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THE ONTARIO TEACHER:

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SELF DEVELOPEMENT OF TEACHERS.

There is no profession in regard to which the duty of self development is more necessary and important than to that of teaching. The peculiar nature of the teacher's work—the fact that he has constantly to deal with the development of *mind* and to the unfolding of those faculties whose growth depends largely upon the stimulus which he is able to impart, render it necessary that his own mind should always be in tune, and that he should preserve that degree of mental fervor without which he can have no enthusiasm for his work. Put a dull, mopish teacher in a school—one whose powers of thought are not or have not been quickened by contact with other minds, and what is the result? Simply, that his school becomes a mere matter of *routine*—his labors are mechanically performed, and his pupils are merely automatic instead of being reasoning and reflecting beings. On the other hand let a teacher, with an intellect furbished by reading and reflection, take charge of a school, and how different the result! The thoughts which fill his own mind are diffused throughout

the whole school; the pupils become reflecting instead of mechanical, and all their work is done with a degree of rationality and intelligence never found under the stagnant and soporific teacher.

Let us briefly specify a few ways in which the teacher can acquire this mental keenness so desirable.

1. Lay aside text books during recitations. Could we only secure a sufficient number of properly trained teachers, we might, except in a few cases, dispense with text books altogether in our Public Schools during the five, six or seven years, of a child's education. We believe there is no other *assistance* to the work of education, so much perverted both by pupil and teacher as the text book. The pupil almost invariably regards his text book as the traveller by rail regards his luncheon—something to be devoured. The great object of the pupil is to commit his work to memory—to recite definitions *verbatim*, and to answer the teacher's queries, (which by the way, are as mechanical as his own answers, precisely in the words of the book. By this process there is little acquir-

ed but a mere *word knowledge*. Ideas are nothing. The pupil is fully satisfied when he has the words, whether he has ideas or not. To the teacher the text book is a similar source of mischief. He regards the questions it proposes as all that is required in order fully to unfold the subject under consideration. He assumes that the author knew what was required when the work was prepared, and that if his pupils can answer all that is required under any special head, then they have certainly mastered every reasonable difficulty. We have seen teachers sit upon their chairs with professorial dignity and taking Hodgins' easy lessons in Geography, ask a class of juveniles the questions in regular order as they were laid down, and require from the class *verbatim* answers. We have seen such classes, too apparently do well—at least do well enough to satisfy such a teacher that they were making rapid progress in geography. But on dispensing with the text book and cross examining such a class, as to how much they really understood, the result was most deplorable. Let the questions be varied in the least—let them be asked to explain in their own language any point or any difficulty; there was nothing but the vacant stare, or the limping, ungrammatical and blundering answer. Or even reverse the case. Take the text book away from the teacher. Ask him to *grind* a class on the *noun* or *verb*, and see how suddenly his professional dignity would disappear. All his props are removed, and with scarcely more success than the pupils themselves, he blunders through a disconnected and disjointed review of the prescribed work.

Now, apart altogether from the inefficiency of the work done with text-book in hand, the teacher should, for the mental stimulus it imparts, trust to his own resources. We have never seen—and we venture to say it never will be seen—the same interest kept up by a *bookish* teacher as by the oral

tions are better, or more clearly put than those in the book, but because all he says is aided by the *living eye* and inspired by the natural activity of his own mind. And thus thinking himself, he stimulates his class to think, and the work done is mutually beneficial.

To a teacher anxious for self development we say, discard your text books during recitations. Fill your minds with the subject when you may, and then before your class pour out of a full treasury those stores of information and illustration which never fail to enrich your pupils in the highest sense of the word.

2. Teachers can secure their self-improvement by pursuing a *systematic course* of reading. We have repeatedly urged this through the columns of the TEACHER. We know of no profession in which the opportunities are so great, or the facilities so abundant, for self-improvement of this kind. The teacher's work is necessarily systematic: His hours of labor are uniform and well defined; and although they are in some respects exhaustive, yet in few instances can it be said, that they disqualify him for even several hours reading. At this season of the year particularly, are his opportunities peculiarly favorable. Our long winter evenings, during which outdoor recreation is impossible, afford ample time for a perusal of the best productions of the age. And he is criminally negligent, who trifles away his time in idle gossip with "the great ocean of truth lying undiscovered before him."

To make a course of reading such as we have referred to profitable, two things are necessary;—first, *system*, and second, *perseverance*. In regard to system we would remark, that a teacher should determine what subjects he would like to read. Having done this, whether geology, or botany, or astronomy, or history, or *belles lettres*, he then selects his authors and follows out a regular course, turning neither to the right

hand or left. Besides the mere reading of scientific works, it would be well to make notes of important points, and from these to review frequently the author's argument, thus completely mastering whatever was undertaken. In this way from year to year—new ground might be cultivated, and a good knowledge obtained not only of the sciences, but also of the many attractive and inviting fields of literature.

When to this is added a perusal of such works bearing upon professional duties as might be available, the teacher's time would be well spent and his mind would soon be liberally furnished with much that would be of use even in the daily work of the school. But entirely apart from the direct practical benefit of this valuable information, there are other advantages not unworthy of notice. The teacher whose mind is quickened by contact with other minds, has thereby acquired an activity of thought that must react upon his school. He sees the great void existing in his pupils' minds, which he feels it to be his duty to fill. He sees how much of the undiscovered they have yet to explore and knowing by experience the pleasure derived from the acquisition of knowledge, he will labor more assiduously to bring others to the same fountain from which he himself drank with such avidity. His own mental powers quickened, he knows the advantage of similar activity in others, and at no time will he allow that mental torpidity to overtake his pupils, which is not difficult to be found in so many of our Public Schools.

3. Self-improvement can also be aided by Teachers' Associations. There seems to be

quite a revival in the Province in regard to those valuable accessories of the Teacher's work. No county should be without one or more. To make these associations really serviceable, they should be entered into with spirit. A regular programme of work should be mapped out, and no teacher should shirk the work allotted to him. Besides the practical work of teaching which should constitute the main part of the exercises, essays may be read, debates carried on, and in many ways variety and interest imparted to the meetings. There the varied information gathered in his evening course of readings might be poured forth either in essay or debate, and a fresh impetus given to those who might be negligent or dilatory.

We have thus briefly referred to some of the means by which a teacher can advance himself in the acquisition of knowledge, and both develop his mind and better fit himself for his professional duties. We would hope our entreaties would not be in vain. Inasmuch as his work is a great one and his responsibilities of the weightiest character, we trust, so far as he possesses the power, he would not fail in rising to the full stature of the *ideal* teacher, but that by the diligent use of every facility within his reach, he would fit himself for the faithful discharge of those duties which the country has a right to expect from him. His position cannot be made for him without any outside help—he must raise himself and this can only be done by making society feel that he is not only indispensable to its well being, but that he is eminently qualified for the work he has undertaken.

SCHOOL DISCIPLINE.

BY J. B. BROWN, TEACHER, FOREST. ESSAY READ BEFORE THE FOREST TEACHERS' ASSOCIATION.

By School Discipline, as we intend to discuss it to-day, we mean the maintaining of obedience and order in the school.

So many Utopian theories have of late years, been advanced, that it is dangerous to discuss this subject, or to commit oneself to any system not fully abreast of the enlightened sentiment of the age. A great many of these theories, however, we regard as based on the assumption of a moral perfection on the part of those to be governed, which is scarcely orthodox, as well as a maturity of judgment not supposable in children; and also of a perfection and tact on the part of those who govern, which unhappily, has no existence in fact.

These theories doubtless, originated with the severe and harsh methods of government that have hitherto prevailed, and they have probably done much good in introducing more moderate systems; but they are in danger of bringing about a state of things fraught with far more danger to society, and productive of far worse results than the evils they are intended to remove. They suit well those who dislike discipline of any kind that imposes restraint, and, if acted upon would soon create contempt for all school authority, and render our schools far less efficient, and more difficult to manage.

The practical teacher will find this subject present an almost endless variety of phases that cannot be made to harmonize with any theory. All that can be done, therefore, is to discuss the general principles upon which school discipline should be based, and the details must be filled up by the individual teacher, according to the

circumstances, and exigences of the case in hand.

For the sake of distinctness, we will discuss this subject under two heads, which, for the want of better definition we will call *Discipline by habit*, and *Discipline by command or rule*.

By the first we mean that order and regularity in the school room which is the result of training, and which becomes a habit; or, rather, the course of training which produces that result by patient drill, and constant repetition. We regard this as a very important element in the management of a school. If properly attended to, it would obviate a great deal of that other kind of discipline which is usually regarded as the peculiar badge of the pedagogue profession.

The first thing to be attended to is the teacher's own deportment in school. If he would have a quiet and orderly school, he must himself be quiet and orderly. If he would have the obedience and respect of his pupils, his own conduct must be respectable and consistent. His movements about the school-room; his mode of speaking to the pupils; the posture he assumes before his class; his mode of commanding, reproving, threatening; and the care with which he selects his language in addressing his pupils, will all be reflected with unerring certainty in their speech and behavior. If a teacher is boisterous he will have a boisterous school, if he moves clumsily and noisily about the school-room, he may expect to be constantly annoyed with feet scraping and slate rattling and falling on the floor and if he is in the habit of using slang

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phrases or improper language, his pupils will not only despise him, but follow his example. Then, too, he must be steady and constant, not keeping order by fits and starts. Ever vigilant, he must not allow disorder to accumulate with increased momentum, and then try to put down the brakes when the speed becomes dangerous.

Again, the Teacher must be methodical if he would have good order. "*A place for everything and everything in its proper place.*" "*A time for everything and everything at its proper time.*" The pupils will then find everything they require without confusion and perform every action expected of them without delay. The Teacher must insist, as perseveringly insist, on uniform order and action, as if he were a drill sergeant. Toes and hands in their places, books and slates in their places. Also a uniform system of acting in going to and from the classes, and out and in into the school-room, should be maintained. He must see that they are simultaneous in their movements as well as prompt and quick; checking the smallest irregularity, until their actions become confirmed habits performed without effort.

Unimportant as these particulars may appear individually, it will be seen, on a little reflection, that, taken together, a due attention to them or otherwise makes all the difference between an orderly, and disorderly school. There is not more difference between an undisciplined rabble and a well trained army, than between a school where these things are attended to and one in which they are altogether neglected. These habits once established in a school the task of governing it becomes easier, as scholars who come in afterwards will fall in with the usages of the school without any special effort being put forth on their behalf.

But assuming that all this is attended to as it should be, there are a great many things in which the pupil must be guided by arbitrary rules; not arbitrary because unreasonable or unnecessary, but because the

pupil is not supposed to know or appreciate the reasons for their imposition, and are expected to conform to them simply because they are rules or commands. This is what we mean by the second division of our subject. It is here the real difficulty of this question arises, and it is a question of very great importance. We are confident that for one Teacher who fails to give satisfaction in other respects, there are ten who fail in administering the discipline of the school, for this clashes at once with all the prejudices, conceits and vices of the School Section; and the Teacher's sins in this department go on accumulating till the cup of his iniquity is full, (for they are never forgiven), when he must drink it to the dregs.

If fixed rules are necessary for the government of a school, then these rules must have a sanction, by which they can be rigidly enforced; otherwise, they will be treated with contempt, and become worse than useless. You make rules for the guidance of the pupils' conduct in and about school,—they are not to speak during school hours, not to disturb others, not to fight, not to deface anything about the school, not to use bad language, &c., and you expect them to obey you promptly. Yet some will thoughtlessly or deliberately break through all these regulations and openly and defiantly disobey. It will be granted that there is always a large portion of a school habitually obedient, being taught obedience at home; say one-half or two-thirds. With these there is no difficulty, and we set them aside as out of the question. It is of the other third who are not disposed to obey that we have to speak. The question is, how will these be made to conform to the rules of the school when they are not disposed to do so? In other words, how will you make willful boys and girls do as they are bid? How will you restrain a vicious boy who is bent on mischief? There are various answers given to this question. Appeal to his better

nature and develop what good is in him by kindness, says one; remove the temptations says another; and another recommends to stimulate him to virtue by rewarding virtuous actions. Do all these say we, and more. How much more, and what? Just what, and as much of it, as is necessary to secure the required result.

What is required in the management of children is obedience. Cheerful and willing if possible, and if not possible it must be forced; for prompt, implicit, and instantaneous obedience, without hesitation, question or explanation, is indispensable. That cheerful and willing obedience is not always attainable, will be admitted by every teacher. What then? Will you bribe a vicious boy to be virtuous? If you try that, your experience will certainly be like that of the Saxons, who bribed the Danes to stay away from England. But, suppose you could do it successfully, (which we unhesitatingly deny), what have you accomplished? Taught the pupil that obedience to lawful authority is to be rendered only when he sees clearly that it is his immediate interest to do so. You train him to be a bad neighbor, a bad citizen, and a pest to society.

