC ANALYSIS.

The first association between the spoken and the written word is, or should be, between them as wholes. Later, the parts of the words are brought distinctly to the child's consciousness. The parts of a spoken word are the elementary sounds composing it; the parts of a written word are the letters; and the latter being symbols of the former will need to be associated with them. For this purpose it will be necessary (1) to separate the spoken word into its component sounds; (2) to separate the written word into letters or groups of letters; and (3) to establish the direct association between the several sounds and the corresponding letters. Let us consider these steps in detail.

(1) *Slow Pronunciation.*—There are forty-five elementary sounds, and every spoken word is made up of one or more of these sounds. In order to make one sound, the vocal organs must take a particular position, and the next sound in the word cannot be articulated until this position is changed. In changing the vocal organs from one position to another there must be a pause or a suspension of sound—except in glides, where the sound is continuous. This pause is, in ordinary pronunciation, imperceptible to the ear. A longer pause than the ordinary one will be perceptible. Pronouncing words with perceptible pauses between the sounds is called "spelling by sound," or "pronouncing slowly." The term is preferable, as describing more accurately the true nature of the act.

Experience has shown that children very readily catch this slow pronunciation, provided the teacher uses perfectly natural tones; as, for example, when she quietly tells them to touch the—d—e—s—k (making the sounds), or to s—t—a—n—d u—p, etc. The children may very easily be led to pronounce words in the same way. Thus they are brought to a conscious breaking up of the spoken word into its elementary sounds.

(2) The separate letters are learned by copying written words and by direct practice on single letters.

(3) *Association of Sounds with Letters.*—When several written words have been taught, the teacher may begin to articulate the sounds of a word as she writes the corresponding letters on the board. At first nothing should be said about it to the children; they should simply hear the sounds and see the writing. After this process has been followed for some time the children will, of their own accord, begin to pronounce slowly as the teacher writes. This is an indication that the direct associations between elementary sounds and letters are becoming

established. The pupils are now ready to begin the phonic analysis of written words.

The purpose of this training is to give the child the power to pronounce new words for himself. There is a danger, however, in too much training of this kind; for it is well known that children may be trained to pronounce words they do not understand, and thus to form that habit of empty word-pronouncing which lies at the foundation of much bad reading. Phonics has to do with the pronunciation of a word, and pronouncing a word is not learning it. A word is learned only by associating it with its idea.

Phonic analysis enables the children to feel and act upon, though unconsciously, the analogies pervading the words of the language.

For example, having learned several words like *fan, cap, hat, black, lamp, sled, bed, nest, spin, hill, ship, top, dog, tub, gun, jump, etc.*, a child will not hesitate, in pronouncing any monosyllable having a single vowel and ending with a consonant, to give the short sound to the vowel. This rule has exceptions, but its importance is manifest when we remember that about half of all the monosyllables of the language end with a consonant and have the vowel short.

Again, by contrasting a few such words as *mat, mate; hat, hate; pin, pine; rod, rode; tub, tube*; the child will soon learn to give the long sound to a vowel when followed by a consonant and a silent *e*. Indeed, the silent *e* may be taken as a sign that the preceding vowel is long, and no other mark is needed. This rule applies to a very large number of monosyllables.

For the rest, there are many smaller classes of words in which analogy may be relied on as a safe guide to pronunciation; as in *fight, right, might, sight, tight, etc.*; *old, bold, cold, sold, etc.*; *mind, blind, find, kind, etc.*; *wedge, edge, tinge, hinge, budge, trudge, etc.* (which are the principal classes of exceptions to the two rules above stated); *boat, coat, road, toad, moan, groan, board, soar, etc.* (where the *a* may be regarded as a sign that vowel *o* has the long sound); *pain, rain, gain, grain, main, etc.*; *day, may, pay, say, etc.* (where the *i* or the *y* may be taken as a sign that the *a* has its long sound.)

These and many more such lists of words have no need of marked type or marks of any kind to indicate their pronunciation. The children will soon learn to rely on the analogies, and, if the teacher is judicious in her choice of lists, they may do so safely. Concerning the exceptional words like *are, were, was, could, would, should, have, love, do, to, here, there, where, etc.*, it is to be remarked that they are everyday words, and their pronunciation and writing are learned very early.

There is no need of marking them. Exceptional words that occur less often may be marked; but there will be little need of marks in teaching the vocabulary of the First Reader.

THE METHOD.

The method described in the foregoing remarks is a combination of processes. The important features are the following:

(1) *Association.* The fundamental process aims to bring about direct associations between ideas and written or printed words, also between thoughts and written or printed sentences. The beginning with selected words and sentences is a feature of the so-called Word and Sentence Methods. The use of objects and models or pictures of objects in preference to spoken words as a means of establishing the desired associations is a characteristic of what is known as the Object Method.

(2) *Writing.*—The words and sentences taught are written on the black-board by the teacher and copied by the children. The change from script to print may come early or late; but script comes at the very beginning, and is kept up, even after the change has been made, both as an important means of learning to read and as a preparation for composition. Thus the valuable part of what is known as the Script Method is utilized.

(3) *Phonic Analysis.*—The phonic analysis of spoken words comes in early, and phonic analysis of written words follows as soon as the necessary associations between the elementary sounds and the letters representing them can be established. This is not made the fundamental process, but it is an indispensable part of a complete method. Its principal aim is to give the child the power of pronouncing new words by the help of the analogies of the language.

DIRECTIONS.

The rest of this document contains detailed directions as to carrying out the method above described in the work of the school-room.

PRELIMINARY WORK (a) IN CONVERSATION (b) IN PHONICS.

(a) *CONVERSATION.*—Before beginning the work of teaching words the teacher should give some preliminary exercises in *seeing, hearing, and talking.*

The purpose of these exercises (which are to be carried on by conversation) is to overcome the natural timidity of beginners, to develop their power of talking freely, distinctly, and correctly, and to train them to a habit of fixing their attention; so that when the first steps in teaching words are taken a little later, their attention may be concentrated on that work alone.

