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FOR THE ATLANTIC PROVINCES OF CANADA.

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The Educational Review.

Devoted to Advanced Methods of Education and General Culture.

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CONTENTS:

Notice of Change of Address should be promptly sent to EDUCATIONAL REVIEW, St. John, N. B. The former as well as the new address should be given.

EDITORIAL NOTES.

FOUR EXTRA PAGES have been added to this month's issue of the REVIEW, making twenty-eight pages in all. This extra space is to make room for our correspondents and to make up for the extra space given to advertisers, which has been a little larger this year than last.

THAT excellent work, "Meiklejohn's English Language," has been prescribed by the Board of Education for New Brunswick as an additional text-book in grammar, composition and literature for school license of Class I. It is also the prescribed text-book in English for matriculation into the N. B. University.

WE notice that our veteran educationist, Principal McN. Patterson, has been "going for the local government" at the agricultural centennial for not placing the Bible in the public schools as a text-book. Premier Fielding seemed to think that those trained in and for the various churches might have the confidence of their respective denominations in biblical instruction, but that it would not be popular to compel partially instructed teachers to assume the responsibility of instructing all denominations in a text-book the interpretation of which is the foundation of denominational existence. Better the liberty that now is. But Principal Patterson's practice has been better tested than his theory referred to, for Acacia Villa enjoys the highest reputation for the full rounded education given. The moral, the physical, the practical, the theoretical and the æsthetic being all duly and harmoniously developed. We are glad to notice the flattering comments bestowed upon it in the press.

THE article by Dr. MacGregor in another column will be read with much interest by advanced school teachers.

Dr. J. George Hodgins, Deputy Minister of Education, Ontario, has prepared an exceedingly interesting and valuable work entitled "Ryerson Memorial Volume, 1844–1876." It not only gives a panoramic glimpse of the life, educational times, work, and public appreciation of this most eminent of Canadian educationists, but of the development of the educational system in Ontario from the earliest times. This picturesque compilation is a cluster of pen photographs from nature arranged and framed with most effective skill. No one could be better fitted than Dr. Hodgins to produce such a work. Though of nearly quarto size it contains only some 130 or 140 pages.

WE conclude in this number the article by Dr. Fitch. Our readers will find it a good tonic—to be kept at hand and read now and then to arouse fresh enthusiasm in our English literature.

THE letter of Professor MacGregor, of Dalhousie, urging the Dominion Government to assist in studying the marine currents in our coast waters is being generally copied and endorsed, as we would expect, by the public press of the Atlantic provinces of Canada.

THERE is some editorial matter and correspondence that is unavoidably crowded out of this issue. It will appear next month.

WILL subscribers in writing about a change of address be very careful so give their former as well as present address?

IN the Christmas number of the Trinity College *Review*, of Toronto, there was a series of clever sketches by prominent Canadian writers. Mr. Geo. Stewart, of the Quebec *Chronicle*, contributed an article on a "Half Forgotten Singer." The subject of Dr. Stewart's sketch was Dr E. K. Crosby, a gentleman of fine literary tastes, and who was well known to a comparatively small literary circle in St. John some years ago.

WE acknowledge the *Herzlichen Gluckwunsch*, received from Dr. Hall from Berlin, and reciprocate most heartily. We are glad to notice that the *Weekly Monitor* "has him in" for a series of letters from the German capital. This is like the *Monitor*. It has always been one of the most valuable of our exchanges.

SECTARIAN EDUCATION.

An influential provincial daily quotes the New York *Journal of Commerce* as a reliable exponent of public opinion in the United States when it says: "There can be, as it seems to us, no common ground on which Catholics, Protestants, Hebrews, infidels and the irreligious can stand for the support of a school out of the public treasury." Our reading of the trend of thought is very different. The current in the United States appears to be more fully than ever setting in one great massed volume in favor of State education. "The schools would at once assume a higher character, and the young of all classes be much better educated in all that this word implies, if the State would surrender the task and leave it to the care of those who are so deeply interested in the result," says the *Journal;* thus "putting its foot in it," and revealing the hoof at the same instant. History has a broad ocean of testimony to give on the results and character of sectarian education, and the *Journal's* mop, capacious as it is, can hardly absorb the tide. "Those who are so deeply interested in the *results:*" That is, Catholics in Catholicism, Protestants in Protestantism, Hebrews in Judaism, infidels in idol smashing, and the irreligious in deviltry generally. Give them each full and free scope in delimited camps that the education of *all* classes would be much better "in all that this word implies!"