Bribing will not do; compel him, but how? Expulsion is one method that has been tried, with what success let the 1,200 Teachers of New York answer, and let that answer which is published in the Journal of Education, be carefully studied by those who are shocked with the bare idea of inflicting corporal pain. There is still another plan; and there is so much loathsome sickening sentimentality abroad on this subject that we will not look for soft terms to express it. *Flog him.* Annex to every offence an adequate penalty either by depriving the delinquents of some customary pleasure, or inflicting corporal pain, and let the penalty so infallibly follow the offence that the fear of punishment certain to overtake him will more than balance the

gratification, and he will clearly see it to be his interest to obey—and for this purpose the more rapidly the punishment follows the offence the better. Except in a doubtful case that requires inquiring into, and to avoid wasting the time of the school, we do not believe in the theory that it is best to leave the offender till night, and calling him to account, hours, or even days after the offence has been committed. If the punishment could be made to follow the offence instantly so much the better. In this as in some other things, cash down is better than a promise to pay, with the possibility of never being paid at all. Pain at hand has generally more terror than pain in the distant future. If this fails, we think there is nothing for it but expulsion. If it is a contest of authority, (and most Teachers are familiar with this), you may see days before that a battle is pending. Be cool and deliberate never doubting for a moment your ability to cope with the difficulty. Choose your own battle ground. Let him fairly commit himself, and then join issue on a case that is clear and tangible. To him it appears sudden. All the better. Then, quick and sharp only to stop with instant submission, unless he requires more than it is prudent for you to administer; then instant ejection. In such a case as we have been supposing either of these extremes must be resorted to, and no pupil should be allowed to remain in school one moment after having defied authority, unless atonement is made by instant submission..

Be it distinctly understood that this mode of procedure is not to be resorted to except when other methods would fail. We say, *would fail*, not, *have failed*; for in such cases the matter must be settled at once, and it will not do to try experiments. We claim a right to take from every other system all that can be taken and still keep the rod in reserve. The question is not, whether you will govern by mildness or severity; but whether you will govern by

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mildness alone, or, by mild treatment, when you can, and when that fails by sternness. We are fully aware that an injudicious use of the rod makes vicious pupils of those whom mild treatment might have controlled. We are opposed to harsh treatment in school. Let the Teacher make the pupils feel that he has a tender regard for their feelings and their welfare. Let him not affront a pupil by open rebuke, when private expostulation will produce the desired effect. Let him convince his pupils, by his treatment of them, that he takes no pleasure in domineering over them or imposing restraints, and that when he does so, it is only in their interest and that of the school. A bond of sympathy will thus be established that will secure him the goodwill of the great majority of his pupils, and completely prevent combinations to circumvent him. But when all milder methods have been tried the Teacher will still find some of his pupils unruly and disobedient, when flogging or expulsion must be resorted to.

But when is a Teacher to use the rod and when to expel? In this he must be guided by circumstances. We would say that whenever the Teacher is sure that the pupil will be wisely dealt with at home, he should send him home and let the parent deal with him, and it will not require to be done often. If a Teacher finds that a pupil can do as he pleases about coming to school, and that he would be sure to leave if flogged, it is not well to afford such a scholar an opportunity of punishing him; send him home, and make him feel that coming to school is a privilege only to be enjoyed during good behavior. And lastly, if it is likely to require more severe chastisement than it would be prudent for you to administer, to subdue him, rather expel. In most other cases the method Solomon recommended for enforcing obedience is the best, restraints, curbs, and penalties, according to the nature of the child. "*A whip for the*

horse, a bridle for the ass, and a rod for the back of a fool."

But this is not consistent with the humane principle of governing by love rather than by fear. Certainly not. There is such a thing as governing by love and fear, governing in love, that is with feelings of love towards the persons governed; but such a thing as governing by love alone, has no existence in God's universe. God does not govern by love. Law is not for those whom love and reason restrain, law is for the froward. What could be more inexorable than moral or physical law? Not even ignorance will avail as an excuse. Violate the Divine law and you incur its penalty, violate a physical law and the consequence is corporal pain; and if you transgress the law of society it will punish you with the same barbarous severity. Imagine a staff of police officers appealing to the better nature of the burglar or thief, trying to win him over to a life of honesty, with strict injunctions not to interfere in any way with his personal liberty, lest they exasperate him and only confirm him in vice; or, imagine a vicious boy in school, working his own pleasure for weeks or months, smiling contemptuously at the effort of the teacher, who is trying all the time to find out the spot in his heart, and develop the good that is in him, while he is engaged with the other pupils finding out the soft spots in their heads, and, with more success, developing the bad that is in them. Away with such nonsense. There is something of far more importance in school than reclaiming a bad boy, even if we were sure of that result. There are fifty boys who may be made bad instead of the other being reformed, and we may not sacrifice the many for the few.

We are told that corporal punishment only begets revenge. Our experience compels us to disbelieve this. Our first pupils are now men and women. We saw no evidence of revengeful feeling in school, and

certainly none in our intercourse with them since, but on the contrary, they can jest about their childish freaks, and confess they got what they needed and deserved. In fact it is contrary to experience and common sense. Show me a child who is never corrected by his parents, and I will show you one that will grow up to hate and despise them ; and what is true of the family is true of the school. Do not be put down by the sneer often heard, that "*you are obliged to govern by fear.*" Fear governs the world. It governs men and women, and why should it not govern children? Well is it for the boy who is restrained by the fear of his father's displeasure, at a time when reason is not strong enough to guide or control him, from forming evil habits, habits that, in all probability, would not be formed in maturer years, but which, being formed, would be far too strong for reason when she ascends her throne. Those were words of wisdom which Solomon spoke when he said, "Correct thy son while there is hope, and let not thy soul spare for his crying." Undoubtedly the parent is the proper party to do this, and the teacher, who for the time is in the parent's place, must perform the duty, and when it is neglected at home, there is no alternative for him. The experience of many parents whose pampered and over indulged children have brought their grey hairs down to the grave with sorrow, attest the fact, that there can be no love on the part of children towards those whose duty it is to guide them, without first awe and respect.

"Do not make a child afraid of you, but win it by love." Sounds very specious. Do not be deceived by it. It requires qualifying. Government, from the nursery to the throne of the monarch, must be a "terror to evil doers as well as a praise to them that do well," otherwise you make no difference between vice and virtue; virtue has no advantage or reward, and vice has all the reward it ever asks, viz : *impunity.*

Fear is certainly not the best kind of feeling that can prevail in a school, but neither is it the worst. If you have a vicious boy in school, he either quails before your glance, or meets it with one of defiance and contempt.

Nor is the use of the rod in the government of a school inconsistent with mild and gentle control, and it is an impudent and false assumption, that they only who ignore the rod altogether, govern mildly. The Teacher who retains his right to use the rod may have the respect and love of all his pupils, even of those whom he is obliged to chastise, and in our opinion has a far better chance to have it than the one who deprives himself of that right, and if it be true, when spoken of a father, that, "He that spareth the rod *hateth* his own son"—may it not also be true of the teacher who fails to correct a fault in a pupil, through a false sentiment of gentleness, that he is altogether regardless of the future happiness and welfare of those committed to his care.

To sum up ; then, in a few words, we think that in the management of the school the teacher should train his pupils by mechanical drill to habits of regularity and order ; that he should keep them out of mischief by keeping them constantly employed ; that he should insist on implicit and prompt obedience, doing what they are told, when they are told ; that he should be as mild and gentle as a lamb, but as firm as a rock—and that he must be prepared to enforce the regulations of the school, when necessary with the utmost rigor. We think that in so doing he will best discharge his duty to his pupils and employers, and that such a course of treatment will make better scholars, than any other kind ; better men and women ; better neighbors, and better citizens.

SPIRIT OF THE TEACHER.

BY R. C. HOLBROOK, TEACHER, WINDSOR.

Perhaps the very first question that the honest individual will ask himself, as he proposes to assume the teacher's office or to enter upon a preparation for it, will be—"What manner of spirit am I of?" No question can be more important. I would by no means undervalue that degree of natural talent—of mental power, which all justly consider so desirable in the candidate for the teacher's office. But the true spirit of the teacher,—a spirit that seeks not alone pecuniary emolument, but desires to be in the highest degree useful to those who are to be taught; a spirit that elevates above everything else the nature and capabilities of the human soul, and that trembles under the responsibility of attempting to be its educator; a spirit that looks upon gold as the contemptible dross of earth, when compared with that imperishable gem, which is to be polished and brought out into heaven's light to shine forever; a spirit that scorns all the rewards of earth, and seeks that highest of all rewards, an approving conscience and an approving God; a spirit that earnestly inquires what is right, and that dreads to do what is wrong; a spirit that can recognize and reverence the handiwork of God in every child, and that burns with the desire to be instrumental in training it to the highest attainment of which it is capable,—such a spirit is the first thing to be sought by the teacher, and without it the highest talent cannot make him truly excellent in his profession.

The candidate for the office of the teacher should look well to his motives. It is easy to enter upon the duties of the teacher without preparation; it is easy to do it without that lofty purpose which an enlightened conscience would ever demand;

but it is not so easy to undo the mischief which a single mistake may produce in the mind of the child, at that tender period when mistakes are most likely to be made.

Too many teachers are found in our schools without the spirit for the work which is here insisted on. They not only have not given attention to any preparation for their work, but resort to it from motives of personal convenience, and in many instances from a consciousness of being unfit for everything else! In other professions that is not so. The lawyer is not admitted to the bar until he has pursued a course of thorough preparation, and even then but warily employed. The physician goes through his course of reading and his course of lectures and often, almost through a course of starvation in the country village where he first puts up his sign, before he is called in to heal the maladies of the body. It is long before he can inspire confidence enough in the people to be entrusted with their most difficult cases of ailing, and very likely the noon of life is past before he can consider himself established. But it is not so with the teacher. He gains access to the sanctuary of mind without any difficulty, and the most tender interests for both worlds are intrusted to his guidance, even when he makes pretention to no higher motive than that of filling up a few months of time not otherwise appropriated, and to no qualifications but those attained by accident. A late writer on the Spirit of the teacher hardly overstates this matter, when he says:—"Every stripling who has passed four years within the walls of a college; every dissatisfied clerk, who has not ability enough to manage the trifling concerns of a

common retail shop; every young farmer who obtains in the winter a short vacation from the toils of summer,—in short, every young person who is conscious of his imbecility in other business, esteems himself fully competent to train the ignorance and weakness of infancy into all the virtue, power and wisdom of maturer years,—to form a creature, the frailest and feeblest that heaven has made, into the intelligent and fearless sovereign of the whole animal creation, the interpreter and adorer and almost the representative of Divinity!

Many there are who enter upon the important employment of teaching a common school as a secondary object. Perhaps they are students themselves in some higher institution, and resort to this as a temporary expedient for paying their board, while their chief object is, to pursue their own studies and thus keep pace with their classes. Some make it a stepping stone to something beyond, and, in their estimation, higher in the scale of respectability, treating the employment, while in it, as irksome in the extreme, and never manifesting so much delight as when the hour arrives for the dismissal of their schools. Such have not the true spirit of the teacher; and if their labors are not entirely unprofitable, it only proves that children are sometimes

submitted to imminent danger, but are still unaccountably preserved by the hand of Providence.

The teacher should go to his duty full of his work. He should be impressed with its overwhelming importance. He should feel that his mistakes, though they may not speedily ruin him, may permanently injure his pupils. Nor is it enough that he shall say, "I did it ignorantly." He has assumed to fill a place where ignorance itself is sin; and where indifference to the well-being of others is equivalent to willful homicide. He might as innocently assume to be the physician, and, without knowing its effects, prescribe arsenic for the colic. Ignorance is not in such cases a valid excuse, because the assumption of the place implies a pretention to the requisite skill. Let the teacher, then, well consider what manner of spirit he is of. Let him come to his work only when he has carefully pondered its nature and its responsibilities, and after he has devoted his best powers to a thorough preparation of himself, for its high duties. Above all, let him be sure that his motives on entering the school room are such as will be acceptable in the sight of God, when viewed by the light beaming out from his throne.

COMPOSITION IN OUR SCHOOLS.

BY CON. O'GORMAN, WHITE LAKE.