The lessons, preparatory to reading, should not be desultory or purposeless. Simple, well arranged talks with the children on the parts of their bodies, on animals and plants; on place, form, color, and other qualities of objects, are a natural preparation for the first reading lessons. The written words of these oral lessons. Such words as *hand, nose, arm, cat, bird, rabbit, rose, bud, flower, leaf; on, in, for, square, round, large, small, hard, sweet, soft; white, black, red, blue,* and the action words, *see, run, jump, walk, catch, sing,* will all be used in the oral instruction indicated in the Outline Course of Study.

The greatest care should be taken that the voices of both teacher and pupils be used naturally and easily. Harsh and unnatural tones should not be allowed. Faults in articulation and pronunciation should be carefully corrected, and, in general, correct habits of speech should be formed or strengthened by giving much practice in speaking.

1. *Exercises in Imitation of the Teacher.*—Suiting her action to the words, the teacher may use, and the pupils imitate, first in concert and then individually, such sentences as the following* :—

This is my right hand.
This is my left hand.
Here are both hands.
This is my right arm.
This is my left arm.
Here are some blocks.
There are some flowers.
I can bend my arm.
What can you do with your hand?
I can shut my hand.
I can open my hand.
This is my slate.
What is that?
That is the clock.
This is my slate and that is the clock.
This is my slate and that is your slate
This is my desk.
That is the teacher's desk.
Where is the clock?
There is the clock.
Where is a picture?
There is a picture.
Here is a boy, and there is a girl.
What can you do?
I can run.
See me run.
I can walk.
What are you doing?
We are walking.
Where are you going?
I am going to the teacher's desk.
What do you see?

* These examples are of the simplest kind, of course; the teacher will use such as are adapted to the needs and capacity of her class.

I see a window.
I see a table and a chair.
Where are they?
The chair is here.

2. *Relations of Objects suggested by their relative Positions.*—Put objects in different places, and ask pupils to tell you where they are. For example :—

Where is the box?
The box is on the table.
The box is under the table.
Where is the pencil?
The pencil is in your hand.
The pencil is in the box.
The pencil is in the box, and the box is on the table.

Where is the picture?
The picture is on the wall.

3. *Actions.*—The teacher may perform acts, and the pupils tell what she does. For example :—

You sat down.
You walked.
You took the pencil.
You made some marks on the blackboard.
The teacher rapped on the table.
Miss —— rang the bell.
Let one pupil perform acts, and let other pupils tell what he does.

John stood up.
Marv shook hands with Kate.

4. *Qualities of Things.*—At the request of the teacher let the pupils tell something about two boxes :—

This box is red.
That box is blue.
This box is pretty.
That box is heavy.
Where is the pretty box?
The pretty box is on the desk.
This box is red and that box is blue.
The red box is on the desk, and the blue box is on the table.

5. *Things Compared* :—
This block is large.
That block is small.
This block is larger than that block.
These blocks are small.
Those blocks are large.

6. *Suggestive Questions* :—
What do you see?
What do you hear?
What can you touch?

7. Ask a pupil to perform several acts, and, during their performance, to describe what he is doing.

Ask him to tell where certain objects are. Ask him to take an object, and tell all he can about it.

Give pupils different pictures, and ask each to tell a story about the one that he has.

Let the teacher tell short, interesting stories, and then let the pupils tell them.

Thus, by making everything real, all purely mechanical expression is avoided, and the emphasis, inflection, pauses, and tones spring from, and are controlled by, the thought.

(To be concluded in the October MONTHLY.)

CONVENTION OF THE ONTARIO TEACHERS' ASSOCIATION.

The Twenty-fourth Annual Convention of the Ontario Teachers' Association opened at the Education Department, Aug. 12. There was a good attendance of teachers throughout the Province. Hon. G. W. Ross, Minister of Education, President of the Association, occupied the chair. The meeting opened with reading a portion of the Scripture, followed by prayer by Mr. Robert McQueen, of Iroquois. After the minutes of the last meeting were confirmed, Mr. Inspector J. H. Smith, of Ancaster, was appointed Recording Secretary. The different sections of the Association were then formed, as follows :—High School Sections, H. I. Strang, Goderich, Chairman; Public School Inspectors' Section, Mr. D. A. Maxwell, Amherstburg, Chairman; Public School Section, Mr. Jas Duncan, Windsor, Chairman. The sections met in the mornings.

Mr. Hendry, the treasurer, submitted his annual report, from which it appeared that the receipts for the year had been \$859.81, of

which \$484.71 was the balance from previous year, \$200 the Government grant, and \$52 members' fees. After paying all expenses the balance in hand was \$541.75.

The accounts were submitted to an auditing committee consisting of Messrs. McAllister, McQueen and Campbell. The meeting adjourned till two o'clock.

TUESDAY AFTERNOON SESSION.

There was a larger attendance in the afternoon than in the morning. The President took the chair at two o'clock, and after routine proceedings Mr. James L. Hughes, Public School Inspector for the city of Toronto, read an exhaustive paper on "Industrial Education." By an industrial training he meant anything that would tend to enable the hand to represent more accurately in material form the thoughts of the mind. He held that the sooner the industrial training of a child began the more perfect would be his development. The hand, he said, was

the agent of the mind, and formed one of the means by which the mind acquired knowledge. He dwelt for some time upon the good results in the way of industrial education derived from the Kindergarten system of teaching. The child during his first year at school should deal chiefly with real things as he did before he entered school, and he should use things not that he might learn about the things themselves, but that through using them he might incidentally learn new facts, discover new principles, develop his perceptive faculties, and define his conceptions. Industrial drawing should be taught in all the classes. The thanks of the profession were due to the Minister of Education for the progressive and liberal course he had recently adopted in providing free of charge for teachers in Ontario the means of learning how to teach this important subject, by establishing vacation drawing classes in charge of competent and experienced masters. Mr. Hughes exhibited some specimens of work done under the Kindergarten system, such as paper posting, paper folding, sewing on cardboard, etc.

Considerable discussion followed among the members of the Association with reference to the paper.

Dr. Mulvaney endorsed the views of Mr. Hughes. He thought in addition to what the Government had done in this direction something in the direction of scientific training should be provided. There was much room for improvement in that direction.

Mr. T. O. Steele thought that if parents could be brought to feel the importance of this kind of training the teachers would be given help in which to do the work. He would also teach the girls how to use tools.

