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SCHOOL-CULTURE OF THE OBSERVING FACULTIES.*

BY J. C. GLASHAN, INSPECTOR PUBLIC SCHOOLS, OTTAWA.

WHY should children be sent to school? Is it merely that they may learn to read, to write, and cipher? Reading, writing, and cipher-ing are no doubt very important, but are they all-important, or even most important? The man who reads may be said to hear from the past and the distant; the man who writes speaks to the future and the far away. Reading and writing are indeed important, for they enable us to converse untrammelled by the shackles of time and space. But the man who reads learns only what others already know, and he learns it, mayhap, not even as they know it, but only as they express their knowledge, and as he understands that expression. He looks at things through other men's spectacles, without knowing whether those spectacles magnify, minify, colour or distort. Surely more important than learning and blindly accepting the opinions of other men is it to be able to form opinions for one's self, and at the same time to know that these opinions have been properly arrived at and are correct.

If a boy is to be a carpenter, it is all very well for him to read about the different kinds of wood he will have to work upon, and about the various tools employed in his future trade, but he will learn to use these tools only by using them; he will learn to distinguish the different kinds of wood and to select the kind and the piece suitable for his purpose in each case, only by actual practice of his trade. And what is true of the carpenter is true, *mutatis mutandis*, of every other handicraft, of every business, of every profession. However much one may learn by reading, it is but little and unimportant compared to what must be learned by actual practice. But even if we desired it we can not, during the short time our pupils are at

* Read before the Ottawa Teachers' Association.

school, exercise them in all the trades and professions. What, then, can we do? We can so teach them that this practice, when it must begin, will not be set about in a blind, hap-hazard way. We can and we ought to teach our pupils HOW TO LEARN; we can train them and we ought to train them to observe and to use the results of their observation.

But, the handicraft, the business, or the profession once learned, is the boy, now grown a man, done with observation? By no means. Every time he is called upon to make application of the knowledge he possesses, the skill he has acquired, he must observe, draw inferences, and reason therefrom; and his success in his calling will depend on the accuracy with which he does all this. Reading will supply him with other men's observations and reasonings, but these will be useless for the case in hand, unless they were made under like circumstances, or unless they can be modified to suit the present conditions. Now, to judge what are the real circumstances and conditions of the case, the man must be able to observe these conditions, and to distinguish those that are essential from those that are merely accidental, to interpret his observations aright, and then to reason correctly from the results thus obtained.

But man does not exist wholly and solely to carry on some handicraft, business or profession. Around him lies a world abounding with endless sources of health and happiness, if only he knows where to look for them and how to use them, but equally abounding with pitfalls of misery and distress to all who grope through life intellectually blind and deaf, who having eyes see not, and having ears hear not. Now, the securing of that health and happiness of which I have spoken, so far as it depends on the material world around a man, will depend on his ability to observe closely, to systematize his observations into related groups, and to connect these with the observations and experiences of other men, so as to obtain therefrom a living knowledge of the laws of his being and of the world around him. Here, again, power of observation is the first and most important requisite, and, as a natural gift or talent, this power is extremely rare; "for the observer," as John Stuart Mill has remarked, "is not he who merely sees the thing which is before his eyes, but he who sees what parts that thing is composed of. One person, from inattention or from attending only in the wrong place, overlooks half of what he sees; another sets down much more than he sees, confounding it with what he imagines, or with what he infers; another takes note of the *kind* of all the circumstances, but, being inexpert in estimating their degree, leaves the quantity of each vague and uncertain; another sees indeed the whole, but makes such an awkward division of it into parts, throwing things into one mass which require to be separated, and separating others which might more conveniently be considered as one, that the result is much the same as, sometimes even worse than, if no analysis had been attempted at all."

But if man does not exist solely for his profession, neither does he exist solely for and unto himself. He is under certain obligations to his family and to his fellow-men, he has domestic and social duties, and to fulfill these aright, amid the ever-shifting conditions of life, requires the keenest powers of observation, of interpretation, and of judgment. And although destruction as surely awaits the man who dwells in moral darkness as it does him who takes his way heedless of all the physical laws of his being, too often the evil he does dies not with him, but lives and works woe to

those he loved and would fain have protected. Yet it is here, it is in what regards their social life (and under social I include domestic and political), that too many men seem to be unable to observe aright or to make any use of such observations as they may have correctly made. When their course is not taken at utter random, too often it is guided by blind empiricism, or else is only a prolonged game of "follow your leader." The boy was not trained to observe and to think for himself when the subjects he had to examine and to think about were comparatively simple, and now the grown man will not or can not do it, or, if he does actually try, he is as likely to go astray as to go right, for he now must begin on what is extremely complex.

If, then, our school instruction aims at preparing pupils for the duties of after-life, however important we may deem those forms of hearing and speaking which we call reading and writing, even more important ought we to consider observation and inference and reasoning therefrom. That man is best equipped for the mental work which is more or less the business of every one from the cradle to the grave, who is able to use all his senses aright, who best knows all the precautions that must be taken to guard against misinterpreting the evidence of those senses, and against wrong reasoning from that evidence; who best knows how to trace thought backward to the grounds of belief and forward to discovery and verification. That is the best education that fosters the mother of freedom—independence of thought.

I have spoken of the insufficiency of reading and writing as a means of education, because there are still among us some who declare that these arts, with a little knowledge of ciphering, are all that should be taught in our public schools, are all the education that should be given to the children of the people; all the training for the battle of life, for the "struggle for existence," that should be provided for those who will have to bear the brunt of that battle, who will have to wage the fiercest contests in that strife. By all means, teach the children to read, teach them to write, teach them to cipher, but also train them in those mental processes which all men have to employ somehow or other every hour of their waking life, in every transaction of their daily business. Train them to do well and to know that they are doing well what they must do if they are to live at all.

But how is a child to be trained in these mental processes? In exactly the same way that he is trained in any art, in any handicraft. A man learns to play on the violin by playing on the violin, and no amount of directions without actual practice will make him proficient. So a child must be taught to observe by observing, to draw inferences by inferring, and to reason correctly by reasoning correctly; but if he is to do these things well he must practise them at first under the guidance of a master in these arts, and must have before him models of perfection in them. Now, Science presents us with the very best examples of accurate and discriminative observation, and of inference therefrom; it begins with the study of the very simplest phenomena, and advances its investigations step by step to a complete and exhaustive analysis of the most complicated actions and relations. It is pre-eminently the study in which one is trained in the *whole* art of thinking, and in which one is taught to be conscious of each step he takes in the onward march of his investigations, and to know that the course he is following, and that course alone, will lead him to the truth, the arriving at which is the ultimate object of all his labours.

But here I must utter a word of warning. It is of the utmost importance to distinguish clearly between *scientific information* and *training in science*, between a mere literary acquaintance with scientific facts such as may be attained by a reader possessed of a somewhat acute mind and a fair share of constructive imagination and that power, those habits of mind, which are only to be gained by the study of facts at first hand. To the majority of pupils, it would not be the information they would gain by a study of science, valuable though this would be, that would be of chief importance, but the scientific habit of mind they would acquire. This habit would be of incalculable benefit to them whatever might be their vocations in after-life, and it would be better attained by a thorough investigation of the facts and principles of one science than by a general acquaintance with what has been spoken or written about many of them.

That this warning against confusing information and training is not wholly unnecessary will be seen by the following extract from the late Professor Todhunter's essay, entitled "The Conflict of Studies:"

"We assert," says the professor, "that, if the resistance of the air be withdrawn, a sovereign and a feather will fall through equal spaces in equal times. Very great credit is due to the person who first imagined the well-known experiment to illustrate this, but it is not obvious what is the special benefit now gained by seeing a lecturer repeat the process. It may be said that a boy takes more interest in the matter by seeing for himself, or by performing for himself, that is, by working the handle of the air-pump; this we admit, while we continue to doubt the educational value of the transaction. The boy would also take much more interest in foot-ball than in Latin grammar, but the measure of his interest is not identical with that of the importance of the subjects. It may be said that the fact makes a stronger impression on the boy through the medium of his sight, that he believes it more confidently. I say that this ought not to be the case. If he does not believe the statement of his tutor—probably a clergyman of mature knowledge, recognized ability, and blameless character—his suspicion is irrational, and manifests a want of the power of appreciating evidence, a want fatal to his success in that branch of science which he is supposed to be cultivating."

Professor Todhunter was an eminent teacher of mathematics; he wrote many text-books on this science, some of which have been translated into nearly every civilized tongue, he even wrote an elementary text-book on physical science, the very science the boy is here assumed to be studying, yet in the above paragraph he presents us with an argument which would be amusing had it come from the pen of a mere literary man, but which it is almost impossible to believe a cultivator of science could advance in sober earnest. What would have been the thoughts and feelings of the professor had one of his pupils, when asked to demonstrate the *pons asinorum*, returned answer:

"Sir, my tutor was the Rev. Mr. Jones, of Westbury; he is a clergyman of mature knowledge, recognized ability, and blameless character. Now, he assured me that he had examined Euclid's proof of this proposition, and had found it to be correct, and as to doubt his word would be to manifest irrational suspicion, and a want of power to properly appreciate evidence, I accepted his testimony, and I now offer it to you as my proof."

I suspect that that pupil's ideas of proof would have received a clearing up. He would have learned that there are other kinds of evidence be-

sides oral testimony, and that it is as necessary to be able to judge of the validity in each case, of these other kinds of evidence, as it is to be able to judge of the value of testimony. He would learn that, unless he were to be a professed mathematician, a knowledge of the bare truth of the *pons asinorum* was a matter of no moment, the important thing was to see how that truth was arrived at, and how it was demonstrated; the educative factor present in the study was the exercise of the reasoning faculties, and of the powers of orderly arranging and of clearly presenting all the parts of a somewhat long argument.

So in the experiment with the sovereign and the feather, the mere testing of the truth or the falsehood of the statement that, if the resistance of the air be got rid of, a feather will fall earthward as fast as a sovereign, is not the chief thing aimed at. In fact, this statement should not be advanced prior to the performance of the experiment, but the fact stated in it should be discovered by the pupils for themselves from the experiment; and I beg to add that, had Professor Todhunter ever actually tried the experiment with the common apparatus, he would possibly have found the discovery of the fact not quite so simple a matter for a boy as he evidently imagined it to be.

But Professor Todhunter, while admitting that a boy takes more interest in seeing an experiment performed or in performing it for himself than in merely hearing a statement of its truth, doubts the educational value of the appeal to the senses. Any teacher of natural science worthy of the name of teacher would, from his experience, be able instantly to explain why this increase of interest, and instantly to set all doubts regarding the matter to rest. *There seems in many minds to be an almost total separation between words and the things they represent, except as regards constantly recurring incidents of their daily life.* Hence words seem to have no power in such cases to call up and keep before the mental vision a distinct image of the thing reasoned about. In fact, what is called the scientific imagination seems almost wanting in many minds until a severe course of training in science arouses the dormant faculty, and developes into the actual and the active what otherwise would have remained an unnoticed and neglected potentiality. The consequence is, that the teacher who depends on verbal statements alone can never be sure that the ideas so clear to himself are correct, if at all apprehended by his pupils, and that these are not increasing their ignorance rather than their knowledge. Many minds which seem to become sluggish, or to wither away when fed with what to them are the dry husks of words, are roused to activity and intelligence when they are directed to the study of things and the relations of things, when they are brought face to face, so to speak, with the actual phenomena of the world around and within them.

But before I pass from this, let me point out that the guinea-and-feather experiment, if *successfully* performed, is about as bad an example of an educative experiment as could well be selected. The bare fact to be observed would stand out too distinctly, too completely disentangled from other phenomena to give it any value in training the observing faculties of any but mere infants, while the inferences and deductions from the results of the experiment are too abstruse for any but those who have advanced some way in quantitative analysis of phenomena. Moreover, the mere experimental result can be obtained without any elaborate apparatus, while the deduced propositions can be, and in actual practice generally are, arrived at by simpler means. In truth,

the experiment is not one which should be presented to the pupil in order to deduce from it that the earth's attraction depends, not on the nature of a body, but merely on its mass, but he should be skillfully led to suggest this experiment as a test of the truth of this proposition. In fact, it is an experiment of *verification*, not an experiment of *discovery*.

It was my intention, when I consented to address you on this subject, to present you with an outline of how actually to proceed in order to give children a systematic training in observation, selecting plants as the objects for examination. Botany has been called a science of mere names, and it must be confessed it has too often been presented as such; but, rightly treated, it offers a wide field and ample scope for observation of the forms, the positions, and the functions of the various parts of plants, of the relations of these parts to each other, and of their modifications and adaptations to varying conditions, as well as for many other observations just such as children in our primary classes are capable of making. But all, and more than all, I purposed doing, has been done, and so well done, by Miss Eliza A. Youmans, in her "First Book of Botany," that I believe it will be better to refer you direct to that work, rather than to enter on details here. If one of you will take, say, a second class through the first twenty exercises in Miss Youmans's little book, working them out conscientiously and thoroughly, I do not hesitate to predict that that class will by this means acquire more real knowledge and more intellectual power than it would acquire from all the reading, writing and ciphering done in the first four classes, if done without such a course. Furthermore, the power gained and the habits acquired in the study of plants, or even in the examination of leaves, will not be confined solely to these, but will be directed to and exercised upon all other objects coming within the range of the children's observation; thus their general knowledge will be extended, and, as a result, your pupils will read with more intelligence and with fuller comprehension of what they are reading about. As for arithmetic—and here I can speak with some authority—you will find that you have somehow bridged over the, to many seemingly impassable, gulf between the mere art of ciphering and the application of that art to the resolution of numerical problems. Words will no longer be mere vacant forms or empty sounds, their content will be restored to them, the data of the problem will be mentally *realized*, and their inter-relations discovered and comprehended. In nine cases out of ten, it is the inability to realize the data, to project before the mind's eye a picture of the reality, that is the actual stumbling-block in the way of children who fail in the solution of arithmetical problems.

But the work had better not be done at all if it be not done *thoroughly* and *conscientiously*. All that can be done in a text-book is merely to set up numerous finger-posts to guide the student or the teacher; the scenery on the route can not be presented in all its fullness of detail, with all its play of light and shade; to behold it one must actually travel the road. In the course of teaching these twenty exercises, thousands of questions will arise of whys and wherefores, some of which you will have to put aside for the time being at least; but to others you must lead your children to find the answers for themselves. All these questions can not possibly be anticipated in any book; and it is well they can not be so, for, ever new, ever changing, they afford mental exercise to the teacher as well as the pupils, and thus prevent any danger of stagnation on either side. Let me take

in illustration a very simple question; one interesting to myself personally, because it was the first botanical problem I ever solved, but which, if the solution be properly generalized, is interesting in itself as giving the key to many peculiarities in the forms and markings of leaves.

When I was but a lad at school, a fellow-pupil, the son of a farmer, told me that on the back of every green blade of oats there was legibly stamped a capital B. I laughed at him for his simplicity in thinking he could make me believe such an "old wife's fable;" but he indignantly replied that not only had his father told him of the strange marking, but he had looked and seen it for himself. The only way, it seemed to me, to treat such an argument as this, was to change the subject of conversation, and this I did, a slight smile of incredulity letting my playmate know that he had not wholly imposed upon me. That very afternoon I happened to pass a field of oats, and, remembering the assertion of the mysterious markings, I determined to put the question of their reality to the proof of observation at once, and for altogether. I must confess, however, it was only after a mental struggle that I brought myself to cross the fence into the field; for the assertion seemed to me utterly absurd, and I had not then learned that, rightly taken, there is no such thing as "being made a fool of." But what were my amazement and confusion to find, on the very first leaf I examined, a capital B as clearly marked as if it had been impressed with a die! Quickly gathering and examining other leaves, I found on all of them a marking, in some a mere blur, on others clear and distinct as I had found it on the first leaf. Straightway occurred the questions: What really is this mark? What causes it? I stood among the growing oats, so the answer was neither far to seek nor difficult to find; but I have never forgotten it, for no teacher told it to me—I found it out for myself. I rediscovered the solution of the mystery of this leaf-signature, and, although it must have been discovered and rediscovered thousands of times before, yet I enjoyed all the deep delight of discovery—a delight which never cloys, a pleasure which never palls. What is more, I soon found that my eyes had, as it were, been opened; I found that I could see many other strange things about leaves which, till then, had escaped my notice, and I found that I possessed the key to their solution.

But, if I urge on you the teaching of natural science, I also recognize the difficulties you will encounter if you accept my advice. You will have to teach from the actual objects, a method utterly and radically different from the text-book instruction to which you are accustomed. You will for a time have to submit to the adverse criticisms of those parents who judge of a child's progress, not by its mental growth, but merely by its increase of skill in the art of recognizing the marks that represent certain sounds, and of repeating those sounds, an art too often confused with reading. You will, some of you, have to struggle with classes not too large to inform by telling but far too large to educate by training. But overcome the first difficulty, overcome yourselves, and you will find the others will lessen day by day, and will soon disappear altogether, the little remaining of them being lost sight of in the increase of brightness which the new study will bring to the life of the school-room.—*The Popular Science Monthly.*

IRREGULARITIES OF ENGLISH SPELLING.*

BY J. H. BROWN, DEAF AND DUMB INSTITUTE, BELLEVILLE, ONT.

