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THE CANADA

EDUCATIONAL  
MONTHLY

AND

“SCHOOL MAGAZINE.”

EDITED BY ARCHIBALD MACMURCHY, M.A.

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JANUARY, 1895.

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MANUAL TRAINING AND THE TRADES UNIONS.

BY D. K. CLARKE, SUPERINTENDENT OF MANUAL TRAINING DEPARTMENT,  
WOODSTOCK COLLEGE.

IT has always been a matter of surprise to me that any opposition to Manual Training should come from the Trades Union, the source from which I would have expected its most hearty support. I believe that this opposition arises from a mistaken conception, and that Manual Training only needs to be fully understood and the Trades Union will be foremost in petitioning for its introduction as a part of our general school system. It is a duty that devolves on parents and the state alike to provide boys with the best fitting for life that is practicable. This needs no argument here; the efforts made in general both by the home and by the state indicate the recognition of this duty. The serious labor problems that have in recent years been claiming attention, and the apparently crowded condition of all the trades, make parents anxious that their children may not be left behind in this race for position, and make the State also keenly alive to the best interests of her sons. There is a class of men for whom there is always room, who are in demand everywhere. These are men who think, men who are self-reliant and worthy to be relied upon, skilful and fertile in resources in whatever position they are thrown.

Such men are always at a premium, and will always find room in the world. Now these are precisely the characteristics that Manual Training is specially designed to develop, and it is for this reason that it claims the attention and favor of all the laboring classes.

What is Manual Training? In the first place its object is educative, just as is the study of classics or mathematics. It seeks, however, to educate the practical side of a boy's nature, and claims to add a very important factor which in his more purely theoretical studies is apt to be overlooked. The course usually consists of a regularly graduated series of exercises in wood and metal, as these materials afford, within easy reach, the widest range for educational purposes. In connection with, and throughout the course, drawing is insisted on, and, owing to its importance, is given as prominent a place as time and facilities will permit. The tool and machine work comprises exercises in carpentry, wood-turning, pattern-making, wood-carving; and in metal work, forging iron and steel, including welding, tempering, brazing, etc., and machine work, including exercises on the iron planer, shaper, engine-lathe, milling

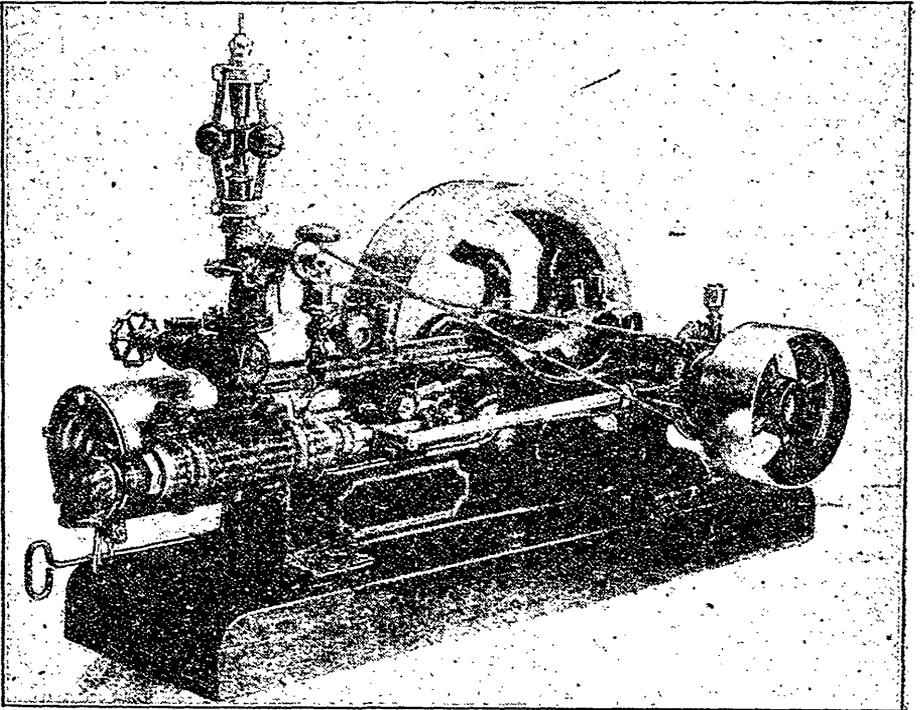
machine, etc., together with filing, scraping and fitting. These exercises frequently take the form of construction of various projects, such as physical apparatus, dynamos, model engines, etc., and what is attained through the medium of this work? There is no thought of teaching any trade or of dispensing with apprenticeship. There is, of course, a certain degree of skill and proficiency attained in drawing and the use of the tools and machines employed. And to many this might seem the sum of it. These are of themselves very important and well worth the time devoted to their acquirement. But these are not the main objects sought, nor are they by any means the most important. Manly independence, and self-reliance, are the natural fruit of this training, and while pupils are taught no trade, they are taught in a thorough and practical way, the general principles underlying all trades, so that whatever branch of mechanical work they elect to follow they enter upon it with confident assurance of success. By combining Manual Training for an hour and a half a day with the ordinary school studies a boy loses nothing in the efficiency of his class work and, at the same time, learns more of the general principles on which all trades are based, than the average apprentice boy does, who spends the year exclusively in shop work. His work is too general for him to become dexterous in any particular line, in other words he does nothing that approaches learning a trade. He is not required, as the apprentice is, to repeat the same operations day after day, what he does once well he is not asked to repeat, but is advanced to something new, so that his work requires close thought and application on his part at every step. He is under the constant oversight of a teacher, whose one aim is the best development of his pupils. It can be readily seen,

then, why I say that Manual Training and apprenticeship are entirely different.

The ideal school course is the one which will best fit a boy to grow up among the men for the times, and should be so arranged as to meet with equal fairness the wants of all whatever be the calling in life at which they aim. Those aiming at the learned professions—say medicine, for example—find the present High School course admirably adapted to them, leading up to matriculation by studies quite in line with their proposed profession. But the great majority of boys in our schools are looking forward to business and mechanical pursuits, and should not these schools, supported by public funds, afford a course equally well adapted to the particular wants of this large majority? During the period that boys usually spend in the High Schools, habits of thought and action are most readily formed, hence the importance that these habits should be given that practical turn that will be of the greatest benefit in future years. The old style apprenticeship is gone, and the boy who enters in the ordinary way a manufactory or machine shop, rises by very slow degrees. Were he at this period of his life able to combine Manual Training with his ordinary school course, he might be encouraged to remain in school for two or three years longer, and whatever would raise the standard of education among mechanics could not fail to benefit the trades themselves as well as the State in general. No doubt the advantages of Manual Training will be more apparent in the case of those proposing to enter some department of mechanics or engineering, yet its advantages are scarcely less for those entering business or professional life. Not only does it tend to create a wholesome bond of sympathy between all classes, but the cultivation of the practical

side is an element of supreme importance everywhere. An example very much in point here, has been brought to my notice recently. One of our Manual Training graduates found himself in connection with an institution in which it was decided to introduce printing as one subject of a business course. The full necessary equipment had been provided and a master printer engaged to superintend the

printing and in due time the class under his supervision was able to send out the first issue of the college magazine in very creditable form. And this is not an isolated example. The history of Manual Training schools everywhere is the same, and to learn the subsequent career of the graduates of these schools is to have the most convincing proof of their supreme utility.



work. At the last moment however this master printer declined, nor could any other be found to take his place, so that it seemed as if the institution must, in this instance, fail in its purpose. Our student had never learnt printing, but his character had received that practical development that Manual Training afforded and he appreciated fully the principles underlying mechanical operations in general. He procured some books of instruction in

At the time that the Manual Training Department was opened in connection with Woodstock College there was pretty strong ground taken by the Trades Unions against its introduction into some of the public and High Schools. About that time an active union man from Toronto had occasion to visit the school in Woodstock, and, after listening to a full explanation of its aims, and seeing for himself the sphere of its work, he said: "There is

no reason for us opposing the introduction of such a feature into the schools; this is along the line of our interests." It seems to me that this is the conviction that all must arrive at who fully understand the working of these schools. The fear was expressed that, in the case of strikes, boys, thus partly trained, might be made to take the place of regular workmen. I have never known of an instance in which such a thing occurred, and, from the nature of the case, it must evidently prove extremely unsatisfactory, if not impossible, to substitute Manual Training boys for mechanics of any trades. When they enter any of the trades, they must naturally do so in the legitimate way as apprentices, but they enter well equipped and qualified to rise rapidly to the front rank; and I am glad to say that the record of the pupils that have passed through the various Manual Training schools, as far as it has been possible to collect such records, shows that a very large proportion of them are successful in speedily reaching a front rank. Manual Training schools lead very naturally to the schools of Technology and Engineering, so that much of the work done in the former is perhaps lost sight of, being absorbed in the latter. I can, however, conceive no essential ground of rivalry between Manual Training and the Trades Unions. In as far as it is calculated in the future to fill the ranks of mechanics with better educated and more skillful men it is a natural benefit and parents should naturally desire to see their sons follow in their footsteps under better auspices, and better equipped for work, than they themselves were; and if the younger generation rises more rapidly than did the old, this is surely no cause for opposition but rather is it the greatest reason for making such advantages available as widely as possible.

Strictly technical schools are within

the reach only of a limited number. The Public and High Schools are the schools of the people. The education of 80 per cent. of our youth ends there. Let no means, therefore, be spared to make these schools effective. With all that has been done for them, especially in recent years, they still lack the practical element indispensable to a well rounded education. I would as naturally expect to see physicians and lawyers agitating for the removal of classics and history from the course, as to find the representatives of labor opposing the adoption of Manual Training with a full understanding of its character and aims. One of the leading Manual Training schools in the United States was established first through the generosity and interest of private individuals. As soon, however, as the city in which it was located had an opportunity of seeing fully its character and the results following its work, the people enthusiastically assumed the responsibility for its management and it has since been carried on and developed with an energy that shows it is one of the city's most highly prized institutions. Let Manual training be introduced into our schools as far as practicable and I believe it will win for itself the same enthusiastic support that it has all over the United States, and no class will be so greatly benefited by it as the representatives of labor whose mistaken opposition has been a hindrance hitherto. We as Canadians cannot afford to sacrifice any advantage in the universal competition of the present day. Our sons must be prepared to enter the great race in every department, and with every people. We have prided ourselves, and with justice too, on the superiority of our educational institutions. Let us not forget that this is an intensely practical age and let our secondary education have the perfection that is necessary to adapt it fully to our people's practical wants.

## THE NATIONAL FEELING OF NOVA SCOTIA.

BY C. OCHILTREE MACDONALD.

**A** NATIONAL feeling is growing up in Canada. It is clear, however, that our national sentiment is, like the sun in autumn, late in rising. Twenty-five years of union has not yet produced that strong individuality of nationalism which attracts the flower of the old world and surplus wealth of the people north of or upon the 49th parallel of north latitude. In seeking some explanation of this, I am led to suspect that the educational system of Canada has not paid any particular attention to the creation of Canadianism during the epoch of union. I am impelled to this conclusion by a scrutiny of the school life and system of Nova Scotia. The scholar and the school in Nova Scotia are thoroughly insular in their prejudices. There is a deep passive resistance to the Federal idea in the character of the Nova Scotian and I am seriously inclined to believe that under present conditions it is going to be as impossible to Canadianize Nova Scotia, as the French education of Quebec found it to Franco-Canadianize Acadia. If there is one thing that is being cherished, inculcated and taught in the schools of Nova Scotia, it is Nova Scotianism and the individuality of Nova Scotia. It is tacitly understood between scholar and teacher that Canada is an appendage which is surely quite the reverse of the Federal idea. The Federal idea aims at inculcating in the minds of the people, especially through the medium of the school, that Nova Scotia is an appendage of Canada. As a matter of form the Nova Scotian admits this, but as a matter of fact he denies it. Nova Scotia is so isolated from the great volume of traffic which circulates

through the Dominion that the province has, as yet, little sympathy with Canada. In summer the great highway of the St. Lawrence practically demonstrates that Canada begins at Montreal and in winter the traffic falls off into Portland and Boston. Traffic, the circulation of trade are the great binders together of peoples, and we find that the mighty volume of such, incident to the acceptance of Canada, as the short route to Europe, Australia and the East ignores Nova Scotia almost entirely. Nova Scotia the peninsula is shut off from it all. Even the Intercolonial Railway of Canada is not holding its own as a through route to the sea, and, after all, it seems quite natural that, these things considered, there should be a greater Nova Scotian sentiment in Nova Scotia than there is a Canadian in Canada. The Federal idea is excellent but it is not yet approved successful.

When adopted on the gigantic scale of the Americas or Canadas, its progress is slow. In the United States, where it has been longest tried, it is difficult to trace the good it has done to 60,000,000 people, steadily arraying themselves against themselves as the East, the West, the South and the Middle States and all deeply involved in debt. The Nova Scotian Parliament is on record as having passed a resolution in favor of secession from the Canadas so recently as a few years ago, and I am bound to admit that both in and out of the schools the youth of the province are instinctively Independents. If this is to be repaired and Nova Scotia drawn more closely into Canada, many reforms must be instituted and much more inducement held out to scholar and teacher to become Canadian.