Mr. Suddaby claimed for Berlin the honour of first introducing the system advocated.

Dr. Forrest said they were doing too much in the way of filling the pupils with knowledge, instead of fitting them for their future work. If they would do away with the home work of the pupils they could find time for the industrial work. Six hours' work a day for a child under twelve years of age was sufficient. He spoke approvingly of the vacation school for teaching drawing to the teachers.

Mr. Tamblin thought that time could be found for this teaching. Those who complained of want of time found time for thousands of unimportant things. There was too much of mental study to the neglect of industrial training. Home lessons should be abolished.

Mr. Pomeroy did not believe the mental work of the schools had done the evil which had been said. It was done by making the boys and girls of twelve men and women,

and in luxurious living. The past generation had done far more work than was done by the present. The country teachers had not time to give this teaching.

Mr. Gordon thought the use of part of the time at this kind of teaching would aid the teachers in the intellectual work.

Mr. Miller was very much pleased with the paper. The time objection had been raised on the proposal of every change which had since been adopted. The talking of want of time was all nonsense. He hoped the paper would be thought over very carefully by all who had heard it. He moved a hearty vote of thanks to Mr. Hughes for his paper.

Mr. MacIntosh warmly seconded the motion, and thought that as teachers should not shut their minds to the reception of new truths. They should be careful not to become fossilized, nor to become moss-grown.

Mr. Fotheringham said the time had come for a change in the country schools. The industrial system should be made compulsory. The time when the control of the subjects to be taught, and the time, should be placed in the hands of those most competent to judge. The trustees were not always the most competent to judge in these matters. Music and drawing should be made compulsory instead of optional.

Mr. McBrien said there were many difficulties in the way of adopting the proposal, but he thought there was nothing in the want of time argument.

Mr. Dearness advised teachers to save time in the way advocated by Mr. Hughes. He thought they could, whether in the city or country, take many useful leaves out of Mr. Hughes's book.

The resolution was carried unanimously.

Mr. Hughes replied to the vote of thanks. He moved that the address read on "Industrial Education" be referred to a committee composed of Messrs. McHenry, Suddaby, Fotheringham and the mover, with a request that they prepare resolutions based on it to submit to the convention at a future session.

The motion was carried.

Mr. William McIntosh, of Madoc, said the subject upon which he had been called upon to speak—the increased Legislative Aid to Public Schools—was ripe for discussion. The educational system was a State system in part, and indeed it was almost entirely a State system as regards Public Schools. The State aided in the support of Public Schools with the object no doubt of encouraging education. Did the State contribute to the support of the Public Schools in a degree commensurate with the control it exercised over the system? The educational system was instituted by the State, and to a large extent

the system had always been in advance of public opinion. What control did the State exercise over the system? The State controlled to a limited extent the people in the erection of Public School buildings. The people were controlled by the State in reference to the qualification of teachers, in regard to the hours of study, in regard to vacations and a great many other things, and they had to abide by it. He found according to the last report of the Minister of Education that the sum of \$251,356 had been given to Public Schools, while the total receipts for the maintenance of Public Schools were \$3,469,990. The grant *per capita* of the school population was a little over fifty cents. The number of teachers in round figures was about 7,000. Would any one say that the grant of fifty cents per pupil was at all commensurate either with the control the State exercised over the schools, or the vast importance of the work done by the Public Schools? He compared the support given to Public Schools with the support to High Schools and the higher educational branches. The aid to the High Schools during the year was \$84,304, and the total amount received for the support of the High Schools was \$373,000. He did not wish the grant to the High Schools lowered, but he thought the grant to Public Schools might be raised so as to compare favourably with High Schools. The Public Schools were the foundation of higher education. It was the duty of the State and those who controlled the system to attend more particularly to the education of children who were in the first, second and third classes. He also suggested new regulations with reference to the distribution of the legislative grants. For a great many years the Legislative grants had been divided among the municipalities according to the average attendance. The system was fraught with many evils.

Mr. Dearnness said that too much State aid would cripple local effort. He contended that the present system of apportionment did have a tendency to bring up the average attendance.

Several members expressed the opinion that an increase in the grant would be a popular move.

Mr. McAllister said that if the law in regard to compulsory attendance was enforced the grants received would be much higher.

Mr. McBrien said the people highly approved of the Government liberality to High Schools, but asked why the same liberality was not extended to Common Schools.

Mr. McKinnon thought the grant to Common schools was too small. The teachers did most important work for the community, and yet no class of professional men was so poorly paid.

Mr. Smith was in favour of increased grants to Public Schools, but doubted whether teachers' salaries would be much increased thereby. He would like to see some change in the method of apportionment, but could not suggest what that change should be.

Mr. Fotheringham thought it would be wise to distribute a portion of the grant upon the rate of taxation paid by the section; another portion upon the grade of certificate of the teacher, and the third portion upon the average attendance.

Mr McIntosh moved that it is the decided opinion of this meeting that the Legislative grant should be largely increased, and that the whole question of distribution be referred to a committee composed of Messrs Dearnness, McKinnon, Fotheringham, Burrowes, Mc-Kay, Miller, Brown, and the mover to report in detail as to the best mode of apportionment. Carried.

The meeting adjourned till 8 p.m.

EVENING SESSION.

In the evening not only was there a very large attendance of teachers, but many prominent citizens also were present. The main feature of the evening was the President's annual address, delivered by Hon. G. W. Ross, Minister of Education and President of the Association. [See page 321.]

Mr. David Fotheringham moved, seconded by Mr. MacMurchy, that the Association express its high appreciation of the address, and tender a hearty vote of thanks to the President for having delivered it. This resolution was put by the Secretary and carried amid loud applause.

The President acknowledged the vote in a few words. He expressed great gratification at the success which had attended this meeting. He had not known a meeting which was better attended or at which the discussions were more earnest and interesting. He explained that the next part of the programme would be the hearing of reports from delegates of the various county Associations. In the course of a brief discussion upon the work of these Associations, he stated that in New York there was a staff of twelve men who did little if anything else than visit the counties and instruct the teachers in the latest and most advanced thought in connection with education. In some of the other States the same work was done in different ways. He had hoped to have two men to place upon the road to visit the several Associations for this purpose. He did not desire to interfere with the work of the Associations, for he understood that these organizations must be allowed to do their own work. But by this system he hoped to assist the teachers in their work without clashing with the Association.