THE occasion which has brought us together is one of especial interest. We are assembled as the teachers and advocates of a method that has many opponents as well as friends, feeling an honest pride in our conviction and theory; to witness the progress that has been made by our students; to exhibit the ripened fruits of the labours of some of our *confreres;* to gather, I trust, many important lessons from the experience of those long in the work, and to prepare more thoroughly for our particular work at home. Although my position to-day is not wholly free from embarrassment, yet, I am glad to be with you and to contribute my mite towards the success of this Convention. The occasion furnishes me with anopportunity highly appreciated of exhibiting the deep interest I take and feel in the worthy cause of educating children who are deaf. I am well aware that there are many of my co-workers more capable of furnishing a few facts suitable for a paper upon orthographic irregularities, and as the subject is an extensive one, their conviction may be that "fools rush in where angels fear to tread." Well, sir, it is by mistakes that we learn, and if it were for no other reason than to gratify a personal desire to become acquainted with my subject, I shall occupy a few moments of your time trusting I do not speak to an unsympathetic audience for, if you take no interest in our work you would not be here. By your past as well as your present connection with institutions for the deaf; by your relation to those that you teach; by your desire to see the survival of the fittest methods for their instruction; by your appreciation of the benefit that has already characterized the oral method, and by your sympathy for the deaf mute generally, the moulding of his character, the enlightenment of his intellect and the shaping of his destinies, by all these motives you show an interest in our work.

The teacher of articulation, after a few years' experience does not require to be told that our language possesses possibly the most ambiguous system of orthography of all the languages using the Roman letters. In treating this subject, we will take a superficial retrospective view of some of the earlier methods of writing by means of which we may in a measure account for a few of the anomalies which are characteristic of our English spelling.

It is supposed that the Phœnicians were the inventors of alphabetic writing. The Egyptians and the Babylonians had a system of hieroglyphics in which they represented sounds by figures and forms, but it was not alphabetic. They had a large number of ideographs, or signs for ideas and both employed a number of signs for the same sounds. Their system was clumsy and complicated, and we are told unfit for general use. The characters used by the Babylonians did not represent definite sounds of the human voice as in speaking. Their sounds had no definite value and were sometimes used for a complete syllable. The Egyptians went beyond this. They analyzed their syllables

*A paper read at the Convention of Teachers of Deaf Mutes, New York, June, 1884.

but never wrote exclusively by means of such analysis. Their system of writing was varied and mixed. Their phonetic symbols were either alphabetic or syllabic, and were continually being interchanged with the ideographic. It was in this stage that the Phœnicians took hold of Egyptian writing to disentangle it from so many contradictory principles. This was possibly the first attempt made to consummate the union of the written with the spoken words. It was, as has been well said, to emancipate once for all the spirit of man from swaddling clothes of primitive symbolism, and to allow it at length to have its full and free development by giving it an instrument worthy of it, perfect in respect to clearness, of elasticity, and of convenience for use.

The Greeks received their alphabet from the Phœnicians and the Romans from the Greeks. After the Norman Conquest in England, there were a number of French words and phrases introduced in English with a different system of orthography. Shortly after this time there was an infusion of Latin and Greek derivatives, in a haphazard manner without any care to adapt them to our methods of spelling. Amid this confusion of element in language there does not appear to have been any attempt at a scientific respresentation of sounds by letters. Since the invasions of the Saxons into England the greater part of the English language has been Saxon or rather Anglo-Saxon, but even this was not for a considerable length of time the written language of the people. At the bar Norman and Latin were the languages, in the field Norman was spoken, while at the court Saxon was used. It will be readily seen that, to give representation to a language which grew out of so many varied elements, by an alphabet originally intended for only one of them, would be an impossibility. With these various dialects and languages, which had fused into English, there were many sounds which the Latin tongue never possessed. Because of our insufficiency of letters for the phonetic representation of sound, there was adopted an ingenious method to overcome the difficulty. Orthographic expedients were resorted to; that is, a different letter or a different value of the same letter, or a combination of letters was employed to represent such elementary sound as were unknown in the Latin language, and consequently unprovided for by its alphabet. It is not to be wondered at, when there were no printing presses, that the system of writing was not philosophic. Language in these early periods was acquired almost entirely by the ear, and the probability is that very few, who at that time could read, were in the habit of using words they had only heard. The consequence of this would be that writers differed very widely in their pronunciation, and as their spelling was intended to be phonetic they differed just as extensively in their orthography. This is confirmed from the fact that manuscripts written about the time of the Norman Conquest, or shortly afterwards, reveal an orthographic confusion not to be found in other languages at that time. With the advent of Norman French came new letters and new sounds, and not only these but it had different combinations to represent the same sounds. Then came the invention of printing (1471), possibly the most decisive epoch in the cause of spelling. With the introduction of the printing press, at the time when Norman and Saxon languages were side by side in England, each striving for supremacy, it is not suprising to find that much confusion should be the result. The compositors were mostly from the continent and had little or no know-

ledge of the language. The result was that mistakes in spelling were of frequent occurrence, and in time were actually used as being correct. Their system of setting type was not as complete as that of more modern date, and it is said that letters were frequently dropped out or inserted into a word as the spacing required. Much of the irregularities may be traced to the capricious sway of Johnson's dictionary. I think it was Johnson who wrote that "C had no determinate sound and it never ends a word." Again, many of the beginnings of our othographical anomalies originated in part with the slavish retention of symbols which had ceased to be pronounced in words, even before they were brought into the English language, while others have come through the gradual changes which occur in every language from time to time. We hold intercourse with the vast mass of mankind by means of writing or speaking. This communion of mind with mind is certainly greater, and I think more powerful, by means of the former than by the latter. Is it not, therefore, of the utmost importance that our alphabet which forms the foundation of all literature, should be faultless and true. It is a lamentable fact that very few even in the present day can tell with any degree of certainty how to pronounce a word that may be given them in ordinary orthography, unless, they should have heard it pronounced by others. This fact was exemplified to me on several occasions during the time of the Zulu War. The frequent and misleading combination of letters to represent sounds in English alphabetic writing is a characteristic not to be found in the spelling of any other living language, not even excepting the French. The object of all writing should be the representation of alphabetic sounds. In other words, the primary aim of orthography should be to analyze words into syllables and syllables into sounds; that each character have a fixed sound which should not have more than one symbol to represent it.

Much speculation exists regarding the primitive alphabet. Some assert that it was an invention, while others maintain that it was simply a discovery. The first letter or mark used for that purpose—whatever it may have been—worked out by the fertile brain of its author, was an invention, but the application of such to sounds which formed the elements of words, and the adaptation of these marks to ordinary conversation, was possibly the grandest fact in the history of the alphabet. The analyst of spoken language may have been one man, while the translator between the eye and ear may have been another. In order to discover the true number of letters we have to give representation to all our sounds, we shall, therefore, dwell more closely upon the alphabet. We have in all thirty-eight sounds to be represented by twenty-six letters. Three of these letters (x, q, c) are redundant, their phonetic value being represented by the remaining twenty-three. The arrangement of the vowels with the consonants appear to possess much regularity and scientific construction. The vowels are found at regular intervals. First we have "A" followed by three consonants; "E" followed by another three; "I" with five consonants; "O" with a similar number; then "U" with another five consonants; if we consider "W" and "Y" as vowels, each of them is followed by a single consonant. Then, again, every letter in the alphabet with the exception of "J" and "Q" has the fashion of appearing silent: as Bala*a*m, lam*b*, s*c*ent, We*d*nesday, tam*e*, cu*f*f, *g*naw, *h*our, busi*n*ess, *k*nee, ca*l*m, mam*m*a, autum*n*, tr*o*uble, receip*t*, pur*r*, mis*s*, of*t*en, build, se*v*en-night,

*w*rite, ticdouloureu*x*, buz*z*. There are also many peculiarities resulting from a combination of different letters to represent one sound. The sounds of our vowels disturb the common sense of our children and at almost every step their progress is impeded. They learn one thing in one word and it is contradicted in the next. It is evident that "OA" in the word "boat" represents the single sound of "O" just as the single letter in "no." In the absence of a fixed sign for long "O" we are forced to resort to the method of writing two letters. It would be a difficult thing to represent it by a single "O," because once we make the addition of a consonant we immediately change the sound of the vowel, as "not."

We will now examine the five vowels and ascertain the many different ways of representing the sounds. Long "A" may be (ai) slain, (ay) stay, (eigh) eight, (ea) break, (ei) skein, (ey) they, (au) gauge, (ao) gaol, (uet) bouquet, (eig) reign, (ah) dahlia, (aigh) straight, and (a) waking (13). The Italian sound of "a" may be (au) aunt, (al) calm, (ea) heart, and (a) rather (4). The broad sound of "a" may be represented by (a) tall, (al) chalk, (au) Paul, (augh) caught, (ough) fought, (ao) broad, (aw) awl, and (awe) awe (8). The long sound of "a" has (ai) fair, (a) fare, (ay) prayer, (ea) pear, (ei) their, (e) there (6).

Long "E" may be (ee) feet, (ea) reap, (ei) receive, (eo) people, (uay) quay, (ey) key, (e) me, (i) police, (ie) piece (9).

The short sound may be (a) many, (ue) guess, (u) bury, (ie) friend, (eo) jeopardy, (ei) heifer, (ea) heather, (ay) says, (ai) against, and (e) pet (10).

Long sound "I" is expressed by (y) by, (eye) eye, (ais) aisle, (uy) buy, (ye) dye, (ie) die, (eigh) sleight, (igh) right, and (i) rite (9).

Short sound of "I" has (e) English, (ai) fountain, (ui) biscuit, (o) women, (y) pity, and (ey) money (6).

Long "O" may be represented by (oa) coat, (ou) show, (ou) four, (oe) oe, (eo) yeoman, (eau) bureau, (aut) hautboy, (ew) shew, (oo) floor (10).

The short sound may be represented by "o" and by (augh) slaughter, (aw) paw, (a) watch, (ow) knowledge (5).

Long sound of "U" has eight servants with itself, (ew) few, (eau) beauty, (ewe) ewe. (ue) sue, (ui) juice, (eu) feudal, (iew) view, and (ie) adieu, and the short sounds may be represented by (u) run, (ou) rough, (oo) flood, (o) some, and (oe) does. Taking the aggregate of the different represent ations for the five vowels we find that no less than ninety-four methods are employed. Pupils have in in all these cases to learn and memorize all the forms of spelling as coincident with the same forms of sound; the particular form which represents each individual word. The greatest difficulty in the acquirement of the English language rests in its inconsistent orthography. Our pupils have to master, and to commit to memory word by word. There are no rules upon which we can rely, and if perchance one should be given, the exceptions are almost as numerous as the examples. What would we think of a system of railway signals that meant a clear track and right of way one night, but upon another occasion signified danger; or how would we appreciate a system of mathematics, which made five equal to one quantity when before seven, but a different quantity when before three. These are examples of the inconsistencies that we must teach, these are the absurdities we have to overcome.

We have not only a multiplicity of alphabetic combinations doing duty for one sound but, we have to add to their trouble in their attempts to master our orthographic anomalies,

by giving different sounds to the same combination of letters. Alas, how cruel the tricks of English spelling are! Take for example "ough" observe how strangely inconsistent the spelling is for the pronunciation. A pupil that can believe in *through*, *though*, *fought*, *cough*, *rough*, *plough* and *hiccough*, will believe anything. Originally spelling was intended to present an invariable representation of the same sound with the same symbol. This was the primary function of alphabetic writing. The sound which fell upon the ear was to picture to the eye a certain letter and no other. If a particular sound had been represented by one character in one place, but by another in a differeut place, the result of such in the earliest stages of our alphabet would have been fatal. But the language of our present literature as it appears to us reaches only to the eye, and it must be learned by the ear from the intercourse of our daily life. Fancy a person deducing from analogy the pronunciation of "sound" and "wound," "love" and "move" "door" and "poor," "arch" and "monarch," "lamp" and "swamp," "laughter" and slaughter." Take an example of a word of one syllable with the same radical vowel. In the word "we" the two letters as they are written give a phonetic representation. Prefix an "o" (owe) and the sound of the "we" is not heard. substitute an "e" for the "o" (ewe) and we have an entirely different sound; again place an "a" before the original word (awe) and we get still another sound; affixing a "t" at the end of our word "we" and it is pronounced "wet."

Examine now examples of dissyllables. We have "busy," "bury" and "surely;" "putting" and "butting." We have also peculiarities in diagraphs; "ch," is apt to give you some trouble as "chain," "chaise" and "chord." "Ph" may be put in the category with "ch." "Gh" is ready to keep him company with its manifold servants, in "ghost," "cough," "hiccough" and "Lingham." "S" appears equally as misleading in "has," "sat," "sure" and "leisure"; "th" brings up the rear in "thin," "thyme" or "them." We learn in practice to readily recognize the distinction between "th" voiced and non-voiced, because we have acquired the pronunciation of every word in which it may be found, but how few there are outside of those who may have given the subject some attention that are aware of a difference in pronunciation.

At best our language was but a transfer from the Latin, and the only original parts it possessed, that is two symbols for "th", were left out, not because the sounds which they represented had taken their departure, for they still remain. "C" may be pronounced like "k," "S," "sh" as in the words "can," "city," "gracious."

"G" has two sounds as in "go" and "gentle." "Z" may be "z" in "zone" or "zh" as in "azure." "Sh" may be "si," "ci," "ss" or "ti" as in "mansion," "precious," "pressure" and "caution."

Very frequently I have been asked why we retained letters in a word when they were not pronounced, probably never had been, and altogether likely never would be. This is a very difficult question to answer. Why should we have an "s" in "island" or an "hy" in rhyme? The former comes from "ealand," and the latter from "rime," both Anglo-saxon roots. Why have we a "c" in "scent" a double "s" in "scissors"? Why "tongue," except from false analogy with *langue*, instead of the Saxon "tung"? Why "could" instead of "coud"? why "reason" instead of the old French "reson"? why "parliament" instead of "parlement"; "summer" instead of "sumor" or

"sumer"? Why "cow" but "kine"; "cat" but "kitten"; "corn" but "kernel"; "fancy" but "phantom"? If we substituted an "f" for the "ph" would we be less aware of its derivation? Why still retain the "b" in thum*b* and lim*b*? Why, indeed, unless it be to preserve an effigy of an effete orthography. They come from the Anglo-Saxon "lim" and "thuma." Why "receipt" but "deceit; "conceive" but believe; "proceed" and "precede"? "Uncle" must be spelt with a "c," but ankle with a "k." Why retain the letter "b" in debt? The French do not use it, yet they are less ignorant than we as to its derivation.

If we can readily distinguish between the hominims "rite," "write," "right" and "wright" when spoken, would there be a greater hardship in making the same distinction when written? A-g-u-e spells a word of two syllables, but if we prefix (pl) we get "plague" a word of one syllable. It would be a work of supererogation for me to add numberless examples of this nature. What I have desired to illustrate is that our present English spelling, through a combined number of causes, does not represent our present pronunciation, and in many cases a pronunciation we ever used in our language. The consequence of this is that we must necessarily experience difficulty in our work. But some say if you write "program," "dialog," "hav," "moov," etc., it will completely destroy the history of our language. Well, what if it does? Language was not made for scholars only, and it must necessarily be in a state of change. If you examine the orthography of Bunyan, Spencer and Shakespeare it will demonstrate to the most ignorant that wonderful changes have been made since that time. Milton wrote "sovran," "stedfast" and "forgo." Spencer wrote "seemd," and in "Canterbury Tales" we find "ther," "lern," "fil" and "wondres." If any of these celebrities had to pass an examination before any of our school-boards according to our standard he would be plucked in spelling. Voltaire said "That etymology was a science in which the vowels are worth nothing, and the consonants very little"—and so it would appear, especially with English. We will suppose that it did obscure the history of the word. How many of those who speak our language know or care to know the history of this or that word. The question is not, what is best for the few, but what is the most beneficial for the masses. The more we examine this subject the more we find that bad spelling is prevalent. In our city I observed the other day amongst the signs the following: "a pheaton for sale," "carriage makeing" and "cheap grocerys," yet I doubt whether we, as Canadians, are much worse spellers than other people.

Possibly the nearest approach to a philosophical construction of a phonetic alphabet is that of Prof. Bell's "Visible Speech," yet I doubt whether it was the intention of the author to have it come into general use. I believe the system of Visible Speech has been the means of bringing the subject of articulation more prominently before teachers of the deaf; and though I do not consider it of absolute importance to convey speech to them, yet I deem it of vast utility that instructors of the oral method should possess a thorough knowledge of such a system. There can be no doubt, but that our unsystematic manner of representing spelling is a great difficulty in our teaching. This becomes more apparent with advanced pupils who are constantly increasing their vocabulary of words. While our orthography remains as it is, this will not be made easier, but I trust

that the language we use will not long be kept in bondage by an orthography totally void of rule, method and system. And "yet there are people who honestly believe there is something peculiarly sacred about the present orthography of the English tongue, who look upon the creation of type-setters as the crowning mercy to our race of an All-wise-Providence, and actually shudder when a new spelling is employed as if the fountains of the great deep were breaking up and the civilization of the world were threatened with a second deluge of barbarism."

HIGHER EDUCATION OF WOMEN.*

BY PRINCIPAL SIR J. WILLIAM DAWSON, C.M.G., LL.D.

(Continued from the November MONTHLY.)

THE arrangements at Girton are in the main similar to those at Newnham, but Girton is at a greater distance (about two miles) from the town, and has a finer building than that of Newnham with somewhat more luxurious accommodation for the students, most of whom have two rooms; and it is considerably more expensive.