## RELIGIOUS TEACHING IN THE SCHOOLS.

## LESSONS FROM THE CHURCH CONGRESS.

THE question of religious teaching in schools is of vital interest not only to all members of the scholastic profession—it is of vital interest to the nation at large; and only a little less important is the question of organising Secondary Education. During the late Church Congress at Exeter, both subjects were discussed; and we propose to lay before our readers the gist of the arguments and statements brought forward on that occasion, as fully as is compatible with the limits of space at our command.

In connection with religious teaching in secondary schools, it may be well in this place to mention some remarks made by the Bishop of London. His lordship said that he wished very specially to emphasise two things. In the first place, a school, although it might very largely take the place of a home, yet could not entirely take that place; moreover, in the case of day schools, so far from their taking that place, the schools were of necessity subordinate to the home, and the teacher could not give religious instruction with real effect if the home were altogether filled with a contrary spirit and were exhibiting no religious life. The Rev. A. O. Hardy, speaking on this subject said: "Parents had complained that their boys had gone to the public schools with such teaching as could be given at home, but had come back with no faith at all. He found that the experience of boys differed, whether they had been in the sixth form or not. There was a general feeling that whilst there was definite teaching in the sixth form there was a great want of it in the other parts of the school. He believed the truth was that whilst there

was on the part of the headmaster a grip on the other subjects, there was not the same grip on the religious instruction."

Another speaker, the Rev. Dr. Wace, principal of King's College, London, still more strongly insists on definiteness in religious instruction. He says:—

"Our great danger at the present time is what is called undenominationalism. Now undenominationalism is founded upon the supposition that some absolute line can be drawn between religious teaching—theological teaching—and other teaching, and that it is possible for a man to study all other subjects satisfactorily, and not to touch religion at all. A very serious attempt is being made, to which I will presently refer, to adopt this principle as a rule for determining whether public support shall be given to institutions for secondary education. Now that which is of first importance for us, I think, to realize, in reference to this aspect of the subject, is that the separation between religious and theological truth and other truth is not possible, and that the higher you go in teaching the more impossible it becomes. It may be possible, no doubt, to teach the multiplication table quite thoroughly without any reference to religion; abstract mathematics may be taught with something of the mechanical accuracy of a calculating machine, but the moment you touch upon the higher branches of learning you touch inevitably upon the great problems of religion and of theology. History, for example, may be taught in a Christian way, in a non-Christian way, or in an anti-Christian sense. To the Christian,

Christianity is the key of all history. All history, past and present, exhibits a Divine order, the working out of the great Divine purposes, of which the history of God's people in the past and the history of the Church in the present are the centre, and the man who teaches history in a non-Christian spirit is not simply holding erroneous religious opinions, but, from our point of view, he is not teaching true history."

He said further: "There is a very great danger ahead to the secondary schools of this country, so far as they come or may come under the control of Government. It has been seen from the action of the present Government that there is a strong tendency to lay down a general rule that no public assistance and no public recognition shall be given to institutions which insist upon their teachers being Christians. I refer, of course—and I only refer to this in passing as an indication of the danger in question—to the withdrawal of the public grant from King's College, London, a grant which is withdrawn from it solely in consequence of the requirement in its constitution that its teachers must be Churchmen—a requirement established for that purpose to which I have referred—namely, that the whole education of the place shall be Christian. As one of the previous speakers has said, we, as Churchmen, are not asking for any exceptional privileges in this matter whatever; but what we are asking is that we shall have as much freedom and as much assistance from public money to teach the Christian view of the universe as other institutions shall have to teach a non-Christian view. That is all. The rule which the present action of the Government indicates is objectionable, not simply from a religious point of view, but from the point of view of its being a restraint on freedom of teaching.

If you set up an enormous engine supported by public money to maintain teaching in which the Christian view of life is kept in the background, you are practically penalising the Christian system, and you are giving an enormous and unfair advantage to systems which keep it out of sight. That is the only practical point I would venture to urge on your attention. The subject is a very momentous and urgent one, and I hope that more attention will be given to the grave danger with which the whole higher education of the country is menaced."

The Rev. F. B. Wescott (headmaster of Sherborne), in his address, pointed out the many difficulties in the way of religious teaching in secondary schools:—

(1) The want of enthusiasm and earnestness on the part of the teachers.

(2) The general vagueness of views which is becoming more prevalent among those masters who are laymen.

(3) The practical difficulties of securing the earnest and sober attention of the hearers in the ordinary school class-room; where, he said, the circuit of sympathy was apt to be incomplete.

Every school teacher, more especially every day-school teacher, feels the power of home influence on his pupils, and has to assist, or counteract it, as the case may be. In an interesting paper read at the Church Conference by Miss L. H. M. Souby, Headmistress of the Oxford High School for Girls, that lady made excellent remarks bearing on this point. She says, for instance: "It is no truism to insist on the responsibility of parents. With a feeling, one part humility, and three parts laziness, too many parents depreciate their own power in the matter, and hand the child over to us. They may hand us over their privileges, but they cannot

hand us over their responsibility." No; nor can they hand over their responsibility even to the State. Miss Soulsby considers that religious teaching is outside the sphere of school teaching. That is to say, school can do something. It can familiarise girls with our Lord's life, and make it their standard and daily example. "Knowledge of Old and New Testament history, and such practical teaching as I have spoken of, leaves time for little else in school," says Miss Soulsby. She thinks, nevertheless, that a course of reading on religious subjects, comprising such heads as: Study of the Bible itself; the present position of science and of criticism with regard to religion, dogmatics, Church History, illustration of the Bible in modern discoveries and travel, practical devotional reading, should be undertaken by women. And she confidently affirms that of the seven heads mentioned above, devotional reading is the only one in which the average woman could stand examination, and yet it is her duty to know something of the other six. She suggests that there should be issued an authorized scheme of reading, giving, under such headings as the above, the *minimum* course of readings which an average woman should feel bound to master as an elementary part of her education. "There might be more than one such list, so as to give scope for varying views, but authorisation by some committee of repute would be a strong feature of the desired usefulness.

With regard to the question of organising secondary education, perhaps the most interesting and striking discourse of the whole Congress, was that delivered by the Right Reverend Dr. George Ridding, Bishop of Southwell. And on the whole, the most important part of it, from our present point of view, was the distinct

and courageous stand made against what the Bishop called "the ladder idea"—*i.e.*, a ladder, or uninterrupted progression from primary schools to the University. To persons who have seriously considered the practical objects of teaching, and the practical results which may be hoped from teaching in the vast majority of cases, it would seem almost a work of supererogation to dwell on the objections to the "ladder" scheme; and almost a sufficient reply to its promoters to say, "It is impossible; therefore not open to discussion." But, unfortunately, "men are but children of a larger growth" in eager credulity on points which touch their own desires. From various causes and motives, which need not here and now be insisted on, there is a large number of persons who wish very much that a boy could rise uninterruptedly from the lowest class in the Board School to brilliant distinction at Oxford or Cambridge. They would like that it should be possible. They would like it so much, that they cannot bring themselves to believe that it is impossible. There are, perhaps, some skilled handicraftsmen who would not be ready to admit the converse proposition: who would entertain well-grounded doubts of its being possible for a senior wrangler, for instance, to descend—or, if the word be offensive, let us say to proceed, from the higher mathematics, studied abstractedly, to the manufacture of perfect Sheffield cutlery, or exquisitely fitted cabinet-work, by a consecutive series of classes.

The Bishop hits a notable nail on the head when he says: "The ladder must not be shortened at the top to flatter men into false ideas of equality." And again: "There is a real delusion in the ladder idea that unifying education is an end in itself, in the face of the very varied objects for which people want to be educated. There must be three main

lines of education—the literary, the commercial, the manual. Which of these any particular student is to follow is his business, or his parents'."

Dr. Ridding is of opinion that "all this accommodation" is not needed for really clever boys, who can *step off one ladder to another* if they find themselves on the wrong one; and neither ladder need be spoiled to ease them. He proceeds to point out that what is far more desirable than any attempt to unify education, is to achieve improvements which shall make each sort of education good of its kind. Much fault has been found with the present system of industrial education. Our artisans are said to fail in foreign competition from want of general education, and clerks or travellers from ignorance of foreign languages. And the blame of these two defects has been laid by some persons on middle-class schools. But, the Bishop pertinently asks, is that just? He mentions a school of which he himself was on the governing body, with business men for his colleagues—men who were zealous for modern theories, and very eager to give a good commercial education, book-keeping, shorthand, etc. The Bishop asked "Why do the boys not learn French and German?" and was answered "Oh, French and German are no use to our boys here." In short, the teaching of French and German would have been the administration of a supply without a demand. Whether the demand ought to have existed is another point altogether.

And as regards the second indictment against middle-class schoolmasters—*i.e.*, the alleged falling-off in certain handicrafts wherein Englishmen were formerly supreme—Dr. Ridding's argument appears to us to be unanswerably cogent. Grant, he says, that English workmen have deteriorated, and German workmen improved,

as much as is alleged, can the blame of this be laid on the schoolmaster, or on the lack of adequate school teaching? Surely not; seeing that fifty years ago, when, for instance, English cutlery and English leather were supremely excellent, and acknowledged to be so all over the world, no one can say there was more schooling than at the present day. "There was," says Bishop of Southwell, "more apprenticeship, more drill in craft elements, more pressure to do good work, but fewer books, and less science and art teaching." And again, "Ask a foreign hotel-keeper, whose guests are nearly all English, why he has no English waiters? He does not say, 'They cannot talk the language'; but 'Germans cost less, are more amenable, and ready to put up with what is required, and what Englishmen refuse,' etc."

All this mainly to rebut the nonsense talked about schools, as though a certain curriculum, approved by a Governmental body, and paid for by ratepayers, could supersede diligence, and practical labour, and honest earnestness, and an adequate length of time devoted to learning a trade, a calling, or handicraft.

Can we suggest a more practical and common-sensible utterance on the subject than Dr. Ridding's remarks that "manual skill must be acquired young, and under a close discipline only enforceable on the young. Its teachers must know it. A handicraftsman's secondary education *must be that of his hands; his secondary school the workshop, under skilled workmen.* . . . I believe we shall go on a wrong tack if we try to improve manual skill by lengthening schooling and delaying the secondary education of the workshop and the farm."

There are probably few persons who would deny the energy, acuteness, and business abilities of the citizens of

the United States. But even in a "workshop" not requiring absolute manual flexibility such as is needed in the handicrafts—the counting-house—Americans do not subordinate the necessary practical apprenticeship to business habits and business experience, to any school curriculum on *a priori* principles. All Americans get school teaching, true. But the age of fifteen or sixteen is considered by them quite late enough to leave the school bench, and school examinations and competitions, for the daily practical training of the office stool. Cases have come within our personal knowledge of young men—the sons of American parents residing in Europe—who had received a University education in England or Germany, and who proceeded to New York bent on finding an opening for commercial pursuits, but were met by the uncompromising reply: "Too late. You're no good. We want young fellows who have been trained in business habits. Your education has, no doubt, been excellent, but it is useless for Wall Street."

And it is just this, the formation of habits, the *bending of the character* towards certain pursuits, which must be reckoned with quite as much as the mere acquisition of book-learning. And it is a process that can be performed by no sudden stroke of a harlequin's wand, even though harlequin should be the duly elected representative of a million of voters. *Tabula rasa* has never been a favourite method with the Englishman. His laws and constitution, his habits, traditions, and national character are all the result of organic growth, which was necessarily slow, but—we have been accustomed to think—correspondingly solid. Not that we would set ourselves against progress in educational method, or any other department of human affairs. Growth implies change. But the change brought

about by development and evolution is one thing; the change produced by cutting everything down to one dead (however symmetrical) level is quite another thing.

As to private schools, the Bishop of Southwell said much that was pregnant and pertinent. He said, among other things, that people are looking with interest to the Royal Commission for information about private venture schools. It is to be hoped that the information will be forthcoming. "Private schools exist for social reasons, or because parents believe that in them they can get more exactly what they wish, and control their boy's teaching, and hours, and payments. *They represent parental liberty.* They represent, also, large vested interests."

Finally, Dr. Ridging said: "I have repeated at each turn that I see no knot in the present problem that requires the intervention of such a machine-god as a Minister of Education. The name sounds great things; but what are they? A Minister is not a Minister, but an office of clerks, of many grades, but one routine; not always satisfactory in the regulated business of the civil and military services, nor enthusiastically approved in the Education Office, Charity Commission, or South Kensington, ably manned as they are with the best available officials. What would the Minister add? A personage, either himself of special views, or exposed to special pressure from political parties or doctrinaire amateurs, the butt of magazine writers and secretaries of associations, and bound periodically to show himself worth his place by a revolution."—*The Educational Review, London.*

Great results cannot be achieved at once; and we must be satisfied to advance in life as we walk, step by step.—*Smiles.*

## THE TEACHER'S MISSION.

VERY few teachers but have heard of miseries that exist in this world, and of remedies for them. Now the evils that exist are of two kinds, those that can be remedied and those that cannot. And when the matter is fairly and carefully considered it will be found that the real remedy for remedial evils is in the hands of the teacher. And by teacher is not meant solely the one in the school-house, but all who are able to lift people from lower to higher levels. But as those in the school-house have all the children from five to fifteen years of age daily before them, on them hangs the heaviest responsibilities.