Reports were then read from a number

of the counties. Mr. D. J. Murphy spoke for West Middlesex, in which Association there were 120 teachers. His reports showed a good state of affairs to exist. Mr. Sinclair, of East Lambton, representing ninety-eight teachers, and Mr. Baird, West Huron, also reported. Mr. Powell, of Bruce, stated among other things that there was a lack of interest among the young teachers. His Association contained eighty teachers. Mr. Chadwick, of Perth, representing from 150 to 200 teachers, stated that the Perth Association had no membership fees. One of the main difficulties was the indifference of many of the teachers to the literature of the profession. He thought there should be some scheme for putting the school journals into the hands of all the teachers. Mr. Payne, of Algoma, began the reading of his report, but as it was long, and had evidently been prepared with great care, the reading of it was postponed to a future occasion. Mr. Fotheringham reported for York that the Association, numbering eighty teachers in attendance, was in a flourishing condition. Mr. F. O. Steele spoke on behalf of the North Simcoe Association of fifty members. Mr. J. H. Smith for Wentworth with 115 members. Mr. McRae for the forty members of the Waterloo Association. Mr. Henstridge for the Frontenac Association of 140 members, and Mr. Clapp for the North Wellington Association of 103 members.

The hearing of reports for other counties was postponed.

The Association then adjourned until two o'clock.

WEDNESDAY.

The Convention met again at 2 p.m., the President, Hon. G. W. Ross, in the chair.

A memorial from the Woman's Christian Temperance Union, praying that temperance text-books be introduced in the schools, was referred to a committee.

Mr. G. W. Johnston, Hamilton, read a paper on "How Best to Secure the Permanence and Increase the Efficiency of the County Model Schools." He argued that reading, mental arithmetic, and hygiene should be left to the High Schools, and the proper work of training students how to teach be alone taken up by the Model Schools. He thought the department immediately after the June Literary Examinations, should instruct each student what Model School she or he should attend. It would secure an equal distribution of students at the various Model Schools. The principals should teach classes in the presence of the student-teachers, which they could easily do if relieved of the burden of teaching hygiene, reading, and mental arithmetic. Then students should be practised in teaching under the direction of the princi-

pal. The student-teachers should be taught how to observe teaching for three weeks before being sent out to teach the classes. The syllabus should be so revised as to bear solely upon teaching, or how to teach, and should be divided into twelve portions corresponding with the twelve weeks of the term, the primary essentials being taken up first. Both the Literary and Provincial Examinations should be uniform all over the country. The County Boards ought to be remodelled, so as to consist of only three members—practical teachers, such as the principals of the High Schools and County Model Schools. He made many other suggestions in reference to the grants, examinations, marking, simplification of the training registers, and issuing of permanent third-class certificates.

Dr. Kelly moved a vote of thanks to Mr. Johnston for his suggestive paper. The recommendation to make the Principal of the Model School one of the Examining Board was in opposition to the principle of examinations adopted by the Department. He objected, moreover, to the permanence of third-class certificates. He held that third-class certificate holders should work up to first-class. It would be a retrograde movement to have permanent third-class certificates.

Mr. McBrien favoured the permanent third-class certificates. If a teacher taught successfully for one year, he would teach more effectually the second year. The fact of renewals being granted recognized this principle.

Mr. Chadwick said that students would naturally flock to the best Model Schools and why should the poor schools be kept up at the expense of the good ones. A few effective Model Schools could do all the work of the Province, and there was no necessity to keep up so many as at present.

Mr. Steele hoped that many of the suggestions made would be carried out.

Mr. Powell agreed that it was advisable to relegate the literary course to the High Schools.

Mr. Munroe, Ottawa, thought that the examination papers should be uniform. They might be prepared by the Department.

The motion was carried.

Mr. F. H. Mitchell, Perth, read a paper on the "Status and Values of Third-class Certificates." He called attention to the fact that a large number of the teachers have entered the profession merely as a temporary experiment, with the intention of deserting at the first opportunity. Many were acting irregularly, as he claimed, under permits. He wished to inquire into the causes of this. The high-standard the third-class teachers attained since 1880 showed their ability to

teach in any schools. Thoughtfulness and the philosophy of the art of teaching he thought were the want of the profession. The impediment to the social position of the teacher was that they were birds of passage. The legal, medical, and clerical professions, and book agents were recruited from their ranks. He suggested a remedy in the grading of the certificates, and one in the increase in the number of rural boards. People were not averse to paying good salaries. Good teachers could get good salaries. These were faults which could be removed by legislation, but there was much which should be done by the teachers. They should respect themselves, and devote themselves to a philosophical study of the subjects taught. A fault in the teachers was their habit of deserting positions, in the face of written bonds, for more lucrative situations. The people did not hold a high enough appreciation of a high standing. Legislation might be provided requiring that places of say \$75,000 assessment should employ a second-class teacher. Third-class certificates should only be in force in the county wherein granted. He recommended that several subjects should now be struck off the Model School list; hygiene should be limited to school hygiene; reading aloud to be made to extend over a certain ground; the philosophy of teaching as well as the method should be taught and explained; every incentive should be offered as an inducement to people to enter the profession; there should be an increase in the number of members of rural school boards; certificates should be valid only in jurisdiction of the granters; teachers should respect their calling; and they should act in good faith towards one another.

Mr. Alexander, of Galt, was strongly in favour of the Third Class Certificates being permanent. He moved a vote of thanks to the essayist.

Mr. Smith suggested a plan for a person serving an apprenticeship of say three years as a pupil teacher before being allowed to go up for the Third Class Examination.

Mr. J. L. Hughes seconded the motion.

The motion was carried.

Mr. Dearness presented the report of the Committee on the School Fund. It recommended (1) that the amount of the legislative grant to Public Schools be largely increased; (2) that a part of each grant, say one-half, be divided equally among all the school sections in the municipality, and that for the purpose of this section each additional department count as one-half of a school in making this division; (3) that the balance of the legislative grant be appropriated on the basis of the rate of taxation in the several

school sections for the previous year, and that the balance of the municipal grant be appropriated on the basis of average attendance for the whole year.