Owens College, Manchester, has now definitely provided separate classes for women in the junior years, and admits them to the College lectures only after passing an examination equivalent to our Intermediate.

With reference to the relations of the sexes, the principles of all the colleges and halls connected with the English universities seem to be—(1) the separate residence of the women in their own colleges. (2) The supervision and tutorial help of lady-principals and tutors in the colleges. (3) The employment of lecturers sanctioned by the universities to conduct separate classes for the ladies in their own colleges. (4) Permission in the senior years and for special subjects to attend the public lectures of University lecturers, with or without a chaperone. (5) The preparation of the students for the University examinations, and as far as possible for honour certificates.

It is evident that education on these principles is different, practically, from the system of "co-education" introduced in University College, London, and in some colleges in the Western States and in this country. It combines much privacy and seclusion, and separate study under female influence of a high order, with permission under certain conditions to attend public lectures; and it is to be observed that the student of Girton or Newnham can, if she so pleases, complete her whole course of study without attending any mixed classes. It seems to me that this is quite as far as we should venture in the matter of mixed education; and I think we could venture so far, provided that, at the end of the second year, we find a number of lady students prepared to go on with the work of the third and fourth years, and that endowments sufficient to continue the whole work in separate classes are not provided.

*A Report presented to the Corporation of McGill University, October, 1884.

EXAMINATIONS, DEGREES AND CERTIFICATES.

In England the examinations for degrees are now everywhere open to ladies, but under different conditions. The University of London and the new Victoria University admit ladies to the degree of B.A. without any restriction; and at London they come up to receive their diplomas habited in gowns and hoods in the same manner with the male graduates—an arrangement which has at least the merit of producing uniformity in dress. In the University of St. Andrew's the degree given to women is Licentiate in Arts, with the letters L.A., and this degree is placed by the University on the same educational level with B.A. The advantages of this expedient are that, while it gives the lady graduates an equal standing with the men, it prevents the apparent anomaly of the use of a term which has popularly been restricted to men, and leaves the University free to deal, on independent grounds, with the question of advanced degrees, should these be provided for women. The practical difficulties connected with this last question, and with the privileges accorded to graduates in reference to voting, to offices, etc., have probably influenced the older English universities in withholding the B.A. and merely giving a certificate of having passed the examinations. Another difficulty, of course, occurs from the change of name in case of marriage, which would require some attention in the keeping of the University registers; but this could probably be avoided by exacting a small fee for keeping the name on the University books with any changes which it might undergo.

The point most insisted on by the ladies managing the several colleges is, that the certificate or degree, whatever its nature, should be understood to be equal to that accorded to men. This is with them not merely a matter of sentiment, but a practical consideration, since it is necessary to place the women who graduate on an equality with other graduates in the competition for educational employments. I was assured by several ladies of much influence in the movement, that they attached little importance to any letters after the names of the graduates, provided their equality was practically acknowledged. On the other hand it is certain that some colleges for ladies send up their graduating classes to London by preference, in consequence of its giving the degree of B.A., and I was informed that the regulations of the Victoria University were likely to be of such a character as to attract large numbers of ladies to its examinations, which it is hoped will be managed in such a manner as to avoid the evils alleged against the London Examinations, in the matter of cramming, and of a hard and fast adherence to certain text-books not always fitted to give scope to the most practical and advanced teaching.

ACTION OF M'GILL UNIVERSITY.

As to our own action in this matter, I have felt that this must practically be regulated, not so much by the theoretical views which we might be inclined to favour, as by the demand on the part of women for a higher education than that of the ordinary schools, and by the means placed at our disposal to establish classes for the purpose. On my return from England last summer, I found that the first of these conditions was fulfilled by the fact that as many as eight young women, who had passed as Associates in Arts, were prepared to proceed at least as far as the examinations for Senior Associate, and were very desirous that the University should aid them in their studies. In

endeavouring to meet this demand, in conjunction with Rev. Canon Norman, the Vice-Chancellor of Bishop's College, and supported by the voluntary offers of assistance made by several of the professors, I was prepared to recommend to the corporation that we should co-operate with Bishop's College and with the Ladies' Educational Association in opening classes for women in the first year in Arts, provided the means to pay for this, without trenching on the ordinary income of the University, could be secured. The scheme, which seemed to rest on the possibility of such aid, had not advanced beyond provisional suggestions for the course of study required, and for establishing it under the auspices of the Ladies' Educational Association, when the financial difficulty was removed by the liberal gift of the Hon. Donald A. Smith, who, believing that special classes for ladies should be established, placed at the disposal of the University for this purpose the sum of $50,000 to be invested for the endowment of a college and classes for women. Under this endowment the classes have been commenced with the most gratifying prospects of success; the number of students entered being 24, of whom 11 desire to proceed to the Degree examinations. This I consider a large number, when we make allowance for the fact that no special preparation could be made for these classes in the schools of last winter, and that the classes could be advertised only for a few weeks before they were opened.

The arrangements for this session refer only to the work of the first year in Arts, and are in every respect similar to those for male students of that year, except that women are allowed to take German as equivalent to Greek. Three students however, have entered for Greek, and it is likely that in subsequent years the proportion may be larger. We have been enabled to use for the present the new class-rooms in the Peter Redpath Museum, which are sufficient to accommodate the classes, and will thus avoid any expense for rooms. These arrangements and the provisional regulations passed by the Faculty of Arts under the resolutions of the Corporation accepting Mr. Smith's benefaction, will suffice for the second year. Our students will then be able to enter for the Intermediate examinations and those for Senior Associate in Arts; and the question will remain how many desire to go on for the Degree examinations, and in what way the work of the third and fourth years will be provided for. These questions will have to engage the attention of the Governors and Corporation, and the manner of their solution must depend on the means which may be placed at disposal of the University for the work to be done. Provided that no additional endowment can be secured, it will be necessary to open some of our present classes in the advanced years to women, and even this will involve some expense in the provision of proper waiting rooms and probably of a lady superintendent of the classes, while it is not impossible that a portion of the students may decline to go on under these conditions. If, on the other hand, an additional endowment should be provided, separate provision can be made for the ordinary work, and at least for most of the honour studies, so that, as in England, a choice may be offered of separate and mixed classes. It is my decided conviction that this choice will be necessary to enable us fully to realise our wishes in this important work, though I am quite prepared to consider the other alternative and to devise means for carrying it out, should this be necessary.

Should the classes increase in number of students, and separate

tuition be provided in the third and fourth years, additional class-room accommodation will be required. But this subject will, in any case, have to engage the attention of the Board very soon, since the class-rooms used by the Faculties of Arts and Applied Science are now overcrowded. The requisite accommodation would, in my judgment, be best provided by the erection of a new building adapted to the wants of the Faculty of Applied Science, and which might be sufficiently large to contain rooms for the classes for women; or a building which need not be large or expensive, might be erected for the Women's College. The classes may, without inconvenience, remain for some time at least, as at present, a Special Course under the Faculty of Arts; and there will, in the infancy of the scheme, be great advantage in this arrangement, as tending to render more uniform the course of study for both sexes, and to extend to the one any improvement which may be introduced with respect to the other, while giving to the women the full benefit of the apparatus, library aud museum of the University.

Two subjects still remain for consideration: one is the relation of our classes for women to those of the Ladies' Educational Association, and another, our relation to colleges for ladies, as for instance the Trafalgar Institute, which might become affiliated.

With respect to the first of these, it must be borne in mind that, while some of the subjects usually taken up in the lectures of the Ladies' Educational Association are similar to those in the college course, others are different, and that numerous ladies benefit by these lectures who could not take a college course. The commencement of college classes, therefore, affords no good reason for the discontinuance of these lectures. It will, however, be possible to open such of the college lectures as may be suitable to the members and students of the Association, and in this way its functions may be extended and its financial responsibilities diminished. This combination is carried on with great success by the Edinburgh Association, which has thus been coming into closer connection with the University, and has at the same time been instructing large classes of students not intending to take a full University course.

With reference to affiliated colleges for women, these might either be altogether independent and situated beyond the limits of Montreal, so that their students would merely come up for examinations, or there might be colleges or halls in Montreal, in which, as in the Cambridge and Oxford colleges, the students might reside and receive a portion of their tuition while attending the University classes. Such a foundation as the Trafalgar Institute might in this way enjoy the benefits of connecting with the University in the diminution of expense, in extending its course of study, and in obtaining for its students the University examinations and certificates, without losing any part of its distinctive character.

I think it quite possible also that the McGill Normal School may, in connection with the classes for ladies, do much for the greater elevation and improvement of its academy class. The arrangements for this have already been under consideration of the Normal School Committee, and the Principal and Professors of the school, and it is hoped that proposals for securing these advantages may be presented to the Corporation of the University before the end of the session.

On the whole, I think the Corporation of the University has reason to congratulate itself on having already

attained to a safe and progressive position in this important matter; and that, by continuing its work in the direction already pursued, it has an assured prospect of taking a leading place among Canadian universities in the great enterprise of providing for the higher education of women.

LETTERS TO YOUNG MEN AT COLLEGE.

Introductory.

BY D. A. O'SULLIVAN, M.A., LL.B., BARRISTER-AT-LAW, TORONTO.

IF I were to die to-morrow, a large share of the anxiety about temporal matters natural to me as a father would be about the future of my children. With the best of mothers remaining there would be still the fact that boys will be boys, and that they require the counsels and the guidance of both parents, and not unfrequently the authority of the one capable of exercising it. It is with them that I shall have chiefly to do in these letters. It would be rude, however, to omit any reference to the gentler sex, and I shall presently make amends. There is a French saying *place aux dames*, but the politest of peoples are accustomed to be addressed by their orators with a total disregard of their own sayings. And so here it will be *Messieurs*, and in good time, *Mesdames* or *Ma'mselles* rather.

The unprotected boy is hard to contemplate; but there are darker pictures which however we will not refer to at present. Every one puts aside the gloomy picture and hopes for the better things. *Spero meliora* we have heard; and some one is now saying through the press *pet altiora*. The wisest of Fathers remains to every unprotected child; but He remains along with the legacy of good and evil inseparable from the human parents. My anxiety, therefore, in the event referred to as possible to-morrow would be proportioned to my sense of responsibility as a parent. What bequests of fortune or character or temper naturally come to my children? As to the fortune, that could be arranged in short time, as well for the simplicity that befits small possessions, as for the fact that I have already instructed the rising generation of my profession and others dabbling therein in the secrets of drawing a "simple" will. We will not concern ourselves here as to what disposition a father should make of his property or the son when it comes into his hands, it will be rather what is to be done with such gifts of mind and character as we are all variously endowed with. It will be such remarks as a man might make to the proposed guardian of his children, and whoever wishes to avail himself of it in his will can do so if he pleases. There will be charge for legal advice and no offence taken if the reader prefer his own.

Most people who write on these matters forget that they were ever children themselves, or were ever at College, and they write from the horseback and whip-in-hand style. The old writer who thought nothing human to be foreign to him was in a more suitable mood. I can take a hand in yet with my college chums

at a game of ball, and my eldest born is not so old but that he would tip over the ink on these papers if he were not completely engrossed with his house of blocks. I do not view what I am writing about either from a balloon or through a telescope. As an old boy I talk to the young boy, and don't ask him to do all the *fielding*. I shall take the boy by the hand and not by the ear. If the talk is too long and too dry for him, then I am to blame. All work and no play makes Jack, they say, a dull boy; but all play and no work makes Jack a useless boy; a thing that can't fairly be called a *boy* at all—something that sleeps, and eats, and plays, but doesn't work. How can such a—well, such a young person—make a living or repay those who supported him when he was, or might have been, a boy? I write no sentence for such a person; 'twould be unjust to call it a *boy*. I will write for the boy or youth who expects to grow up to be a *man*.

WIT AND DIPLOMACY IN DICTIONARIES.

BY C. W. ERNST.

DICTIONARIES may not be altogether amusing, but there are few dictionaries which do not contain some amusing statements. Dr. Johnson defines a lexicographer grimly as "a harmless drudge that busies himself in tracing the original and detailing the signification of words." This drudgery has been relieved partly by the voluntary and involuntary jokes of the dictionary-maker himself, partly by the reception with which his work has met at the hands of his professional brethren and the people at large. No dictionary could be more sober and matter-of-fact than Weigand's excellent German "Wörterbuch." Every edition of it defines a crab, or *krebs*, as "the well-known insect." The "Dictionnaire des Dictionnaires," by Napoléon Landais, contains this entry: "*Yanquis—nom d'un peuple des Etats-Unis d'Amérique.*"—"Yankees—the name of a people who live in the United States of America.

The amusing definitions which abound in Johnson's dictionary of 1755 are fully matched in Richelet's French dictionary of 1698, and in Riemer's Greek dictionary, which used to be popular in Germany. Johnson defines oats as a grain which in England is generally given to horses, but in Scotland supports the people. Richelet observes under the head of *bain*, or bath, "*Quand les médecins ne savent plus où ils en sont, ils ordonnent le bain à leurs malades.*"—"When doctors do not know which way to turn, they order their patients to take a bath." He defined the Augsburg Confession as "*la déclaration de la création de Messieurs les Protestans*"—the declaration that Messieurs the Protestants had come into existence. Johnson defined excise as "a hateful tax levied upon commodities, and adjudged not by the common judges of property, but by wretches hired by those to whom excise is paid." Richelet remarks under the head of *épicier*, or grocer, that "these people wrap some of their merchandise in gray paper, or in a few sheets of wretched books, which one sells to them because one has been unable to sell them to others. The translation of Tacitus by the little man d'Ablancourt has had this misfortune." Richelet is cautious enough to express this lexicographic

remark as follows: "*Le Tac. du petit A a eu ce malheur.*"

Dr. Johnson defined a Puritan as "a sectary pretending to eminent purity of religion," a Whig as "the name of a faction," and a Tory as "one who adheres to the ancient constitution of the state and the apostolical hierarchy of the Church of England, opposed to a Whig." Dr. Johnson copied occasionally from Nathan Bailey's "Universal Etymological English Dictionary," which the elder William Pitt used to read in order to have affluence of language. But Johnson was too shrewd to fall into the blunder of John Ash, who borrowed extensively from Johnson's two folio volumes. Johnson remarked under the word curmudgeon, "It is a vitious manner of pronouncing *cœur méchant*. Fr. an unknown correspondent." John Ash transferred this entry to his dictionary of 1775 and the second edition of 1795, in which it reads, "fr. the Fr. *cœur*, unknown, *méchant*, a correspondent." Ash, who was a Baptist minister, announced the plan of his work as "extensive beyond anything that has yet been attempted of the kind in the English language." He was right, as he called Gawain the sister of King Arthur, and branded esoteric as bad spelling for exoteric. Under the head of dictionary, William Rider remarks in his work of 1759, four years after Johnson's great work, "How little those books which go by this name in the English language may deserve it, may easily be perceived by considering that none claim any other merit but scraping together as many synonimes as they can, and leaving the reader to pick out the meaning from the rubbish that is collected." Dr. Webster said in his dictionary of 1828 that curt is "rarely used, and not elegant," and that the word curtly is "not in use."

Such curiosities become quite marked when one traces certain theological, medical, or political words through an entire series of dictionaries. The current edition of Webster's dictionary remarks under consubstantiation that "the Lutherans maintain that, after consecration of the elements, the body and blood of Christ are substantially present with the substance of the bread and wine." Charles Richardson's dictionary, valuable for its elaborate quotations from the best authors, mentions John Milton's remark that "the Lutheran holds consubstantiation an error, indeed, but not mortal." And Milton is right, if the official creed of the Lutheran Church is to settle the question. Webster defines a humanitarian as "one who denies the divinity of Christ and believes him to be a mere man." John Wesley, who published a dictionary in 1753, remarked on the title-page that he was "a lover of good English and common sense," and "N. B.—The author assures you, he thinks this is the best English dictionary in the world." He defines a Methodist as "one who lives according to the method laid down in the Bible;" an Arminian as "one that believes universal redemption." Calvinists, in John Wesley's anonymous dictionary, are "they that hold absolute, unconditional predestination." A latitudinarian is "one who fancies all religions are saving." A Puritan is "an old, strict Church of England man;" and a swaddler is "a nickname given by the Papists in Ireland to true Protestants."

James Knowles, whose dictionary of 1835 contains seventy-seven thousand words, or twenty thousand more than Johnson's, defines a Papist as "one that adheres to the Church of Rome," and a Romanist he defines as a Papist; but in his preface he offers a profuse apology for the offence given by these definitions. Still more

remarkable than the history of words like Catholic and Romanist is the fate of the term ultramontane. Bailey's work of 1721, being the principal predecessor of Johnson's, says that ultramontane is "a name the Italians give to all people which dwell on this side of the Alps." Johnson's dictionary of 1755 says that the word means "being beyond the mountains." Todd's edition of Johnson, in 1818, retains this definition. Latham's edition of Todd-Johnson, in 1870, remarks that "in the English and the allied languages *ultra* means to the south of, the mountains being the Alps. The term is chiefly used as an equivalent to Romish, Roman Catholic, and Papal." Richardson's work of 1836 quotes Bacon's remark that a man of a certain kind is not possible "because he is an ultramontane, of which sort there has been none these fifty years." The word ultramontane as now used by Protestants and some Catholics means a person who contends for the absolute authority of the Vatican. Within a little more than a hundred years, therefore, the meaning of the word has been reversed; but it is still a party term. J. Knowles' dictionary defines an ultramontane also as "a foreigner."