The subject of composition has been, and is still, occupying the minds of many of our fellow-teachers. "Writing makes an exact man," amounts almost to a proverb; therefore, the earlier in the life of a pupil it can be commenced the better. The world wants ready and exact men, those who can, by means of their clear intellects, arrive at correct conclusions, and be able, with their pen, to snatch from the mind's chaos,

the thoughts which meteor-like flash through them.

Learning to write is only a mechanical means for the accomplishment of a great and important end. Once the difficulty of forming, with facility, the various characters is mastered, use should be made of the attainment in something more than the laborious imitation of the tradition of *copper-plate* of the copy-book, or the trans-

copying of paragraphs from books. These, important exercises in themselves, do not accomplish the object, so to speak, of making the pen the servant of the mind.

Seeing, then, the importance of this acquisition, let us no longer delay to take our class, and, selecting some simple subject—the stove perhaps, require the pupils to express, in their own words, all they can think of about it. Doubtless, they will mention its material, use, shape, &c. ; and this too in homespun, original, and often disjointed sentences. Then will it be the teacher's province, kindly and pleasantly, to make the necessary suggestions and corrections ; clothing the pupils' ill-expressed phrases in language still simple, yet elegant and terse ; pointing out, if such be the case, that some of them have omitted mentioning anything about the material of which the stove is made. This will naturally lead to an impromptu lesson on iron ; where most found, its qualities, uses and manufacture. Or, if so disposed, the teacher asks them if they have nothing to say as to the comfort and absolute necessity of the warm stove during our severe winter ; the cheerful aspect of a bright fire, as it throws its ruddy glow on the countenances of all in the family circle as they gather round it each evening after the toils of the day ; and, to go on with the association of ideas ; of the reminiscences of the domestic hearth ; of pleasant stories told and plans discussed ; and, perhaps, the recalling to mind of some in foreign lands, whose vacant places betoken the missing link. Thus, little by little, may the teacher awaken among his pupils an unflagging interest ; so that they will, by degrees, become accustomed to express their thoughts in written language ; and will learn to regard as a pleasure that which heretofore they have looked on as a thankless task. The system of drawing up questions on the lessons, to be answered by the pupils in writing, is well calculated to cultivate brevity and clearness of expression.

The advantages of the plan are too many to cause its rejection after its once being adopted ; even though the work may be, at the outset, of an unsatisfactory character. The pupils in giving written answers, have their whole attention absorbed. Mind, hand, and eye are all at work. The hand in manipulating ; the memory in recalling facts ; the judgment in choosing proper language in which to clothe them ; and the eye in scrutinising the various forms of the words, with a view to their correct orthography. All these, the oral method of questioning cannot alone accomplish. A judicious combining of the two systems, if perseveringly carried out, would yield an abundant return for the pains bestowed. Once the teacher has succeeded in dragging his class through the "slough of despond" and banished the all-at-sea feeling which would, most likely, at first possess it ; he would soon see that the advantages accruing from such a course are too obviously important to render the extra care bestowed, a matter of serious objection.

As an illustration of the success of the plan, and not from any boastful spirit, I would mention, that after some months trial of weekly written examinations on various subjects among the higher classes, the result has proved eminently satisfactory ; and in History, the class can write, in tolerable language, a *precis* of the principal events of a reign or the character of a sovereign.

These thoughts have suggested themselves on reading the accompanying extract entitled :—

"TEACHING WITHOUT KNOWLEDGE.—Mr. DuPort, inspector of schools, county of Berks, in his general report of last year, just printed, gives the following samples of what may result from the plan of dealing with extra subjects, such as geography, history, &c., by way of a written examination, just on the same principle as with spelling or sums, the result of which, as compared with former days of oral examination, are,

he says, highly unsatisfactory :— History. —Question, "Write an account of Mary Queen of Scots." Answer, "Mary Queen of Scots, she was the daughter of Henry the 8th, and half sister of to Elizabeth, and when Mary did came to the throne and because she was a romeman chalic, she wanted all her people to be romeman challics, and some of her people would not be romeman challics, and so she put them in prison till they wood be one, and when Queen Elizabeth came to the throne they were very glad, and she let them out." Geography.— Question, "Describe the course of the Severn." Answer, "The seven is a rapied cause than the theams." Grammar.—Question, "What is an adjective?" Answer, "An hadities is a word placed before a none to show some qualities or circumstances respetnet as a good man

a long gurney." Mr. DuPort mention, two very good schools, in one of which the children were prepared for a written examination in animal physiology by a gentleman of university standing and no ordinary teaching power, and in the other the boys were taught orally by their national school-master. Children of nine years old in this latter school could tell their parents more as to the importance of ventilation and of wholesome food than the children of eleven years old in the former school, where all their energy had been expended in compassing the art of writing out a paper free from all ludicrous spelling or absurd faults of composition, and where the minds of the children were too jaded over that effort to digest at all comfortably the general spirit of the subject.—PALL MALL GAZETTE.

A TEACHER'S CHARACTER.

BY WM. MILL, TEACHER, SARNIA TOWNSHIP.

A teacher's character should be unimpeachable. It should embrace that of a true hero, a warm patriot, a meek and lowly Christian; should be true, firm, kind, resolute. In short it should possess all the moral qualities, and all the christian virtues that are possible to exist in the human breast.

The formation of character, such as is worthy of the name, we may term an acquisition. It is, however, a life-long work, and then in a sense is wholly unattainable. The most godly man that ever lived must acknowledge his utter failure in the attempt; so prone is he to fall into every species of error and wickedness, and the royal law says that he that is guilty of offending in one point, is guilty of all. We are not to suppose however, by taking this view of the matter, that it no longer remains our duty to live pure, godly lives, as our Crea-

tor never intended such to be the case. We were created for a wise and good purpose, and it is our bounden duty therefore, as well as our privilege to endeavor in all things to answer the end for which we were created.

Seeing, then, that it requires such unremitting care, and such constant watchfulness on the part of a single individual to bridle his *own* tongue, and to keep a guard over his *own* evil heart, what must it be to have the charge of 40 or 50 immortal souls entrusted to his keeping! It seems an almost insuperable difficulty. And yet every person who undertakes to become an instructor of the youth, has undoubtedly such a charge committed to him. It appears to me that we teachers do not very often, even in the slightest degree, realize the weight of responsibility that rests upon us as such. If we could only constantly bear

in mind the fact, that all our actions, all our words, and our general bearing in the presence of our pupils, are closely, nay, severely criticized; if we could only take a glance into the distant future, and be able to calculate the amount of evil, or the amount of good, the influence of our characters will have upon our pupils, according to how we have behaved in their presence, it would undoubtedly startle us, and should, to say the least of it, add impetus to a desire to live in such a way, as to reflect credit upon ourselves, and do honor to our Maker. Our character and bearing before our pupils should be such as we would wish them to imitate.

There are many things which unite to form a good character in a teacher. We should pay special attention to habits of neatness in person, and courtesy of manners. We should endeavor to cultivate a kindly and sympathetic disposition towards those we are endeavoring to instruct. Our dealings with them should be always upright, and impartial, almost to a fault. But above all we should have the sunshine of God's love shed abroad in our hearts. Let no teacher who does not possess this "one thing needful" consider himself as being the right man in the right place, or occupying a proper position while such; as the troubles incident to a teacher's life will only become more aggravating, and annoying.

Some (inexperienced) teachers look at the profession in a very different light from those who have already passed through the mill, and know something about it. They picture to themselves calm repose, and luxuriant ease, a life of sweets with no bitters. They imagine that in a few years they will have acquired an independent fortune, as the result of past pleasures and enjoyments, and no amount of argument, however weighty, will convince them of anything to the contrary. They do not for a moment seem to realize the arduous undertaking they are about to engage in, the

thankless office they are about to hold, the bitter disappointments they are to meet with, and the many slurs, and faultfindings, they are to encounter in their new sphere of life. They seem to be infatuated, and deprived of reason. We do not therefore, wonder at the chagrin, and bitter disappointment the lofty aspirant—a teacher—after fame and pleasure, finds he has to meet with, when he realizes his future prospects utterly blighted, the very idol of his heart—worldly prosperity, and wanton enjoyment—so completely crushed, and disfigured as to be wholly unrecognizable. Such, however, is a necessary result. A teacher's conscience should be pure, and void of offence. His mind should be undivided when attending to his business. The standard of excellence he sets should be high, and he should strive by every lawful means to attain to it.

A teacher possessing a well balanced and well stored mind, a sweet temperament together with a true christian character, holds an enviable position, and certainly merits honor and respect, whether he receives it or not. He possesses a treasure which this world can neither give, nor take from him. The praise or censure of man is very often of very little account, and he should not trouble himself too much, either about winning the one, or avoiding the other, as long as he has the smile of God's approval resting upon him, and a "thus saith the Lord" for all he undertakes.

The teacher's profession is a noble one. One which I believe will contribute no small share to the advancement of civilization, and the prosperity and general welfare of our beloved Canada. In fact it forms the basis, upon which the subsequent edifice of our national prosperity and honor depends. How necessary then, how highly important it is, that our staff of teachers should be men and women of sterling principle and integrity, fired with holy zeal, and earnest desires to further the principles of social advancement, and religious

culture; to instil into the minds of the young, lessons of truth and lessons of usefulness; that they may be able, after leaving the school-room, and going out into the world, to fill positions of trust and honor.

A teacher's studies should not be confined to the narrow compass of the authorized school-books. He should read such books as treat upon character, mental discipline, temperament, refinement, manners, etc. He should also make the study of art and nature a pleasant pastime, when wearied with other studies. Lives of great and good men should also occupy a considerable part of his time; everything in short that tends to lift the mind above the things of vanity and time to things of a purer and nobler nature. All the nobler powers and

faculties of the mind, hitherto dormant should be aroused and exercised. But above all books, let the Bible occupy a major part of the time we have for studying and reading. We should each morning peruse a portion of it, and apply its teaching to our hearts during the day, so that we may be guided aright.

A teacher of this stamp, no matter how obscure or secluded he may be in this world, will nevertheless, in the world to come, receive his reward. And after his labors in this life are o'er, if ever the old adage hold good with anyone, it will with him, viz: that he was "one of those in whom mankind lost a friend, and no man got rid of an enemy."

SOLUTIONS TO QUESTIONS.

AT RECENT TEACHERS' EXAMINATION.

Natural Philosophy—First Class.

BY J. C. GLASHAN, ESQ.

(1. For "10 lbs. at B" read "20 lbs. at B.")

Take 1 lb. as the unit of force and G, the centre of gravity of the beam, as the centre of moments.

Resolve the force along AE horizontally and vertically, giving $5\sqrt{3}$ and 5 respectively.

$$\therefore n \text{ (at B)} = 5\sqrt{3} \text{ (at A)} \quad \dots \quad (i)$$

$$m \text{ (at C)} = 20 \text{ (at B)} + 20 \text{ (at G)} + 5 \text{ (at A)} \\ = 45 \text{ (at C)} \quad \dots \quad (ii)$$

$$5AG + mGC - 20GB = 0 \quad \dots \quad (iii)$$

But since the beam is uniform $AG = GB$

$$\therefore GC = \frac{1}{2}AG$$

$$\therefore AC = 1\frac{1}{2}AG$$

$$CB = \frac{3}{2}AG$$

$$\therefore AC = 2CB \quad \dots \quad (iv)$$

By (i) the beam has no horizontal motion of translation; by (ii) it has no vertical motion of translation and by (iii) it has no motion of rotation provided as found in (iv) AC equals $2CB$.

2. Let c in AB be the "point of rest" of the heavy body.

From cB cut off $c b$. Draw a c equal to $c b$, and condirectional (parallel and measured in the same direction) with AC . Draw $b e$ perpendicular to $a c$ produced, and draw $a f$ perpendicular to AB (produced if necessary.) Produce $b e$ and $a f$ to meet in d . Join a and b .

Because $a c$ equals $c b$ the angle $a b c$ equals the angle $b a c$; the angles $b f a$ and $a e b$ being right angles are equal; therefore the remaining angles $f a b$ and $e b a$ of the triangles $a e b$ and $b f a$, are equal and therefore $d a = d b$.

If b represent the force in the direction $a b$, then $a c$ will represent the force parallel to AC and *towards the plane*, a line through c condirectional with $b d$ will represent the weight and another line through a condirectional with $d a$, will represent the resistance of the plane. But since the body is in equilibrium, by the polygon of forces.

these lines will be equal in length to b, d and d, a respectively. Therefore, since b, d was proved to be equal to d, a the weight will equal the resistance.