The report was adopted, and the Convention adjourned till the evening.

EVENING SESSION.

The Convention re-assembled at eight o'clock.

After routine business, the President, in a few complimentary words, introduced Rev. Principal Grant as the speaker of the evening. [See page 325.]

A hearty vote of thanks to Principal Grant for his address was moved by Mr. MacMurchy, of the Toronto Collegiate Institute, seconded by Mr. Miller, of the St. Thomas Collegiate Institute, and carried amid loud applause.

Hon. G. W. Ross then rose to present the medal won by Mr. W. H. Davis, of the Ottawa Normal School. He explained that when the Prince of Wales visited Canada in 1860 he left £300 to be used in advancing education in the Province. He (Mr. Ross) determined that so long as he had control of it, this money should be used to provide gold medals for the best scholars in each of the Normal Schools of the Province, the prize to be won not merely by a good showing at the examination, but with some consideration given to the work of the whole session. In Ottawa the prize was won by Mr. Davis, and in Toronto by Miss Amelia Harris. Mr. Davis was called up and received his prize amid the applause of the audience.

The Association then adjourned.

THURSDAY.

The Ontario Teachers' Association re-assembled at two o'clock, Hon. G. W. Ross presiding.

Mr. Scarlett presented the report of the committee to which was referred the communication of the Woman's Christian Temperance Union. They stated that the matters referred to them had been for some time, and were still, under the consideration of the Education Department. When finally settled they would, no doubt, be satisfactory to all concerned.

The report was adopted.

Mr. McAllister presented the report of the Audit Committee. They stated that they had examined the accounts and vouchers, and found them correctly kept.

The report was adopted.

The Secretary presented the report of the Executive Committee, making the following nominations of officers:—President, Mr. J. H. Smith; Recording Secretary, Mr. R. W. Doan; Corresponding Secretary, Mr. D. H. Hunter; Treasurer, Mr. W. J. Hendry.

The report was taken up clause by clause.

In amendment to the recommendation for the election of Mr. Smith to the presidency, Mr. Suddaby proposed Mr. J. L. Hughes, and Mr. Sinerl proposed, in amendment to the amendment, Dr. McLellan.

Mr. Hughes requested his friends to drop his name, and asked them to support Dr. McLellan.

Mr. Hughes' name was then withdrawn.

A ballot was then taken, Messrs. Bryant and Campbell being appointed scrutineers, and resulted in the election of Dr. McLellan.

The report as a whole was then carried.

Messrs. McMurchy, Alexander and McKinnon were appointed a committee to report next year on amendments to the constitution.

Mr. Smith moved that the next annual meeting be held at the Grimsby camp grounds.

The vote was lost.

The Chairman then introduced Col. F. W. Parker, of the Normal School, Normanville, Ill., and author of "Talks on Teaching."

Col. Parker then delivered an address on the Teaching of Reading and Language in Schools. He said that the maxim, "learn to do by doing," had been disregarded. For the last thirty or forty years teachers had been trying to do a thing by doing something else. In the first place, reading was not talking. The child had learned to talk before he came to school; in fact all great elocutionists said, "If you will learn elocution, go to a little child." The child's pronunciation and articulation might be imperfect; its emphasis never. The lecturer imitated in a way which excited the laughter of the audience the dull, monotonous tone in which a child reads after a few months' training at school, and said it was something between a whine and a groan. Reading was not pronunciation. If pronunciation had to be taught, it was something quite separate from reading, nor did reading consist of articulation or emphasis, both of which the child had learned before coming to school.

He defined reading as a means of getting thought by means of written sentences. Reading was thinking by means of written words. If the child did not think he did not read. Thinking was the mind's means of growth, and reading was one great means of thinking. The great mistake committed had been to make expression the end of education, whereas power should be the end and expression the means. As frequently taught, oral reading, instead of a means to make the child think, was actually an obstacle between the child and the thought. Children, he thought, were born good, but men had sought out many inventions to make them bad. One of these was the old A, B, C method of teaching the alphabet. Another

was the phonic system, as sometimes taught, and another was elocution, in which children were taught to make strange and unnatural noises. He strongly condemned the system under which children were made to read the same book again and again after they had learned its contents by heart. Take this question of polluting literature. Why did children read it? Because they were starved in the school-room on this miserable rubbish. He would throw away the spelling books, the grammars, the primary geographies, and buy a library for every school-house in America. He concluded by expressing a hope that his hearers were moving in the direction of taking a little time to develop the child's mind.

Mr. J. L. Hughes presented the report of the committee appointed to consider his paper on Industrial Education. They recommended (1) that industrial drawing be made compulsory in Public and High Schools, and that the marks of drawing be taken into account the same as any other subjects at the Entrance Examinations; (2) that so far as practicable, industrial occupations of an appropriate character should be introduced into the Public Schools, especially in the junior classes, and that the Honourable the Minister of Education be requested to provide for such training in connection with the Normal and Model Schools as a means of cultivating manual dexterity and developing the mind. He moved the reception and adoption of the report.

The report was adopted.

Mr. Burrows moved, seconded by Mr. Smith, that the Secretary be instructed to furnish each member of the Association with a copy of the minutes of the annual meeting free of charge.

Mr. McAllister moved in amendment to refer the matter to the Executive Committee.

The amendment was lost, and the motion was carried.

Mr. William Carlyle, read his paper on "Uniformity of Text-Books." After speaking of the late Dr. Ryerson's efforts to arrive at uniformity in text-books, in which, if that gentleman had lived until 1883, he would have found he had not succeeded, he pointed to the uniformity in the whole system. It was said that all the children should not read the same books, as reducing all to the same dead level. Grant this, and who is to decide upon the books? Frequent changes would destroy permanence. The pupils have now to endure frequent changes of teachers. If to this were added text-books, the case would be well nigh hopeless. Unless the same author or no text-books be used, classification would be a practical impossibility, and dispensing with class instruction would require a remodelling of the

system. To what extent should uniformity be insisted upon? The practice of the late Minister of Education in requiring uniformity in the book upon the table, but allowing the subsidiary use of other books, was prudent. Did they need one series of school readers? Most assuredly. Let more be authorized, and they would all find their way into the school to the bewilderment of the teacher, multiplying the number of classes, already too large. But was it necessary that the series should embrace six books, accompanied by a speller and a book on elocution. Would the scholar, by reading scraps, not acquire a taste for selections merely, or a disgust for reading that would never be overcome? It was difficult to excite the pupil's interest with readers composed of shreds and patches. Three books compiled with better taste, one whole book, and some recognized English classical work, authorized from time to time, would achieve better results than the old series of readers. Then, no textbook would meet the requirements of the schools for an indefinite period. As the circumstances of the school changed, the textbooks would have to be changed.