An anonymous dictionary of 1689 says that "hasle-nut" is derived "from the A.S. Hæsl-nutu, the Belg. Hasel-noot, or the Teut. Hasel-nusz —all perhaps from our word haste, because it is ripe before wall-nuts and chestnuts." The author says of his work that "the chief reason why I buried myself herein was to save my time from being worse employed." Edward Phillips' dictionary of 1658, which Sir John Hawkins has rashly thought to be the basis of English lexicography, defines bigamy as "the marriage of two wives at the same time, which according to common law, hinders a man from taking holy orders," the punishment of bigamy in 1658, being in fact death. A gallon is described as a measure containing two quarts. A quaver is described as "a measure of time in music, being the half of a crotchet, as a crotchet the half of a quaver." For these crotchets Phillips was taken to task in an amusing folio volume published in 1673 by Thomas Blount. John Minsheu's dictionary of 1617 explains the word cockney in this way: "A cittizens sonne riding with his father out of London into the country, and being a novice and meerely ignorant how corne or cattell increased, asked, when he heard a horse neigh, what the horse did; his father answered, the horse doth neigh. Riding farther, he heard a cocke crow, and said, doth the cocke neigh too?" Richard Hulœtus' dictionary of 1552 defines a cockatrice "as a serpent, called the king of serpents. whose nature is to kill with hissing only." It is a curious fact also that John Palsgrave's "*L'Eclarcissement de la Langue Françoyse*," first printed in 1530, and reprinted at Paris in 1852, is not only a good English dictionary, in which the verbs are enumerated in the first person, but also the first attempt at a grammar of the French language. If the Germans had followed the example set by Palsgrave's work, they would have escaped the absurd confusion in what they call their separable and inseparable verbs. Palsgrave mentions the word *ambassade* for English and French, and furnishes a good starting-point for some remarks on the diplomatic terms in our dictionaries.

The word diploma is mentioned in the earlier dictionaries, and Bailey defines it as a charter, an instrument, or a license, Johnson as a "letter or writing conferring some privilege"; but the word diplomatist is wanting in Johnson and the dictionary of the French Academy. All recent dic-

tionaries of the English language give the word diplomat, but the word diplomat does not appear in Webster, while Worcester's Supplement has it, and Latham's edition of Todd-Johnson quotes it from the "Saturday Review" of June 3, 1865. In fact, Latham's Todd-Johnson mentions diploma, diplomacy, diplomat, the verb to diplomate, diplomatic, diplomatics, and diplomatist, while Richardson mentions only diploma, diplomacy, diplomated, diplomatic, and diplomatist. But Latham fails to mention that diplomatic may be used in the sense of shrewd or having tact. In Washington and London the phrase "diplomatic corps" is common: it is said to have been coined, in 1754, by a lady in Vienna. The word diplomat is mentioned correctly in Annandale's recent edition of Ogilvie's "Imperial Dictionary."

A diplomatic document less formal than a treaty is called a protocol. Ogilvie's latest edition explains the word correctly, while the other dictionaries confine themselves in the main to Minsheu's antiquated definition of 1625. The first English lexicographer to mention the word international is James Knowles. But neither Knowles nor Webster explains all the senses in which the word is used. Worcester has it nearly right. The word was coined by Jeremy Bentham, and appeared for the first time in his "Principles of Morals and Legislation," printed in 1780, but published in 1789. Bentham says, "The word international, it must be acknowledged, is a new one, though, it is hoped, sufficiently analogous and intelligible. It is calculated to express in a more significant way the branch of law which goes commonly under the name of the law of nations, an appellation so uncharacteristic that, were it not for the force of custom, it would seem rather to refer to internal jurisprudence." The definition of international in Knowles is, "regulating the mutual intercourse between different nations;" in Latham, "connected with the intercourse of nations." Worcester does better, although the use of the word in phrases like "international fair" or "international cable" is quite recent, and has not been explained by Webster.

The first treatise which uses the term "international law" on the title-page is Henry Wheaton's of 1836. The same work mentions correctly the manner in which the Congress of Vienna, in 1815, and the Congress of Aix-la-Chapelle, in 1818, established four classes of diplomatic officers, ambassadors and papal nuncios being the first, ministers and envoys second, residents third, and chargés fourth. A chargé is accredited simply by one minister of foreign affairs to another, while ministers, envoys, and residents represent a sovereign government, and ambassadors are supposed to represent in addition a sovereign person. For this reason, ambassadors rank in England next to princes and above the Archbishop of Canterbury, while ministers and envoys rank below the earls. But even residents are accredited to sovereigns, and for this reason fall under the qualification which the new English dictionary of the London Philological Society applies to an ambassador, as one "who has a right to a personal interview with the sovereign or chief magistrate of the country in which he resides."

This country does not send out ambassadors; but our ministers in London, Berlin and St. Petersburg have a right to a personal interview with the sovereigns to whom they are accredited. Our minister-resident in Copenhagen is accredited to the King of Denmark, and is received by him in person. But our ministers and residents transact business chiefly with the heads of the foreign office, because the latter are the responsible

agents of the crown under which they serve, and neither the Queen of England nor the Emperor of Germany can issue any documents which are valid in international law unless countersigned by a responsible minister. The article "ambassador" in Dr. Murray's great dictionary, then, is not sufficiently precise, because an ambassador is not the only diplomatic officer who has a right to a personal interview with the sovereign to whom he is accredited.

The same dictionary is mistaken also in stating that there is any material difference between ordinary and extraordinary ambassadors. The ordinary or resident ambassadors of Russia in Berlin and Constantinople, the British ambassador in Germany, and the German ambassador in London, are "ambassadors extraordinary and plenipotentiary;" but this title is complimentary, in the same sense in which Mr. James Russell Lowell's is. The latter is called "envoy extraordinary and minister plenipotentiary," although in fact he is our ordinary minister in London and a plenipotentiary in very few things. This complimentary use of the word extraordinary in relation to ambassadors or ministers is not explained by any of our dictionaries. The Imperial Dictionary is mistaken in saying that "an envoy is distinguished from an ambassador or permanent resident at a foreign court." An envoy is a parmanent resident at the seat of the government to which he is accredited, whether that government has a court or not. The Imperial Dictionary says also that the word international may mean "pertaining to or mutually affecting one or more nations." What international affair could mutually affect one nation?

Ogilvie's erroneous definition of an envoy has been copied from Webster, and might be used as a good text for preaching a sermon on the easy faith with which some lexicographers have copied from their rivals or predecessors. Nearly every dictionary, Worcester included, has copied Johnson's amusing misprint of adventine for adventive. And on diplomatic terms nearly every lexicographer has been misled by his colleagues, though Todd-Johnson may be unique in defining a minister-resident as "an agent, minister, or officer residing in any distant place with the dignity of an ambassador." The resident ranks below an envoy, who ranks below an ambassador. An ambassador is described quite correctly for the time by Bailey, who said in 1730 that an ambassador or embassadour is "a person sent by a king, prince, or soveraign state to another, either to treat on some important affair, to compliment upon some happy occasion, or to condole upon a death." But the Congress of Vienna introduced a new order of things in diplomacy, if not in the dictionaries.—*Lippincott's Magazine.*

An old friend of mine once asked me if I was studying any of the higher branches, and, upon my replying in the negative, he said, "Well, you ought to do so, for if you don't your life will be miserable." Being young and rather thoughtless at the time, I paid little attention to my friend's advice; but now I begin to find out that his words contained a good deal of truth. Only this evening I read, in one of the Toronto dailies, a lecture by Professor Haanel, of Victoria University, Cobourg, on "The Physical Basis of Mental Phenomena," which gave me a vivid glimpse of the pleasure I have missed; by neglecting the study of the higher branches I have allowed my mental faculties to become somewhat dwarfed from want of use. In exact, thorough knowledge of any subject, I am a mere child; what I know of any subject is fragmentary, inexact and unsystematic.

And all this is my own fault: I knew better than to allow myself to drift into this state, but was too indolent and careless to apply myself earnestly to study and to make use of my spare time to advantage. And how old habits cling! I often even yet fritter away many a precious hour.—[*An extract from my Journal by Erorlé.*]

THE VOYAGEUR'S GRAVE ON THE NILE.

Here on the Nile's bank,
Arm 'neath his head,
Came up just where he sank,
Motionless—dead.
Comrades! your eyes grow dim;
Throw a flag over him.

No time for long good-byes;
Lay him at rest;
Bury him as he lies,
Warrior-like dressed.
Hush, now! the mass is said
For quick and for the dead.

"Forward!"—He'll never harm
In his lone bed.
He'll hear no war's alarm,
No martial tread.
Leave this rude cross to tell
Near it he lies.—Farewell!

Fearless, he cared not how
Slender his boat.
Down the St. Lawrence now
No more he'll float.
Strange here in stranger land,
Dead on the burning sand.

—*Nathanael Nix.*

The Week.

A SCHOOL TEACHER'S QUALIFICATIONS.—First of all, the voice should be trained, for a clear, musical voice is one of the teacher's most potent qualifications for success, and cannot be overrated. Drill in phoncis is necessary, nor only to gain the ability to give the slow pronunciation with ease and with natural inflections, but as an aid to perfect articulation and pronunciation. That every teacher should be an expressive reader is self-evident, but it might not occur to all that to be an eloquent talker is one of the requisites demanded by the New Methods. Faults of tone, modulation, and manner are propagated by the teacher, as well as false syntax and incorrect pronunciation. Then, too, every teacher should be able to sing, and sing well. Music fills the air with beauty, and in the school-room everything should be quiet and musical, with never a harsh note. Gymnastics—the training of the whole body—is of the utmost importance, not only to insure symmetrical physical development; but to aid in the establishment of good order. Mental action depends largely upon physical conditions, and we should train the body that the mind may act.—*Francis W. Parker.*

UNIVERSITY WORK.

MATHEMATICS.

ARCHIBALD MACMURCHY, M.A., TORONTO, EDITOR.

PROBLEM SOLUTION.

y W. J. Robertson, M.A., Math. Master, St. Catharines' Col. Inst.

Prove that

$$\frac{a^{n+2}(b-c)+b^{n+2}(c-a)+c^{n+2}(a-b)}{a^2(b-c)+b^2(c-a)+c^2(a-b)}=$$

the sum of all terms of n dimensions that can be made by the letters a, b, c. This problem occurs in Wolstenholme, and is of considerable practical importance in obtaining the factors of a certain class of quantities. The following solution suggests itself to me:

$$(1)\ \frac{1}{1-ax}=1+ax+a^2x^2+a^3x^3+\ldots\ldots$$

$$(2)\ \frac{1}{1-bx}=1+bx+b^2x^2+b^3x^3+\ldots\ldots$$

$$(3)\ \frac{1}{1-cx}=1+cx+c^2x^2+c^3x^3+\ldots\ldots$$

$$\therefore \frac{1}{(1-ax)(1-bx)(1-cx)}=$$
$$(1+ax+a^2x^2+\ldots)(1+bx+b^2x^2+\ldots)(1+cx+c^2x^2).$$

From the right-hand product select the co-efficient of x^n, the result will be $a^n+b^n+c^n+a^{n-1}b+a^{n-1}c+\ldots\ldots$ or the sum of all the terms of n dimensions in a, b and c.

Let $\frac{1}{(1-ax)(1-bx)(1-cx)}=\frac{A}{1-ax}+\frac{B}{1-bx}+\frac{C}{1-cx}$, clear of fractions and equate co-efficients. It will be found that

$$A=\frac{a^2}{(a-b)(a-c)};\ B=\frac{b^2}{(b-c)(b-a)};$$
$$C=\frac{c^2}{(c-a)(c-b)};$$

$$\therefore \frac{1}{(1-ax)(1-bx)(1-cx)}=$$
$$\frac{a^2}{(a-b)(a-c)}(1-ax)^{-1}+\frac{b^2}{(b-c)(b-a)}(1-bx)^{-1}+\frac{c^2}{(c-a)(c-b)}(1-cx)^{-1}.$$

Expand $(1-ax)^{-1}$, $(1-bx)^{-1}$, $(1-cx)^{-1}$, and select from each expansion the co-efficient of x^n. The co-efficient of x^n in $(1-ax)^{-1}$ is a^n; the co-efficient of x^n in $(1-bx)^{-1}$ is b^n, etc.;

$\therefore$ the co-efficient of x^n in

$$\frac{1}{(1-ax)(1-bx)(1-cx)} \text{ is } \frac{a^{n+2}}{(a-b)(a-c)}+\frac{b^{n+2}}{(b-c)(b-a)}+\frac{c^{n+2}}{(c-a)(c-b)} \text{ or}$$
$$\frac{a^{n+2}(b-c)+b^{n+2}(c-a)+c^{n+2}(a-b)}{a^2(b-c)+b^2(c-a)+c^2(a-b)}$$

(since $(a-b)(b-c)(a-c)=a^2(b-c)+b^2(c-a)+c^2(a-b)$).

Therefore

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

is equal to sum of all terms of n dimensions in a, b and c.—Q.E.D.

The practical use of this theorem may be shown thus: Suppose we are asked to find the factors of $a^3(b-c)+b^3(c-a)+c^3(a-b)$.

Put $n=1$ then $\frac{a^3(b-c)+b^3(c-a)+c^3(a-b)}{a^2(b-c)+b^2(c-a)+c^2(a-b)}$
$=a+b+c$;

$\therefore a^3(b-c)+b^3(c-a)+c^3(a-b)$
$=(a-b)(b-c)(a-c)(a+b+c)$.

Similarly $a^4(b-c)+b^4(c-a)+c^4(a-b)=$
$(a-b)(b-c)(a-c)(a^2+b^2+c^2+ab+bc+ca)$;
$a^5(b-c)+b^5(c-a)+c^5(a-b)=$
$(a-b)(b-c)(a-c)\{a^3+b^3+c^3+a^2b+ab^2+a^2c+ac^2+b^2c+bc^2+abc\}$; $a^6(b-c)+$ and $+$ and $=(a-b)(b-c)(a-c)\{a^4+b^4+c^4+a^3b+ab^3+\ldots\}$.

PROBLEMS.

(FROM NOVEMBER NUMBER.)

1. If three circles touch each other in any manner, the tangents at the points of contact pass through the same point.

1. Join the centres of the circle A, B, C, let D, E, F be the points of contact opposite to the angles A, B, C, respectively; then, since the two tangents drawn to each circle from the same point are equal, it follows that the three tangents are equal; that is the tangents at D and E will cut off each the same length from the tangent at E, or the three tangents will meet in the same point P, which is the centre of the circumscribing circle of the triangle ABC, for the angles A, B and C are bisected by the lines AP, BP, CP.

14. If $f(x)=ex-1$ and $\phi(x)=e^x+1$, show

$$f(x)\log\tfrac{1}{2}\left[+f\left\{\phi(x)\right\}+\phi\left\{\phi(x)\right\}\right]=$$
$$\phi(x)\log\tfrac{1}{2}\left[\phi\left\{f(x)\right\}+f\left\{f(x)\right\}\right]$$

that is substituting

$$(e^x-1)\log\tfrac{1}{2}\left[e^{e^x+1}-1+e^{e^x+1}+1\right]=$$
$$(e^x+1)\log\tfrac{1}{2}\left[e^{e^x-1}+1+e^{e^x-1}-1\right]$$

that is $(e^x-1)\log e^{e^x+1}=(e^{2x}-1)$

$$=(e^x+1)\log e^{e_x-1}.$$

Q.E.D.

(CONTRIBUTED.)

1. To show that $12n+5$ cannot be a perfect square.

2. Given the perimeters A and B of two regular polygons inscribed in a circle, one of n sides and the other of $2n$ sides, to find the perimeter of a regular inscribed polygon of $4n$ sides.

Result $B\sqrt{\frac{2B}{A+B}}$.

(SELECTED.)

3. Show how to find the least number of terms of a geometrical progression, of which the first term and the common ratio are given, whose sum exceeds a given quantity. In what case is the solution impossible?

4. Two men, A and B, play together, A having the liberty to name the stakes. Whenever A loses a game, he increases the last stake by a shilling for the next game, and diminishes it by a shilling after gain. When they leave off playing A has gained £13, and nad each won the same number of games, A would still, by following the above principle in regulating his stakes, have gained 10*s*. If the first stake be 30*s*., show that A won 15 and lost 5 games.

5. Solve the equation

$$\frac{x^2}{a-y}+\frac{y^2}{a-x}=a$$
$$\frac{x}{a^2-y^2}+\frac{y}{a^2-y^2}=\frac{1}{a}.$$

MODERN LANGUAGES.

Editors: { H. I. STRANG, B.A., Goderich. / W. H. FRASER, B.A., Toronto.

SOME TEST QUESTIONS ON THE CONJUGATION OF FRENCH VERBS.

1. Name the distinctive infinitive endings of the four regular conjugations, and trace each ending to its Latin origin.

2. Which of the conjugations contain the largest number of verbs? Assign a reason for your answer.

3. Draw up a table of the endings of the pres. indic. of the four conjugations, showing wherein they are identical.

4. The "s" of some of these endings is said to be contrary to etymology. Explain.

5. Account etymologically for the so-called euphonic "t" used in certain parts of the first conjugation interrogatively.

6. Tabulate the impf. endings of the four conjugations and show wherein they are identical.

7. Trace the impf. endings of the first and second conjugations respectively to their Latin origin.

8. What points of identity may be noted in the endings of the preterite in the four conjugations.

9. The future of all verbs is formed by affixing to the infinitive of the verb, the pres.

indic. of *avoir*. Apply this rule by writing out in full the future of the regular conjugations, noting what letters have disappeared by syncopation in the actual forms.