3. Bisect AC in G; G is the centre of gravity of the square. Produce EB to intersect AC in F. Let w equal the weight of the squares. The force acting along FB will equal $q + w + 3q + w = 4q + 2w$.

Take moments around G;

$$(3q + w) AG - (4q + 2w) FG - qGC = 0$$

$$\text{But } AG = GC$$

$$\therefore FG = \frac{1}{2}AG.$$

4. Since their velocities at the moment of collision were equal, had no collision occurred the first particle on arriving at B would have had the initial velocity (here zero) of the second particle

$$\therefore \text{height of B} = 384^2 \div 2g = 2304.$$

5. Let g' be the value of g resolved along CB

“ g' ”	“ “ ”	“ “ ”	“ “ ”	“ “ ”	CA
g'	z	-	-	-	-
$\frac{g'}{g'}$	$\frac{z}{x}$	-	-	-	(i)

$$\sqrt{\frac{2x}{g'}} = \sqrt{\frac{2z}{g'}} - \sqrt{\frac{2y}{g'}} \quad \dots \quad (ii)$$

$$\frac{\sqrt{z}}{\sqrt{x}} = \frac{\sqrt{x}}{\sqrt{z} - \sqrt{y}}$$

$$\therefore z - \sqrt{(yz)} = x$$

$$\therefore (z - x)^2 = yz.$$

6. Resolving the initial velocity horizontally and vertically gives for the latter component 160 ft. per second, hence the time of flight from A to B would be $2(160 \div g) = 10$, therefore the time of the second particle's flight was $\frac{1}{2}(10 - 4) = 3$ seconds and therefore the height of the point of collision was $3 \times 160 - 16 \times 9 = 336$ ft.

7. Let c equal the contents of the body in cubic feet, the weight of the body when immersed in water will be decreased by $1000c$ oz. Hence when immersed in the first liquid its weight will be decreased by $(1000c - 1)$ oz., and when immersed in the second liquid by $(1000c - 1)$ oz. these

therefore will be the respective weights of c cubic feet of each of the liquids

$$\therefore \frac{1000c - 1}{1000c - 1} = \frac{1000t - 1}{1000t - 1}$$

$$\therefore c = t.$$

8. 15 lbs. per square inch is 34560 oz. per square foot, therefore pressure at the surface is 34560 oz. per square foot and at a depth of 7 feet in the liquid it is $(7000s + 34560)$ oz. per square foot, s being the specific gravity of the liquid.

Writing *a.u.c.* for “air in unimmersed cone”

and *a.i.c.* for “air in immersed cone”
height *a.u.c.* : height of *a.i.c.* :: 7 feet
7 in. : 7 ft. :: 13 : 12

Similar solids are in the triplicate ratio of their like linear dimensions

$$\therefore \text{volume of } a.u.c. : \text{volume of } a.i.c. :: 13^3 : 12^3 :: 2197 : 1728$$

∴ by Boyle's Law

$$7000s + 34560 : 34560 :: 2197 : 1728$$

$$\therefore S = 1.34.$$

NOTES.

1. Using the system of notation explained in solutions Nos. 2 and 3, page 239 of the August No., this solution becomes $(nj^2 + 2oj^3); B + mj; C + 2oj^3; G + (5\sqrt{3} + 5j^3); A = 0$

$$\therefore n = 5\sqrt{3}$$

$$m = 45,$$

$$\text{and } AC = 2CB.$$

Some of our readers seem troubled about taking moments; it is simply the principle of the lever the point about which the moments are taken corresponding to the fulcrum. Treat AB as a lever with fulcrum at G, (iii) shows where an upward force of 45 lbs. ($m = 45$) must be applied to balance a downward force of 20 lbs. at B and one of 5 lbs. at A. (iv) is the statement of the relative distances of this point from A and B. Again in 3 treat AC as a lever with fulcrum at G, find where an upward force of $4q + 2w$ (the force exerted by the string) must be applied to balance two downward forces one $q + w$ at A the other q at C.

2. The above proof is for any angle of elevation of the plane.

Mr. Charles Barnes, a student of the Normal School, gave the following elegant proof for the angle given in the problem. Since the forces parallel to AB and AC are equal and inclined at 60° to each other, their resultant will bisect the angle between them and be at 30° from the plane, or 60° from the vertical, and also 60° from the plane perpendicular to the plane, i.e., it will bisect the angle between the direction of the weight and the direction of the resistance of the plane, therefore if the body be in equilibrium the resultant of the two last mentioned forces must bisect the angle between their directions and, therefore, they must be equal.

3. The proof will do if we read *parallelogram* for *square*.

5. (i) is proved in any good text-book on the subject. A proof may be given thus,—Draw CE perpendicular to AB and EF, EG, perpendicular to CB and CA respectively.

$$\begin{array}{l} \frac{g}{g'} = \frac{CE}{CF} = \frac{CB}{CE} \\ \frac{g}{g''} = \frac{CE}{CB} = \frac{CA}{CE} \\ \therefore \frac{g}{g'} = \frac{CE}{CB} \times \frac{CB}{CA} = \frac{CE}{CA} \end{array}$$

(ii) is simply the analytical statement of the problem since for any space s and constant accelerating force f , time of description from rest of s equals $\sqrt{\frac{2s}{f}}$

Arithmetic — First Class.
BY J. S. CARSON, ESQ.

1. Let 1 equal prime cost of tea. Then by the conditions of the question

$$\begin{array}{r} 3 \qquad 3\frac{1}{2} \qquad 2 \qquad 9 \\ - + \$25 = - + - + - \\ 25 \qquad 100 \qquad 40 \qquad 300 \\ \hline \$25 = \frac{10}{300} + \frac{2}{40} + \frac{9}{200} - - \\ \qquad \qquad \frac{1}{3} \qquad \frac{1}{20} \qquad \frac{9}{200} \end{array}$$

$$\$25 = \frac{1}{120} \text{ of cost price}$$

$$\therefore \text{Cost price} = \$25 \times 120 = \$3000.$$

2. Find value of goods

$$15 : 210,000 :: 100 : x \\ x = \$1,400,000$$

Find consumption under second condition

$$\frac{7}{10} \text{ of } \$1,400,000 = \$980,000$$

Find revenue under second condition

$$\$210,000 - \$14,000 = 196,000$$

This revenue is 25 per cent. of a certain sum.

$$\therefore \text{sum equals } \$196,000 \times 4 = 784,000$$

$$\text{Then } \$980,000 - \$784,000 = 196,000$$

Now if $\$980,000$ was diminished

$$\$196,000, \text{ find the diminution on } 100$$

$$980,000 : 100 :: 196,000 : x$$

$$x = 20.$$

Therefore 20 per cent. is the answer required.

2. Let $\frac{3}{8}$ and $\frac{7}{10}$ be the fractions,

Reduce them to a common denominator,

$$\text{Then } \frac{3}{8} = \frac{15}{40} \text{ and } \frac{7}{10} = \frac{28}{40}$$

Now 1 is the G. C. M. of 10 and 21,

Since the unit is divided into 30 equal parts and 10 parts taken in one case and 21 in the other,

$$\therefore \frac{1}{30} \text{ is the G. C. M.}$$

From this we have the following rule for finding the G. C. M. of fractions:—

Divide the G. C. M. of the numerators by the L. C. M. of the denominators.

By almost similar reasoning we obtain the following rule for finding the L. C. M. of fractions:

Divide the L. C. M. of the numerators by the G. C. M. of the denominators.

It might be stated in addition to the above, that fractions are divided by dividing numerator by numerator and denominator by denominator; from this it is plain that $\frac{1}{30}$ is G. C. M. of the fractions given.

An algebraic demonstration of this will be given in the next number of the TEACHER.

$$4 \text{ lbs. coffee} + 4 \text{ lbs. tea} = \$4.60$$

$$\therefore 1 \text{ " " } + \frac{1}{4} \text{ " " } = .92$$

By the second condition of the question he can sell

$$\frac{75}{100} \text{ of } 5 \text{ lbs. coffee and } \frac{113\frac{1}{2}}{100} \text{ of } 4 \text{ lbs. tea}$$

for $\$4.60$.

$$\therefore 3\frac{3}{4} \text{ lbs. coffee} + 4\frac{1}{2} \text{ lbs. tea} = \$4.60$$

$$\text{and } 1 \text{ " " } + \frac{27\frac{1}{2}}{100} \text{ " " } = \$1.22\frac{1}{2}$$

Then by subtraction of first equation from second we have,

$$\frac{92}{225} \text{ lbs. tea} = 30\frac{2}{3} \text{ cents}$$

$$\therefore 1 \text{ lb. cost } 75 \text{ cents}$$
 and 1 lb. coffee cost 32 cents.

5. 5 rounds from 50 guns equals 250 from one gun
 250 rounds in 8 minutes equals $31\frac{1}{4}$ in one minute
 300 men in 70 minutes equals $4\frac{2}{7}$ in one minute
 If $31\frac{1}{4}$ shots kill $4\frac{2}{7}$ men
 $31\frac{1}{4} \div 4\frac{2}{7} = 11\frac{1}{2}$ equals shots required to kill one man in one minute.
 By the second condition
 8 rounds in 10 minutes equals $\frac{4}{5}$ in one minute
 800 men in 50 minutes equals 16 men in one minute
 $\therefore 11\frac{1}{2}$ shots are required to kill one man in one minute
 $\therefore 11\frac{1}{2} \times 16 = 184$ equal shots required to kill 16 men,
 If $\frac{4}{5}$ of a shot is fired from each of the second set of guns in one minute, it will require
 $184 \div \frac{4}{5} = 230$ to do the work by the second condition
 $\therefore 145\frac{1}{2}$ or 146 equals the number of years.

6. Let $x = A$'s debt to B
 Find present worth of this due in 4 years

$$x \times \frac{100}{100} \times 4 = \frac{2x}{5} = \text{mercantile disc't}$$
 omitting the days of grace,

$$\therefore \frac{3x}{5} = \text{present worth}$$

Find amount of above for 4 years at 10 per cent. compound interest.

$$(1.1)^4 \times \frac{3x}{5} = \text{amount.}$$

$$\therefore (1.1)^4 \times \frac{3x}{5} = x - 160$$

$$x = \$794.43.$$
 The remaining part is easy.

7. $90 \div 5 = 18$
 $90 \div 6\frac{1}{4} = 14\frac{2}{3}$
 $90 \div 7\frac{1}{2} = 12$
 $90 \div 8\frac{1}{3} = 10\frac{2}{3}$
 $90 \div 10\frac{1}{4} = 8\frac{1}{4}$

Find least common multiple of the above quotients and it will express the number of days travelled before they came together.
 L. C. M. of numerators equals 1080
 G. C. M. of denominators equals 1
 \therefore L. C. M. equals 1080
 Since the first man travelled at the rate of 5 miles per day,
 $1080 \times 5 = 5400$ miles.

8. Find amount insured
 $3\frac{1}{2} : 432 : 100 : x$
 $x = \$11,520$
 $\therefore \$11,520 - \$40 = \$11,480$ equals goods and insurance on goods.
 $\$11,480$
 Then $\frac{\$11,480}{1.03\frac{3}{4}} = \$11,065.06$ equals value of goods

9. The formula given is deduced from first principles in Todhunter's Advanced Algebra.
 Let x equal annual payment
 Then $(1.06)^4 \times 4500 = x \left(\frac{(1.06)^4 - 1}{.06} \right) =$
 $x \left(\frac{R^n - 1}{R - 1} \right)$
 By solving the above equation
 $x = \$1298.67 +$

10. All regular solids are to one another as the cubes of their like lined dimensions
 $\therefore 105 : 22,680 : 7^3 : x^3$
 $105 = 22,680 \times 343$
 $x = 42$ inches.

SELECTIONS.

THE TEACHER'S PREPARATION FOR ORAL LESSONS.

He who intends to make teaching a profession, is mistaken if he thinks his own study is completed when he has gained the information that he is to impart to his pupils. It may be safely said that as many of the failures made in teaching are the result of not fully understanding how to deal with the minds of children, as are due to a want of proper familiarity with the subjects to be taught.

The greater the difference in mental development, the less, as a general rule, is the sympathy between teacher and pupil. This is illustrated by the fact that children learn more readily from children—a fact that is admitted even by casual observers. It also accounts, in part, for the numerous cases in which teachers who have taken up the study of a new subject, and kept sufficiently in advance of their pupils to be familiar with the matter they teach, have succeeded even when the more learned have failed.