A vote of thanks was tendered Mr. Carlyle for his paper.

Mr. A. P. Knight, Kingston, read a paper on "University Consolidation and Legislative Aid to the Colleges." In touching upon the last subject first, he said there were three schemes for the solution of the

question: (1) to aid one central college; (2) to leave each college to its own resources; (3) to aid all the colleges. In regard to the first proposition it was admitted that no one art college would satisfy the requirements of the country, and this scheme would please few and would lead to a cry of "fair play." In regard to the second proposition it was argued by its advocates that the State should not provide anything beyond a common school education, and it was asked why the majority of the people should be taxed to give advantages to a limited few. The third proposition was that on certain conditions each college should receive an annual grant of say \$10,000. Among the conditions were that each aided college should have an endowment of \$300,000, of which one-half might be required to be deposited with the Government. In regard to consolidation, he thought that if all the existing institutions were combined in Toronto, a new agitation would be started for founding new colleges in other places. His own idea was that they could not have too many colleges, and too few universities. He favoured therefore, giving a legislative grant to all colleges fulfilling the prescribed conditions.

A vote of thanks was passed to Mr. Knight for his paper.

The meeting adjourned till 8 p.m.—*Daily Press Report.*

(To be continued.)

CONTEMPORARY LITERATURE.

FIRST READING—FROM BLACKBOARD TO BOOKS, with Directions for Teachers, to accompany Calkins' Reading Cards. By N. A. Calkins. Ivison, Blakeman, Taylor & Co., New York and Chicago.

This volume possesses the merit of much originality in form and arrangement of contents. Beyond this, we cannot see any pressing reason for its appearance. There is no doubt that in the hands of young teachers it might accomplish much good, but every well-read young teacher should be already familiar with the principles enunciated and illustrated here, from having met with them in "sundry places and divers manners." It is simply another attempt to combine the word and phonic methods in

connection with black-board illustrations, and this, presumably, is just what every teacher of average ability does every day. In the United States, a work of the kind before us may be a necessity; in this country, it is a little behind rather than in advance of the age. We have no means of knowing the price of the book, but it would be dear at seventy-five cents. Mechanically, it leaves nothing to be desired.

A MAP OF ONTARIO, FOR SCHOOL, LIBRARY AND COMMERCIAL USE. By S. Hughes. Toronto: Canada Publishing Co., 1884.

THIS is one of the clearest and most compendious maps that we have seen. Indeed

it is *facile principis* of the maps of this Province. Besides the usual features of good charts, it presents an admirable view of our railway system, populations, distances, High School towns, and many other things of interest to the intelligent reader. It is a capital bit of work.

REPORT OF THE MINISTER OF EDUCATION FOR THE YEAR 1883, WITH THE STATISTICS OF 1882. Printed by order of the Legislative Assembly, by C. Blackett Robinson, Toronto.

(Second Notice.)

WHEN we undertook the task of reviewing the last report of Mr. Crooks as Minister of Education, we had occasion to regret his serious illness. We have now to lament his loss as head of the Education Department by an affliction, surely, the saddest that can befall the life of man—insanity. The greatest bereavement of life is that which deprives us of the power of knowing that it is a bereavement. Well might Edgar, in "King Lear," under his assumed garb of madness, exclaim, when he saw the condition of his father with his eyes torn out: "The worst is not, so long as we can say, this is the worst." Whatever may have been Mr. Crooks' faults in his administration of the Department, the EDUCATIONAL MONTHLY, in pointing them out, never lost sight of his earnestness and honesty of purpose. And who can now say to what extent these faults are attributable to the shadow that for a long time was gradually obscuring the brightness of his powers?

While we are not of those who cry, The King is dead! Long live the King! we are, nevertheless, prepared to welcome Mr. Ross as successor to Mr. Crooks. He has a great deal to recommend him to the position, and to the teaching profession. He was a practical teacher, and as such passed through all grades of the profession until he reached the position of Model School Inspector. His valuable services in this capacity we had occasion to commend in our review of last year's Report. He has with one or two exceptions acted wisely in his professional career. He has the merit, not a small one in our eyes, of

being the first teacher who, in conjunction with Mr. McCall, had public spirit enough to establish an educational journal. This was the *Ontario Teacher*, which, in its independence of tone, and its devotion to the interests of education and the profession was the worthy predecessor of the EDUCATIONAL MONTHLY.

Mr. Ross's experience as a legislator in the House of Commons should enable him to survey with no narrow view the important field of labour he has entered upon. It remains for him to show whether he proposes to occupy it as a mere time-serving politician, or as a statesman with broad and patriotic views. He takes hold of the helm at a time when the cry is in many quarters "about ship," and it will be for him to show that it is safest to keep the vessel in her present course. So long as he steers clear of the shoals which Mr. Mundella, his compeer in England, calls educational politics, and keeps his eyes steadily fixed on the improvement of our educational system, and of the teachers engaged in it, so long as he summons to his aid the men best fitted to manage the educational ship quite irrespective of their political creed he may depend upon the hearty support and co-operation of the EDUCATIONAL MONTHLY.

It would be premature to look for any material results of his administration in the statistics which we are about to give, seeing that Mr. Ross took charge of the Department but a few months ago.

STATISTICS OF THE PUBLIC AND SEPARATE SCHOOLS FOR THE YEAR 1882.