But who are the most interested in the results of education? There cannot be a shadow of a doubt that it is the State. The State has to protect the peace and liberty and life of the Catholic, the Protestant, the Hebrew and the infidel. They have to work with each other, eat bread with each other, and it is acknowledged they should learn to love each other. To carry out the leading idea of civilization—the central truth of Christianity—the sum of the moral law they have to learn to love their neighbors as themselves. Instead of separating sects, our bounden duty from every point of view is to draw them nearer. Not to be endeavoring to magnify differences and organizing hostile camps of war; but to be recognizing resemblances, relationship and our universal kinship as the children of the great Father whom to love is to be lovable. But still, owing to our imperfect and different kinds of knowledge, different theories of religion, as well as of morals and of political economy, must necessarily be held. Let the various Church organizations do their own duty in their own spheres here by giving specific religious instruction. They have no right to monopolize what is common to humanity. Monopoly of action can in equity be granted only where there is no encroachment on the like privileges of others. The Chapel, the Synagogue, the Sunday School, the Bible Class, the Prayer Meeting, should each in its own way do its own duty. The instant any one of them comes in to say, our worshippers must not work with you, must not buy from nor sell to you, must not meet with you lest they should become acquainted with your ideas or theories, or learn to think you may be as good as one with a different tonsure,—the instant this is done war is declared against the leading principles of civilization and the sum total of Christianity, even should the sect label itself Christian. The *Journal of Commerce* betrays the hand of a not overwise sectary, who unconsciously but most significantly admits that his *ism* is become too obsolete or effete to hold its own in a free and open competition for the suffrages of an intelligent humanity. The Atlantic provinces of Canada are to be congratulated on the harmonious development of public education within them. The State does its part and all young citizens meet on common grounds, and learn to respect and love each other as equals. The churches engage in a rivalry to produce the best types of the religious character, and public charity is so diffused that whenever such eminence of character is shown it receives the homage and the admiration of all.

A LADY TEACHER ON PRIMARY EDUCATION.

A "lady teacher" writes as follows: I have never been afflicted with the "rage for scribbling," but I cannot resist the impulse to send you a word expressive of my interest in and appreciation of your article on "Primary Education" in the EDUCATIONAL REVIEW for November.

You describe exactly, it seems to me, the lady fitted by nature and education to be the teacher of a primary school.

The points to be emphasized are: first, ladies so fitted are rare; second, they should be secured for this particular branch of the service; third, the emoluments should be such as to encourage them to remain in it.

The question arises: How is this to be accomplished? Is it by appealing to the parents through the public journals? or have the teachers the matter in their own hands? or is the Board of Education the proper quarter in which to represent it?

Would not a consideration of these questions be a step in the right direction?

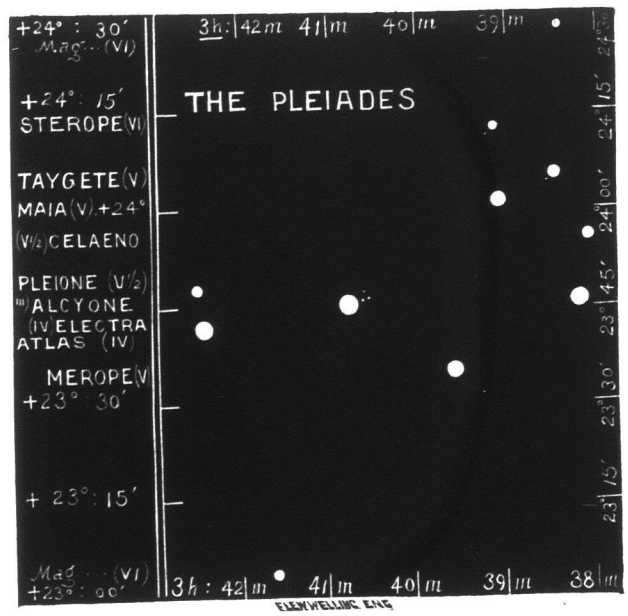
[Yes. Teachers have the matter largely in their own hands. First, by qualifying themselves for their work, entering upon it with enthusiasm and intelligence and making their influence felt in the home. The best way of reaching the parent is through the pupil. Intelligent and systematic effort in moulding the character and mind of the pupil *should* appeal to the parent more strongly than any possible way.—ED.]

Teachers' Institutes.

York County, N. B., Teachers' Institute met at Fredericton on Thursday and Friday, Dec. 19th and 20th. Among the papers read was one by Miss Clark of the Normal School on the "Necessity of Physical Exercises in our Schools" which elicited favorable comment. A pleasant feature of the proceedings was an evening entertainment in the parlors of the W. C. T. U. at which addresses and music was furnished by members of the Institute and others.