When a person has so completely mastered a subject as to be able to bring to mind at will, it is often the case that he forgets those difficulties which hedged up the way for a time when the study was a comparatively new one, and he fails to adapt his instruction to the young learner. But if the individual having the greater mental development, can learn to look at a subject from the standpoint of his pupils, he will then come into full sympathy with them and meet their condition and wants.

To this end it is necessary that each lesson to be given should receive due preparation, that the ideas contained in it may be successfully imparted to the pupils. While there are but few who deny that every teacher, at the commencement of his professional life, should prepare each lesson to be given, there are many who consider it unnecessary for the experienced teacher to give his lessons even a thought. But the ambitious teacher will certainly not rest satisfied with his old methods, if by a little effort he can improve them; nor will he be content

to repeat the same matter year after year when new facts are being developed in every subject.

In preparing an oral lesson the teacher should first consider the subject, and in selecting it he may take anyone that treats of useful or interesting information, or that tends to the healthful development of the mind. It has been thought the subjects which can be successfully presented to a child are very limited in number; but the sources from which the child obtains its little store of knowledge, even before the school period arrives, are numerous, including nearly all the branches of natural science.

The teacher, in the second place, should take great pains to adapt the matter of the lesson to the capacity of the child's mind. Nearly every subject includes facts and principles which children cannot understand, and much of their dislike of school is due to the attempt to memorize what is not understood. The child must begin with primary facts, and in after years proceed to the more complex and abstruse.

In the third place, the teacher should see the point of the lesson, and this should be clearly brought out. A lesson that has no point is not likely to be remembered.

In the fourth place, the teacher should give careful attention to the method of teaching the lesson—the method most likely to give the pupil clear conceptions. Different methods will suggest themselves to the mind of every live teacher; for the more one studies to obtain successful and pleasing methods, the more readily do they come to mind, and the less likely is one to fall into any set form. As a general rule the greater the interest of the teacher, the greater the interest of the pupil; and if, at the outset of a lesson, the method be such as to arouse the attention of the class, so much the more is added to the interest of the teacher. When the lessons of the day have thus been full of interest, we hear the teacher say, "I have enjoyed school to day."

The method of teaching the lesson includes the art of questioning properly—an ability which all teachers do not readily acquire. As much depends upon the manner of questioning pupils, as upon any other feature of the lesson. Long, wordy questions should be avoided, not only because they are not readily comprehended, but because they avert the attention and detract from the interest of the class. Clear and concise questions will often make a class seem bright and intelligent. General questions may be used to advantage to test the knowledge of the scholars, or by the way of encouraging free and easy conversation in class; but, if a particular answer is required, such a question should not be used.

Pointed questions should be used to bring out particular answers, that the chain of thought be not broken by an answer out of place, or that the minds of the pupils may not be made to wander when they should be held to the point.

Direct questions are aptly put, when the admission or denial of a statement is wished upon which to base the next question; but

at other times they only encourage laziness, or a careless habit of thinking. Not only is it an easy matter to answer "Yes or No," but a child soon learns from the manner of his teacher which is desired; and the lesson which thus costs him but little effort, he correspondingly appreciates and remembers.

Suggestive questions should not, as a general thing, be used. There may be cases, however, where the pupil is trying hard to think what to answer, but has in some way become puzzled, that the assistance of a suggestive question may be better than to let the pupil fail, if in so doing it tends to discourage him.

Questions of whatever kind should follow each other in such order that each may open the way for the next.

Finally, the value of a lesson largely depends upon an orderly running up of the facts brought out. A complete summary with appropriate applications serves "to clench firmly the nail now driven." *National Teacher*.

SEX AND EDUCATION.

(The following extracts are from Dr. E. H. Clarke's address at Detroit; his book with the above title, has given importance to his views. Eds.)

"Unless men and women both have brains, the nation will go down. As much brain is needed to govern a household as to command a ship; as much to guide a family aright as to guide a congress aright; as much to do the least and the greatest of woman's work, as to do the least and greatest of man's work. Moreover, in both sexes, the brain is the conservator of strength and prolonger of life. It is not only the organ of intellect, volition, and spiritual power, but the force evolved from it, more than the force evolved from any other organ, enables men and women to bear the burdens and perform the duties of life; and with its aid, better than with any surgery, can they overcome the "ills that flesh is heir to."

"But the organs, whose normal growth and evolution lead up to the brain, are not the same in men and women. Consequently their brains, though alike in microscopic

structure, have infused into them different, though equally excellent qualities.

"Build the brain aright, and the Divine Spirit will inhabit and use it. Build it wrongly, and the Devil will employ it. The development of the mind, then, means practically the development of the brain; and the building of the brain is a part of education.

"A wise and appropriate system of education, in its effort to build a brain either for the male or female organization, will endeavour to aid and imitate the process by which Nature performs the same task. Herein physiology can render infinite service to education, a service that the latter cannot afford to refuse.

"It is impossible, within the limits of this paper, to give even an outline of the wonderful process by which that delicate and marvellous engine, the human brain, is built up—an engine which is only a few inches in diameter; whose weight, on an average, is only about forty-nine ounces; which contains cells and fibres counted by hundreds of millions—cells and fibres that

vary in thickness from one one-millionth (1-1,000,000) to one-three-hundredth (1-300) of an inch—an engine, every square inch of whose gray matter affords substrata for the evolution of at least eight thousand registered and separate ideas; substrata in the whole brain for evolving and registering tens of millions of them, besides the power of realizing them under appropriate stimulus—an engine, parts of which are sensitive to innumerable vibrations in a second—an engine that transmits sensation, emotion, thought and volition by distinct fibres, whose power of working has been ingeniously measured to fractions of a second—an engine, a mechanism that can accomplish this, and greater wonders still, without conscious friction, pain, or disturbance, if it is only properly built and its working not interfered with. Not even an outline can be given here of the curious processes by which nature builds this mechanism of inconceivable delicacy and power. Only a few salient points can be dwelt upon, that may serve as hints for the educator's guidance, and these can be presented only in the most general way.

I once asked a successful merchant and manufacturer, who had accumulated a large fortune, how he managed to make money at a time when all others who were engaged in the same business were losing it. He replied that he had practically learned every detail and branch of his business so thoroughly that he could at any time, if necessary, take the place and perform the special work of any of his workmen. In one, and a most important sense, he was made by and out of his business.

Two duties, then, are imposed upon our civilization. Two problems are presented to our educators. The duties are, first, to secure the perpetuation of the race in America; and, secondly, to provide for the survival of the fittest here also. The problems are, first, to develop the individual to the highest degree; and, secondly, to obtain the development without interfering with the perpetuation of the best. In other words, humanity demands, and our education must give, both the highest development of the individual, and the perpetuation of the best. It has been argued with much apparent force that these two results are impossible because the highest cerebral development, being made at the expense of the rest of the organization, sterilizes the

individuals whose brains attain such supposed magnificent proportion and quality. This is not the place, nor does it fall within the scope of this paper to point out the fallacy of such a statement.

"Poor brains, automatic ganglia, will grow like weeds without cultivation, or any soil. The best brains, the only sort the world needs, are built by education or educated evolution, in accordance with working plans that nature furnishes. Let us endeavour then to get some notion, however crude, of the way in which the Divine architect, whom we know as Nature's God, builds a human brain. By so doing we shall clear the way to a correct understanding of the relation of sex to education.

"The building of a brain—this is today's social problem; and teachers are largely charged with its solution. When this is solved, all other problems will be easily disposed of; for the human brain is the last, the highest, "the consummate flower" of Nature's development on this planet. It cannot be made, except as the crown of the rest of the body. No perfect brain crowns an imperfect body. When Michael Angelo reared St Peter's dome in the air, he made every stone beneath contribute not only to the use and beauty of the part he put it in, but to the support and power of the dome. The brain must be built in connection with the building of the rest of the body, remembering constantly that the imperfections of the latter reflect themselves upon the former.

"In one sense the process of brain-building is alike for the two sexes; in another sense it is different. It is the same for both, inasmuch as the process which evolves the best possible brain, by means of appropriate brain exercise, including cerebration out of the underlying organization, is alike in the two sexes.

"It is different for the two, in so far as there are any organ or sets of organs in the structure of one sex that are not in the structure of the other, provided the organization of both sexes is normal and all their functions normally performed, the same sort of brain work will develop the brain of each. But if the methods of education render abnormal any part of the body, or interfere with any function, there will not only be damage to the part disturbed, and friction in its function, but the brain will suffer, just in proportion to the importance

of the organs disturbed, and the amount of the disturbance.

The object of education for the sexes is the same. The physiological principle which should guide their education—that is, the appropriate development of the whole organization, so as to evolve the best brain is the same. The application of this principle to home, social, and school life demands diversity of management. The same law, but diversity of application.

“The only difference between the sexes is sex; but this difference is radical and fundamental, and expresses itself in radical and fundamental differences of organization, that extend from the lowest to the highest forms of life.

“Progress is impossible without accepting and respecting difference of sex. That it is physiologically possible to diminish it, by an education arranged for that end, no physiologist can doubt; nor can it be doubted that identical methods of educating the sexes, such as prevail in many of our schools, tend that way. One result of a school system, animated by such methods, is to make a very poor kind of women out of men. Fortunate for the republic, if no illustrations of the truth of this remark could be found within its borders. The best quality, noblest power, and supreme beauty of the two sexes grow out of their dissimilarity, not out of their identity.

EDUCATIONAL INTELLIGENCE.

CANADA.

Report of the proceedings at meetings of the Council of Public Instruction, held 1st and 3rd September, 1874.

Council Room,

Education Office, 1st Sept., 1874.

The Council met pursuant to notice, at three o'clock, p.m., the Very Rev. H. J. Grasset, B. D., in the Chair.

Present.—The Chairman.

The Chief Superintendent of Education.

The Rev. J. Jennings, D.D.

His Grace the Most Reverend J. J. Lynch, D.D.

William McCabe, Esq., LL. D.

James MacLennan, Esq., M.P. Q.C.

The Reverend S. S. Nelles, D.D.

The Reverend A. Carman, D.D.

Daniel Wilson, Esq., LL. D.

Samuel Casey Wood, Esq., M.P.P.

1. The minutes of the previous meeting were read.

2. The letter (11327) of the Scrutineers to the Chairman, reporting the results of the recent election of new members was read.

3. The Chief Superintendent requested the Council to take into consideration the question whether the Reporters be admitted to discussions of the Council, and stated what had been the usage heretofore, with respect to the Council's proceedings.

The Council having considered the matter, it was—

Ordered, that it is not at present expedient to give to the proceedings a larger measure of publicity than is required by the law.

4. *Ordered*, that the Very Rev. H. J. Grasset, B.D., be appointed Chairman for the year commencing this day.

5. The following communications were laid before the Council:—

From the Venerable T. B. Fuller, D.D., expressing his regret at not being able to be present.

7643. From the Secretary of Victoria College, reporting the appointment of the Rev. S. S. Nelles, D.D., as the representative of that institution in the Council of Public Instruction.

11054. From the President of Albert College, on probable delay in his attending the meeting.

11272. From the Chief Justice of Ontario, respecting the case submitted to him by the Chief Superintendent.

11307. From Messrs. Adam, Stevenson, & Co., respecting Mr. Loudon's Algebras, and submitting certain other books.

9825. From the Chairman of the Central Committee, respecting the fixing of a time for receiving appeals from examining boards.

11279. From Principal of the Normal School, on the course of study.

11308. From the Chairman of the Central Committee, recommending certain candidates for first-class certificates.

10345. From the Inspector of the County of Ontario, recommending a modification of a regulation.

10897. From the Secretary of the Examining Board of the County of Peel, with a similar recommendation.

11312. From the Chairman of the Central Committee, reporting on the above two letters, which had been referred to his Committee.

11032. From Mr. Charles Clarkson, respecting the procuring of an Honor Certificate.

11310. From the Chairman of the Central Committee, reporting on the foregoing letter.

6. *Ordered.*—(a) That the Committee on Library and Prize Books be continued as heretofore with the same members.

(b) That the Regulations, Programmes and Text Books for Collegiate Institutes and High Schools, and the duties of Inspectors of High Schools, be referred to a Committee consisting of the representatives of the Collegiate Institute and High School Masters, and of the Colleges, together with Professor Smith, and that until the Roman Catholic College at Ottawa is represented here, His Grace Archbishop Lynch be also a member of said Committee.

(c) That the Regulations, Programme and Text Books for the Public Schools, and the duties of Inspectors of Public Schools, be referred to the Representatives of the Public School Inspectors and Teachers, and of the High School Masters, together with his Grace the Archbishop and the Rev. Dr. Jennings.