Now it may be that children may assemble with teacher and go forth unable to cope with a the evils that beset them in the street and at home, although they have acquired the power to read; so that in addition to teaching pupils to read is the task of impressing on them that doing the right is the foremost of all things. This is the *teacher's mission*.

George Washington stands before the world as the greatest of all for behaving righteously and wisely while possessing unlimited power. He was left fatherless when eleven years of age; to his dying hour he attributed to the influence of his mother the acquirement of ability to restrain his high temper and to square his conduct according to justice and equity. In the archives of Mount Vernon may be seen a little volume bearing the name of Mary Washington, written by her own hand, and which was held by him as a saintly relic. It is entitled Sir Matthew Hale's Contemplations; from this she daily read to her children. Thus she fulfilled her mission.

It has doubtless not dawned on the minds of a vast number of teachers that they are charged with any other duty than giving instruction in read-

ing and other branches; it is owing to this poor conception of the teacher's work that the jails have to be enlarged at about an equal rate with school-houses. In like manner, so poorly do most mothers conceive of their duty in bringing up children that in few households are such lessons considered important as Mary Washington gave in her home on the banks of the Rappahannock.

Let us propound the inquiry at once: Now, how shall the teacher fulfil her mission? In speaking of Mary Washington reference was designedly made to a small volume which in those days of few books was carefully studied by her. Without attempting to answer the above question in fullness and minuteness a partial answer may be given in the words of Ruskin:

"And I would urge upon every young man, at the beginning, of his due and wise provision for his household to obtain as soon as he can by the severest economy a restricted, serviceable, and steadily (however slowly) increasing series of books for use through life; making his little library, of all the furniture in his room, the most studied and decorative piece, every volume having its assigned place, like a little statue in its niche."

To perform her mission then, the teacher must be the possessor of a library—if may possibly be a small one. To own a library supposes, of course, that it is read; supposes that it is turned to for aid, that the subjects read about are thoughtfully turned over in the mind. It is not expected nor desired to turn the teacher into what is called a great reader; such persons are rarely useful and the teacher aims at advancement and usefulness through his advancement. To read many books means a waste of time, and time is about all we have. If a poor, shallow

book is chosen it means that a good strong book is laid aside.

It may be considered a strong assertion, but it is true, nevertheless, that one who has not read certain books is not yet fitted for a teacher, although he may pass a good examination in arithmetic and geography. The one who proposes to teach, proposes to form mind and character; he cannot do this unless his own mind is on a high level. You cannot supply a town with water unless you put the reservoir on a hill, nor can one teach (in any decent use of the word) unless he is at a higher point than his pupils. To know more about arithmetic does not necessarily place him higher; many a vulgar seaman knew far more than Victor Hugo did when he wrote "The Toilers of the Sea," but from the latter streams of thought are steadily flowing.

Ruskin says, "I wish you to see that both well-directed moral training and well-chosen reading lead to a possession of a power over the ill-guided and illiterate." Before one can benefit another he must be on a higher plane; the teacher really enters the school-room as a beneficent power; and doubtless most teachers desire to do this. Of course, the early conception that he enters to command silence and cause fear and trembling by his frown must have disappeared and a nobler one have taken its place. How shall he become a beneficent power without going higher than his pupils?

Without pursuing this thought let it be said that to make any worthy attainment in the school-room there must be a noble motive; we can see that all great men have been actuated by noble motives. The reason the world is no better is because so few are actuated by noble motives. But there is nothing to hinder the teacher from acting and carrying on his work by the highest possible motives in

himself. To know what these are he must converse with the great thinkers as they have expressed themselves in their writings. Such a teacher will find himself looked up to in a way that will often affect him profoundly. It is possible for us to *feel* when we cannot know. Those who walk with high-thoughted writers attain to a state of joyful rest, having obtained some glimpses at least of divine truth—the only substantial thing in the universe next to God himself. Rossetti says, "My life has been apart, in shining brightness and the place of truth." So he who is a companion of the great thinkers may rise above the dust and perplexity of the school-room and be able to understand how to make things tend to harmony, and how that band of youth may be fitted to go out into the world earnest to make it better.

There must be a contempt for merely hearing lessons, for knowing to day only what was known yesterday, for running one's thoughts in the same old grooves. No wonder there is a need of compulsory laws; no wonder the teacher looks east, west, north, and south for some business less deadening. Teaching is a serious business; only persons of serious and earnest lives should attempt it, for its main aim is to cause young people to live nobly.—*The School Journal.*

A good school-master ought to be the degraded servant of no one; not ignorant of his rights, but thinking much more of his duties; giving an example to all, serving all as an adviser, above all not desiring to withdraw from his occupation, content with his situation because of the good he is doing in it, resolved to live and die in the bosom of the school, in the service of common-school instruction, which is for him the service of God and men.—*Guizot.*

## COMMON SCHOOL STUDIES.

NOT long ago some dissatisfaction with the common school studies was expressed through the medium of various letters in the provincial newspapers. Then followed a brief discussion in which the education officials appeared finally to silence their critics; but I could never see, although I watched the contest closely, that the objections urged by the latter were in any case shown to be groundless.

Having for some years been occupied with such matters, my firm convictions drew me to the side of those who contended that the machinery, especially that part of it relating to the courses prescribed for the different grades, had become too complex and cumbersome; in short, that the branches to be pursued were far too many and not of the right assortment. I had witnessed, as one concerned, always with surprise, and often with regret, the rapidity with which change succeeded change in the regulations, and I could not help thinking them more the reverse of improvement than anything else. Accordingly, I hoped that the question would be agitated till the official eyes should be opened and good wholesome reform brought about. In this way I was doomed to disappointment, with many others, who honestly believed that their children were being hampered, instead of helped, by the exorbitant demand laid upon their time and faculties. And if the people then complained that too much was attempted before even the rudiments were fully mastered; they have just reason at present for coming forward with a pretty forcible remonstrance. For the catalogue has been steadily increasing, and of course the number of new books—rather expensive, too, for the kind has kept even pace with it—while real knowledge, in the midst of what is an actual hin-

drance, has in most cases lagged woefully behind, till the bewildered parent seriously asks whether his highly favored offspring will ever be able to earn enough by his stock of learning to pay for his stock of books.

Often as it has been said, it will bear repeating because so often lost sight of—that the great end of education is to fit the person for the work he expects to perform during his lifetime. There are a few things of a fundamental nature which should be made the basis of all instruction, and which should be taught to all, because in some way all will have need of them, no matter what the occupation may be. A sound English elementary education is indispensable, and for the lack of it no faint tincture of half a dozen sciences can ever atone. It is not contended that the pupil should stop when he is in possession of the common implements of learning, but, if means and opportunity allow, he should follow what desire he may have for things of the understanding. Special training for the professions, and the higher accomplishments, literary, scientific and musical, are within the reach of a comparative few, but open to all who have the capacity to learn and the cash to pay for it. Now the vast majority of pupils in our public schools cannot and do not expect to go beyond the common courses. When their period of tuition is over,—generally much interrupted towards its close, say, at the age of sixteen, for boys, they must go forth to battle with the world, to earn their living by hand work, as did their father before them. They are called on to act their part in a field where little avails if the power of dealing with practical facts is wanting or but slightly developed. If they can read well, write a fair hand and

reckon accurately, they are not badly equipped for the struggle. It is, therefore, of the first importance that children should be well grounded in the elementary branches, but this is next to impossible when their minds are divided among a multitude of topics, the meaning and intent of which older heads find it difficult to understand. Take the young swimmer beyond his depth, and he no longer strikes out in self-reliance, but clings to the nearest floating object and drifts helplessly enough. In like manner, put the child, however bright by nature, into studies too deep for his age, and, as the safest resource, his mind lays hold of the mere words which float in the memory, and gradually settles lower and lower. The provincial examiner was astonished and grieved to find at the last examination so many candidates, thoroughly drilled according to law, answering in the exact words of the text and apparently altogether ignorant of the subject. It is a great wonder that he did not at once divine the cause of this detestable species of word-mongery, for which the students are not wholly to blame. Henceforth, when he comes seeking fruit under a system of such rank growth, he must be prepared to find nothing but leaves. The syllabus bears the same relation to solid learning that the catechism does to true piety.

I am by no means indifferent to the value of a liberal education. The higher studies have their use and their place. But for the junior classes they are no more to be compared, in point of importance, with the ordinary branches than the luxuries of life are to be compared with its necessaries; and it would surely be ruinous economy to indulge to an equal extent in both where the means at command would not secure a sufficient supply of the latter. In order to see how provision is made for mental nourishment

in the schools, we have only to glance at the bill of fare placed before the sixth grade for instance, comprising, it may be, boys and girls from eight to twelve years of age. Here it is: 1. reading; 2. spelling and dictation; 3. punctuation; 4. composition,—essays, letters and descriptive sketches; 5. grammar—parsing and analysis; 6. writing; 7. drawing; 8. geography—book and map exercises; 9. arithmetic; 10. botany—a little; 11. natural phenomena—a few; 12. mineralogy; 13. hygiene; 14. music—tonic sol-fa! Some of the above, it is true, are not entered as separate studies, but that only adds to the confusion. Besides, there are a few extras easily bringing the number up to twenty; while for the eighth grade the branches in all count up twenty-two, including prosody and a dash at rhetoric and chemistry. It is clear that the juvenile intellect, revelling in all these, is living far beyond its means, and that it must become bankrupt shortly after setting up on its own account. I heartily wish the gentlemen, who drew up this enormous time table, could sometimes go with me and hear the testimony of candid and naturally capable young fellows, lately from the upper forms in country sections and now fishing farming, lumbering, etc., working at the forge or in factories—hear them tell, I say, what time they wasted over useless subjects they did not understand and could not remember, to the detriment of real progress—then there would be no need, I think, of a stronger protest.

The last number of the *Journal of Education* does not hold out much hope of reform. On the contrary, it particularly insists on the tonic sol-fa (for which if the certified teacher is not qualified, by nature, he must have a substitute), and repeatedly admonishes teachers not to neglect it under pain of having their government grants cut off. This implies a suspicion that the measure would be generally dis-

tasteful, and the frequent warning sounds like an effort at intimidation. If the mere neglect is to be visited with such a dire penalty, in the event of outspoken opposition, the above handy process of amputation might be carried to a still more disastrous extent. *The Journal* complacently remarks, "No matter whether that law is one we consider good or otherwise," it must be enforced. Another by way of consolation, "Only by enforcing the law can it be practically demonstrated to be either good or bad. If, when enforced, it is found to be too painful for the community, the provincial legislature may repeal it—or it may not." So it is only an experiment on a large scale. This is the first time I ever heard of painfully experimenting on the living subject for the sake of science, except in the case of criminals under sentence of death. Also I doubt if any one but the late

lamented Alexander could afford to show such a supreme contempt for the will of the people. But assuredly that must have been an unauthorized statement. I apprehend no perpetual infiction like the one hinted at. Both the legislature and the council of public instruction can yet be touched by the feelings of our infirmities, or else we can touch them in some other way. Impatient of a burden acknowledged to be painful, and exasperated by cool indifference, the public might take it into their heads to abolish the legislators themselves. However, I incline to the belief that revision of the common school curricula will be ordered, if the people move for it vigorously. Let the teachers be heard. They are, after all, among the best judges, and their opinions must be neither ignored or repressed.—*M. H. Nickerson (Clark's Harbor) in the Halifax Herald.*

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## PRACTICAL CHILD STUDY.

BY G. STANLEY HALL, PRESIDENT CLARK UNIVERSITY, WORCESTER, MASS.

THE movement which began in 1880, through an effort to secure an inventory of the minds of the children of Boston when they entered the public schools, has become an acknowledged part of our educational activity, and promises to become the greatest movement in the role of educational history. This scientific, philosophic study of children is the one thing which has been needed to place teaching among the true professions. The educational philosophies of the past have been excellent each in its peculiar field, and each has brought a great and permanent advance. But each has been a partial philosophy, representing a part only of the new philosophy of education, which is just

about to take shape. All the originality and creativeness in the old wisdom has gone, and it must give place to the new, larger, evolutionary wisdom.

Everything that is of value serves human education and the only standard of value and merit is whether a thing can serve education in its large and evolutionary sense. Will the new subject or method bring men and women to a larger, fuller maturity. This is a new standpoint, and it shows itself best through the study of childhood. It is this study which is to provide the perspective for our education, which is to show us what is deepest, fundamental in our work. We are passing from the period when

classification was the great work of every growing philosophy and science, and, for the immediate future, all our attention is to be turned towards the embryo and its development. All the sciences which deal with life are now striving to show how the stock has evolved. This idea has even come over into the realm of the soul to work its transformation there. The study of soul evolution is just beginning, but it is becoming already the master-key for every one who is striving to solve the problems of the human will, the emotions and feelings. The intellect was the beginning and end of the old philosophy. The heart is the beginning of the new. The study of childhood gives the dynamic force, where the intellectual methods failed to work.