10. The conditional mood of all verbs is formed by affixing to the infinitive of the verb, the imperf. indic. of *avoir*. Apply this rule as in question 9.

11. Strictly speaking, what persons does the imperative mood lack? Tabu'ate its endings.

12. The endings of the pres. subjunctive are identical in all conjugations; give these endings, trace to Latin, and explain the apparent exception formed by the second conjugation.

13. Account for the circumflex accent, which is found in the third sing of all the subjunctives imperf.

14. Name the participles present and past of *parler, finir, recevoir*, and *vendre;* account for their endings etymologically.

15. What tenses are known as the *primary* or *primitive* tenses of verbs.

16. Explain how the primary tenses are used to form other tenses; and distinguish. those, in which there is an etymological connection between the primitive and the derivitive, from those empirically derived.

17. Given the following primary tenses, write out in full the verbs represented:

(*a*) Aller, allant, allé, je vais, j'allai.

(*b*) Dormir, dormant, dormi, je dors, je dormis.

(*c*) Voir, voyant, vu, je vois, je vis.

(*d*) Croire, croyant, cru, je crois, je crus.

18. How are the compound tenses of verbs formed? Distinguish between the use of avoir and être for this purpose.

19. How is the passive voice formed What verbs may be used in the passive? And what rules govern the agreement of the past participles in the passive voice?

20. Explain by reference to general principles any orthographical peculiarities or expedients in the following forms: je jette; je cède; il me protége; nous mangeons; nous perçons; j'envoie; ils agréront; il l'agréet

W. H. F.

CLASSICS.

G. H. Robinson, M.A., Toronto, Editor.

Antibarbarus.

(Meissner.)

Banish, in exilium eicere, expellere, not mittere.

Before, many years before, multis annis ante, not antea or prius.; as before said, ut supra diximus, dictum, not ut ante dictum.

Believe me, mihi crede, not crede mihi, which belongs to colloquial language. Cicero in speeches and essays always uses mihi crede.

Blinded, oculis captus, not caecatus or occaetus, which in classical prose were used only figuratively.

Bombast, bombastically, inflatum orationis genus, exaggerata altius oratio, not tumor verborum (post-classical); inflato genere dicendi uti, not tumide dicere.

Break out into words, dicere coepisse, or simply, dicere, into tears, lacrumas effundere, into laughter, cachinnum tollere, not erumpere, in verba, lacrimas, risum. War, wrath breaks forth, bellum, ira exardescit. But risus, vox, fletus, seditio erumpit.

Breast, figuratively, animus, not pectus, which is used very seldom figuratively (toto pectore amare, cogitare, tremere), strong (of an orator), latera bona.

Bribery, corruptela, largitio, ambitus (for office), not corruptio, which in Cicero is used only passively, lost condition, etc.

Bridge, build over the stream, pontem in flumine facere, not trans flumen.

Briefly, denique (in enumerations), ne multa, quid plura? Sed quid opus est plura Not breviter, which stands only in connection with verba dicendi, *e.g.*, breviter narrare, exponere, ut breviter dicam.

Bad custom, res mali or pessimi exempli, consuetudo mala, mos pravus; abuse, vitium male utentium, etc., not abusus, which is a law term.

Busy one's self about, studere.

By no means, minime; not the least, ne minimum quidem, not ne minime quidem, nor non minimum, not a little.—*Latine.*

NATURAL SCIENCE.

H. B. SPOTTON, M.A., BARRIE, EDITOR.

NOTES.

"SCIENCE" vigorously condemns the prevailing form of agricultural reports. These oo frequently contain merely records of experiments made, omitting the more important half of the experimenter's work, *the discussion of the results of these experiments*, so as to determine what they really teach. "Facts are good, but he who will have nothing but facts confines himself to the husks of investigation. . . . When the public funds are to be expended in scientific investigation, the public has a right to demand that the work be put into the hands of those who are not only industrious experimenters, but who are able and willing to test critically the results of their own experiments, and present to the public only results which have endured such testing."

THE study of earthquakes, we suppose, would properly come under the head of physical geography. Hitherto no organized effort has been made to observe them. This is probably due to the comparative rarity, as well as the uncertainty, of their occurrence. Two shocks within as many months during the present year have, however, aroused the attention of American scientists, and it is not unlikely that a few stations may be established and furnished with suitable seismometers.

IT is supposed that the temperature of the moon's surface must be at least two hundred degrees below zero, centigrade.

THE souring of milk is due to the presence of a microbe, the lactic bacillus, which may be found in millions in the turning liquid. The point of a pin dipped into curdled milk will take up sufficient of these bacilli to sour any quantity of fresh milk and curdle it in a few hours. By sowing different kinds of microbes different kinds of transformation may be induced in the milk. For instance, the people in the north of Sweden purposely sow a microbe which has the effect of converting the milk into a jelly which keeps its flavour unimpaired for ten days. Another microbe causes alcoholic fermentation, producing an exceedingly healthful beverage.

TWENTY-FIVE different nations were represented at the conference which met at Washington on October 1st, to fix upon a universal prime meridian. As a result of the discussion which took place, Greenwich was selected by a nearly unanimous vote, France being the only European power which dissented from this conclusion. It was also resolved to reckon longitudes east and west to plus and minus 180°. One great advantage of the selection of Greenwich is that the 180th meridian (on each side of which there is a difference in date of twenty-four hours) occurs in the Pacific ocean, where no inconvenience can possibly be felt by reason of the jump in the local time, except in the Fiji Islands, for which a special arrangement would be necessary. It was also recommended that the hours should be counted from zero to twenty-four. The difficulty of applying this scheme to local time would be found in the present form of the dials of clocks and watches.

THE transparency of the water in the lake of Geneva has been tested by careful experiments. An electric light was lowered to a depth of about 220 feet, when it all but disappeared from view. It was also found that sensitive photographic plates were affected by the sun's rays at a depth of about 820

feet. Below this point, therefore, it is concluded that complete darkness prevails.

THE biggest earthworm ever heard of is probably the one recently sent from Cape Colony to the Royal Zoological Society in London. The longest measurement taken was six feet and five inches; but it is supposed that if the worm's frame were relaxed by drowning it would measure at least ten feet. It is reported to be a loathful animal, and we have no difficulty in accepting the statement. It is to be dubbed *Lumbricus microchæta*.

THE largest crystal of zircon yet known has been found in the County of Renfrew, Ontario. Its weight is about twelve pounds. The largest specimen hitherto known weighed less than three pounds.

SCHOOL WORK.

DAVID BOYLE, TORONTO, EDITOR.

SCHOOL DISEASES.

It is a serious question whether we are not getting what is called education at too exorbitant a price, when the health and usefulness of eyes are impaired or sacrificed. And the mischief that is done to eyes in schools and colleges may safely be taken as an indication of the damage that is inflicted upon other parts of the body. Objectors may, perhaps, say that the appalling statistics obtained by the foreign observers could not be gathered in American schools and colleges. I believe that they might, and I found my belief upon twenty years' work among just the classes of subjects tabulated by Cohn and the other Continental observers. I believe that our system of education, if, indeed, we may be said to have a system, is one of the most damaging in its effects upon the growing bodies of scholars of any in the world. Let any one familiar with hygiene take the pains, as I have, to inquire carefully into the physical effects of curricula of our leading schools and colleges, and he will be compelled to confess that there is the greatest cause for reform. The attention which is paid to gymnastic exercises and other methods of physical culture, does not correct the evils. It often happens that those who really need physical exercise most do not get it, or that the exercise is excessive, and does harm to those who engage in it. What we need in our school and college curricula is a diminution of the hours of labour. The working hours too often extend from eight or nine in the morning to ten or eleven at night. The strain thus put upon growing bodies is too great. Some method should be devised by which much that now involves a persistent use of the eyes in confined and unnatural postures of the body could be accomplished through the use of models or photographs, or the blackboard. Much that is now attempted to be taught by badly printed books might be taught orally, or by some form of object lesson. Even if such radical changes could not be accomplished, much might be done toward lessening the evil effects of our present method by shortening the hours devoted to study, by correcting defects in the architecture of class and study rooms, by improving the ventilation, heating and lighting of school-houses, and by diffusing information among the parents of scholars, so that there may be less in the home-life that is prejudicial to health. And just here we touch the very fountain of the evil. Our schools cannot be much, if any, above the intelligence of their patrons. I do not blame the teachers for the evils in our systems of education. I blame boards of trustees and other school and college boards for not applying the principles that have already been worked out by scientific men. If architects and boards of managers of schools and colleges would apply, in

the construction and conduct of their institutions of learning, even a few of the principles that sanitarians all agree upon, we would at once see a reduction in those forms of disease which are traceable to their present neglect. —*C. R. Agnew, M.D., in The Teacher.*

STUDYING UNDER DIFFICULTIES.

Four or five years later she received her first introduction to mathematics, by one of the most curious accidents that could be imagined, through a fashion-magazine. At one of the tea-parties given by her mother's neighbours, she became acquainted with a Miss. Ogilvie, who asked her to go and see fancy works she was engaged upon. "I went next day," Mrs. Somerville writes, "and after admiring her work, and being told how it was done, she showed me a monthly magazine with colored plates of ladies' dresses, charades, and puzzles. At the end of a page I read what appeared to me to be simply an arithmetical question; but in turning the page I was surprised to see strange-looking lines mixed with letters, chiefly X's and Y's, and asked, 'What is that?' 'Oh,' said Miss Ogilvie, 'it is a kind of arithmetic–they call it algebra; but I can tell you nothing about it.' And we talked about other things; but, on going home, I thought I would look if any of our books could tell me what was meant by algebra. In Robertson's 'Navigation,' I flattered myself that I had got precisely what I wanted; but I soon found that I was mistaken. I perceived, however, that astronomy did not consist in star-gazing, and, as I persevered in studying the book for a time, I certainly got a dim view of several subjects which were useful to me afterward. Unfortunately, not one of our acquaintances or relations knew anything of science or natural history; nor, had they done so, should I have had courage to ask any of them a question, for I should have been laughed at." —*From "A Sketch of Mary Somerville," in Popular Science Monthly for May.*

THE VALUE OF SLANG.

"Slang has this value, that it shows how language grows. The English tongue is so vigorous that it seizes whatever it needs for growth, just as it did in its infancy. At that period direct imitations of sounds were constantly made into words, as the young vandals of to-day use 'chink' for 'money.' Farther on in the growth of the tongue, it took from ordinary speech these imitative words, and converted them to new uses, just as you say 'ticker' for 'watch,' and 'puff' for 'advertisement.' The contraction of words is another stage, as, 'mob' now perfectly good English, was at first merely slang for the Latin *mobile*, the fickle crowd, as 'cab' was slang for 'cabriolet,' and 'furlong' for 'furrow-long,' the length of a furrow, and as 'nob' is slang for 'nobility.'

"We make words from men's names in the same way. I suppose 'boycotting' may be good English soon. 'Martinet,' now indispensable, was the name of an historic general over-strict in discipline. 'Derrick' was a famous hangman of the seventeenth century, in honour of whom the roughs nicknamed the gallows-like hoisting apparatus; and these are two, only, out of scores of cases.

"Many of the words that are now respectabilities of conversation were once gutter-children. 'Drag' for instance, was a thieves' word for carriage, and 'dragsmen' the particular variety of thieves' who followed the carriage to cut away the luggage from the rack behind. But 'drag' is good English now for a private coach. 'Kidnap' was thieves' slang for child-stealing; that is, to 'nab a kid.' 'Tie,' for cravat, was as much the slang of low life as 'choker' is now. 'Conundrum,' and 'donkey,' and 'fun' were all slang words, though perhaps not so low. 'Bore' was slang, and so were 'waddle' and 'bother.'"—*St. Nicholas.*

SOME DEVICES IN ARITHMETIC.

Among the many original and successful devices used here for presenting examples in arithmetic in such a way that the pupils can clearly see the relations, are the following:

The teacher brought into the class a pair of grocers' scales, four paper bags containing coffee, and a large empty paper bag. On the outside of one of the bags of coffee was

marked in large letters, Rio, 35 cts. per. lb., an another, Java, 28 cts. per. lb., on another Mocha, 35 cts. per. lb., and on another Porto Rico, 25 cts. per. lb.

After a short conversational talk about different kinds of coffees, how and where they grew, and the causes of difference in quality, the teacher said she wished to buy some coffee, and that Herbert might be grocer, while the rest told what she must pay.

Herbert took his place at the table on which were the scales and coffee. The teacher said "Good morning, Mr. Grover; I wish to get some mixed, brown coffee. I should like two pounds of Rio (Herbert now weighed two pounds and put it into an empty box), one pound and five ounces of Java three-fourths of a pound of Mocha, and one and a fourth pounds of Porto Rico (H. weighing as before). (To class). How much is this mixture worth a pound, and how much must I pay?"

The class, seeing on the bags what each was worth a pound, worked on their tablets the example.

During the recitation, a little lesson on honesty in giving exact weights was given.

After working several examples of different nature, but all under alligation, the teacher asked what they had been doing in all these examples? They readily said they had been mixing things of the same kind, but of different quality, and finding the cost of the mixture. The teacher asked if they knew what this finding the value per pound, bushel, etc., of a mixture was called in arithmetic, saying that it was given a name. As none knew, she told them it was alligation.

At another time I witnessed a lesson in fractions. The teacher wished to develope the idea of the least common denominator, though the pupils had probably never heard the term. He folded a piece of paper into halves; then, without unfolding, folded it into thirds. Opening it, he asked the pupils what they saw. Various answers were given, as, "I see six parts;" "I see two threes in six parts;" "I see three twos in six parts," etc.

He then gave each several pieces of paper (using good-sized tablet paper) and asked them to take a piece and fold it into halves; to lay them aside and take another piece and fold it into fourths. He said, "How many times did you fold the paper to get fourths?" (Answer, "Two times.") Now, fold first piece into fourths; how many times did you just fold it? (Answer, "One time.") Why fold this only once and the other twice to get fourths? (Answer, "The first piece has been folded before into halves, and the half of a half is a fourth.")

"Take another piece; fold it into halves. Lay that aside; take another piece and fold it into sixths. How many times did you fold the paper to get sixths? (Answer, "Three times." Fold the first into sixths, how many times did you just fold it (Answer, "Two times.") Why fold this only two times and the other three to get sixths? (Answer, "Because the first piece had been folded into halves before, and one-third of a half is a sixth.") Take another piece; fold it into halves. Now, take another and fold it into eights. How many times did you fold the paper to make eighths? (Answer, "Three times.") Fold the first piece into eighths; how many times did you just fold it? (Answer, "Two times.") Why only fold this two times and the other three times? (Answer, "It had been folded into halves, and a half divided into four parts give eighths.")

The teacher wrote upon the board:

$\frac{2}{4}+\frac{2}{6}+\frac{2}{8}$

"First we want to fold for fourths. Every time we fold for a number we will write it on the board. Take a new piece of paper and fold it into halves. Into how many parts did we fold it? ("Two parts.") We'll write down the 2. Fold the same paper into fourths. Into how many parts did you separate halves? ("Two parts.") What shall I do? ("Write down the 2.") Show your folds; open your paper. These folds we call factors. Now, we'll fold for the eighth. Take another piece; fold it into halves. I will put down the factor 2 again for the halves. Fold it into fourths. Into

how many factors did you fold the halves? ("Into two factors.") I'll put down the factor 2 again. Now fold it for eights; into how many factors did you fold the fourths? ("Into two factors.') What shall we do then? ("Write down the 2.") Now we'll fold for sixths. Take a piece of paper; fold it into sixths. Into how many factors did you just fold it? ("Two factors.") (Teacher writes the 2.) Then into how many factors did you fold it? ("Three factors.") (Teacher writes down the 3.)

Take a new piece of paper; fold it for the first 2, the halves. Those we make a new fold for we will save; those we do not make a new fold for we will mark out. Did I make a new fold for the halves? ("We did.") Then we'll save it. Fold for the second 2, the fourths. What shall I do? ("Save it." Open your paper. Fold for the first 2, the halves, in eighths. Did you make a new fold? ("No, sir.") What shall I do? ("Mark it out.") Fold for the second 2, in the eighths. Did you make a new fold? ("No, sir.") What shall I do? ("Mark it out.") Now fold for the other 2, in the eighths. Did you make a new fold? ("We did.") Then we'll leave that factor 2. Open your paper. Now we'll fold for the first part of the sixth. Shall I leave the first factor? (They say no.) Fold for the second in the sixth. What shall I do? ("Leave it.") Then (pointing to the numbers left and to paper) we made a new fold for halves, for a half of that or for eighths, and for a third of that or for twenty-fourths. In what do fourths, eighths and sixths meet? ("In twenty fourths.")

Show me three-fourths of your paper. How many parts or twenty-fourths in it? (Counting, they find eighteen twenty-fourths.) Three-fourths equals how many twenty-fourths? ("Eighteen twenty-fourths.") Teacher writes down the eighteen twenty-fourths.) Show me one eighth of the paper. How many of these twenty-fourths in one-eighth? ("Three twenty-fourths.") Show me seven-eighths. How many parts or twenty-fourths in seven-eighths? (Counting they find twenty-one twenty-fourths. Teacher writes down the twenty-one under the eighteen.)