(d.) That the Interim Committee provided for in the 28th section of the Act, consist of the members resident in Toronto, and that they have the powers of the Council, except that they shall not be empowered to make permanent appointments, or sanction Text Books.

7. *Ordered,* that the recommendations of the Central Committee as to the candidates for first-class certificates be adopted, and that the following certificates be granted.

GRADE A.

Mr. Archibald Smirl.

“ Joseph Standish Carson.

“ Morris Johnston Fletcher.

“ Edwin D. Parlow.

“ Robert Kimball Orr (conditional).*

“ John Munroe.

GRADE B.

Mr. David McArdle.

“ Thomas Leitch.

“ Alfred Goodbow.

“ Charles Andrew Barnes.

“ David Hammel-

GRADE C.

Mr. John Wesley Cook.

“ Alexander Hotson,

“ Levi Clark (conditional).*

The certificates of Messrs. B. K. Orr and Levi Clark are granted subject to the condition that they furnish more definite evidence of their time of service in the profession.*

8. The Chief Superintendent was requested to lay before Council, at the next meeting, a copy of the case submitted by him for the opinion of the Chief Justice, at the request of the Council, respecting the price of books.

Adjourned till Thursday at 3 o'clock.

(Signed) H. J. GRASSET, Chairman.

(Certified)—Alex. Marling, C.C. P.I.

Council Room,

Education Office, 3rd Sept., 1874.

The Council met, pursuant to adjournment, at 3 o'clock, p.m., the Very Reverend H. J. Grasset, B.D., in the chair.

Present.—The Chairman.

The Chief Superintendent of Education.

His Grace the most Reverend J. J. Lynch, D.D.

The Honorable Wm. McMaster.

William McCabe, Esq., LL. B.

James MacLennan, Esq., Q.C., M.P.

The Reverend A. Carman, D.D.

Daniel Wilson, Esq., LL. D.

Samuel Casey Wood, Esq., M.P.P.

Goldwin Smith, Esq., M.A.

1. The minutes of the preceding meeting were read and approved.

2. The following communications were laid before the Council:—

11330. From the High School Inspectors, with suggestions.

11344. From the chairman of the Central Committee, on Programmes.

11379. From the Principal of the Normal School, on the course of study.

3. The Chief Superintendent of Education also laid before the Council a copy of

* Note—These conditions have since been complied with, and the certificates have been issued.

the case he had submitted to the Chief Justice.

4. The Chief Superintendent made a statement respecting the arrangements for teaching the several branches of study in the Normal School for this session.

5. The Report (11413) of the Committee on Regulations was read and adopted.

6. Ordered, that when the Council is not in session the Chief Superintendent shall be at liberty to lay before the Committees any communications requiring their immediate attention.

7. Ordered, that the proposed course of study for the Normal School be referred to the Committee on Public School Regulations.

8. Ordered, that the Committee on High and Public School Regulations, &c., be hereafter one joint Committee.

9. Ordered, that one gold, two silver, and two bronze medals, of a total value of \$100, be granted to teachers who have passed the best examinations (1874) as recommended by the Central Committee.

10. Ordered, that, in addition to the restrictions on the power of the Interim Committee already adopted, the principle on which the prices of books are to be fixed be reserved for the decision of the Council.

11. Ordered, that the Council concur in the recommendation of the Central Committee contained in letters 11312 and 11310.

12. Ordered, that in the advertisement alluded to in the Report of the Committee, Public School Inspectors and Teachers be also invited to express their opinions on the books.

13. Ordered, That the Clerk of the Council inform the proprietors of the *Toronto Mail, Globe and Leader* that a copy of the report of the proceedings of this Council, and of the Interim Committee, similar to that required by law to be published in the *Journal of Education*, will be furnished on application,

14. Ordered, That the next regular meeting of the Council be held on the first Tuesday in October next.

15. The minutes of the meeting were read and approved.

16. Adjourned.

(Signed) H. J. GRASSETT,
Chairman.

(Certified)—Alex. Marling,

C. C. P. I.

Regulations adopted by the Council of Public Instruction, 3rd September, 1874. Certificates to monitors and assistants in High Schools and Collegiate Institutes.

37 Vict., ch. 27, sec., 27 (7.)

At the request in writing of any High School or Collegiate Institute Board, High School Inspector may admit to examination any senior pupil in a High School or Collegiate Institute, or any other candidate for the position of Assistant Teacher or Monitor in such High School or Collegiate Institute, on the following conditions:—

(1). The pupil or other candidate shall present to the Inspector a certificate of good moral character, signed by a clergyman.

(2). The subjects of examination for the position of Monitor shall be:—Reading, Writing, Spelling, and the elementary parts of Grammar, Geograpy, and Arithmetic.

(3). The subjects of examination for the position of Assistant Teacher, shall be (in addition to those required in the case of a Monitor)—a competent knowledge of Grammar, Geography, Arithmetic, the elements of Latin, and a satisfactory evidence of some knowledge of the art of teaching and school government.

An Inspector may, at his discretion, grant without examination, a certificate as assistant teacher in a High School or Collegiate Institute, to any undergraduate in Arts, of at least two years standing, on the following conditions :

(1). That such undergraduate present to the Inspector evidence that he is in good standing in his University.

(2). That he present to the Inspector a certificate of good moral character, signed by a clergyman.

3. That he furnish such evidence as the Inspector requires of some knowledge of the art of teaching, and of school government.

A certificate granted under these regulations may be suspended or cancelled by an Inspector, for any reason which may appear to such Inspector to warrant it.

No certificate shall be given for a longer period than one year; such certificate may, however, be specially renewed for twelve months, at the request of a High School or Collegiate Institute Board concerned; but no certificates shall be given to a monitor or assistant teacher for a third year without re-examination.

All certificates granted, suspended, or cancelled under these regulations, and all renewals of such certificates, as herein provided, shall be duly reported by the Inspector to the Chief Superintendent of Education, and to the High School or Collegiate Institute Board concerned

Certificates to Monitors and Assistants in Public Schools.

37 Vict., ch. 28, secs. 112 (27), and 114 (18.)

At the request in writing of any Public School Corporation, a Public School Inspector may admit to examination any senior pupil or other candidate for the position of Monitor or Assistant Teacher, in such public School, on the following conditions:—

(1). The pupil or other candidate shall present to the Inspector a certificate of good moral character, signed by a clergyman.

(2). The subjects of examination for the position of Monitor shall be Reading, Writing, Spelling, and the elementary parts of Grammar, Geography, and Arithmetic.

(3). The subjects of examination for the position of Assistant Teacher, shall be those prescribed for third class certificates.

N. B.—A competent knowledge of those subjects, at the discretion of the Inspector, shall be required.

No certificate shall be given for a longer period than one year. Such certificate may be specially renewed for twelve months at the discretion of the Inspector; but no certificate shall be granted a third time without re-examination.

A certificate may be suspended or cancelled at the discretion of an Inspector, for any cause which he may deem sufficient to warrant it.

All certificates granted, suspended or cancelled, and all other information desired, shall be duly reported by the Inspectors to the Chief Superintendent of Education.

Appeals from the decisions of Local Boards of Examiners.

37 Vict., ch. 27, sec. 32 (2), and ch. 28, sec. 115.

Any Teacher who may have been examined by a County or City Board, and any Trustee or Head Master of a High School or Collegiate Institute, shall have the right to appeal to the Chief Superintendent against the decision of a Local Board of Ex-

aminers or of a Public or High School Inspector.

Every such appeal shall be made in writing to the Chief Superintendent within two weeks from the time when the decision of the Local Board or Inspector is known to the appellant, and not later than one month after the decision itself was communicated to the Teacher or Board concerned.

A copy of the appeal, with full particulars of objections, shall be sent by the appellant to the Board or presiding Inspector.

No appeal shall be entertained by the Chief Superintendent which is not made in accordance with these regulations.

HURON TEACHERS' ASSOCIATION.—Pursuant to notice, the annual meeting of the Huron Teachers' Association was held in the Central School, Clinton, on Saturday 16th October, the president in the chair.

The attendance was good, somewhat over sixty teachers having been present during the course of the day.

The financial report was read and after having been referred to the audit committee, and certified to by them, was adopted by the meeting. Mr. R. Ferguson then gave a very able report of the proceedings of the Provincial Teachers' Association, held in Toronto, in August last, for which he received the cordial thanks of the meeting.

A resolution was passed, authorizing the payment of Mr. Ferguson's expenses as delegate to Toronto, which he declined. The ladies present thereupon requested, as they were not required by the constitution to pay any entrance fee, to be allowed to defray the same. The sum of \$6.50 was at once subscribed, and coming from such a source, Mr. Ferguson could no longer decline.

Mr. Dewar, I. P. S., then illustrated his method of teaching Geography to Primary, Intermediate, and Senior classes, in a very satisfactory manner. A hearty vote of thanks was then tendered to him by the Association.

The report of the Committee on Centralization was then read and submitted to the meeting for discussion. Upon motion, the meeting adjourned until the afternoon.

The Association resumed work at 1:30.

Mr. Malloch, with a class of his own pupils, explained his method of teaching proportion in a very lucid and able manner.

The meeting accorded a hearty vote of thanks.

The centralization question was resumed. The following places were suggested as suitable localities in which to form local Institutes, viz., Dungannon, Goderich, Varna, Exeter, Clinton, Seaford, Brussels, Gorné, and Wingham. After considerable discussion, the report was amended and adopted in the following form:

"The said institutes or any others which may be formed, may affiliate with the Central Association on the following terms:

1st. That each affiliated Institute shall pay to the treasurer of the C. A. an annual fee of ten cents for each of its members.

2nd. That the member of any local affiliated Institute to be a member of the Central Association.

3rd. That there shall be two meetings of the Central Association in each year, viz: in June and December.

4th. That each affiliated Institute furnish its members with tickets of membership."

It was moved by Mr. R. Ferguson, and seconded by Mr. Miller, I. P. S., that the meetings of Central Association be held permanently in Clinton.

The meeting proceeded to the election of officers for ensuing term, when the following were chosen: President, Mr. H. J. Strang B. A.; First Vice-President, Mr. S. Hicks; Second Vice-President, Mr. R. W. Miller; Secretary-Treasurer, Mr. G. Sheppard. Mr. Strang was introduced to the chair, and votes of thanks tendered to the retiring officers.

Notice was given of a meeting to be held in the Central School, Clinton, on Saturday, the 3rd Oct. next, beginning at 10 o'clock a.m., for the purpose of organizing a local institute in affiliation with the Central Association; and also of a similar meeting to be held in Varna, on the 10th Oct.

(It was resolved that this Association regrets that a malicious attempt should have been made to injure Mr. Miller by the publication of anonymous letters containing a gross misstatement of his action at and in regard to the June Meeting of this Association, and in part of the proceedings of the last meeting of the Presbytery of Huron, in reference to Mr. Miller and the proposed Sabbath School Convention, and further, that this Association cannot too strongly condemn the gross unfairness of the *Globe* newspaper in refusing to publish an authorita-

tive correction of the anonymous letters, and that this meeting desires to express its full confidence in Mr. Miller, as an upright and honorable man, and its entire approval of the manner in which he has always discharged the duties of his position.

Mr. Miller then made a few remarks in connection with the subject of the preceding resolution, and afterwards gave an interesting and able sketch of the doings of the leading educationists at the late meeting of the National Educational Association, held in Detroit.

The meeting then adjourned, to meet in Clinton, in December next.

TEACHER'S CONVENTION.—The Teacher's Association in the County of Wentworth meet Oct. 9th, in the Central School Hamilton. The meeting in the forenoon was not largely attended, but in the afternoon about one hundred were present. The 56th & 57th exercises in Smith & McMurphy's larger arithmetic were discussed, after which the 2nd class examination papers in arithmetic and grammar were taken up. In the evening the teachers met in the Collegiate Institute, when Mr. J. H. Smith, Public School Inspector, delivered a lecture on methods of teaching, after which Mr. J. B. Smith, of Hamilton, gave several interesting readings. The convention re-assembled Oct. 10th in the Central School. The greatest part of the forenoon was taken up in discussing the infinitive mood and participle, after which Mr. McCallum, City Inspector, gave a short lecture on chemistry, which he illustrated by several interesting experiments. After passing a vote of thanks to Mr. McCallum for his lecture, and to the City Board of Education for the use of the building, the association adjourned *sine die*.

LAMBTON TEACHERS' ASSOCIATION.—The regular meeting of the Association took place in the High School, Sarnia, on the 3rd October. The chair was taken by the President, Mr. J. Brebner, who called upon Mr. Sinclair to open the meeting with prayer. The minutes of the last meeting were then read and adopted; after which Mr. Brebner gave an "Object Lesson" on a brick, showing his method of imparting instruction to children from objects. The lesson was very interesting, and led to a discussion which lasted till noon.