The total receipts were \$3,469,990, showing an increase of \$210,751. The increase for the previous year was only \$4,409. This is very satisfactory, and we trust Mr. Ross regards it with feelings akin to those with which Mr. Mundella congratulated the House of Commons in England lately upon the fact that the educational estimates now had reached the respectable sum of £3,000,000. Of the total amount, eight per cent. was contributed by the Legislative Grant, twenty-seven and one-half per cent. was from Muni-

icipal School Rates, forty-two and one-half per cent. from Trustees' School Assessments, and twenty-two per cent. from Clergy Reserve Funds, Balances, and other sources. In this statement we have ventured, for the sake of clearness to alter the phraseology of the synopsis in the Report, and have used that in the tables. What are called in the synopsis County Rates are those levied by Municipalities, and what are called Local Municipal Rates are those levied by School Trustees in the School Sections, etc.

The total expenditure was \$3,026,974, being an increase of \$182,702. Of this amount seventy-one per cent. was devoted to teachers' salaries, and the remainder was spent on maps, prizes, library books, sites and buildings, and rent and repair of school-houses, in all of which items there is an increase.

The total number of pupils attending school during the year was 471,512; of this number, fifty-two per cent. were boys, and forty-eight per cent. girls. There was a decrease of 4,695 boys and 61 girls. A decrease in this item has been going on since 1877, when the attendance was 490,860. It would be interesting to know to what it is due, and still more interesting to know when it is going to cease. Is it due to the withdrawal of children from school at an earlier age than formerly, or to an actual decrease in our school population? We fear to both causes, for while the decrease in school population was only 407, that in the school attendance was, as we see above, 4,756, and while the school population since 1877 has decreased 10,987, the attendance at school has decreased 19,348. The decrease for 1882 was confined to the counties; indeed the cities and towns show a positive increase, and if we take the counties by themselves, their decrease was 9,645. By a law that was passed in 1881, the parent or guardian of every child between the ages of seven and thirteen is required to cause such child to attend a public school, or other school in which efficient elementary instruction is given, for eleven weeks in each term, that is for 110 days in the year. Now this is an excellent law for making our Public

School system effective, and, if carried out, would leave little to be desired. But what says the Report before us? "The number of children between seven and thirteen years of age reported as not attending any school for 110 days during the year is 87,444. This statement is surely serious enough to awaken the attention of the Minister. It certainly awakened ours, and on referring to the tables to see where the evil lay, we were surprised to find that only the counties had made complete returns, five cities, including Toronto, and nineteen towns had made none. So that we may safely set down the number of those children who do not attend school between the prescribed ages, at 100,000. We have thus placed before us the disagreeable fact that the parents of one-fifth of our school population are allowed to violate the law with impunity. Was the legislature in earnest in 1881 in passing the compulsory law, or are we to regard it as another specimen of that fancy legislation with which the members of our Local House while away their time, reserving their more serious moments for the more important occupation of abusing each other before the country, or talking buncombe. If the law was passed with the serious purpose of being carried out, why has it been allowed to remain a dead letter? Cannot the Minister, with the aid of the Inspectors, make some effort to check an evil which, if allowed to continue, will in future years leave its blight upon the education of the country?

The next statement that meets us is that 8,086 children between the ages of seven and thirteen attended no school whatever during the year, but, upon again referring to the tables, we find that only two out of the ten cities, and those, too, with the smallest school population, and only fourteen out of sixty-five towns make returns of this class. The above number, therefore, does not give at all an adequate idea of the proportion of our school population that is allowed to grow up without any training, except what the evil associations of the streets and lanes afford. We have repeatedly urged the necessity of industrial training as the only means of

saving many of these children from a life of crime. They would thus be made wealth producers instead of wealth consumers. Had the money that has been spent on the Mercer Reformatory, an institution that has failed hitherto, and is sure to fail, in accomplishing the work for which it was established—the reformation of women who have fallen into vice—been employed upon a provincial institution for the industrial training of both boys

and girls who did not or would not attend school, one great means of supply to the criminal class would have been cut off, and our educational system would have had the merit of being consistently carried out.

Percentage of Average Attendance :

In Cities.....	58
“ Towns.....	53
“ Counties....	43
“ the whole Province.....	45

(*To be continued.*)

EDITORIAL NOTES.

IN order to make room for Convention matters, and the very remarkable treatise on Reading, which we reprint under “School Work,” we are obliged to omit a large portion of University Work, School News, and The Editor’s Table.

WE trust that this number of THE MONTHLY, which we may call our Provincial Association number, will be especially welcome to the profession. The papers which we are enabled, by the courtesy of the writers, to present in a full and revised form are worthy of repeated perusal, and will take rank in value with any papers read at similar gatherings.

THE High School masters were unanimous in condemning the character of some of the papers set at the recent Departmental and University Examinations. They adopted a strong resolution, expressing their views upon the matter, and urging desirable changes. We sympathize with the masters in their indignation at the injury that is done to candidates and schools by these imperfect tests. Every year there has been more or less occasion for complaint, but now that the masters have taken the matter vigorously in hand we may hope to see the grievance remedied.

PRINCIPAL GRANT’S ADDRESS is a breezy call to abandon formalism, and to leave the teacher to the full play of his individuality. He protests against the delusion that, in educational matters, we are models to all the world. He declares that it is a fallacy to aim at absolute uniformity over the whole country, and that it is a huge blunder to over-stimulate the young mind. He is quite certain that the school curricula contain too many subjects, and that it is most absurd to place a subject upon the programme simply because it is useful. He is of opinion that literature gives the highest kind of mental training, and in this he agrees with Matthew Arnold and Goldwin Smith. The whole lecture is suggestive and, though possibly some fallacies may be detected in Dr. Grant’s reasoning, yet it is after all a valuable contribution to current thought upon educational topics.