We have almost lost one important step in psychology—the genesis. The records of the childhood of the soul are less tangible than those of the physical forms, as we find them in the rocks. For these we have to go to the customs and traditions of savage life. Every child is a little savage. He needs his myth and must be a fetish worshiper. In his heart he is a polytheist or a pantheist. He must have these traits of the savage if he is to live and grow to the full vigor of his possibilities. The child loves the birds and flowers, the sun and stars, and it was these which gave us our religion. We must catch and follow the traces of likes and dislikes in each child, and thus develop every germ of originality. Not to do this, not to be ever on the watch for the means by which we may further this development, is to dwarf some part of the child's being. The mother who endeavors to prevent her child from learning anything which he will ever have to unlearn, fails to understand the fundamental truth of education, that experience consists in laying aside smaller for larger ideas and truths.

This is an essential to any growth.

The will comes before the intellect. It belongs to and shapes the conscience. Before the will can acquire motive power there must be a full and proper development and training of the muscles. The larger muscles must be exercised before the small ones, to work out the order of nature. The small muscles, as those of the face and hand, are the especial organs of thought, and if intellectual training goes on before these muscles are duly developed in their natural course, we breed muscular incoherence. This is why free play is better, because larger and more free than any gymnastics. In France and Germany most careful attention is being given to the free field games, and we are even told that everything can be taught by games. Everywhere, spontaneous action points out the line of growth.

One of the great discoveries of the new philosophy is that every child passes through nascent periods, which ought to give the key to the plan of his education, physical, intellectual, and moral. The whole method and scope of school work has got to be reconstructed, if our practice is to harmonize with our new knowledge. At the proper periods we must graft the young soul all over with buds, which will ripen in later years. We must observe and study each child, and beware, first of all, of stunting or arresting the development of the physical organs, when they should have the first claim on the child's strength. There is the very greatest danger of stopping the full development of the physical organs of the body and the vital organs, by too great intellectual training, especially during the period of adolescence. The healthy flow of animal spirits should give zest and interest to all the work of childhood and youth. Without this spirit there can be no paying intellectual training. Indifference and cynicism is the blight of our

youth. It is infinitely more important that our young people should have a strong head of interest on, than that they should pass any examinations, or accomplish anything else in the world.

The study of the nacent periods has shown us that oral language has its period of natural acquisition between the fourth and eighth years. If any language is learned by hearing it, after this period, it is acquired by the use of faculties which were not meant to be so employed. From eight to fourteen is the time for learning the dead languages by the eye. Before adolescence is the time for acquiring the love of nature in all its forms, which is the basis for all true religion. Religion is not a technical subject. It must come from the heart with the realisation that all life is one from the bottom to the top. We are blood relatives of everything that lives. Thus we get that divine sympathy which realizes that nothing in the world is foreign to man. Christ is supreme, because he is the super-man,—the culmination of all.

In everything we must guide the child to free and large conceptions. Too great accuracy and nicety is the vice of our schools. We demand too fine work for the stage of development of the child's motor-ability, and thereby directly breed chorea. Children do not learn in this way. We should rather allow freedom and choice of work very early. Examinations, as the support of exactness and accuracy in details, must be abolished, and in their place teachers should freely employ the spring examinations. Accustom the children to tell and to use what sticks in their minds, what is left this year out of all that they went over last year.

The distinction between boys and girls is of the utmost importance. In England the women who are the leaders in female education have con-

cluded that they have passed examinations enough and beaten the men often enough to prove their intellectual equality, and now their next programme is to differentiate and to lay stress on the things in which they differ from the men. Our female education, instead of developing on its own basis, has followed an almost servile imitation of that of the boys. The sexes are different; and just as we are striving to develop the truest manhood, we should aim at true womanhood in every sense. This child study movement appeals to, and must depend very largely upon, women. The interest in the individual children is especially good for women. They seem to have a greater capacity than men for developing an interest in and for getting into the human, individual souls. Their greatest forte is in working with and by personalities. This new and great movement should be pre-eminently the woman's science.—*The Journal of Education*.

VAST BEDS OF BONES.—It has been discovered within the past few years that one third of the habitable part of Florida is rich in beds of phosphate, which are the remains of animals that lived ages ago. Some of the bones are in large pieces and well preserved. The bones and teeth of elephants, horses, tigers, crocodiles, and other animals have been discovered, also those of the mammoth. Fossil starfish and the backbones of sharks are among the "finds." One writer says: "It looks as though at some prehistoric time all the beasts of the field and all the birds of the air and all the leviathans of the deep had gathered for some unknown purpose in the state of Florida, and had been overtaken by a great calamity and left their bones there." These bones are used as fertilizers, and are mines of wealth to the state.—*Geographical Spice*.

## TRADE OR PROFESSION?

WHAT is teaching? There are plenty of people who would like to vote that teaching is a profession, but the public in general deny this; they look on it as an occupation and they will continue to do so until there is a change in the attitude of teachers themselves towards their work. The public cannot be coaxed to consider teaching as a profession; it can be made to feel that it is by the doings of the teachers; when the teachers consider it a profession then the public will, and not before. Here is a young woman who is at work in a store; she gets an appointment as a teacher through a politician; is she doing professional work? In New York State the teachers are obliged to attend the institutes by law, they don't want to be improved enough to come otherwise; are they professional people? Only one teacher in ten owns a book on education; are the nine non-owners professional people?

An "occupation" is some employment. A man habitually earns money; his main object is to get a living. We say a farmer "occupies" the land; the word indicates that something is held to as a necessity. The word "trade" comes from *tread*; it has reference to putting things on the track; a man has a trade when he produces things wanted in life's tracks or treads. To "learn a trade" is to learn a kind of work that provides things in the general tread of life.

An "office" is an employment to which one is elected, or to which he is appointed—this carries with it both honor and remuneration: of course the office of sweeper in the custom-house is at the bottom and is an occupation merely. A "calling" is an employment which a man feels he has special aptitude for. The use of it in theology to indicate the selection

by the Creator is disappearing, it will be noted. Persons now turn to preaching as they do to teaching—of course with more reverence and feeling of responsibility.

A "profession" designates an employment in which there is learning (the scholarship, fitness) and humanitarianism or altruism (the fitness of sensibility). There are three if not four professions:—Preaching, law, medicine, writing and art. Once preaching was considered as a "calling"—a man supposed he had a "call" from the Creator. The "call" idea has given it a high cast. He begins with a desire to benefit the world and considers that he has fitness in power of speaking, a love for religious subjects of thought and to this adds knowledge. The lawyer begins with knowledge, sees he has fitness in speaking or utterance, and a taste for subjects in which there is to be an application of legal thought. The physician starts with knowledge too, but puts next to this a desire to benefit his fellows; once he was not allowed to take a fee. The writer begins with fitness to express himself and to this adds knowledge; his aim is to benefit, to entertain, to amuse. Newton wrote to benefit; Scott, to entertain; Mark Twain, to amuse. The artist begins with knowledge and aims to reach the sense of beauty.

What is teaching? Is it an occupation, a trade, an office, a calling, or a profession? It depends on what the teacher places first. If his main idea is to benefit the children, if he feels he has fitness in interesting them, and to this adds knowledge, it is a profession and ranks along with preaching. If he only wants to get a living out of it, then it is a trade or occupation.

In some places they try to make an office of it; a basis of knowledge is fixed (a very low basis, too, and not above what clerks and bookkeepers have) and then the politician is invoked. But the general idea is spreading that it should be made into a profession. How shall this be done? The teacher must make the root idea the desire to benefit others, he must possess a good deal of knowledge of the history, principles, methods, and civics of education as well as the knowledge to be communicated; he must have some fitness growing out of this knowledge and his own constitution.

The great step is apparently to

possess what may be termed professional knowledge. This can be done by any one; he may not have his work recognized as professional, but in twenty-five years the public will see that it is so.

It must be noted that the professions have a *professional spirit*. What is this? It is a fixed plan to proceed according to science; or, to make it plainer, to proceed according to the Creator's plan in the child and not by routine. The aim must be truth, to go according to true purposes. Such a person will aim to know the truth. The aim will be to give a longer and more splendid life to the pupils; whoever does this teaches professionally.

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## THE PUBLIC SCHOOLS.

THE education of youth must be under the control of men who know what education is. There is no stimulus for awakening a mind like the contact with another mind superior to it. There is no way to create an ideal of a good and useful life so powerful as the contact with a high and noble character. In the early and impressionable years these influences of superior intelligence and noble character tell most. The awakening of the mind is the most difficult task the educator has. Therefore for the lowest school are needed teachers of high cultivation and high aims. And these fine qualities will count for more there than in any other stage of the progress of the youth into citizenship. But this superior ability must be paid for adequately. The safety of the State, therefore, lies in the total reform of its common schools, by immensely improving the character of their teachers, and by paying them such

salaries as will attract to that work the best abilities.

The few remaining country academies are survivals of the old system. Very few of these institutions have resisted the popular demand to absorb them into the machine, and make them the finishing-shops of the graded system, under the name of high schools, and, of course, free schools. Many of them were old foundations, with traditions, having a distinctive character as well as a permanent fund. In these old academies were educated many of the men and women who have been most distinguished in our day in letters, in law, in politics and theology. They had a certain independent, stimulating life. Perhaps they had not the facilities, the apparatus, the range of the modern high school; they did not demand so much, or, rather, not so many things, but they had quite as high a flavor of learning and culture, and the education that they gave was a training for

life, for which those who experienced it always look back with gratitude. They had individuality, and to lose that out of any educational process is to lose something very valuable in experience and in memory. The character and efficiency of the academy depended almost altogether upon the principal and the teachers. There were some good academies, which had fame, and some poor; and the same academy, changing its masters, had sterile and fruitful periods. Indeed, it must be admitted that the usefulness and reputation of the academy (or the seminary, as it was often called) depended upon the character and the talent for teaching of its masters—that is, upon the power of individual initiative. And that it should do so rests upon a sound theory. The education of a mind depends, with here and there an exception, upon the influence on it of a superior mind, and preparation for a useful life depends also upon contact with superior character in the formative period. This influence is not the property of a machine, though the machine has its uses in training into habits of order, method and routine. The teacher is the only inspirer. If his personal influence is lacking to the pupil, the scholar may be passed along through the whole graded system and finally emerge from a college with a mind unawakened.

I do not say that there are not in the primary and secondary schools of the graded system many excellent teachers. There are. Wherever you find them you find as good schools as the system will permit, and you commonly find them intelligent educators, who are impatient of the present system, of its political management, of its committees, of its prescription of textbooks, its multiplicity of studies and its cram and examination features. In the old academies in-

competent teachers reduced the school to a lower level often than a poor high school; but there was always the remedy in the hands of the trustees of reviving the school by raising the character of its teaching force. And a first-rate school of this sort always draws pupils, notwithstanding it costs more than the high school, because every intelligent parent knows that the best thing for his children is to put them under the influence of a virile and sweet spirit.—*Charles Dudley Warner, in Harper's Magazine for November.*

Of all combats the sorest is to conquer ourselves.—*Thomas a Kempis.*

You cannot do your duty to the poor by a society. Your life must touch their life.—*Phillips Brooks.*

Often enough have men made Heaven a compensation for the woes of earth. . . . Paul makes Heaven not a compensation, but a development.—*Phillips Brooks.*

When the procession of your powers goes up to worship in the temple, do not leave the noblest of them all behind to cook the dinner and to tend the house. Give your intelligence to God.—*Phillips Brooks.*

Remember that the care for your health is a part of that total self-consecration which cannot be divided and which altogether makes you the medium through which God may reach His children's lives.—*Phillips Brooks.*

"My grandmother sent me to school, but I looked at the master, and saw that he was a smooth, round ferule or an improper noun, or a vulgar fraction, and refused to obey him. Or, he was a piece of string, a rag, a willow-wand, and I had a contemptuous pity. But one was a well of cool deep water, and looking suddenly in, one day, I saw the stars."—*George William Curtis, in "Prue and I."*

## HOW TEACHERS SHOULD TALK.

BY CAROLINE E. LEROW.

It is necessary for a teacher to talk a great deal, and to talk so as to be heard and understood. But in order to be heard and understood it is not necessary to talk loudly, much less to snap and scream as is the custom with too many teachers, especially those who are impatient, nervous, or irritable, who are obliged to work in a noisy room, or with a rebellious class of children.

The secret of talking easily and intelligibly in a large or noisy room is to fill the lungs fully, and to re-fill them at every pause; to speak slowly; to speak with careful articulations, and to make all effort at the waist. This last is the most important matter, and can be accomplished only by those who can fill the lower part of the lungs and use the muscles of the diaphragm.