Show me one-sixth of the paper. How many twenty-fourths in one-sixth? ("Four twenty-fourths.") How many parts in three-sixths? (Counting, they find twelve twenty-fourths.) Writing the twelve under the twenty-one, and pointing to the numbers, the teacher says: "If there are eighteen twenty-fourths in three-fourths, twenty-one twenty-fourths in seven-eighths, and twelve twenty-fourths in three-sixths, how many in all?" Answer, "Fifty-one twenty-fourths, or 51-24, which equals two and three twenty-fourths." 3-24 (from paper) is same as one-eighth. Sometimes it is best to leave the paper folded while making new folds. The teacher must have worked the lesson so thoroughly before coming to the recitation as to know. This lesson of course is only *outlined*, to be filled in and enlarged at the teacher's pleasure.

At another time the curiosity of a class was excited by asking them how to find the height of a tree, and a few days were given them to think out a method. Nearly all had studied out a partial plan. The experiment was made by driving a large stake in the ground, fifty feet from a tree, to which was fastened a horizontal bar. This was moved to an oblique position, till, the eye at one end, the other pointed to the top of the tree. They then measured, by means of a plumb-line, the distance of each end of the bar from the ground. It was found that the upper end was three feet higher than the lower end, and it was ten feet on the ground from where the plumb-line from lower end of the bar touched to that from upper end. Then if for ten feet the elevation was three feet, for fifty feet the elevation would be fifteen feet, the height of the tree.

Another tree was measured by means of its shadow; the shadow of the stick being to the height of the stick as the shadow of the tree is to the height of the tree.

In one class I noticed a pasteboard model of a house with the square inches (representing square feet) marked off on it, with the windows and doors cut out. The pupils measured it and found the cost of plastering.

They afterwards measured the school-room and found the cost of plastering that.

If the examples we give came from things they can be applied to things again; if they did not, of what value are they?

Too much of our school work is the study of *words* rather than of *things;* we teach in arithmetic *figures*, not the *reality*. We worship the *language*, or the *answer*, not the *thought* behind the words.—*The School Room.*

EDUCATIONAL INTELLIGENCE.

THE PROTESTANT TEACHERS' ASSOCIATION OF QUEBEC.

(Continued from November Number.)

Hon. G. Ouimet, Superintendent of Education, who expressed his full sympathy with these annual conventions of teachers, which were most valuable aids to the cause of education, through the enthusiasm and instruction derived from them by the teachers. As a French Canadian, he assured them that in their efforts to disseminate knowledge they had the full sympathy of the French Canadian population. Both the English and French-speaking citizens of the Province could unite with all their hearts in the cause of education, and he hoped a firm union would be instituted between the two races, who were alike concerned in the welfare of the Province. With regard to the Protestant committee of the Council of Public Instruction, the slowness of whose action had been complained of by a gentleman in his paper during the afternoon, they of course had held many sessions, and they did the work perhaps very slowly, but they did it very surely.

Chancellor Heneker, of the University of Bishop's College, was then called upon. He said:—Your worthy president has been somewhat unmerciful to you in naming me as one of the speakers of the evening. His own powers of oratory make him forget that all are not equally gifted, and the only consolation I can offer you is to be as brief as possible. I acknowledge without hesitation that I have a deep sympathy with those who are engaged in the noble work of education. The profession of the teacher in these modern times is somewhat different from what it was in the old days, when our ancestors, nobles of the land, had, many of them, to fix their seal or to make their mark to an agreement, if memory serves me rightly, even Magna Charta will prove that literary education was not one of the necessary conditions of a man's fitness for the council board of the nation. We now know, of course, that something more than mere book education is required if a man is to fill any of the more important duties of life. The scholar is not necessarily a statesman, nor a successful lawyer, nor a physician, nor a good parish clergymen, any more than he is a successful carpenter, or mason, or farmer. It becomes therefore an important consideration to weigh carefully the wide question of education, and to understand what we mean by it. No nation can remain great which does not secure to itself the whole powers of its citizens; not their intellect alone, but their physical strength as well. And their minds and bodies must be trained on a basis of moral qualities if permanence and the respect of other nations are to be secured. How many of you teachers have thought over the education system of which you are a part? Believe me it is a subject well worthy your deepest attention. But I do not wish to alarm you. I can assure you I have no intention of entering on so wide a field of discussion. All I wish to say on this point is that as teachers, trainers of the mind, you are not merely fulfilling a duty to yourselves, not merely acting as workers in a hive of industry, but you are doing something more. You are in your vocations, preparing your pupils so far as mental training goes, to fulfill the duties which will devolve on them hereafter as men and women in regard to their common country, and that your vocation in this respect being of a public nature tends to the welfare of the state, your calling is the more honourable. Although like too many such callings, the public is content with giving you the bare honour without that recompense of the purse which falls to the lot of those occupations which are more selfish in their aims. I value these meetings, these conventions, as of inestimable importance to you as a body, because they create an *esprit de corps*, and because they enable you to consult as to many of the difficulties which must surround you in your daily work. Assembled here with the great body of elementary teachers are representatives of the government of the country, of the

council of public instruction, of the highest class of teachers and of persons of influence outside your professional body. There can be no better proof of the importance attached to your calling, and I congratulate this association on the success of this Cowansville meeting. Various opinions exist and must, no doubt, exist on many important questions of administration as well of the other practical work of the teacher. And the best way to learn what is going on and to form an opinion as to the motives of those to whom are entrusted important functions is to meet them face to face. As a member of the Council of Public Instruction I can truly say that it is a source of infinite pleasure to me thus to meet you. And when I compare in my own mind the work which was being done in the academies of the country when the Protestant committee first instituted the system of inspection with the work now done, I am amazed at the advance which has been made during a comparatively short time. I could point out to you places which a few years ago seemed entirely indifferent to education—now possessed of well equipped schools, showing excellent results from examination, and the movement seems spreading, for year by year we are enabled to record an advance in the right direction. I do not mean to say that we have reached the standard which we should aim at, but whereas it was commonly thought a few years ago that the educational system of Quebec was far below the standard of Ontario, I very much question from the reports made to me, whether Quebec is now a whit below Ontario in this matter in her best schools. I am one of those who think that in the training of the mind there is a higher, a more noble aim than the mere money-getting principle. Intellectual knowledge is of value for its own sake, and although I have no faith in the often quoted statement that "Knowledge *is* power," yet there can be no doubt that knowledge *gives* power to him who possesses it if he but knows the way to use it. But even independent of this power, there is something in knowledge which is valuable simply for its own sake. Speaking with the most profound humility—but I hope not irreverently—I feel that every step taken by man in the acquisition of knowledge brings him nearer to Omniscience. If I have in these few words given you subject for thought, I shall not bear malice towards my friend your president, and again congratulate him and you on this successful gathering.

Several other addresses were also delivered during the evening.

COWANSVILLE, October 10.

The second day's proceedings of the Provincial Association of Protestant Teachers was opened here at ten o'clock this morning, the president, Hon. W. W. Lynch, presiding. Amongst those present were Sir William Dawson, Hon. Senator Ferrier, Mr. Thomas White, M.P., and Mr. Fisher, M.P.

The meeting having been opened with prayer by the Rev. Mr. Ker,

The secretary announced that a telegram had been received from Dr. Putney, of St. Johnsbury, Vermont, regretting his inability to be present. A letter was also received from the Rev. Dr. Norman, expressing his regret at his unavoidable absence.

Dr. McGregor reported, on behalf of the nominating committee, recommending that the next place of meeting and officers for the ensuing year should be as follows:—

Place of meeting—Montreal.

President—Sir William Dawson.

Vice-Presidents—Dr. Robins, Dr. Cameron and Prof. McGregor.

Secretary—Dr. F. W. Kelley.

Treasurer—Mr. C. A. Humphrey.

Council—Mrs Fuller, Miss Peebles, Miss Rogers, Dr. McGregor, Messrs. R. J. Elliott, A. Pearson, A. W. Kneeland, and R. M. Campbell of Montreal; Mr. Holiday, of Huntingdon; Rev. R. Ker, of Quebec; Mr. Curtis, of St. Johns; Inspector Hubbard, of Sherbrooke; Miss McDonald of Quebec; Miss Abbot, of Waterloo; and Miss Phelps, of Bedford.

Dr. Robins communicated a paper on "School Aids," in which he recommended certain books as aids to teachers.

THE PROTESTANT COMMITTEE.

Mr. Hobart Butler, M.A., of the Bedford Academy, then read a paper on "A Few Thoughts upon the Protestant Committee of the Council of Public Instruction, and the Results Flowing from its Official Acts." The paper expressed the opinion that too many of the members of the Protestant committee were residents of cities, and too few of the country, and this was shown by the distribution of the text-books. The result was detrimental in the extreme to the country schools. He pointed out that there was a great injustice done to the pupils of the country academies in the examinations for diplomas. The examinations took place on one day, and in five hours they have for the elementary diplomas to pass in eight subjects, and for the model and academy diplomas nine and ten subjects in the same number of hours. This he thought was decidedly unfair to the candidates. In the normal school on the other hand two or three weeks were allowed for the examination. In regard to the system of selection of text-books he mentioned that there were no two adjoining municipalities which had the same series. In Cowansville

there were two school municipalities, and when the children from the township school come to enter the village one they were put to the expense of purchasing new series besides being compelled to begin at the bottom of a new system.

A very interesting paper on "County Academies and Model Schools" was read by Mr. Elliott of the High School of Montreal. Mr. Elliott pointed out that these county schools must be in a very large measure depended upon to prepare teachers for the elementary schools, and out of 1,100 teachers in the Province that only 270 were pupils of McGill Normal School. The main source from which teachers were derived must then be the county academies and model schools and he pleaded that by better assisting this class of schools the government would be benefiting the whole educational system. He charged the Protestant Committee of the council of public instruction with neglecting true elementary education for the so-called higher education as shown by the fact that while they devoted $9,150 of the public money to the education of the wealthy man's sons, they could only find $6.225 to distribute over the whole Province among academies and model schools. The paper showed that it was the duty of a government to educate the masses of the people, and Mr. Elliott remarked that a great mistake was made by the government in offering such inducements for the young to engage in higher education, and urged that this was actually forced upon them. This, he said, was already resulting disastrously to this country, which being young must depend for a large measure on its agricultural pursuits, young men being induced to leave their farms to engage in the professions.

Sir William Dawson, in opening the discussion on these two interesting papers, said the Protestant Committee were expected to do their work for nothing, and also to please everybody. It must also be remembered that they were obliged to administer a system which was in operation before their time, and for which they were not responsible, and which required a great deal of caution in making any great revolution. With regard to the composition of the committee, he said that five or six of its members were considered as representing the country districts, besides Mr. Rexford, who certainly knew as much as any man about the needs of country schools, and who was always at hand to give them his valuable advice. With reference to the point urged by Mr. Butler, that only one series of text-books be used, he said that the city and country schools had somewhat different requirements as regarded text-books, and the Protestant Committee did not like to make a cast-iron rule in the matter. He next alluded to the complaint against the board of examiners sitting too short a time to give the candidates for diplomas proper time to show their knowledge, and said it must be remembered that they were unpaid boards, and the only way perhaps would be either to pay these boards or to have the examinations conducted by a central board. In regard to the Normal Schools, he said that measures were now being taken to aid teachers in attending these schools, and they had also arranged that the professors should give one month of their time to training in the art of teaching the teachers in the country schools. He urged that it would be a great improvement to have the higher schools and academies distributed more evenly over the country. He said there had been a good deal of misapprehension about McGill University. The University was supported by money given by citizens of Montreal. For instance, a young man coming from the country to attend the Faculty of Arts paid $20 a year, and the university spent $100 a year in educating him; besides this many young men who could not afford to pay got their education practically for nothing; in fact more than one-half the students of the Faculty of Arts at present were getting their education practically free. It was in reality the rich people of the city who were paying for the education of young men from all parts of the Province, and in this way doing a work for the benefit of the whole country. There were at present forty students from the city of Montreal out of the 400 or 500 in attendance. Again, the education of the university was certainly most practical, fitting the young men to become clergymen, doctors, lawyers, civil engineers, surveyors and mineralogists. They were blamed for not starting schools for technical instruction everywhere. There were already some in operation in different parts of the Province, and was the fault of the people themselves that there were not more. When in England he found that it was recognized that it was the part of the people to establish and support such schools in their own districts, the government assisting them by grants of models, apparatus, prizes to successful students and grants to their teachers. He commended this whole question of technical education to their careful consideration, and concluded by saying that the Protestant Committee did not set themselves up in their own views, but were most anxious to learn and most anxious to meet the growing wants of the country, and would be happy at all times to follow the suggestions that were made to them for the advancement of the cause of education. They could not very well expect them, when

they received a suggestion from one part and another from an opposite one, to do both.

Hon. Senator Ferrier also briefly addressed the convention in defence of the Protestant Committee.

The convention then took recess.

AFTERNOON SESSION.

The convention resumed at two o'clock, and in addition to those mentioned in the morning, Principal McCabe, of the Ottawa Normal School, was present and occupied a seat on the platform.

Inspector McGregor continued the discussion on the papers of Messrs. Butler and Elliott, and said that the state of education in his district was of the most encouraging nature.

After some remarks by Inspector Hubbard,

Rev. Mr. Ker said that the two papers had taken up almost every conceivable point in connection with the system of education, except this, that it was not the Protestant Committee that had this matter in hand practically; it was really a question for the ratepayers, and if the ratepayers required a better class of schools, then the ratepayers could clearly have that school. They should begin by paying the elementary teachers something like adequate salaries. He believed that every teacher should have a Normal School certificate, but in order that they might be encouraged to attend the normal school and get this certificate, they should give them something like proper salaries. Thirty dollars a month, much less $13, an instance of which had been given by Mr. Rexford, was too little to offer teachers as remuneration for their services.

Mr. Hewton urged that the inspection at the academies should take place at a time when the pupils were not taken from them.

Rev. Mr. Rexford favoured among other things, giving a certain amount of aid, by special grant or otherwise, to country academies, for the purpose of instructing elementary teachers in the art of teaching.

After some remarks by Mr. Fisher, M.P.,

Principal McCabe, of Ottawa, in response to a request, described the Normal School system of Ontario. These Normal Schools, he said, formerly did what was called in Ontario non-professional or literary work, and in conjunction with this they attempted to do professional work, that was giving the instruction itself and also instruction in the methods. This was found, however, too difficult to carry out, and it was deemed necessary to relieve the Normal Schools altogether of non-professional work, and to bring them to what they were now, merely institutions for purely professional training. They had given over to the High Schools and academies all the non-professional work. Besides this, they had County Model Schools, or ordinary Public Schools with certain characteristics in which the training of third-class teachers was done, so that the Normal Schools were not only limited to professional work but also limited to training the higher—in fact the very highest—classes of teachers. In every electoral district in Ontario there were these County Model Schools, and it was so arranged that the headmaster devoted his whole time, or at least a portion of it—say two hours a day—in training these teachers. They had also increased the attendance of the teachers at the model school from three to six months. No one could teach in the Province of Ontario without either a Normal or Model School diploma.

In answer to Dr. Kelley, the secretary of the Department of Public Instruction, Rev. Mr. Rexford, stated that during the past five years the universities of the Province had received $45,750, while the academies and Model Schools have received $33,038.

After some remarks in reply by Messrs. Butler and Elliot. Mr. Butler moved, seconded by Walton—"That it is the decided opinion of this convention that the inspection of the county academies and Model Schools should be completed not later than the tenth of March. A large proportion of the older and more advanced pupils, upon whom most of the time and attention of the teacher has been bestowed, are obliged to leave school about that time to engage in teaching and in the labours of the farm and other manual occupations. These schools are consequently very much reduced in numbers and average standing and an examination taking place in April, May or June, affords no sufficient indication of the work done or of the general usefulness of the school. As the small amount of aid from the superior education fund now granted to those schools is apportioned upon the results of these examinations, it seems very desirable to examine them at a time when they have an average attendance. We therefore respectfully repeat our request that the Protestant Committee of the Council of Public Instruction will order the examination of the county academies to take place not later than the month of March." Carried.

Mrs. Morton, Ex-Lady principal of the Girls' High School, read an interesting paper on "A Plea for the Teaching of Temperance in our Schools." Mrs Morton said that legislation was no doubt a good remedy for the evils of intemperance, but she believed education to be a much better remedy; legislation could not prove effective until we had educated the public mind. While they

were considering every day the value of one class of studies with another, were we not largely neglecting one important branch of education, viz., that of the moral and physical nature of the child, and making no provision for the teaching of these subjects in our schools. While it might be true that a teacher might impress the truth relating to these subjects upon our children by his life and conduct, as well as by his words, we must not forget that many of them were not surrounded with such influences at home that led to a pure life, and therefore to ensure this end it was time that we put into our school lessons on these subjects, or at least to teach the effects of alcohol on the human system, so that our children might go out of school forewarned which meant forearmed. As the late Dr. J. G. Holland said some years ago, "What we want in our schools is to do away with the force of a pernicious example and a long cherished error by making the children thoroughly intelligent on the subject of alcohol. The more thoroughly we can instruct the young concerning the dominating evil of our time the better it will be for them and the world." The teacher might claim want of authority to do this, but she hoped that excuse would soon cease to exist. In this Province we had already made some progress in this matter, the Protestant School Commissioners of Montreal having introduced into all the common schools of the city Dr. Richardson's temperance lesson book to be taught to all children over twelve years of age, and the promise that if the temperance people would prepare a more elementary book it would be introduced into the lower classes next year. No teaching of this kind, however, had been introduced into the high schools of the city, and she wondered that parents, in view of the tremendous risks, did not rise up and demand such teaching for all the children. We should also have this subject thoroughly taught in our Normal Schools, and expect every teacher who holds a certificate for teaching to have passed successfully in this subject. Then, and not until then, might we hope to have our children as thoroughly taught this subject as they were taught geography, arithmetic, or any other subject. We in Canada should not be left behind the United States in this matter, the States of New York, Vermont, New Hampshire and Michigan having passed by their legislature acts requiring this teaching in all their schools. The New York State Act was called "An act relating to the study of physiology and hygiene in the public schools," and read as follows:—

1. Provision shall be made by the proper local school authorities for instructing all pupils in all schools, supported by public money or under state control, in physiology and hygiene, with special reference to the effect of alcoholic drinks, stimulants and narcotics upon the human system.