On re-assembling after dinner, Mr. J.

Linton, of Moore, showed his plan of teaching Map-drawing, which was listened to with much attention. Mr. R. G. Duff then read an essay on Music, and by the unanimous vote of those present, the writer was requested to allow it to be published in one of the local papers.

A discussion then took place with regard to the conduct of Mr. A. Dingman, at the Convention recently held in Toronto, resulting in the following motion :

"Moved by Mr. W. Mill, seconded by Mr. Thos. White, that this Association do not pay the expenses of the said A. Dingman for attending the Convention above mentioned, because he acted contrary to the instructions of those sending him."—Carried.

It was then moved by S. Knight, seconded by Geo. Kirk, That this Association should pay \$3.00 towards defraying the expenses connected with the election of Professor Goldwin Smith.—Carried.

The following programme for next meeting was then consented to, viz., R. R. Pierce, Geography; S. Knight, Grammar; A. Dickson, Subject to be chosen; J. Linton, Method of teaching Music; T. White, Reading.

The Association then adjourned, to meet in the same place on the second Saturday of December.

THAMES TEACHERS' ASSOCIATION.—The Thames Teachers' Association met in Thamesville, on the 12th ult. The President being absent, E. B. Harrison, Esq., was called to the chair. The minutes of the former meeting being read by the Secretary, and a communication from W. H. Ballard B. A., intimating his removal from Chatham to Hamilton and implying his resignation of the presiding of the Association.

It was resolved that the next meeting shall be held in Chatham about the first of December. The advisability of establishing a Teachers' Library, having been discussed, a committee was appointed to devise a plan by which such object might be accomplished.

On motion several teachers were admitted to membership.

Mr. Edwards was elected President.

Moved by James Duncan, seconded by Thos. Gosnell, that the members of the Thames Teachers' Association hereby cor-

dially and thankfully approve of the course of the *Globe* and other newspapers during the late election in fearlessly exposing the Sangster scandal and in assisting the Public School Teachers to defeat Dr. Sangster and elect Prof. Goldwin Smith. And 2nd. We are confident that the great abilities and pure life of our representative will be useful at the Council Board, will elevate the profession and be an honor to the teachers of Ontario.—Carried.

Moved by L. A. Edwards, seconded by Jas Duncan, and resolved :

1st. That this Association heartily approves of the course pursued by Mr. Maxwell, the delegate sent to the Toronto Convention for the nomination of a candidate to represent the Public School Teachers of Ontario in the Council of Public Instruction.

2nd. That the thanks of this Association be tendered to Mr. Maxwell for the efficient manner in which he discharged his duties in that convention.—Carried.

Moved by L. A. Edwards, seconded by T. S. Gosnell, and resolved :

That this Association while regretting the loss of W. H. Ballard, B. A., as President, heartily congratulate him on his recent appointment to a position in the Hamilton Collegiate Institution.—Carried unanimously.

The President's address not being forthcoming, the Secretary at the request of the Association read an essay on "The art of Questioning," after which the subject "What are the proper spheres of the inductive and deductive methods of instruction?" was discussed.

It was resolved that the delegate's expenses to the Toronto Convention be paid out of the funds of the Association; that a committee be appointed to audit the Treasurer's books and report at next meeting; that it is advisable that the "Ontario Association for the advancement of Education" should hold its annual meetings during the Easter holidays; that the subjects for discussion at the next meeting shall be "What are the proper spheres of the inductive and deductive methods of instruction" and "Methods of teaching Reading." It is intended to begin the next meeting on Friday and endeavor to secure some efficient lecturer—Prof Goldwin Smith if possible,—for the evening.

UNITED STATES.

—The Ohio Central Normal School has added another permanent instructor to its faculty, thus enabling Prof. Ogden, associate principal, to devote part of his time to attending teachers' institutes.

—Miss Flora T. Parsons, for nearly two years one of the associate editors of the *New York State Educational Journal*, representing institutes, died June 21st in Bricksburgh, N.J., from consumption.

—The *Commercial* states that the Chickering Institute, Cincinnati, has opened the new year with 180 pupils, and a senior class of 22. Of the seven or eight young men sent to Eastern colleges or scientific schools from this institution this year, not one received a "condition."

BRITISH AND FOREIGN.

—A curious festival is reported in one of the German school papers, namely, that of a Prussian village commemorating the undoubted singular event that for a hundred years the elementary school has been conducted by half a dozen masters, all of the same name and family.

—All along the Rhine the Prussian Government seems to have fully made up its mind to replace the clerical school inspectors, either by the local magistrates officially, or else by professed educationists and other laymen. It has long been known that, especially in the Rhenish provinces, the Catholic clergy, for reasons best known to themselves, connived at irregular school attendance. And on "the impracticability of the laws of compulsory education," some would-be educationists rest their claims to be heard.

—By the new School Act of the Swiss Confederation, the following points will be gained over the *ancien régime*: The confederation is empowered to establish a university and other establishments for higher education by the side of the already existing polytechnical school; the cantons provide for efficient elementary instruction, which will be placed under the supervision of the government; such instruction to be compulsory and all the public schools free; the public elementary schools shall be open to the children of all creeds alike; finally, "against cantons omitting to comply with these regulations the necessary measures shall be taken."

—In a late meeting of the London School Board it was recommended that a Mr. Levy, an Israelite, be appointed head-master of a school, in a locality where three-fourths of the population are Jews. Much discussion was aroused, the religious difficulty being the bone of contention. But, to the credit of the board be it said, a resolution making the appointment passed.

—The Walsall School Board at a recent meeting arrived at a somewhat stoical resolution. It was reported that a sum of £60 had been subscribed from private sources for the purpose of giving the Board children a "treat." The Board looked coldly upon the proposal, and requested the clerk to ascertain whether the subscribers would allow the money to be devoted to the purpose of giving prizes to the successful scholars. We are advocates of the prize system as an incentive to application and high attainment, but we think there should be a time now and then when the whole rank and file of the school should be permitted to rejoice together. It is competent to the School Board to offer prizes, and we think they do wrong to discourage an annual treat, the gift of the inhabitants, in which for one day in the year scholastic competition is sunk in *esprit de corps* and enjoyment.—*School Board Chronicle*.

—We gather the following somewhat disconnected particulars from the French educational report, brought up in the Assembly last month by the Committee of Education. The budget for the year 1875 demands an additional sum of 503,125 francs over and above the preceding; the bill on the salaries of teachers is again *promised* in M. Bardoux's report; 30,000 francs will be required for national burses (sizarships) in the communal colleges; altogether 1,130,000 francs for the encouragement of necessitous intellection and industry. It is proposed to raise the salaries of first-class inspectors of schools (120 of these there are) to 3000 francs. Incidentally we learn that the number of infant schools has increased to 3,652. The report concludes with an astounding admission of national immorality. Having previously stated that there are in France 15,150 mixed schools, the reporters dolefully ask: "But what results can we expect from these schools—*avec nos habitudes*?"—*[London School Board Chronicle]*.

—At the adjudication of prizes at University College, London, the first prize in jurisprudence was awarded to a young lady who two years ago, at the same college, achieved a like success in political economy. The second place in the same class was attained by another lady. Still another obtained honors in political economy; and prizes were gained by three, and certificates by several, in the fine arts classes. That women should prove themselves equal to men in drawing and painting, perhaps, less remarkable than their success in sterner studies; but it is noteworthy in these days, when fresh consideration is being given to the question of female education. The ex-

periment of mixed classes has as yet been only very partially tried at University College, and its extension through the whole of the arts school would involve none of the peculiar difficulties that have been incident to the attempt to teach medicine to ladies in Edinburgh. The senate of the University of London is soon to consider the recent vote of convocation in favor of admitting women, on the same conditions as men, to its degree examinations. If a woman competing at college with men, can take prizes in political economy and jurisprudence, it is hard that she should not be allowed the chance of obtaining a degree in arts or laws. —*From the London Athenaeum.*

CHOICE MISCELLANY.

—All is but lip wisdom that wants experience.—SIR PHILIP SIDNEY.

—Education is the placing of the growing human creature in such circumstances of direction and restraint as shall make the most of him, or enable him to make the most of himself.—JOHN GROTE.

—Nothing could be more improving and of greater vital interest to school children than a good newspaper. As an adjunct, at least, to those reading-books which contain the best specimens of classic and current literature, nothing could be better. A daily or weekly children's paper, prepared with reference to educational needs, would not be a bad idea.—DETROIT POST.

—A school-boy requested to write a composition upon the subject of "Pins," produced the following. "They have saved the lives of a great many men, women and children—in fact whole families." "How so?" asked the puzzled teacher. And the boy replied: "Why, by not swallowing them." This matches the story of the other boy, who defined salt as "the stuff that makes potatoes taste bad when you don't put on any."

—There are, in each department of knowledge, central facts and germinal principles. If we reach these early and well, the labors of acquisition are greatly lightened. They serve to explain to the mind, and to hold for the memory, those multitudinous minor facts which otherwise confuse the one and

burden the other. It is a secret of wise acquisition to learn the most in learning the least, and we do this by directing attention at once to leading fruitful facts. The ground is thus outlined; we know where to look for particulars; and these, as they come to us by direct search, or as incidents of growing information, fall at once into their place, strengthen our general hold of truth, and are themselves securely rolled in and bound up in the compact bundle of knowledge.—BASCOM'S Philosophy of English Literature.

—GENERAL SUGGESTIONS.—The hints following were gleaned from a longer list, given the Rev. J. H. Vincent, D.D., to Sabbath-school teachers. They are helpful to teachers anywhere:—

1. Teach by example.
2. Draw maps on a blackboard or slate to fix the *where* of the lesson.
3. Study the art of questioning. Teach what you want to teach from the lesson, and then frame questions to draw it out.
4. Test your questions upon your children at home. If you have no children borrow your neighbor's for this purpose.
5. Gain an intense interest in the lesson yourself as a teacher. *Be intensely in earnest.*
6. Study your pupils—adapt your teaching to their wants.
7. Use your will—determine to teach them.

SUCCESS IN TEACHING.—Every teacher desires success. It can be had. Will you

try to deserve it? If so, decide in your own mind what success is, then how to seek it, and lastly work for it. Success is obtaining the right results. In teaching, it consists in making the pupils know—in leading them to love study, in training them to right methods of study, in forming right habits, in cultivating their tastes and talents judiciously.

To obtain success one needs knowledge and skill. He needs to know the right methods of work and have skill in the same.

Avoid all common errors, make a list of such errors as you know other teachers have, make a list of your own, and avoid them all. Seek perfection. The requisites of a good school are, a good school house, a good teacher and good scholars.

You can keep your house neat, quiet and well ventilated. The house has an influence on the school, keep the air pure and the rooms neat.

You can be a good teacher. Success depends not upon one great effort, but upon regular, patient, and faithful work. Keep at it—"With time and patience the mulberry leaf becomes satin."

Go to school in season. Call school at the right time. Have the pupils come in promptly and quietly. Write out your order of exercises. Arrange your programme as well as you can. Carry it out to the minute. Consider it as necessary for you to follow it as for the children to follow it. Provide enough work for every pupil. Suppress whispering. Secure the co-operation of your pupils. Lead them to see that it is for their interest to have good order and a good school. Require hard study from the pupils. Lead them to love school. Give short lessons. Assign them so plainly that none may mistake their lessons. Have the lessons well studied. Require clearness, promptness, and accuracy in recitation. A little, well known, is of great value. Let not "how much, but how well," be your motto; Do not assist the pupils at recitation. Cultivate their self reliance. Self help is their best help. Do not let them help each other. Excite an interest in study. Be enthusiastic yourself and you will make your pupils enthusiasts. Encourage those who need encouragement. Review often. Talk but little. Be quiet yourself. Speak kindly and mildly. Be firm. If you love the pupils, they will love you. Keep good order. Government is the main thing.

Have order and good order, whatever you lack.

A good teacher can become better. Be not satisfied with your present skill. Seek to improve yourself as a teacher. Study hard yourself and study daily. Try to learn more each day than you learned the day before. Have a fixed time for your own study. Use that in study. If you do not love learning why should your pupils?

Talk with parents about their children. Many parents can give you useful hints about teaching. Urge the parents to send their children to school regularly, and to talk with them about their studies. Review the day before retiring. Mark down your errors, their causes and effects—shun them in the future.

Keep a list of your plans your difficulties and your methods of meeting them. Look at the list often and see if you are carrying out your plans.