The average teacher talks from the throat filling only the upper part of the lungs, and the delicate vocal chords, which should be merely the passive instrument of vibration, are compelled to do the active service which properly belongs to the larger and stronger muscles of the diaphragm. It is not to be wondered at that huskiness and indistinctness of tone, irritation and soreness of the throat, fatigue and nervous exhaustion should speedily follow such perversion and such muscular strain. The only wonder is that so many can persist in this abuse, year after year, without entirely losing their power of speech.

The vocal chords although thus strained being inadequate to the amount of voice required, the teacher in order to be more plainly heard tries to increase her power by raising her natural degree of pitch to an unnatural one; by straining the vocal chords still further in a vain attempt at increased force;

or by directing the breath into the nostrils, thereby giving the tone a nasal quality and a consequently sharper and more penetrating sound.

These devices may be temporarily successful; in a few cases they are, unfortunately, permanently so, but as a general thing the teacher so using and abusing her voice finds at the end of a few months that she has lost control of it, retaining the disagreeable habits of speech thus formed, but being unable to command loudness or distinctness of tone.

Simple slowness of speech—for one reason because it is so very unusual—always attracts attention. This fact is noticeable in any company. Slow speech is intrinsically quiet and has a marvelously soothing effect in the school-room. Being unusual it arrests the attention and stimulates curiosity as to what is to follow. A very few experiments in this direction will be sufficient to convince any teacher who may be skeptical concerning this statement.

To this extreme slowness add very distinct articulation, and, unless it is difficult to do so, a little lower degree of pitch than the natural conversational one, and there is produced a tone which, although made without effort, is heard distinctly in the furthest corner of the room and becomes a most impressive utterance. It is a tone which not only arouses curiosity; it commands respect, giving a strong impression of reserve force and settled determination upon the part of the speaker, and has a most satisfactory psychological effect in holding attention and compelling obedience upon the part of the pupil.

Few persons have any adequate idea of economy of nervous and vocal

strength, while the daily and hourly waste of power in these directions is lamentable. In no place is this waste so excessive as in the school-room. There is no work in the world which makes greater or more incessant demands upon the vitality than that required of a teacher. There is certainly no person who should more carefully seek to protect and save herself from physical break-down, a

vast amount of which might be prevented by attention to the one matter of proper vocalization.—*The School Journal.*

Each good thought or action moves  
The dark world nearer to the sun.

*Whittier.*

A man's first care should be to  
avoid the reproaches of his own heart.  
—*Addison.*

## THE LARGEST USES OF EDUCATION FOR THE INDIVIDUAL AND SOCIETY.

IF people could get the idea that what is called education is a good thing in itself, without reference to its practical uses, what a long step ahead the world would take! The notion that education must be for some definite purpose is responsible for much misdirected effort and many disappointments. If we were asked what is the great need of the day in ordinary life, we should say that it is intelligent readers and critical appreciators of art. It is certainly a very crude idea of life that an education is wasted if it is not practically applied to one of the learned professions, to authorship, or to art, or to teaching. The impulse for any of these careers is strong enough. What needs leavening and liberalizing and lifting up intellectually is the great mass of society.

We shall get on a solid basis when we recognize the truth that a thorough education, a full development of all the faculties, is worth all it costs to the individual and to his or her associates, if it may never be put to any professional use. One of the most encouraging things in our recent life is that so many college graduates go into business. If their cultivation in the classics, in the whole range of

liberal studies, is needed anywhere, it is in the business world, in social life. The effect of this infusion of culture into ordinary affairs is visible in many towns and cities in the West, where the whole social tone is elevated by it. One reason why the West is so progressive in the liberal arts, in the formation of libraries and galleries, and in schemes for diffusing cultivation, is that so many college-bred young men have gone there and gone into business. A man may not be a better lumberman because he can read Latin, and knows the difference between Hawthorne and Rider Haggard, but he will be a more interesting man. And to have an interesting society—that is, to lead interesting lives—is altogether the most important worldly thing in this earthly sojourn.

Anxiety is exhibited in many quarters about women who are striving for the higher education, meaning the education usually given to college students. What is it for? What will they do with it? What will they become? The professions are already full; even that of teaching, the least desirable, will eventually, at the rate of supply, be overcrowded. There are more women now who write than there

are who can read discriminatingly. Why urge so many into the higher education, the college training, for which they will have, if the world goes on marrying and baking and sweeping and keeping domestic establishments running, so little use? The question might be briefly answered, to make them women. In detail it might be added, to make them more interesting women, better company for themselves and for others, fuller of resources for a life alone or a family life, with an intelligent apprehension of what is going on in the world. To improve the tone of society is excuse enough for the higher education, even if it were not desirable that typewriters should be intelligent. And beyond the needs of society, can it be doubted that if all the mothers of this generation were educated, capable of rightly directing the intellectual development of young minds, the next generation would show a marked improvement over the present? The disappointment about this education arises from misplaced expectations. It isn't the office of education to upset society, but to make it better. The professions can absorb a limited number only. Society needs an unlimited number of highly intelligent persons.—*Charles Dudey Warner, in Harper's Magazine for April.*

• The child is a little Athenian, always listening for some new thing. All the world about him is mysterious, ever breaking out into tidings of itself.

The best which the soul is in itself should be turned towards and poured upon whatever other soul may need it anywhere.

Wherever the background is lost, the foreground grows false and thin. What is this foolish realism in our literature but the loss of the background of the ideal, without which every real is base and sordid?

## TO THE FIRST SKYLARK OF SPRING.

Two worlds hast thou to dwell in,  
sweet,

The virginal untroubled sweep,  
And this vext region at my feet,  
Alas, but one have I!

To all my songs there clings the shade,  
The dulling shade of mundane care.  
They amid mortal mists are made,  
Thine, in immortal air.

My heart is dashed with grief and  
fears;

My song comes fluttering and is  
gone.

O high above the home of tears,  
Eternal joy, sing on.

WILLIAM WATSON.

From "Odes and Other Poems."

To make children prematurely wise is useless labor. Suppose they have more knowledge at five or six years old than other children, what use can be made of it? It will be lost before it is wanted.—*Dr. Johnston.*

Perhaps all the things that a successful teacher should know and be able to do can be summed up briefly in this way: first, she should be skilful in reading the minds and hearts of her children through their various modes of expression; and, second, she should understand how to use the means at her disposal so as to discipline each mind committed to her care in a manner befitting its particular needs. It hardly need be said that no teacher can employ the agencies of discipline and culture in the school-room intelligently until she comprehends how they will affect the one under training, or whether they are adapted at all to accomplish the special purposes in view.—*M. V. O'Shea.*

## NOTES FOR TEACHERS.

**ELECTRICITY WITHOUT WIRES.**—In the opinion of leading electricians, one of the next great steps forward in electrical development will be the doing away with wires for the transmission of electricity. Our present methods for the transmission of electric energy are held to belong to a primitive stage of the science. All the paraphernalia of wires, poles, etc., that are now necessary, are regarded as crude, clumsy and wasteful; belonging to a period of development corresponding to that in the growth of a child where it cannot walk without support. In the coming period all necessity for these things will be done away with, and the methods for the transmission of the marvelous energy that has been harnessed to do the work of the world will be as invisible as the flow of the fluid itself. The harness will disappear, and Ariel will do his subtle service with no outward token of his existence save in the effects produced. That such will be the case is held by electricians to be no wild fancy. Men like Dolbeare, Thomson and Tesla look forward to it with confidence—a confidence which would seem to be justified by the fact that, to a limited extent, its feasibility has already been demonstrated. And, when the theoretical soundness of any proposed method has once been demonstrated, its practicability is pretty certain to follow. Experience with the more familiar forces has accustomed us to look for tangible instrumentalities as a necessity in the transmission of any power. We see that water cannot be carried except in something to hold it, as in pipes, and in the same way we think it must be necessary to have wires for conducting electricity. But the field in which electricity operates belongs to an entirely different realm from that where other mechanical forces work. Water power proceeds from the

operation of a liquor upon solids, and steam and wind powers from gaseous substance upon solids. But the field of electricity is in the mysterious element of the ether—an element that is as material as the others in a manner, pervading as well as enfolding all other substances, but in itself absolutely intangible to our senses, and known only by the effects which it produces, or for the production of which it forms the medium.

While sound is transmitted in the air, light and heat, as well as electricity, are transmitted in the ether, and the laws governing them have been discovered to be identical. So for the transmission of electrical energy only the medium of the ether is essential, and how to utilize this medium directly, without the intervention of wires or other conducting agencies, will be the great task of the future for electricians. Electrical impulses imparted to the ether may be conveyed to an indefinite distance. The capacity to receive and transmit them depends upon the delicacy of the instrument used. With a mechanism sufficiently responsive, it is conceivable that such impulses might be received between distances as far apart as the ends of the earth. The flashes of the aurora borealis, sweeping instantly from horizon to zenith, give us an idea of the vastness of space which such impulses may be made to cover. The telephone has been used for a considerable distance without wire, and in the same way telegraphic communication has been carried on over a distance of several miles. It is only necessary to systematize these methods to apply them in regular practice.

It seems probable that the transmission of intelligence without wires will be the first result in this direction, and that the transmission of light, heat and power will follow. The saving

will be something immense. The operation of the mechanism employed for these purposes will probably be analogous to that of tuning forks, where one responds to the vibrations set up in another. With dynamos running to a certain pitch, electric lights, heating apparatus and motors at a distance, attuned to that pitch, will be set in operation. The economy of such a system would naturally be immense. The supply of electricity from a central station is at present a wasteful method, on account of the cost of the copper wire necessary to conduct it. The interest on the cost of this portion of the plant forms one of the greatest items of expense in the transmission of electricity from a central station. It is, therefore, much more economical, in cases where many lights are used, to depend upon an isolated plant in the building itself than upon a supply from a central station. But with the use of wires dispensed with, the generation of electricity at a central station, where fuel could be concentrated and converted into energy on a large scale, would naturally be the most economical for the entire community. The increase in the standard of living, and in the world's wealth, consequent upon the decreased cost of such a system, would be inestimable.—*Boston Herald*.

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#### THE PERFECT HEADMISTRESS.—

She comprehendeth all natures; she hath no contempt for any. Therefore all are attracted toward her, and place their trust in her.

She is, like the Divine Providence, slow to anger. She considereth that she also is mortal, and therefore liable to error; but her subordinates doubt it,

She hath very pretty manners. Being in a figure royal, she is royally gracious. For she forgetteth herself

in the desire to set at ease them that come to her.

To live near her is an inspiration.

She is not equally well skilled in all subjects having had no more than the common span of time in which to perfect the gifts of her intellect. Yet she knoweth the difficulties of all her underlings; her counsel is wise; she is quick to discern between the ways that are good and them that be indifferent or naughty.

To all she is easy of approach, and most easy to the perplexed in spirit. She hath an unending patience, and so great a compassion for dulness, though it be far removed from the nimbleness of her own mind, that even the dullest do not fear to speak of their troubles to her.

She remembereth that the feminine body is made chiefly, though not altogether, of flesh and blood, which are but frail materials; she hath considered, with a sigh, that flesh at its best is but weak; and she asketh of human nature no more than it is able to perform.

She is a born administratrix. She marshalleth her forces even as a skilful general; she perceiveth the several capacities of her captains. She loveth little children.—*The Journal of Education, London*.

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Great results cannot be achieved at once; and we must be satisfied to advance in life as we walk, step by step.—*Smiles*.

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#### THE TELEPHONE.—

The use of the telephone on Australian sheep ranches is becoming common. Its employment is mentioned on the Clark ranch in Montana, where all the sheep and shepherds are watched and handled telephonically, by means of six stations all communicating with a central point, from which come weather signals, orders, etc.