2. No certificate shall be granted to any person to teach in the public schools of the State of New York after 1st January, 1885, who has not passed a satisfactory examination in physiology and hygiene with special reference to the effect of alcoholic drinks, stimulants and narcotics upon the human system.

The paper concluded by asking them not to forget that example was better than precept in this as in all matters. Let every teacher live his teaching, let a boy never have occasion to say to any of our teachers "Physician, heal thyself."

Inspector Hubbard bore testimony to the value of total abstinence.

Dr. Robins said he had never known a man who had not injured himself both mentally, physically and morally by his indulgence in the use of intoxicating spirits and tobacco. He was convinced that by total abstinence from the use of these they would all make themselves more useful in their day and generation.

Sir William Dawson had been a teetotaler from his childhood.

Hon. Senator Ferrier said he would be eighty-four years of age on the 23rd of this month, and he had been trying to remember how long he had been a total abstainer. He simply mentioned this to show that it was not wanted in old age, and it was not wanted in youth. He also referred to the fact that a system had been organized by Mr. Spicer, of the Grand Trunk, for about fifteen years, that all the drivers of locomotives and all those connected with the running of the traffic of the Grand Trunk should unite in becoming teetotalers. This was not made compulsory, but the men gradually adopted the system, which was found to work well.

Mr. Thomas White, M.P., expressed his great satisfaction at having listened to the paper. He had studied the temperance movement with some degree of interest for a great many years, and a number of years ago he gave up the habit of taking a glass of wine which he had continued for eight or nine years, and also the habit of smoking, which he had continued for twenty-three years, and he had found that he could do twice the work with half the labour.

Some remarks by Messrs. Masten and Newton concluded the discussion on this paper.

On motion the report of the nominating committee was adopted.

Dr. Kelley moved, seconded by Mr. Masten.

That this convention would view with the greatest satisfaction, a more intimate official relationship between the Protestant secretary of the Education Department and the Protestant Committee of the Council of Public Instruction.

Carried.

SIR WILLIAM DAWSON.

Mr. Butler then moved, seconded by Mr. Walton,

That, inasmuch as Her Most Gracious Majesty has thought it advisable to confer the honour of knighthood upon a distinguished member of this association, Principal Dawson, we hereby tender to him our congratulations, and earnestly hope that he will long continue to wear the honour so worthily conferred upon him.

The resolution having been carried unanimously,

Sir William Dawson, in replying, said he only felt that if he could have the confidence, and above all the affection of the teachers of this Province, in whom he had always taken the greatest possible interest, for he wished most earnestly to do all that he could to promote the great work in which they were engaged, he should feel it a source of greater satisfaction than did the honour which Her Gracious Majesty had been pleased to confer upon him, and he attached great value to that. He felt also in connection with this matter that it was regarded by those who cultivated science in this country as a tribute to them and to the great cause which they represented. They must all feel that they were working, not for a certain amount of money, but because they felt that it was a great work. They were workers together with the Master, and if they faithfully performed that work their reward would be great above.

The convention then took recess.

THE EVENING SESSION.

At the evening session a choice programme of vocal and instrumental music was carried out, and several addresses were delivered. Refreshments were also provided by the ladies.

Sir William Dawson, on rising to address the meeting, was greeted with loud and long continued applause. This meeting, he said, recalled to him the work of his youth, when he assisted at smaller gatherings of this kind in Nova Scotia. Referring to the statement in the President's address, that the number of female teachers had increased from 2,000 in 1867 to 4,000 in 1883, he said it was this kind of thing that had enabled our neighbours of the United States to carry their education to such a high point of perfection. In Europe also, and elsewhere, they were waking up to the fact that it was only by the employment of educated women that they could hope to educate the whole community, and it was this that had led to the agitation for the higher education of women. In England and Scotland the demand, not only for more teachers but better teachers, was sending thousands of women to colleges to train themselves for the profession of teaching, and that girl graduate, which only a few years ago was a poetical myth, was going to be a reality. The result of this would be to throw the teaching profession almost entirely into the hands of women. The same thing was now going on in Canada, and he thought this was a step in the right direction. The movement for the college education of women would work almost a revolution in English society, and ten or twelve years from now there would be an entire social revolution in that country, compared with which the French revolution was of little account. The Protestant Normal Schools had done more in this country to make the profession of teaching pre-eminently that of women than anything else, and the same thing would take place with the classes for the higher education of women in McGill University. He said he did not believe in the doctrine of mixed education. From his observations in England and the United States, he believed the true system was to train young women in separate classes, at least until they reached the higher and senior years, and this system would be followed in connection with McGill University. He hoped also that some kind friend of Bishop's College would enable it to come into line and open its doors to women. (Applause.) In regard to the distribution of the educational grant, he said no one regretted more than he did that the universities took any of it at all, and he was looking for a benefactor who would say to them, "Here is $50,000 or $100,000; do not take any more money out of the public fund." (Applause.) The money was all required by the academies, which were the feeders of the universities, and if these were starved, how could they be expected to feed the universities? Elementary and higher education were both equally necessary, and he trusted that they all recognized each other as members of the one great profession. (Applause.) Personally he had worked as an original worker in science, a very good thing in its way, but he would be willing to sacrifice that and any reputation arising from it, if he could do anything for any department of education, either low or high, as it was a higher thing to work for the future. (Applause.) Their worthy president had taken occasion to congratulate him on the honour which the Queen had been graciously pleased to confer upon him, and

he was proud of having received such a distinction at the hands of Her Gracious Majesty; it was an indication of the fact that in the old world they were not merely willing to honour the great men who stood at the top of our political ladder, but also those who worked in this country for the promotion of education. (Loud applause.)

Hon. Senator Ferrier, who has been connected with the financial interests of McGill University for thirty-nine years, then made a short address, stating in the course of his remarks that he had always taken a great interest in the cause of education.

Mr. Thomas White, M.P., said that he had come to the convention with the object of listening to the discussions, rather than to address them and he would therefore detain them only for a moment. He referred to the fact that he had himself been a school trustee in the neighbouring Province of Ontario a number of years ago, having taken a great deal of interest in local educational matters, and alluded to the meetings held some twenty-five years ago by that great man, Dr. Ryerson, in relation to some amendments of the school law of Ontario, which he wished to introduce and concerning which he desired to take the people into his confidence before they became law, and it was the feature which they were illustrating at their annual conventions—the fact that they were not alone engaged with their pupils round them, but that they felt it necessary to come together to compare notes and to instruct each other. That feature seemed to him to be one of the most gratifying and one of the most promising, not only of this province but of the Province of Ontario, that the teachers had become a factor in framing the educational policy of the community in which they resided, and he heartily trusted that their meetings might result in a wider interest in educational work, and a greater disposition on the part of the public at large to do all in their power to assist in its full development. (Applause.) He wished them hearty success in the work in which they were engaged. (Loud applause.)

Mr. Sydney Fisher, M.P., referred to the great and important work of the teachers, in whose hands it lay to instruct our youth to become men and women, and expressed the hope that in the future the district schools would have more means at their disposal, so that they would be able to obtain the very best of teachers, and be able to carry on the work in a thorough and efficient manner. (Applause.)

Inspector Hubbard then announced that the Scott Act had been carried in Stanstead by a large majority, which was received with applause, after which the convention adjourned.

THURSDAY EVENING MEETING.

COWANSVILLE, OCTOBER 11.

The evening session of the Provincial Association of Protestant Teachers last night brought a most successful convention to a close. The chair was occupied by the president, Hon. W. W. Lynch, and on the platform were Principal McCabe, of the Ottawa Normal School; Rev. E. I. Rexford, Dr. Harper, Dr. Robins and Dr. Kelley.

The first business of the evening was the passing a number of resolutions, which were in effect as follows:—

Appointing the President, Hon. W. W. Lynch, as a delegate to the Ontario Teachers' Association, with Professor McGregor as alternate.

Appointing Rev. E. I. Rexford as a delegate to the Teachers' Association of the State of Vermont, with Inspector McLaughlin as alternate.

The usual votes of thanks, and that a delegation consisting of Dr. Robins, Mr. Masten, of Coaticook, and Rev. E. I. Rexford be instructed to wait upon the members of the Quebec Government and of the Protestant Committee of the Council of Public Instruction and urgently call their attention to the resolution regarding the teachers' pension as passed by this association at its session of 1881, and to explain to them the views of the association in regard to the general interests represented by this convention.

THE LATE MR. F. W. HICKS.

On motion of Mr. R. M. Campbell, the following resolution was passed:—

Resolved—That the association has heard with deep regret the death of Mr. F. W. Hicks, M.A., headmaster of McGill Model School of Montreal, long a member of this association and for eleven years its esteemed and efficient secretary; and be it

Resolved—That this association desires to place on record its high estimate of the ability and faithfulness of the deceased gentleman, and its sense of the heavy loss this association and the cause of education generally has sustained by his decease; and be it also

Resolved—That this association extend to Principal Hicks and the family of the deceased its sincere sympathy, with the earnest prayer that in their sad bereavement they may be sustained and comforted by the infinite power of Him who knoweth the end from the beginning, and doeth all thing well; and be it

Resolved—That a copy of this resolution be sent to the family of the deceased and to the public press.

This finished the business of the convention.—*Montreal Gazette Report.*

CONTEMPORARY LITERATURE.

THE ART OF SCHOOL MANAGEMENT. By J. Baldwin, President of the State Normal School, Kirksville, Missouri. New York: D. Appleton & Co, 1884.

ON page thirty-eight of the Regulations for County Model Schools, authorised by the Department of Education, August 14th, 1884, we find the name of this work on the list of compulsory text-books for the teachers in training, and therefore propose very briefly to review it for the benefit of our readers.

We have searched its pages for that dignity in thought and expression which should characterise any work on this subject put into the hands of young teachers—and we have searched in vain.

While frankly admitting that it contains much that is excellent, we are sorry to find the author using gross exaggeration. For example on page sixty-nine—"This grimness is not confined to male teachers, there are thousands of lady teachers who long since forgot how to smile, at least, in a sweet and loving manner. . . . . The lady is tall, pale, wears glasses and never smiles; and yet is one of the noblest of women. Her pupils seem to have copied her. They look anxious and pale; wrinkles are on their young brows; life seems scarcely worth living. They become an easy prey to disease and death."

In speaking of "Spelling Reform" the author dogmatically remarks, "The change must come." Yet, perhaps, there are many wiser men than the president of the State Normal School, Missouri, who would hesitate to say any such thing.

Again we object very much to the spirit of an anecdote on page 191, in regard to "boy and girl love," and the method employed to "cure" it, poor "Alfred and Lena" being kept in and told that "I wanted them to look at each other," and subjected to "the laughter of the school," etc.

It is not at all surprising ro read on a subsequent page, "With all my heart I favour co-education," though one cannot help thinking that poor humiliated Alfred and Lena will be ready to wish they had not been led into temptation.

There is at least one word used by the author, which is marked [vulgar] in Worcester's Dictionary, and another which cannot be found at all, either in Webster or Worcester, although (see p. 54) these are the two dictionaries that the author recommends for school libraries.

We ask our readers to ponder carefully whether the study of a book like this will exercise a good influence on the young teachers at the Model School. It is simply and solely a work for American Schools, and by no means the best of its kind, and as such we submit that it cannot be entirely suitable as the sole professional text-book for the County Model Schools of Ontario.

THE TEACHER; HINTS ON SCHOOL MANAGEMENT. By J. R. Blakiston, M.A. Camb. London: Macmillan & Co., 1883.

THIS is, without doubt, one of the best and most practical books on teaching that we have lately had the pleasure of examining. The teacher of the present day to be successful must get out of the old fashioned routine of a decade since. He must adopt common sense methods, both of management and teaching. Mr Blakiston has kept this fact firmly in mind, and he has succeeded in giving us a book in which we have not been able to discover a single idea which may not be put into practice by any teacher of average qualification for his profession.

Passing by the introduction which contains some useful hints on school-buildings and sanitary regulations, we come to the first division on Management. Here the author strikes a key which is in itself enough

to arrest the attention of the thoughtful teacher. He says, "When a healthy tone pervades a school, it is chiefly due to a teacher's sterling worth making itself felt more or less by every one with whom he has to do. An earnest, unselfish, highminded man cannot fail to exert at all times an influence for good—an influence that will grow and deepen with the growth of his goodness." After some sensible remarks on the relations between teacher and parent he discusses corporal punishment. The statement that the head-master alone should punish, and that no assistant should be allowed to touch a pupil with hand or cane, may be questioned, but he is right in saying that "an interval of at least an hour should elapse between the time of the offence and the infliction of the punishment. The punishment should be inflicted publicly and entered in a log book with full particulars." These two chapters on *Discipline and Class Management* are admirable in every respect, and are alone worth the price of the book. The second division is devoted to Infant education, and contains some excellent hints on *Writing, Form, Colour, and Learning by Heart.* One sentence in the section on *Reading* seems to explain satisfactorily a difficulty which once came under our own notice. "After the children have learnt to recognize sound at sight the combinations 'ad' and 'ade,' the teacher instead of saying 'bee' and 'emm' on showing the letters 'b' and 'm' prefixed to either, will bid the children watch and imitate the movement of her lips as she forms them into the shape required for pronouncing 'b' and 'm'." We have not space to criticize the third division in which there are a few things to which exception might be taken. But the fact is there is so little to find fault with in the book that it seems ungracious to particularize the small blemishes. Every page is crowded with hints to the teacher of the most practical kind possible. For instance on page forty, we find the following in the section on writing: "If copy-books be used having but one copy on a page, the only chance of preventing children copying their own writing and repeating their own faults is to make them begin at the bottom and advance upwards." It is to be hoped that no teacher who is not yet perfect, will be content without a thorough perusal of this valuable addition to pedagogic literature.

GOVERNMENT OF ENGLAND. By Lousie Creighton.

ENGLAND AND IRELAND. By Emily Thursfield. Rivingtons: Waterloo Place, London.

THESE volumes are two of the "Highways of History" series. The first gives a concise account of the progress of popular government in England from the earliest times to the passing of the Reform Bill of 1867. Despite the temptation that such a wide subject presents for digression, the writer adheres in the main to her subject. Once or twice she forgets herself, as in dealing with the Great Rebellion. In one or two instances also she fails to point out the full significance of the changes brought about. For example, the Habeas Corpus Act is but incidentally referred to in a whole paragraph devoted to the Exclusion Bill, and in the description of the Act of Settlement that clause providing for the independence of the judges is not even mentioned. These are trifling defects however in a book that well fulfils its purpose. Should a second edition be called for we would suggest a revision of the titles of the paragraphs, and a strict exclusion of those paragraphs which do not bear directly on the subject.

It needs but a glance at the next volume to see that the writer is not a mere book-maker, but one who has a living interest in her subject, which is a history of the government or rather misgovernment of Ireland by England. Any one who wishes to have an intelligent knowledge of those wrongs of Ireland which have embittered the feelings of the Irish so much and produced the present discontent, cannot do better than consult this little volume. The style is attractive, and the facts are clearly and impartially stated.

EDUCATION BY DOING; OCCUPATIONS AND BUSY WORK FOR PRIMARY CLASSES. By Anna Johnson, New York: Kellogg and Co. Toronto: David Boyle.

THIS is unquestionably the very best Object Lesson Book we have ever seen. It combines all that is really good in the Kindergarten with what is practical in every public school. The objects employed may be readily supplied by the ingenuity of the teacher in the most rural of rural sections, and the lessons based on the objects are really eye-observers.

It is *the* book for which teachers of elementary classes have been waiting. The price by mail—75 cents—should place it within the reach of every one.

HAZEN'S COMPLETE SPELLING-BOOK. Ginn, Heath & Co, Boston, 1884.

THE typography is excellent and the book has many good features, notably its progressive character, careful arrangement and general accuracy. We observe on page twenty-six, among the usual stupid "spelling-book sentences," the peculiar expressions the spectre advanced with stealthy tread," and "a decorous dress," also on page fifty-five, the spelling "geraneum for "geranium."

The lesson on prefixes and suffixes and the pages containing words for review, add to the value of the book.

HAND BOOK FOR THE DOMINION OF Canada. By S. E. Dawson, Montreal: Dawson Bros., 1884.

THIS very handy and attractive volume, we understand from the preface, was prepared at the request of the Citizens' Committee of the British Association for the purpose of giving members attending the meeting at Montreal an outline of facts of interest concerning Canada. It is written in a very clear and agreeable style, is admirably printed and well furnished with maps. It must have been an invaluable *vade mecum* to the British tourist. Even as a text-book in our schools it would have a decided advantage over some that, under the name of Canadian history, leave out all Canada and much of the history.