THE address of the President, the Hon. G. W. Ross, Minister of Education, though brief, contains much matter for reflection. It is extremely valuable in showing the trend of the Minister’s thoughts, and in giving an outline of his educational policy. He frankly admits that our school system is not perfect; that it is a compromise, and as such, cannot be perfect in that it does not provide religious teaching. He does not attempt any solution of the difficulty, but frankly states

his opinion that a national system of education must be non-denominational. Granted; but must it necessarily be wholly secular? This is the question that will have to be faced in spite of cabinets. He did well to emphasize once more the maxim that, "Education is not knowledge but power." Of late there has been a very marked tendency, as seen in departmental examination papers, to consider knowledge and information about recondite things, the true education. The Minister does well to sound the halt and to face about. The most noticeable portion of the Minister's address is that wherein he defines his ideal of a good common school education. It is essentially the complete possession of a knowledge of the three R's, and of what some one calls the three D's, drawing, drill and adroitness. We do not hesitate to state that to bestow this knowledge upon the children is a worthy ambition for the Minister of Education of any country. Notwithstanding all that has been done in Canada, there has only a beginning been made. Our programmes are too ambitious, and we have been going too fast. We must go more slowly and surely. Another important point is the re-statement of the truth that the teacher makes the school. This, it will be observed, is wholly antagonistic to the red-tape theory and the galling bondage of officialism. If the Minister's meaning is that the good teacher is henceforth to be left to exercise his individuality upon a reasonable programme without being hampered by tests, then the good teacher has reason to rejoice.

THE NEW HIGH SCHOOL INSPECTOR.

THE appointment of Mr. Seath to the vacant High School Inspectorship has given much satisfaction to the teaching profession and, we believe, to the country. The Minister of Education is to be commended for the wisdom of his choice and for the signal proof he has given in filling the appointment of the honesty of his expressed determination to know no party politics in

the administration of his Department. If the recognition of Mr. Seath's claim to the position has been somewhat tardy, and if hitherto ministerial eyes have too often been open only to party merit, the High School masters will console themselves by the fact that Mr. Seath, by remaining longer in harness, brings to the work of inspection so much the larger experience and deeper sympathy.

To the readers of THE MONTHLY, it is scarcely necessary to speak of Mr. Seath's qualifications for his new duties. To a sound early education, graced with the highest honours his University could bestow, he has added the rich results of over twenty years close study of literature, science, and other subjects coming within the wide range of a principal of a large and successful school. The publication of his edition of a portion of *Paradise Lost* gave literary students an opportunity to determine the richness and variety of his acquirements, his acquaintance with the best sources of information and the fine critical taste and acumen with which he is endowed. His labours on other works intended for schoolroom use, as well as upon THE MONTHLY, have enhanced his reputation and placed him in the very first rank of Canadian scholars and critics. Nor is it necessary to dwell upon his work as a teacher. The St. Catharines Collegiate Institute is a monument of which any principal may well be proud. In a word, Mr. Seath is an exceptionally well-furnished scholar and successful teacher. He is able to examine and report upon all the work of the High School curriculum. While the bent of his mind is towards "the humanities" he will not, we feel confident, be disposed to ride hobbies or flout knowledge unfamiliar to him.

The advent of a man of Mr. Seath's attainments and experience in the present posture of educational affairs is most encouraging. The pernicious dogma of Payment by Results and the unspeakable "Intermediate," against which, with other friends, he laboured in THE MONTHLY to subvert, are passing away, the craze for mathematical subtleties and quibbles is beginning to subside, the revolt against formalism is in full progress,

the galling tyranny of the examination system is now fully understood, and Mr. Seath comes at a time when the schools, instinct with a new spirit, are ready for a change, and desirous of being led on to the pursuit of right methods, calm work, and useful knowledge. The new Inspector will be able, from his long experience no less than from his intellectual bent, to afford the Minister much valuable assistance in warping back the distorted High School system into something like symmetry. All connected with *THE MONTHLY* unite in congratulating Mr. Seath upon his well-deserved promotion, and in expressing their trust that he will amply justify the confidence of the Minister. But our satisfaction with the appointment is tempered by the knowledge that we thus lose the services of Mr. Seath as editor of our Modern Language Department—a department which, in his hands, has brought much prestige to the Magazine and rendered it most helpful to our readers. However, the influence of five years cordial association with him upon the work of *THE MONTHLY* must remain. By looking back frequently, we shall have all the more courage and certainty in going forward.

SUPERVISION OF TEACHERS' INSTITUTES.

THE appointment, elsewhere noticed in our columns, of Mr. Seath to the High School Inspectorship, it will scarcely be necessary to inform readers of *THE MONTHLY* is occasioned by the transfer of Dr. McLellan to the Directorship of County Teachers' Institutes. The latter is a new office created by the Education Department, with the design of giving increased efficiency to those educational parliaments—Teachers' Associations—and of affording them opportunities for becoming better acquainted with

educational methods, and with the fresh thought of labourers in the profession outside the narrow circles of local organization. The creation of the office is a fitting sequence of the Government's recognition and subvention of these Associations, and a further proof of the Department's desire to increase the professional attainments of teachers. The business of teaching, we all know, is too apt to become a matter of lifeless routine; and we think the Department has done well in charging Dr. McLellan with the care of these Institutes, and of looking to him for the furtherance of the objects they have in view in their periodical gatherings. His thorough knowledge of the machinery of education in Ontario, his familiarity with the methods of educational work, and his personal sympathy with the profession, make him not only acceptable but likely to be of the highest service to Associations in assisting to organize and carry through the programme. In the absence of information to the contrary, we are proceeding upon the assumption that the autonomy of the Associations is to remain unimpaired.

This is not the time nor the occasion to form an estimate of Dr. McLellan's influence upon the High Schools of this Province. While, however, we cheerfully acknowledge his manifold services to the cause of secondary education generally, we must not fail to notice that there have been in his career as Inspector errors in theory, errors in judgment and grave indiscretions, to call them by no worse name, perhaps to none so apparent now as to himself. And so much that might be commended, we have no disposition to dwell upon failures and errors. Dr. McLellan has practically a new career before him, and the fault will be his own if it is not one which will bring still greater credit to himself and permanent benefit to the profession, and thereby to the country.

HOBBIES—Read the sayings of almost any of our advocates of this, that, or the other new educational theory, and except for their want of literary merit, they would scarcely seem out of place among the "Major's Big Talks" in *St. Nicholas*.—*Iowa Normal Monthly*.

WHEN a teacher runs to seed on precepts and concepts, and then, in a kind of second growth, flowers out in the objective, and subjective, and bears fruit in the *abstract*, you may know he is ripening for—something.—*Educationist*.