## PUBLIC OPINION.

TU QUOQUE.—A correspondent writes as follows.—“A few days ago I was collecting exercises in my classroom. One of my pupils, a well-mannered lad, threw his paper carelessly along the desk towards me without thinking. I made a scarcely perceptible pause; he felt my look, picked up the exercise and handed it to me. After a brief inspection, I, noting some trifling omission, tossed it rather contemptuously back, with a curt command for correction. The moral of the incident struck me at once. I had been, momentarily, annoyed by the boy's want of respect, and an instant after I gave him a striking object lesson in rudeness.” We insert this note because it seems to us quite possible, as our correspondent suggests, that the bad manners or even impertinences which trouble the irritable and over-wrought master may be in point of fact only the result of his behavior to the boys.—*The Journal of Education, London.*

VERTICAL WRITING.—Vertical writing is a renaissance. For many years, especially in English-speaking countries, it is a notable fact that it has been steadily on the increase, though little taught in the schools. Wherever absolute legibility is required in national and state capitals, in governmental departments, in offices where valuable records are kept and must be accurately and legibly transcribed, in England and our own country, it is being more and more insisted on that the handwriting shall be vertical. In banks, in the offices of the great railway, insurance, and commercial corporations, in telegraph offices, where actions at law are founded on errors in transmitting and receiving important messages due to slovenly writing,

in all the chirographical centres, vertical writing has been gradually shaping and changing the handwriting of men who have for many years been writing the old way. In many, many instances the question of preference as between two applicants for the same place has been determined in favor of the vertical writer, and upon that sole acquisition.—*The Journal of Education, Boston.*

WORTH OF INEXPERIENCE.—A blessed thing is inexperience. It is that which brings the failures that educates. It brings the successes which comes through daring to do that which experience might have made us afraid to do. An eminent scientist speaks of his boyhood as a time when he was “endowed with that splendid courage in attacking any and every subject which is the blessed compensation of youth and inexperience.” There are times when the caution learned by experience is the all-essential factor in success, and there are times when the wild onrush of inexperience means conquest. One who is inexperienced in teaching may prove himself the successful teacher of a class that has baffled the experienced wisecracks. A young girl will often find her way to the heads and hearts of little children more surely than the staid methods of old experts.—*The Sunday-School Times.*

SCHOOL COMMITTEE.—In our reaction from the old system of public exhibition or examination days we have missed one real advantage which they had, namely, that they brought parents into the school-room, excited their interest, and gave pupils a tangible proof that their elders regarded education as a matter of importance.—*Arlington, Mass.*

## GEOGRAPHY.

THE WORLD'S RAILWAYS.—The report of the Interstate Commerce Commission says that there are 18 countries which partly own and operate their railroads, viz: Argentina, Australia, Austria Hungary, Belgium, Brazil, Canada, Cape of Good Hope, Chili, Denmark, France, Germany, Guatemala, India, Japan, Norway, Portugal, Russia and Sweden. Ten neither own or operate them, viz: Columbia, Great Britain, and Ireland, Mexico, Paraguay, Peru, Spain, Switzerland, Turkey, United States and Uruguay. Greece, Holland, and Italy own their roads, but do not operate them, leasing them out to private companies. In the former list the percentage of roads owned and conducted by the various governments is not given in full, though in Russia it is said to be nearly one-half of the entire system, and a like condition prevails in Austria and Germany. In the latter country the government is required to manage the roads in the interest of general traffic on a single system. In Austria, on the expiration of charters not exceeding ninety years, the lines and lands of the company revert to the government but the equipment remains the property of the private owners. The government fixes the tariff on all traffic, has power to revise it at will, and must by law reduce the rates when the earnings exceed 15 per cent. The cost of freight carriage in a number of countries is given, being in Great Britain 2.80 cents per ton per mile; in France, 2.20; in Germany, 1.64, and in the United States, 1 cent. In the matter of interest on capital invested, England pays 4.1 per cent; France, 3.8; Germany, 5.1; Russia, 5.3; Austria, 1; Belgium, 4.6; United States, 3.1; the aggregate system of the world paying 3.2 per cent.

The management of roads by the government is not always, nor in a majority of cases, found to be advantageous economically, though in some it is important for various public reasons, among them that of defense standing foremost. In this country several of the States have tried ownership in a limited way and not found it satisfactory. Illinois built a road costing a million, but was glad to sell it for 10 per cent of the cost; and Indiana had a similar experience. Georgia now owns a road, but it is leased to a private company. Pennsylvania, Massachusetts, Michigan and several other States have tried like experiments, but all found them failures. In the above recitement it is notable that the United States has reduced the carriage of freight to the lowest point enumerated, but seems not to have made a like score in the matter of passengers, ranking in that particular about equal with Great Britain, France and Germany, when their various classes into which our traveling multitudes are not divided, are averaged. In the matter of interest we are below all the principal countries except Austria; and in extent of mileage and capitalization greatly exceed any of them.—*New York Tribune*.

THE MACKENZIE RIVER MISSIONS.—The Mackenzie basin is an unknown land to many Canadians. Its resources have, however, been made known to us by a parliamentary committee, guided chiefly by Dr. Schultz. The scope of the committee's enquiry covered an area of 1,260,000 square miles, a tract greater than the continent of Australia, or two-thirds of Europe. Its coast line measures 5,000 miles; it has a river and lake navigation of 6,500 miles a distance

of more than twice across the Atlantic. The Mackenzie River is 2,500 miles in length, and is only exceeded on this continent by the Mississippi. The extent of this vast district has been brought before Canadian readers of late by Mr. William Ogilvie, F.R.G.S., of the Department of the Interest, in a series of articles, "Down the Yukon and up the Mackenzie," in *The Canadian Magazine*.

The capital of Austria, which has a population of probably a million and a quarter, is beautifully situated on the right bank of the Danube. Vienna is one of the most beautiful and interesting cities in Europe, and has improved wonderfully of late years by the construction of magnificent squares, streets and buildings. Numerous palaces, belonging to the Austrian and Hungarian nobility or to rich burghers, and interesting partly by their age and art collections, adorn the city. The imperial library contains over 300,000 volumes and about 20,000 manuscripts, among which many are very rare and interesting. The churches, hospitals, etc., are numerous and handsome.

Vienna is a great railway and industrial center; situated at the head of navigation of the Danube, it controls a large water traffic. Several branches of industry have been carried to a high degree of perfection, such as the manufacture of leather, carriages, furniture, meerschaum and amber goods, etc. Great quantities of furniture are made here, and exported especially to the Balkan peninsula and the Polish provinces. The Viennese also make musical, mathematical, optical, and physical instruments of a high quality. The principal articles of commerce are wool, cotton, silk, fur, paper, leather, metal and glassware, objects of art, chemicals, spices and colonial ware.

In ancient times Vienna was a Roman camp, called Vindobona. Charlemagne established a margrave here in 791. In 1237 the German emperor Frederick II. made it a free city of the empire, and under Ferdinand I. it became the residence of the German emperor. Sultan Solymán attacked it in 1529, but it was successfully defended. The Turks besieged it again in 1683; it was saved by King John Sobieski, of Poland. In 1704 a new line of fortifications was formed, including also the suburbs. The city suffered much during the contests between the revolutionists and government in 1848. Since that time, however, it has been so improved that every trace of the damage has been effaced — *The School Journal*.

THE TROLLEY.—In a paper read before the meeting of the American Street Railway Association at Atlanta, Mr. B. C. Foster, referring to the electric heating of cars on trolley lines, stated that his experience showed that to raise the temperature of such cars 40° F. above the outside air, as much energy was required as to propel the car and hence is not economical.—*Public Opinion*.

Be profoundly honest. . . . It would cut down the range of what you say, perhaps, but it would endow every word that was left with the force of ten.

Call it eloquence; call it magnificence. . . . It is the power by which a man loses himself and becomes but the sympathetic atmosphere between the truth on the one side of him and the man on the other side of him.—*Phillips Brooks*.

## EDITORIAL NOTES.

1895.

Happy New Year to all the workers in the wide field of Education. To make the CANADA EDUCATIONAL MONTHLY the magazine we wish requires contributions from all classes of workers in every department of educational effort. Therefore, we hope all friends of our country will continue and increase their best endeavours for our magazine and make it an efficient aid to our public school men, our high school men and our college men.

## SIR JOHN THOMPSON.

Sir John Thompson was born in Nova Scotia. He began life as a printer's boy; then he entered journalism and became a shorthand reporter. From journalism he passed to law, became successively a member of the local assembly, attorney-general, premier of his province, a judge, Minister of Justice in the Dominion Cabinet, Prime Minister of Canada and a member of the Imperial Privy Council. Sir John has shown to the youth of Canada, to the world, what unequalled opportunities the people of Canada have for serving both Queen and Country. The late first minister of the Crown was a man of great ability and withal of modesty. His integrity in public and private life was unquestioned. In his vigour of manhood, the word came to him amidst his honours: Thy work 'tis done. Britannia and Canada, in sad silence, carry his mortal remains to the last resting place, but nevertheless, Sir John Thompson lives. The wealth of a country is its men and women. Canada can ill afford the loss of three Sir Johns so quickly

one after another. Canada expects all her sons to loyally contribute to her stability and prosperity.

## MEMORANDUM FOR TEACHERS AND STUDENTS.

The following circular has been issued by the Education Department:

The new curriculum of the University of Toronto will necessitate a re-arrangement of the high school courses of study. The modifications will come into operation in September, 1895, and an announcement giving complete details will probably be made by this department next May.

While the examinations for the Primary, Junior Leaving and Senior Leaving Examinations will be based after 1895 on the courses prescribed by the new curriculum, the just claims of candidates who have been preparing the subjects of the present curriculum will be recognized in the examinations of 1896. It may be further assumed that in the new High School course the subjects prescribed for Part I. of the new matriculation curriculum, viz.: Arithmetic and Mensuration, English Grammar and Rhetoric, English and Canadian History, and Physics, will be required of all candidates at the Primary examination, and that the standard set for matriculation in these subjects will be adopted as a standard for the Primary. The Department is not in a position to make any further statement on the subject of the coming changes than that now made.

JOHN MILLAR,

*Deputy Minister.*

Education Department, Toronto, December, 1894.

In this connection, we may refer to the charges made by the Senate of the University of Toronto for passing the matriculation examination. A candidate may divide the examination into two parts and a year must intervene between the examination in each of these parts.

(I.) Arithmetic and Mensuration, English Grammar and Rhetoric, Physics, and the History of Great Britain and Canada; (II.) Greek, Latin, French, German, English Composition, English Literature, Ancient History, Algebra, Geometry, and Chemistry.

Candidates for the Matriculation examination of 1896, may, in 1895, take Part I. of the examination on the courses prescribed for 1895 in the subjects of Part I.

The percentage for Pass shall be thirty-three and one-third per cent. on each paper, at the examination taken by the candidate.

The marks for sight-work on each of the "Authors" papers shall constitute at least thirty-three and one-third per cent. of the whole of the marks for the paper.

Junior Leaving certificates will be accepted *pro tanto* at both Part I. and Part II. of the Pass Junior Matriculation examination, but candidates who desire to compete for scholarships or relative standing will not be granted this exemption in the case of Part II.

Candidates for Honors and Scholarships will be examined only on the Honor papers in a department, always provided that such candidates may receive pass standing on these papers.

What the effect of this arrangement will be remains to be seen. From all we hear, we are inclined to say that the result will be the opposite of that which the Senate intended. As

to the expectation that the standard will be raised for Matriculation, not a few say the effect will be contrary. Time, in due course, will tell us.

Careful attention to little things in the school life is not only required by a sensitive conscience and a high ideal of personal attainment, but it has a positive commercial value. This is illustrated every day by countless incidents in business life, the moral of which has its significant relation to the duty of teacher as well as pupil. For instance, we were recently interested in the fate of a number of candidates who were recommended for an important position in connection with a large business house having a capital of several millions. The winning of that position meant an attractive and remunerative life work, in all probability, for the successful candidate. We happened to call on the member of that firm having the matter in charge just as he returned from a conference with the other members, at which a decision had been reached and a choice made between the applicants. He laid several letters before us and said that the contest was very close between the writers of two of them, and that the decision had finally turned in favor of one because of the neat handwriting, careful wording and business-like heading and addressing of his letter. Probably the candidate himself never will know about this, much less his teachers who required of him carefulness in the details as well as in the main objects of his school work. All the same it counted materially in his favor, and the slovenly methods of the other candidate were a handicap on his success. Elaboration of the point is not needful. A word to the wise is sufficient.—*Education.*

## SCHOOL WORK.

## SCIENCE.

*Editor.*—J. B. TURNER, B.A.

COLLEGIATE INSTITUTE, HAMILTON.  
SCIENCE IN THE PUBLIC SCHOOLS.

We are accustomed to praise our system of education in this Province and it is worthy of praise, but there is one respect in which it is lamentably behind the systems of other countries, especially those in operation in different States of the Union. I refer to the teaching of Science of any kind in our public schools. Even in the subject of Geography where one might at least expect that some attention would be given to causes which give rise to the changes which are going on around us, it is to be feared that altogether too much attention is being given to Political Geography to the exclusion of Physical Geography. Looked at from any standpoint the exact situation of the Rocky Mountains is of vastly less interest to the pupils than how they come to be there and how they influence the climate of the western slope of our continent; and yet it is to be feared that of the many who can readily give the location of certain mountain ranges, lakes and such like know little or nothing of the influence of these on their surroundings. As far as Science proper is concerned, it may almost be said that nothing is being done in the way of teaching it systematically in our public schools.

There are difficulties in the way of introducing the subject into our schools, but these are not insuperable.

The first difficulty that will present itself is the already crowded condition of the curriculum of studies. It must be admitted that this difficulty is a real one, but it can, to

some extent, be met by using natural objects in object teaching. In composition, too, what more suitable subjects can be found than the plants with which the children are familiar. However, before asking the pupils to write a composition on such a subject they should be required to thoroughly examine a specimen and then express their ideas in language entirely free from technical terms.

Another difficulty and a very real one at the present time is the lack of any training in Science of a considerable number of our teachers. The removal of this difficulty must necessarily be a gradual process, in order that no injustice may be done, but a beginning should be made as early as possible. The Education Department is preparing a course of study for future teachers' examinations and it would be well to consider the advisability of making the study of Science compulsory on every candidate for a teacher's certificate. If this course is adopted not only will candidates for these examinations be in an improved position, but the fact that Science is made compulsory on these candidates will indirectly exert a beneficial influence on those who are already in possession of permanent certificates.