Read up on teaching. Read for improvement. Adopt new methods with caution. Hold fast the good, reach after the better. See if you can give a reason for your methods of teaching. Write. Make a list of the marks of a good teacher. Attempt to make these your own. Be not satisfied with doing as well as others—surpass them. Surpass yourself daily. Follow these suggestions and success is certain.—J. A. COOPER, Principal, State Normal School, Edinboro, Pa.

STUPIDS.—If a teacher has any cause for thankfulness it is for the "stupids." Now do not disagree. Think a moment. Who have "turned out" well of the class which you had fifteen years ago? Is it the brightest scholar who learned his lessons by intuition, who never needed to study; who could keep himself in mischief, his associates in a stew, you in a worry, and recite his lesson well, all at the same time? Or is it the slow good natured youth of whom you did not expect much? He never worried you. He studied hard at his lessons, never recited well, was slow to comprehend any point you might present, often discouraging you with his dullness. Yet he was diligent. He was reliable, too. He was always on time. He retained pretty well what he once learned, but it was dreadful work getting it. He was one of the faithful ones. If any special work was to be done and the teacher needed assistance he would

be on hand, not to say much but to do a "power."

How often we have wondered what becomes of the "brilliant," in our classes. We thought them quite wonderful. We prided ourselves on them; were always glad when visitors recognized them; have promised them a glorious future and sanguinely hoped they would do us honor. But with the closing of their school life they seem to disappear and settle back; are entirely out of sight.

But in their stead we hear of that slow going John occupying a position of trust and responsibility; of that dull, yet faithful, William wielding a great power of influence and money. And most likely they have the reputation of solid learning and indeed of brilliant powers. Why is this? you question.

But you think again, and the solution is easy. That stupid pupil learned of his stupidity the lesson of patience and perseverance. That bright pupil learned of his quick powers the lessons of laziness and want of application. The one who had to work to learn learned to work, the other who did not have to work to learn, did not learn to work.

Industry is genius. There is no talent like genuine workers. Ten out of every twelve successful men are workers. Nine out of every ten workers will be successful men. Genius, like the oratory of Demosthenes, is action! action! action!

We have often said that the worst misfortune that can befall a child is to be born smart, pretty and wealthy. Not one out of ten such children will amount to anything.

On the other hand the greatest blessings are stupidity, ugliness, and poverty. The person who has them to contend with and contends with them is as sure of success as he is of difficulties.

So then teachers, be thankful for your stupid scholars. Work for them and they will work for you. Believe in them, improve them, encourage them, and you will certainly have your reward.

SPELLING TEST.— We recommend the following test to those who pride themselves on their aptness at spelling.

"The most skillful gauger I ever knew was a maligned cobbler, armed with a poniard, who drove a peddler's wagon, using a mullein-stalk as an instrument of coercion, to tyrannize over his pony shod with calks. He was a Galilean Sadducee, and he had a phthisicky catarrh, diptheria and the bilious intermittent erysipelas. A certain Sibyl, with the sobriquet of "Gypsy," went into ecstasies of cachination at seeing him measure a bushel of peas, and separate sacharine tomatoes from a heap of peeled potatoes, without dyeing or singeing the ignitable queue which he wore; or becoming paralyzed with a hemorrhage. Lifting her eyes to the cupola of the capitol to conceal her unparalleled embarrassment, making a rough courtesy, and not harrassing him with mystefying, rarefying and stupefying inuendoes, she gave him a couch, a boquet of lilies, mignonette and fuchsias, a treatise on mnemonics, a copy of the Apocrypha in hieroglyphics, daguerreotypes of Mendelssohn and Kosciusko, a kaleidoscope, a dramphial of ipecacuanha, a teaspoonful of naphtha, for delebe purposes, a ferrule, a clarinet, some licorice, a surcingle, a carnelian of symmetrical proportions, a chronometer, with a movable balance wheel, a box of dominoes, and a catechism. The gauger, who was also a trafficking rectifier and a parishioner of mine, preferring a woollen surtout (his choice was referable to a vacillating, occasionally-occurring idiosyncrasy), wofully uttered this apothegm: "Life is checkered; but schism, apostasy, heresy and villany shall be punished." The Sibyl apologizingly answered: "There is a ratable and allegeable difference between a conferrable ellipsis and a trisyllabic diæresis." We replied in trochees, not impugning her suspicion.

Those who place their affections at first on trifles for amusement, will find these trifles become at last their most serious concerns.

TEACHERS' DESK.

J. C. GLASHAN, ESQ., EDITOR.

Contributors to the 'Desk' will oblige by observing the following rules :

1. To send questions for insertion on separate sheets from those containing answers to questions already proposed.

2. To write on one side of the paper.

3. To write their names on every sheet.

CORRECT ANSWERS RECEIVED.

G. S. ANSDEN, pupil of Florence School ; 76.

W. C. BRADSHAW, Everett ; 76. (79.)

CON. O'GORMAN, White Lake ; 75, (78).

R. SHEPHERD, Wyoming ; 75, 76.

HENRY GRAY, Sombra ; 76, 77, (78, 79.)

JAS. E. FRITH, Vandecar ; 75, 76, 77.

ANSWERS TO CORRESPONDENTS.

Con. O'Gorman. None ; any other would be merely a variation of yours, or differ from it in some unimportant particular ; e.g., for the latter part might be substituted ' a man's wages equals (2)—2(1)

$$\frac{\quad}{\quad} = \$1.60.$$

9

ANSWERS TO QUERIES.

(71). Area of end of boiler equals .785398 × 502 = 1963.495 square inches.

Area of steam-section = .254551 × 502 = 636.377

" flue-ends = .785398 × (3¼)² × 64 = 530.929

" water section = 796.189

(15 ft. equals 180 inches ; 1 gallon contains 277.274 cubic inches).

$$\therefore \text{gallons of water} = \frac{796.189 \times 180}{277.274} = 517 \text{ gallons nearly.}$$

(72.) (3⅓ min. = $\frac{1}{6}$ of 20 m. = $\frac{7}{12}$ of 5 $\frac{5}{7}$ minutes)

10 taps empty a cisternful and 20 minute's influx in 20 minutes ;

\therefore 10 taps empty $\frac{1}{6}$ of a cisternful and 3½ minutes influx in 3½ minutes.

Again, 15 taps empty a cisternful and 5 $\frac{5}{7}$ influx in 5 $\frac{5}{7}$ th minutes.

\therefore 15 taps empty 7-12ths of a cisternful and 3½ minutes influx in 3½ minutes ;

\therefore (15—10 =) 5 taps empty ($\frac{7}{12} - \frac{1}{6} =$) $\frac{5}{12}$ of a cisternful in 3½ minutes ;

\therefore 12 taps empty a whole cisternful in 3½ min. ; and 2 taps empty $\frac{1}{6}$ of a cisternful in 3½ minutes ;

\therefore (10—2 =) 8 taps carry off the influx

\therefore (12+8 =) 20 taps empty a cisternful and carry off the influx in 3½ minutes.

The solution by symbolic arithmetic is extremely easy. Let x equal No. of taps needed to empty a cisternful in 20 minutes, then the No. required equals (10— x) + 6 x ;

But 20 x equals 5 $\frac{5}{7}$ ths(x +5) \therefore No. required equals 20.

(73.) Let ab and ac represent any two numbers a, b , and c being prime to each other ; their G.C.M. is a , and their L.C.M. is abc ; hence we have this canon :—

Divide the L. C. M. by the G. C. M., separate the quotient into any two factors prime to each other ; the products of the G. C. M. and each factor will give a pair of Nos. fulfilling the proposed conditions. *Unity is to be taken as a prime factor.*

$$56385 \div 179 = 1 \times 5 \times 7 \times 9.$$

Pairs of solutions are

179	"	56385,
895	"	11277,
1253	"	8055,
161	"	16265,

(74.) Let the weight of the beam per unit of length be w and the pressure at M be p .

Take moments about N

$$\frac{1}{2}w(a+c)^2 - pc - \frac{1}{2}wb^2 = 0 \dots (i)$$

The M-moments about any point at distance x from M are $\frac{1}{2}w(a+x)^2 - px$

At B and C these moments vanish, otherwise the joints would bend, hence MB and MC are the values of x in

$$\frac{1}{2}w(a+x)^2 - px = 0 \dots (ii)$$

Elimination of p between (i) and (ii) leaves a quadratic in x .

Example. Let the total length be 6 ft. and the distance of the supports from the ends be 9 inches and 1 foot 10½ inches, respectively ; thus a equals 9, b equals 22½, c equals 40½ $\therefore p$ equals $24w$ and x equals 3 or 27, which added to a equal 9 gives B at 1ft. and C at 2 ft. from A.

(Compare the example under 58.)

(75.) Let W equal the weight of the body, w that of the cane and d equal the distance of the centre of gravity of the cane from D.

6 W equals $dw + 20 \times 2$ lbs.

5 W equals $dw + 8 \times 2$ lbs.

∴ W equals 12×2 lbs. equals 24 lbs.

(76.) There were at first 12 negroes to each white man equal to 24 negroes to every two white men. The addition of the 105 negroes raised this ratio to 29 negroes to every two white men; i.e. it raised the ratio by 5 negroes to every 2 white men, or 105 negroes were 5 negroes to every 2 white men.

105 negroes set off by fives give 21 fives; but for every five there were two white men; therefore, there were 21×2 white men equals 42 white men.

There were at first 12 times as many negroes or 404 negroes.

(The above is substantially the solution of the proposer, arranged for *graphic arithmetic*. On sending it he remarked, "I send also a problem on the same principle as one in the 'Second Class Paper' of last July" (1873) "which I understand, some think cannot be solved without algebra.")

(77.) The times of vibrations of pendulums vary as the squares of their lengths. Taking 315.56929" in a tropical year and 39.143 in. as the length of a second's pendulum at Cambridge the required length will be in miles

$$3155629002 \times 39.143 \div 63360$$

or rather more than 6152 millions of millions of miles.

PROBLEMS.

80. If the estimated annual value of the property in a certain parish consist of the yearly rent paid to the landlord together with the rates, and the rates be calculated upon the rent after a reduction of 30 per cent.; find the rateable value of a tithe-rent charge, the estimated annual value of which is £884 per annum, when the rates amount to 3s. in the pound.

D. MCFARLANE, Arkell, from Barnard Smith's Arithmetic.

81. Problem 24, Exercise 56, page 217, Mc Murchy's Advanced Arithmetic.

WM. MILL, Sarnia.

82. Problem 19, Exercise 77, page 149, Elementary Arithmetic.

DO.

83. Problem 35, Exercise 56, Advanced Arithmetic.

E. H., Mosa.

ANSWERS TO QUESTIONS AT RECENT TEACHERS' EXAMINATIONS

Algebra—Second Class.

1. 1.

$$3x - 2y$$

2.

$$3x^2 - 5xy - y^2$$

3.

$$x = -\frac{1}{3}$$

4.

$$x = 3$$

5.

$$x = \frac{5}{m}$$

6.

$$x = 3, y = -1$$

8.

$$\$4000$$

9.

$$(b) \frac{1}{7}$$

10.

$$\text{Remainder in first case, } -1; \text{ second, } +119$$

Natural Philosophy—Second Class

1. 40lbs.

4. 12 feet.

6. 29.52.

8. 10.

9. $m = 300$.

Arithmetic—Third Class.

- (1.) $3\frac{1}{2}$.
- (2.) 24003 oz., 2997 oz.
- (3.) \$3,000, \$24, \$14.40.
- (4.) \$16800.
- (5.) 16 $\frac{1}{2}$ ft.
- (6.) 22 $\frac{1}{2}$ dys.
- (7.) \$39,46125.
- (8.) \$60,000.
- (9.) \$108 loss.
- (10.) 58 $\frac{4}{7}$ per cent.

Arithmetic—Second Class.

86

1. _____

1251

2. 200.

3. \$100.

4. 83 $\frac{1}{3}$ cts.

5. Given.

6. \$400.

7. \$3570, \$3520.

8. \$26666.66 $\frac{2}{3}$.

6. \$16.92 $\frac{4}{13}$.

10. \$300.

11. £1666 13s 4d.

12. 10, 15, 20.

EDITOR'S DRAWER.

HIGH SCHOOL EXAMINATION. — We notice that the next examination for admission into the High Schools and Collegiate Institutes of Ontario, will be held on Tuesday and Wednesday, 8th and 9th December next.

LONDON COMMERCIAL COLLEGE.— We would call special attention to the advertisement of this excellent College, which will be found on second page of cover.