ENGLISH COMPOSITION. By T. W. Bancroft, Professor of Rhetoric and English Literature in Brown University. Ginn, Heath & Co., Boston

A FIRST BOOK ON GEOLOGY. By N. S. Shaler, Professor of Palæontology in Harvard University. Teacher Edition. Ginn & Heath, Boston.

WE have been in receipt of these books for some time and regret our inability to notice them sooner. The first is a somewhat advanced work on English composition, not the least interesting part of which is that containing short articles by the librarians of two different universities on the use of college libraries by students.

The second is a neat, valuable and well-written work on Geology, in which an intelligent student will find answers to the many questions about the earth and its history which pass through the mind almost every day—answers so clear, and leading on to something more so easily that the study will probably be continued with pleasure.

THE WHITEHALL STANDARD COPY-BOOK, NOS. 1 TO 12. George Gill & Sons: 23 Warwick Lane, Paternoster Row, London.

JOHNSTON'S STANDARD COPY-BOOKS, NOS. 1 TO 11. A. Johnston, 6 Paternoster Row Buildings, London.

THESE two series of copy-books follow the English plan beginning with half-text. Smallhand does not appear in the Whitehall books until we get to No.6 , nor in Johnston's series until the ninth is reached. This we cannot but consider as a serious defect when we remember that small-hand is the only style of writing practised in actual life. The best teachers of writing on this continent are agreed that children should be introduced to the kind of writing they will need to use afterwards as soon as they can make the small letters. Another rule for teaching writing about which there is no dispute is that both small letters and capitals should be introduced systematically. The

Whitehall series follows this with the small letters only, but in Johnston's both are introduced according to the method of their formation.

The first named series has a unique cover on which is represented various interesting objects including pens both ancient and modern. But it has more substantial merits than this to recommend it, for at the head of every page is printed a practical hint on some important matter to be attended to in writing the copy on that page.

Johnston's series might fitly be styled "Writing made easy" from the amount of help afforded the scholar in making the letters. First of all, the outline of the whole letter is given to be filled in; next only a portion of the outline, and finally only the initial and terminal strokes are given. The editors of this series are evidently determined that the writing taught in these books shall be so far uniform in character, that no idiosyncracies shall have a chance of influencing it. One novel feature in this series is the Kinder garten number providing practice in making the various stops in punctuation, the copies of these are arranged in in such a variety of ways that they will afford amusement as well as useful practice.

In both series the smallhand is beautifully clear and round, and the paper is uniformly good.

EDITORIAL NOTES.

A SOUTHERN authority notes with some surprise that the North appears to expend a very great proportion of its Educational Fund on the High Schools and a small proportion on its Country Schools.

WE have frequently observed in some of our exchanges whole columns of matter, and even long articles, appropriated from THE MONTHLY without acknowledgment. We would remind those who do us the honour to quote from our columns that the compliment is heightened by giving the proper credit for what is used.

AGAIN we wish you, dear reader, a pleasant holiday. To many of you we fear there will be little opportunity for relaxation on account of the examination system which is ever encroaching upon the time that should be devoted to recuperation. Mount what steed he will, black care will take his seat behind the faithful teacher. The something left undone will fret him, but he should try to not shorten his holiday and to make the best of it for the long strain of the spring term. To the hundreds of faithful, anxious and self-denying teachers throughout the land we say: A Merry Christmas and a glad New Year to you!

THE *Canada School Journal*, with that fine courtesy for which it has always been distinguished, accuses us in its November number of wilfully mis-stating the number of young ladies in attendance upon lectures at University College at the beginning of the term. In reply to the *Journal*'s ill-natured remarks we need hardly take the trouble to assure our readers that we took some pains to obtain correct information, and that the number given in the MONTHLY was absolutely correct at the time of writing. As the matter of co-education has passed out of the domain of mere theory it is quite obvious that the problem cannot now be discussed upon its merits.

AT a late meeting of the Executive Committee of the Ontario Teachers' Association, the following programme was adopted for the annual meeting of the Association in August, 1885. Besides the usual address by the President, addresses may be expected from

three other prominent Educationists: Papers on "The Permanency of the Teaching Profession" by Mr. Fotheringham; "The School as a Preparation for the Farm and the Workshop" by Mr. Merchant; "The Teacher as a Student" by Dr. Purslow; "The Study of English" by Mr. Houston, and on other subjects by Mr. Glashan and Mr. Swift, have been arranged for by the Committee.

A CORRESPONDENT proposes to us a problem which we confess we cannot solve to our complete satisfaction. He enquires if Dryden was a prophet, and had in view in the following lines a certain busy-body in educational affairs in this Province:—

"Prompt to assail, and careless of defence.
Invulnerable in his imprudence,
He dares the world, and eager of a name
He thrusts about and jostles into fame.
Frontless and satire-proof he scours the streets,
And runs an Indian muck at all he meets;
So fond of loud report that not to miss
Of being known (his last and utmost bliss)
He rather would be known for what he is."

Will some one help us to identify the portrait? It is not possible that amongst scholars and gentlemen there can be any one to whom this picture would have the slightest resemblance.

AT the recent Carlisle Church Congress, one of the speakers declared that whatever secular benefits have resulted from the Education Act of 1870 it effected the disestablishment of religion in the public elementary schools. All government regulations concerning religion, he said, are now of a negative kind. The State has assumed a Gallio-like attitude towards religion and inasmuch as by experience, School Boards afford no security for the efficient maintenance of religious education in elementary schools, it should be the duty of the church to make them as efficient instruments of religious education as possible; and churches must hold fast their church day-schools. At the same Congress, Lord Norton stated that little improvement of any kind could really take place in any department of education, so long as the fatal system of paying for education by grants on show results is continued.

THE following Regulations respecting Religious Instruction, have recently been issued by the Department of Education for this Province. We shall reserve comment upon them until our next issue:

1. Every Public and High School shall be opened with the Lord's Prayer, and closed with the reading of the Scriptures and the Lord's Prayer, or the prayer sanctioned by the Department of Education.

2. The portions of Scripture used shall be taken from selections authorized for that purpose, by the Department of Education, and shall be read without comment or explanation.

3. Where a teacher claims to have conscientious scruples against opening and closing the school as herein provided, he shall notify the trustees to that effect in writing.

4. No pupil shall be obliged to take part in the exercises above referred to against the wish of his parent or guardian, expressed in writing to the master of the school.

5. When required by the Trustees the Ten Commandments shall be repeated at least once a week.

6. The Trustees shall place a copy of the authorized Readings in each department of the Public and High Schools under their jurisdiction, within one year from the date hereof.

7. The clergy of any denomination or their authorized representatives, shall have the right to give religious instruction to the pupils of their own church, in each school-house at least once a week, after the hour of closing of the school in the afternoon; and if the clergy of more than one denomination apply to give religious instruction in the same school-house, the School Board or trustees shall decide on what day of the week the school-house shall be at the disposal of the clergyman of each denomination, at the time above stated. But it shall be lawful

for the School Board or trustees and clergyman of any denomination to agree upon any hour of the day at which a clergyman, or his authorized representative, may give religious instruction to the pupils of his own church, provided it be not during the regular hours of the school.

HIGH SCHOOL ASSISTANTS.

We understand that the Minister of Education intends to put in force some scheme for the professional training of Assistant-Masters and teachers in High Schools and Collegiate Institutes. So far as we can gather the plan is to be of the following nature:—First class teachers and graduates who have not taught are to spend three or four months in some school selected by the Minister, and subsequently be examined on prescribed educational works. Before a teacher can obtain a first class (professional) now, he must spend thirteen weeks at a County Model School, teach a year on a third class certificate, attend a course of lectures and training in the Normal School for six months, and thereafter successfully teach for three years. We submit that it is asking too much from men who have given evidence of considerable ability in the management of schools and the teaching of classes, to require them to pursue professional training in a secondary school for a further term of three or four months. It seems to us that what is required in the case of High School assistants is attendance at a College for a year or two, together with the passing of the usual examinations of such institutions for these years. In truth, we trust the day is not far distant when it will be possible for all our High School Masters and teachers to be graduates. The case of graduates without experience in teaching is a difficult one. There is no doubt that masters have felt for some time that something should be done to better equip, professionally, young graduates just entering on the difficult and exacting duties of a teacher. The proposed solution of the problem is, to say the least, crude and unsatisfactory. Before coming to any decision on the question, the Minister of Education might, without any loss of dignity, and with advantage to the question under consideration, have waited for the opinion of the Committee appointed by the High School Masters at the summer convention. For the present, we will not follow the matter farther than to invite masters to make use of our columns to express their opinion on this important practical question. The solution proposed by the Minister is not one which commends itself to our judgment.

THE DEPARTMENT AND THE SCHOOL READERS.

The decision come to by the Department of Education, and of which Minister Ross, we believe, frankly accepts the responsibility of discarding the several series of Readers which private enterprise had prepared for introduction into the Schools of the Province, and authorizing a series of its own, is, we need hardly say, a grave one. Without wishing altogether to condemn Government action in this matter, we must be allowed as frankly to regret it. And we regret it for these reasons: 1st. Because Government interference with trade is, to say the least, impolitic, and leads, as has been historically attested, to very questionable practices in connection with the officials, high and low, of the Education office. 2nd. Because it opens the door to every kind of tinkering with the authorized school-books; to needless changes of text-books, and consequent annoyance and expense to the public; to no little jobbery in connection with favoured firms, or individuals in the book trade; and reprehensibly holds out visions of fat things to departmental *protégés*, and no end of nice pickings to professional favourites of the minister or needy hangers-on of party. Though all this, and more, has been said by this Magazine in dealing with the subject of reading books for use in the schools, we deem it well to recur once again to what has been the expressed conviction of many in a matter of gravest import to Educational interests, to the independence of the pro-

fession, and to the integrity of the school administration.

Once more, it is necessary to say, that the less the Education Bureau of the Province mixes itself up with matters of trade, and the less it loses sight of the legitimate functions of administration, and the oversight of the schools, the better will it be for the profession and for the school system. Mr. Crooks, the late minister, has been blamed for bringing the matter of the Readers into the muddle into which it has fallen. But whatever Mr. Crooks is chargeable with, he should not be chargeable with this, and nothing could be more unfair to that gentleman, than to make him responsible for sins he never committed, or for the working out of a policy which never was his. Rightly enough, Mr. Crooks desired but one set of Readers for use in the Schools, and so long as he had control of the affairs of the Department his policy was to leave to the rivalry of the publishing trade the enterprise that would secure to the Province the best series to be had. Unfortunately, not Mr. Crooks, but Mr. Hardy, the acting-minister, threw this policy to the winds, and without considering the claims of a third series of Readers, which many of the profession deemed the best for adoption, he hastily authorized two sets, and for a time introduced Chaos into the Educational administration. To reduce Chaos to order, and reclaim the Province for peace, the new minister (it is 'matter of history) drew aside the bolt from the trap on the stage, and the rival publishers, their respective Readers, and an armed throng of combatants, summarily disappeared from the scene.

The cost of the comedy, it is said, was not less than a hundred thousand dollars, a claim for some part of which, we learn, may be yet made upon the Government, by the more crippled of those who have been able to struggle out of the pit into which Mr. Ross had unceremoniously flung them. The sequel to the act was the ministers playing a lone hand, the department putting up the country's money on the venture, the stakes being reimbursement by the three publishing firms interested, or the failure of the series and an inquiry by a special commission of the House.

With the best wishes of this Magazine for the complete success of the new Readers we must at the same time place on record our disapproval of the agency by which the series has been prepared; and our dissent from the idea that Government is justified in doing work that ought to be left to private enterprize, or has any right to imperil the country's interests in throwing aside trade competition, and entering upon an undertaking which, if not a failure, may prove far from satisfactory. We say this all the more earnestly, and from the best of motives, as there are rumors afloat of further interference by the Department with trade in respect of book property, which Government has no right to deprive of its value, nor is justified in risking the people's money in supplanting by work that in the nature of things must be better done by the enterprise of our publishing houses.

THE KNIT BROW.—Worry is fatal to good work, and to worry the growing brain of a child with work is to maim and cripple its organization, doing irreparable, because structural, mischief, the effects of which must be life-long. "Tension" in work is not a proof of strength, but of weakness. A well developed and healthy grown brain works without tension of any kind. The knit brow, straining eyes, and fixed attention of the scholar are not tokens of power, but effort. The true athlete does not strain and pant when he puts forth his strength. The intellectual man with a strong mind does his brain-work easily. Tension is friction, and the moment the toil of a *growing* brain becomes laborious it should cease. We are, unfortunately, so accustomed to see brain-work done with effort that we have come to associates effort with work, and to regard "tension" as something tolerable if not natural. As a matter of fact no man should ever knit his brow as he thinks, or in any way evince effort as he works. The best brain-work is done easily, with a calm spirit, an equable temper, and in jaunty mood. All else is the toil of a weak or ill developed brain, straining to accomplish a task which is relatively too great for it.—*Lancet, Eng.*

EDITOR'S TABLE.

"THE elements of English Speech," by Isaac B. Choate (Appleton's), is highly commended by the critics.

C. W. BARDEEN, of Syracuse, publishes "A Thousand Questions on American History with Answers."

Lippincott's Magazine for January contains an article on Sir John Macdonald from the pen of J. M. Oxley, of Ottawa.

A REVISED edition of Grey's "Bird's Eye View of English Literature," now in its fourth thousand, has been issued by E. P. Dutton & Co.

WE would call the attention of our readers to Johnson's New Universal Cyclopædia, an advertisement of which appears in our advertising columns.

THE *Atlantic* for December has one article at least of special interest to its Canadian readers: "Canada and the British Connection."

THE illustrations in *Harper's Magazine* for 1884 are said to have cost $80,000. It is stated that every drawing in our modern Magazines cost $50 and to engrave it twice or thrice that sum.

THE "Notes and Essays on Shakespeare," by John W. Hales, M. A., King's College, London, announced by George Bell & Sons, London, is sure to be bright and attractive and well worth reading.

MESSRS MACMILLAN announces a "Dictionary of National Biography," by Leslie Stephen, in about fifty volumes (12*s.* 6*d.* each.

Mr. Murray announces "The Students' Edition of the New Testament," abridged from "The Speakers' Commentary."

A BACONIAN SOCIETY—like the Camden Society, the Parker Society, and others—is in process of formation in London. Coöperation is requested from all American citizens who are desirous of subscribing—when the Society is ready to receive subscriptions for its publications.

THE following articles on Literary Topics deserve the notice of our readers: "On the Reading of Books," October *Temple Bar;* "Newspapers and English," October *Macmillan;* "Works of Alexander Pope," *Edinburgh Review;* "Perspective of American Literature," November *Andover Review.*

"STORMONTH'S English Dictionary," now appearing in weekly parts in Harper's Franklin Square Library, is a first-rate book. The present plan of publication affords an opportunity of obtaining a very good Dictionary in an inexpensive way. We shall take occasion to notice this important work at greater length.

WE invite the attention of our readers to the announcements of the various Magazines and Periodicals to be found in our advertising pages. See also our Clubbing Rates. The terms offered by the Publishers of the MONTHLY, are the lowest in this country. Save time and money by taking advantage of our offers.

IT would require a page to describe the beauties and merits of *Harper's Magazine*, and the Century Co's *Century* and *St. Nicholas* for Christmas. These three publications are always beautiful, entertaining and instructive. What a charming present to a friend, a year's subscription to one or all of these Magazines would make! Our special Clubbing rates afford an easy method of gratifying yourself and your friend.

THE December *Popular Science Monthly* (D. Appleton & Co., New York), in addition to Mr. Glashan's paper, quoted in full in other columns, contains amongst other interesting papers, the Reformation in Time-keeping by W. F. Allen, "Queer Flowers" by Grant Allen, "Perils of Rapid Civilization," by Dr. Withington, and the usual valuable Editor's Table, Literary Notices, Popular Miscellany and Notes.

MESSRS MACMILLAN, (London and New York) also announce "Weekly Problem Papers," by Rev. John Milne, M. A. "Physical Arithmetic," by Alex. Macfarlane, "Hadley's Greek Grammar," revised by Professor Allen, of Yale College, "Latin Prose, after the best Authors, "Part I. Cæsar, by F. P. Simpson; The Academica of Cicero, by J. S. Reid, Cambridge; and the Epistles of Horace, by Prof. Wilkins, Owens College.

AT the Thirty-fourth Annual Meeting of the Michigan State Teachers' Association, to be held at Lansing, commencing on the 29th inst., addresses will be delivered by Dr. Charles D. Thompson, of the Polytechnic Institute, Terre Haute, on "Technology in the Public School;" by Prof. Payne, Chair of Science and Art of Education, Ann Arbor, on "Some Lessons on Educational History;" and by Col. F. W. Parker, Normal Park, Ill., on "Learning to Do by Doing." The Secretary of the Association is a gentleman well known to the Profession in Canada, Mr. Z. C. Spencer, Battle Creek, Michigan, formerly Science Master in the Hamilton Collegiate Institute.

THE management of THE EDUCATIONAL MONTHLY have pleasure in announcing that the subscription will be reduced to $1 per annum, beginning with the January number. It must afford pleasure to subscribers and those who are interested in the maintenance of an independent Teachers' organ, managed by teachers for teachers, in the interests of education, that the prospects of THE MONTHLY were never brighter. It is hoped that the same cordial support which has been extended to the Magazine in the past will be practically shown by prompt payment of over-due subscriptions, which although small to each individual, amount to a considerable sum in the aggregate, and by efforts to advance the circulation by forming clubs, the terms for which will be as before, 85c. for each member of a club of twenty or more.