## FLUID PRESSURE.

JAMES GILL, B.A.

PHYSICAL MASTER, HAMILTON C. I.

Since the text books in common use for the Junior and Senior Leaving Examinations pay very little attention to fluid pressure, I thought it might be interesting to give a few examples of fluid pressure as shown in a hollow right circular cone filled with water and placed in different positions.

Let  $r$  be the radius of the base, and  $h$  the height of the cone in cms.

1. To find the pressure on the base when the cone stands in a vertical position with its apex upwards. The pressure on the base is then due to a column of water with circular base of radius  $r$  cms, and height  $h$  cms, and is therefore  $\pi hr^2$  grams.

2. To find the pressure on the curved surface of the cone when it stands as in 1. The pressure is then upwards and equal to the difference in weight of a cylinder of the same height and base as the cone, filled with water, and of the water in the cone.

The weight of the water in the cylinder is  $\pi hr^2$  grains.

The weight of the water in the cone is  $\frac{1}{3} \pi hr^2$ .

The pressure on the curved surface of the cone is therefore  $\frac{2}{3} \pi hr^2$  grains.

3. To find the pressure on the curved surface of the cone when it stands in a vertical position with its apex downwards.

The pressure on this surface is then equal to the weight of a column of water whose base is the area of the curved surface ( $\pi r \sqrt{h^2 + r^2}$  cm) and whose depth is the same as the depth of the centre of gravity of the surface of the cone. ( $\frac{1}{3} h$  cm).

Therefore the pressure on the curved surface is downwards and equal to  $\frac{1}{3} \pi hr \sqrt{h^2 + r^2}$  grams.

4. To find the pressure on the upper half of the curved surface of a cone when the cone lies with its axis horizontal.

The pressure is then equal to the weight of water contained in a hollow wedge of length  $h$  cm, width  $2r$  cm and height  $r$  cm, ( $hr^2$  grams) less the weight of one half of the water in the cone ( $\frac{1}{2}$  of  $\frac{1}{3} \pi hr^2$ ) grams.

Therefore the pressure equals  $(hr^2 - \frac{1}{6} \pi hr^2)$  grams.  
 $= hr^2 (1 - \frac{\pi}{6})$  grams.

Other problems on the cone sphere and cylinder are worked in a similar manner.

### THE HALDIMAND TEACHERS' ASSOCIATION.

At the late meeting of the Haldimand Teacher's Association the Committee on Resolutions presented their report as follows:—  
 Resolved.

1. (A) That in the opinion of this Association the standard of non-professional examination for the lowest grade of Public School Teachers' Certificate should be at least equivalent to that of the present Junior Leaving Examination;

(B) That the age limit for taking the professional Examination should be raised to 21 years;

(C) That Teachers' Certificates of all grades should be valid for life or good conduct;

(D) That the non-professional part of the examination should be taken in two parts, the divisions of work being along the same lines as the Junior Matriculation Examination.

2. That the Regulations of the Education Department admitting holders of Public School Leaving certificates to Form II. of the High Schools be rescinded.

3. That the present Entrance Examination should be retained, but the percentage required for pass should be raised to 40 per cent. on each subject and 60 per cent. on the total.

4. That Trustee Boards in rural sections should consist of at least five members.

5. That the Legislative Grant to Public Schools should be materially increased.

6. That permanent Boards of Examiners for Entrance to High Schools be established in order to secure uniformity in the examinations.

7. That a book of classified pro-

blems should be authorized to supplement the present Public School Arithmetic.

(A) That the name of this Association should be changed to the Haldimand Educational Association.

(B) That it be divided into four sections: (1) Literary; (2) Pedagogical; (3) Biological; (4) Archæological.

(C) That six branch associations be established, one at each of the following places; Cayuga, Caledonia, Dunnville, Hagersville, Jarvis and Selkirk.

(D) That the officers of these branch associations be as follows:

Cayuga—Chairman—L. Kinnear, M.A.; Secretary T. E. A. Stanley, B.A.

Caledonia—Chairman—J. R. Street, M.A.; Secretary—P. Thompson.

Dunnville—Chairman—J. B. Cooke, B. A.; Secretary—Mrs. Anderson.

Hagersville—Chairman—J. McNichol, B.A.; Secretary—J. H. Foreman.

Jarvis—Chairman—W. Hammond; Secretary—Miss Williamson.

Selkirk—Chairman—D. Duff; Secretary—Miss S. Hicks.

(E) That the several chairmen of the branch associations, together with the President and the Secretary of the H. E. A., form the executive committee.

9. That the officers of the H.E.A. for the coming year be as follows: President—Mr. R. Thompson; Vice-Pres.—Miss M. Williamson; Secretary and Treasurer—Mr. Clarke, Moses, I.P.S.; Auditors—Teacher S. S. 1 Oneida and Teacher S. S. 2 Seneca.

10. That the committee to prepare the promotion examinations be as follows: J. H. Foreman, R. Thompson, Wm. Bicknell, Miss Kate Verth, Miss Bella Moir.

11. That the delegates to the O.E.A. be as follows: "Clarke Moses, I.P.

S, L. Kinnear, M.A., Wm. Hammond, J. B. Kaiser.

## QUESTIONS ON CÆSAR.

### BOOK V. CHAPTERS 12-16.

BY H. I. STRANG, B.A.

I.—Translate chapter 13. *Alterum vergit—videbamus.*

1. Parse *dimidio*, *nonnulli*, *bre-viores*.

2. Construction of *spatio*, *Mona-dies*, *noctem*, *mensuris*.

3. *Alterum*. Distinguish in use from *aliud*.

4. *Occidentem solem*. Name the other points of the compass in Latin in the same case.

5. Derive *dimidio*, *bruma*, *mensuris*.

6. *Certis mensuris*. How were they made?

II.—Translate into good idiomatic English, making at least two sentences, chapter 15, *At illi—recep-erunt*.

1. Parse *duabus*, *his*, *perruperunt*.

2. Construction of *spatio*, *subsidio*, *gruere*.

3. Compare *primis*, *arriter*, *audacissime*.

4. Account for the mood of *constitissent*.

5. *His primis*. What may we infer from this phrase?

6. *Novo genere pugnae*. To what is the reference?

III.—Translate idiomatically.

1. Parse *interior alius incolitur quos natos in insula ipsi memoria proditum dicunt*.

2. *Haec tamen alunt animi voluptatisque causa*.

3. *Capilloque sunt promisso, atque omni parte corporis rasa, praeter caput et labrum superius*.

4. *Accedebat huc ut nunquam conferti, sed rari magnisque intervallis proclarentur*.

IV.—1. Nominative, genitive, and

gender of *lacte, carne, acre, abietem, anserem, pedibus, oculis, pecorum.*

2. Give the future participle active of *serunt, vivunt, differunt, auderent, removissent, repelluntur, desilirent, orti.*

3. Give present infinitive passive of *inferebat, facto, objecta, conferti, dispositas, removissent, vestiti, rasa.*

4. Give the corresponding plural forms of *hujus lateris, cui parti, labrum superius, nostro itinere, hunc locum.*

5. Mark the penult of *colorem, removel, maritima, incolo, infinita, dispari, defatigo, collocat, leporem, galinam.*

6. Give two examples each of indeclinable nouns, semi-deponent verbs, defective nouns, defective verbs, adjectives having no positive.

7. Distinguish *appello, Ære, and appello, Ire; occido and occido; consisto and constituo; eques and equitatus.*

8. Form adjectives from *equus, mare, ferrum, Gallia, meridies, periculum.*

9. Give two English derivatives from each of the following: *agua carne, utor, navis, puto, nihil, corpus, caput insua, oculus*

10. Mention any errors in Cæsar's description of (1) the products, (2) the shape, size, and surroundings of Great Britain.

V.—Render into idiomatic Latin :

1. The tribes which inhabit this island raise animals of every kind.

2. We learned that they had crossed over from the continent for the purpose of making war in this state.

3. Several of our men who had followed the Britons too far into the woods were captured or slain.

4. For these reasons our men did not venture to leave the ranks.

5. You will find that the greater part of this island looks to the south.

6. The two cohorts, which Cæsar had sent to repel this sudden attack, were terrified by this mode of fighting.

For Entrance and Public School Leaving.

- (a) And still when'er he paused  
to whet  
His scythe, the sidelong glance  
he met  
Of large dark eyes, where  
strove  
False pride and secret love.
- (b) Alone unto our Father's will  
One thought hath reconciled;  
That He whose love exceedeth  
ours  
Hath taken home his child.
- (c) And one there was, a dreamer  
born,  
Who, with a mission to fulfil,  
Had left the Muses' haunts to  
turn.  
The crank of an opinion-mill,  
Making his rustic reed of song  
A weapon in the war with  
wrong.
- (d) If with readier ear thou heedest  
What the Inward Teacher  
saith,  
Listening with a willing spirit  
And a child-like faith.  
Thou may'st live to bless the  
giver,  
Who, himself but frail and  
weak,  
Would at least the highest wel-  
fare  
Of another seek :  
And his gift, though poor and  
lowly  
It may seem to other eyes,  
Yet may prove an angel holy  
In a pilgrim's guise

Additional Passages for Examination.

For Primary and Junior Leaving.

- (a) O for the death the righteous  
die !  
An end, like autumn's day de-  
clining,  
On human hearts, as on the sky,  
With holier, tenderer beauty  
shining ;  
As to the parting soul were  
given

The radiance of an opening  
Heaven!

As if that pure and blessed  
light,

From off the Eternal altar flow-  
ing,

Were bathing in its upward  
flight

The spirit to its worship going!

(b) Rocked on her breast, these  
pines and I

Alike on Nature's love rely:  
And equal seems to live or die.

Assured that He whose  
presence fills

With light the spaces of these  
hills

No evil to his creatures wills,  
The simple faith remains, that

He

Will do, whatever that may be,  
The best alike for man and

tree.

Whittier.

EXERCISES IN ENGLISH.

I.—“Once, when the sunset splen-  
dors died,

And *trampling up* the slop-  
ing sand,

In lines outreaching far and  
*wide*,

The white-maned billows  
swept to land,

*Dim seen* across the gathering  
shade,

A vast and ghostly *cavalcade*,  
They sat around their lighted

kerosene,

*Hearing* the deep base roar  
their every pause *be-*  
*tween.*”

Whittier. “The Tent on the Beach.”

1. Give the grammatical function  
and relation of the italicised words.

2. Write out in full the clause of  
which *swept* is the verb, classify it,  
and give the detailed analysis of it.

3. Classify *sloping*, *out reaching*  
and *gathering*, giving your reason in  
each case.

4. If a scholar passed *once* as modi-  
fying *swept*, and *cavalcade* as in ap-  
position to *they*, how would you lead  
him to see his error in each case?

5. How would you lead a scholar  
to see that *up* in “trampling up the  
sand,” and “gathering up the frag-  
ments” has a different grammatical  
value?

6. Illustrate from the passage the  
difference between a permanent com-  
pound and a temporary compound.

7. Is it correct to say “between  
their every pause?”

8. Show the appropriateness of  
*trampling* and *ghostly*.

9. Classify the finite verbs in the  
passage as (1) Transitive and In-  
transitive, (2) strong and weak, and  
show that the former distinction is  
not a permanent one.

10. Classify the phrase “their  
every pause between,” and give its  
relation.

II.—(a) “His boyhood fancies not  
outgrown,

He loved himself the  
singer's art.”

(b) “But if he lost, the scenes  
behind,

Somewhat of reverence  
vague and blind,

Finding the actors human  
at the best,

No readier lips than his  
the good he saw  
confessed.

1. Parse *fancies*, *himself*, *behind*,  
*finding*, *his*.

2. Divide the last line of (b) into  
separate clauses, write out each in  
full, and tell its function and relation.

3. Illustrate from these two extracts  
the difference between composition  
derivation and inflection.

4. Form all the derivatives you can  
from *art* and *human*.

5. “Readier” What classes of  
dissyllabic adjectives are compared  
in this way? Give two examples of  
each class.

## JUNIOR LEAVING ARITHMETIC.

(Continued from last issue.)

BY PROF. N. F. DUPUIS, QUEEN'S COLLEGE, KINGSTON.

1. Find the least number which is a multiple of  $1\frac{1}{7}$ ,  $4\frac{2}{3}$  and  $1\frac{3}{8}$ , explaining fully the process.

The product of the fractions is  $\frac{5^2}{2 \cdot 7} \cdot \frac{2 \cdot 3 \cdot 5}{7} \cdot \frac{2^4 \cdot 3}{7^2}$ ; and this product will be least when the numerator is the L. C. M. of the three numerators and the denominator is the G. C. M. of the three denominators.

$\therefore \frac{5^2 \cdot 2^4 \cdot 3}{7}$  or  $\frac{1200}{7}$  or  $171\frac{3}{7}$  is the required number if the word "number" includes fractional number, or 7 times this if whole numbers are meant.

2. Show that the remainder from dividing any whole number by 9 is the same as the remainder from dividing the sum of the digits by 9.

Theorems of this kind are best proved algebraically, although a sufficient arithmetical proof can be given.

1st. If 10 be divided by 9, 1 remains, and a cipher put to the right of this gives 10 again. Hence if 100... with any number of ciphers, be divided by 9, 1 remains. Hence, if  $a$  denotes any number from 1 to 9,  $a000...$  divided by 9 gives a remainder  $a$ .

2nd. But a number, such as 47523 say, is the same as  $40000 + 7000 + 500 + 20 + 3$ , and the remainders from dividing by 9 is  $4 + 7 + 5 + 2 + 3$ , i.e., the sum of the digits. Therefore we have the theorem reduced to the identity, "the remainder from dividing the sum of the digits by 9 is equal to the remainder from dividing the sum of the digits by 9."

The algebraical proof is much more concise. Any number may be represented as  $ar^n + br^{n-1} + cr^{n-2} + \dots + yr + z$  where  $r$  is the radius and  $a, b, c$ , etc. the digits. The remainder, upon dividing this by  $r - 1$  is found by substituting 1 for  $r$ , thus giving  $a + b + c + \dots + y + z$ , or the sum of the digits. . . . etc.

3. A grocer, by selling 12 pounds of sugar for a certain sum, gained 20%. If sugar advances 10% in the wholesale market, what per cent. will the grocer then make by selling 10 pounds for the same sum?

As the sum for which he sells the 12 pounds is immaterial, suppose he sells the 12 pounds for \$12.

Then 12 pounds cost \$10 before the advance,

And 12 " " \$11 after " " "

$\therefore$  10 " " "  $\frac{5}{8} \times 11 = \$9\frac{1}{8}$  after the advance

And 10 " " sells for \$12 after the advance

$\therefore$  He gains  $\$2\frac{3}{8}$  on an expenditure of  $\$9\frac{1}{8}$ .

$\therefore$  He gains  $\frac{17}{55} \times \frac{100}{1} \%$ , or  $30\frac{10}{11} \%$

4. A note made June 1st, at 3 months, was discounted immediately at 8% per annum. and produced \$357.40. What was the face of the note?

The note is due Sept. 4th, counting grace days. Therefore it is discounted for 95 days or  $\frac{19}{73}$  years.

$$\text{If } f \text{ be the face value, } f\left(1 - \frac{19}{73} \cdot \frac{8}{100}\right) = 357.4$$

Whence  $f = \$365.00$ .

5. Find to the third decimal place—

a.  $(1.2345) \div (2.3456)^2$

b. The cube-root of 2.

a should be done by contracted processes.

2.3456	5.5018) 1.2345(0.2243 +
6 5432	11004     Quotient.
46912	1341
7037	1100
.938	241
117	220
14	21
	16
	5

$$5.5018 = (2.3456)^2$$

b. Employ Horner's synthetic method. (See Dupuis' Algebra, art. 155)

$$1.25992 \dots = \sqrt[3]{2}$$

0	0	2
1	1	1
2	3..	1000
3.	364	728
32	432..	272...
34	45025	225125
36.	46875..	46875
365	47213	42492
370	47552	4383
376.		103

6. Find the amount of \$275 in 2 years at 6% per annum compounded half-yearly.

This is equivalent to 3% per annum for 4 years.

∴ The amount =  $(1.03)^4 \times 275 = \$309.51 \dots$

7. What rate % per annum compounded half-yearly is equivalent to 6% per annum compounded yearly?

Let  $t$  denote any number of years. Then we must have  $(1.06)^t = (1+r)^{2t}$   $r$  being the rate.

∴  $1 \div r = \sqrt{1.06}$ ; and  $r = 1 - \sqrt{1.06} = 0.02956 \dots$  per unit, or 2.956...%

8. The 3% consols are at 120, dividends payable half-yearly. A man invested a certain sum and also the first dividend. His next dividend was \$410. What amount of consols did he then hold?

Let 1 share of consols be \$100. His first dividend is \$1.50, and his investment is now \$101.50. His second dividend is  $1\frac{1}{2}\%$  on this, or 101.50 ×

1.5 = \$1.5225. ∴ He holds 1.015 shares for every time 1.5225 is contained in 410, i.e.,  $273\frac{1}{3}$  shares. That is, he holds  $273\frac{1}{3}$  shares of \$100 each, and these are worth in cash 120 times  $273\frac{1}{3}$ , or 32800 dollars.

9. What sum of money invested at 5% per annum, compounded yearly, will, at the end of 4 years, provide for a perpetual annuity of \$100.

\$1 at 5%, for 4 years amounts to  $(1.05)^4$ . The annual interest on this amount at 5% is  $\frac{1}{20}(1.05)^4$ .

∴ The sum required is  $100 \div \frac{1}{20}(1.05)^4$  or,  $\frac{2000}{(1.05)^4}$  i.e., \$1645.41 nearly

10. An agent's rate of commission for selling is four-fifths of his rate for buying. He sold a consignment for \$10200, and, after deducting \$450, invested the balance. What did he charge for selling?

He sold \$10200, and invested, or bought, \$9750, and the \$450 is to pay both commissions.

Let his rate for selling be  $s$ , then his rate of buying is  $\frac{4}{5}s$ .

∴ Commission for selling =  $10200 \times s$ , and the commission for buying =  $9750 \times \frac{4}{5}s$ , and the sum of these is \$450. Whence  $s = \frac{4}{27}$ , or  $2\frac{2}{9}\%$

11. Two candles are of equal length. The one is consumed uniformly in 4 hours, and the other in 5 hours. If the candles are lighted at the same time, when will one be three times as long as the other?

Denote the length of the candles by units, one shortens by  $\frac{1}{4}$ , and the other by  $\frac{1}{5}$  per hour.

After  $t$  hours the length of the longer piece will be  $1 - \frac{t}{5}$ , and of the shorter,  $1 - \frac{t}{4}$ .

∴  $1 - \frac{t}{5} = 3(1 - \frac{t}{4})$ , whence  $t = 3\frac{7}{11}$  hours.

12. Calculate the number of acres in the surface of the earth, considering the earth a sphere 8000 miles in diameter.

The area of the surface of a sphere is equal to that of four great circles =  $4\pi r^2$ . But  $r = 4000$  and there are 640 acres in a square mile.

∴  $640 \times 4\pi(4000)^2 = 4096000000\pi$  acres.

13. Find the external diameter of an iron spherical shell whose weight is equal to the sum of the weights of two iron spheres whose diameters are 6 in. and 10 in. respectively, the internal diameter of the shell being 8 in.

Let  $r$  be the external radius required.

Balance of shell =  $\frac{4}{3}\pi r^3 - \frac{4}{3}\pi \cdot 4^3 = \frac{4}{3}\pi(r^3 - 4^3)$ ; and the volume of the spheres is  $\frac{4}{3}\pi(3^3 + 5^3)$ ; and these are to be equal.

∴  $r^3 = 5^3 + 3^3 + 4^3 = 6^3$ , and  $2r = 12$  in.—Ans.

14. Find the volume of a right circular cone whose curved surface may be formed by bringing together the bounding radii of a sector of a circle, the radius of the circle being 7 feet, and the angle of the sector  $60^\circ$

The length of an arc of  $1^\circ$  for radius 1 is .01745

∴ The length of arc of the sector is  $.01745 \times 60 \times 7 = 7.329$ , and this is the circumference of the base of the cone.

The radius of the base is  $7.329 \div 2\pi = r$ , say

Then the altitude is  $\sqrt{(7^2 - r^2)} = a$ , say.

Finally, the volume is :

$$\frac{1}{3}\pi r^2 \cdot a = \frac{1}{3}\pi \left( \frac{7.329}{2\pi} \right)^2 \sqrt{ \left\{ 7^2 - \left( \frac{7.329}{2\pi} \right)^2 \right\}}$$

## CONTEMPORARY LITERATURE.

*Littell's Living Age* for Dec. 22 contains two pretty short stories, one by Mrs. Pare and the other from *Macmillan's*. The *Gouvernante* of Paris is the opening article from *Temple Bar*.

The Christmas number of the *Book Buyer* is as usual a treat. The illustrations from the holiday books are particularly beautiful and the criticisms by the various popular writers of their contemporaries are exceedingly interesting.

The issue of Dec. 29 of the *Illustrated London News* is a specially interesting one. The frontispiece is a portrait of Sir Arthur Sullivan. "Noemi" by S. Baring Gould is up to that author's best work. There is a timely article on De Lesseps, with a portrait, besides much more interesting matter.

"The Architecture of the School-house is an excellent paper in the December number of the *Atlantic Monthly*. There are a number of good short stories by various writers such as Harriet Lewis Bradley and Robert N. Herrick. Miss Repplier contributes one of her delightful essays entitled, "Ghosts." Mary Halleck Foot's two part story is concluded.

The best recent articles appear in the December number of the *Eclectic*. "The Trees and Flowers of Tennyson" is a delightful paper from *Temple Bar*. Sir Robert Ball's "Possibility of Life in Other Worlds" is given from the *Fortnightly*. The whole issue offers a fine and varied selection which would suit almost any taste.

"Athletics for City Girls" is the title of an excellent and much-needed

paper by Dr. Mary Bissell in the December number of the *Popular Science Monthly*. Another article interesting to women is "The Economic Theory of Woman's Dress." No less than three articles are devoted to Geology, including the British Association popular lecture on Geologies and Deluges by Prof. W. T. Sollas.

*Lippincott's* January number is devoted to the Christmas season. There are three Christmas stories and an article on "Christmas Customs and Superstitions," while Edgar Fawcett contributes "New Year's Days in Old New York." The complete story is "The Waifs of Fighting Rocks," by Captain Charles McIlvaine. Gilbert Parker has a study of "Herbert Beerbohm Tree.

Messrs. D. C. Heath & Co. have just published the first book of new series on "Technical Drawing." It is written by Prof. Anthony, of Dean Tuft's College, and treats chiefly of "Projection," "Geometrical Problems," and the "Use of Instruments." One important feature of this textbook is the number and excellence of the problems; a great deal of labour is saved to the teacher in this way, and the graphic statements of problems will be much appreciated. It is well-printed on good paper, the plates are well-executed and the binding is good.

*A History of English Literature* is the title of a useful and well-written compendium of English Literature by J. Logie Robertson, M.A., first English master of Edinburgh Ladies' College. Such a text-book for Secondary Schools has been needed for years, and Mr. Robertson's volume is one of the best attempts to meet the need. The author has

shown no small taste and literary judgment in the use that he has made of English criticism and in the selections from the authors. There are many things given here which will save teachers and students much valuable time necessary to find them in different books. There is a good index and the work is divided into six different parts, each corresponding to a period in English Literature. New York: Harper and Brothers.

The first number of the *National School Library of Song*, intended for Normal Schools, High Schools, etc., has just been issued by Messrs. Ginn & Co. It is edited by L. R. Lewis, and contains patriotic and devotional songs.

*Difficult Modern French* (Boston: Ginn & Co.) is the title of a little work edited by Albert Leune which is accurately described by the foregoing title and will be found useful by University student.

*Introduction to English Fiction.* By Prof. Simonds of Knox College, Illinois. This is an interesting book. The author has prepared a series of essays on the English novels which have appeared at different periods and has appended a number of selections from these books. There is good work all through, but the chapters on "The Perfection of the English Novel" and "Tendencies of To-Day" deserve special mention, especially the part of the latter which deals with "Realism." Boston: D. C. Heath & Co.

*The College Series of Latin Authors, The Odes and Epodes of Horace.* Edited by Prof. Smith of Harvard. (Boston: Ginn & Co.) We have frequently expressed our appreciation of this excellent series of Latin authors, and the present volume deserves high praise. We have, first

of all, a three-fold introduction on (1) "Life and Works," (2) "Language and Style," (3) "Versification and Prosody." Then the text, occupying possibly one-third or one-fourth of the page, the notes being given below, and, finally, a "Critical Appendix." As to the quality of the work, the editor has evidently written *con amore*, his work is thorough and scholarly. It only remains to add a word on the beauty of the typography.

Under the title of *Stories of Old Greece*, Messrs. D. C. Heath & Co. have published in a tasteful form, with illustrations, a collection of some of the most beautiful Greek Myths, simply told for children by the editor, Miss Emma M. Firth. The ethical purpose is not lost sight of. But how disastrous that in many schools Bible stories, far superior for this purpose are practically forbidden.

It really gives one a feeling of pleasure to see a new and scientific spelling-book. Spelling, according to present appearances, will soon be a lost art. This book is edited by James W. Shearer, and published by the B. F. Johnson Publishing Co., of Richmond, Va. Complete lists of words, the grouping of homonyms, and a good system of orthoepy, are features of this book.

I think that your paper gives more good articles on education than anything we have in U. S. at three times the cost, and I speak from experience,

Yours truly,

PRINCIPAL PUBLIC SCHOOLS.  
Iowa, Dec. 22, 1894.

Religious people read thin, superficial books of religious sentiment, but do not meet face to face the strong, exacting, masculine pages of their Bibles.—*Phillips Brooks.*