The teachers of Victoria and Madawaska met at Grand Falls on Thursday and Friday, Dec. 19th and 20th, and organized a County Institute, with Inspector O'Brien as President. The Chief Superintendent of Education was present and took an active interest in the proceedings. A public educational meeting was held on Thursday evening, at which addresses were delivered by the Chief Superintendent and others. There was an exhibition of manual work from the Superior School, Grand Falls, and from the Grammar School at Andover. Papers were read by D. W. Ross, of the Superior School, Grand Falls: Mr. John Lawson, Miss Lea Dumas and E. M. Brundage. The teachers of the counties of Victoria and Madawaska are to be congratulated on the successful organization of their institute, which adjourned to meet at Edmundston in October next.

The Pleiads.



After the Sun and the Moon and the Big Dipper, no celestial object is better known than the Pleiads. Those who have never seen them have at last heard or read of them; for they have been figuring in song and story from the time that Ulysses steered his raft from Ogygia by them to the time that Amy's cousin watched them from the casement of Locksley Hall. They are mentioned too in our Bible, and perhaps rightly so; at any rate, the notion that the Kimah of Job and Amos is the Pleiads is a notion as old as the Septuagint.

If you don't know them, get some one who does to point them out to you. Or, failing that, go out the first clear evening and find them for yourself. Suppose you do so at nine on January 1st, or at eight on January 16th, or at seven on January 31st, or at any corresponding intervening time on any intervening evening. The hours here given are mean time, your own local time wherever you may happen to live. On the evening and at the hour as above, go out and face south and look up about 70° above the horizon. There! do you see that bunch of stars—half a dozen or so of little fellows huddled close together like a swarm of fireflies, or a brood of chickens, or like anything else that's like them? That's the Pleiads. Take a good look at them so as to be sure of knowing them again when you see them differently placed in the sky.

If you go out again on the same evening, from four to four and a half hours later, you will find them due west and at a more comfortable angle for your neck, just half as high as when on the meridian. Or if you wait until about March 7th you will find them due

west at nine o'clock. After this date nine will find them to the north of west and still nearer the horizon. They set about N. W. by W., and this will happen at nine at the end of April. After that you won't see them at this hour until September, when you will find them above the N. E. horizon. Towards the end of October you will have them due east at nine, and at the end of the year nine will again find them on your meridian.

So at nine o'clock you may see the Pleiads somewhere in the sky on any evening from the middle of September to the middle of April. But you need not give them up during all of the other five months. They rise at midnight towards the end of July. If early rising suits you better than late retiring, you may try how soon after May 10th you can see them in the early morning. That's the date when they rise with the sun in our latitude. They set with the sun on May 22nd, and you may also try how close to that date you can still see them in the early evening. The interval between the date of your last sight of them in the early evening and the first in the morning will be the time during which they are visible at no hour. In Hesiod's time, twenty-seven centuries or so ago, and in Boeotia, where he lived, this interval was forty days. Here and now, perhaps you may make it less.

But it is only January as yet, between the middle and end of the month, and we are out doors between seven and eight in the evening. There are the Pleiads on our meridian, due south of our zenith and only 20° from it if we live in the south of Nova Scotia, or 24° in the north of New Brunswick. Before making a closer examination of this particular cluster let us take a look around. A little below and to the left of the Pleiads you see another cluster, V-shaped and with a large red star in it. That's the Hyades, and the red star is Aldebaran, the Bull's Eye. Farther down in the same direction is Orion, the grandest constellation in the heavens, easily recognized by three second magnitude stars in a row and in the middle of a large four-sided figure with first magnitude stars at the upper left and lower right corners. Still farther down and nearly in line with Orion's Belt (the row of three stars) is the Dog-star, the brightest of all the fixed stars. The next brightest above the horizon at this hour and season is Capella, up near the zenith and a little to the east of it. And over in the north-west, close down to the horizon, is Vega, whose acquaintance we made in November. Other first magnitude stars in sight are Procyon, the Little Dog, making a large triangle with the Dog-star and the red first magnitude star in Orion: Pollux, one of the Twins, about half way between Capella and the eastern horizon: and Regulus, in the handle of the Sickle, just above the horizon a little to the north of east. (If you see what seems to be another first magnitude star near Regulus, look in *Astronomical Notes* for December and you will find out what it is). Except Vega, all our objects so far lie on the east side of the meridian, and most of them in the south-east quarter of the sky. In the north-east you see the Dipper standing on the end of its handle. In the north-west, just south of where Vega is setting, the Cross in Cygnus is beginning to set and now stands upright on the horizon. In the west and still well above the horizon is the Square of Pegasus. Between it and the Pleiads are the three stars in the Ram's head. South of these is the Whale where Mira is now invisible to the eye, but may be found with a glass if you located her well during September and October. Right overhead is Perseus, well marked out by the J which his stars form. Just below him, on the west, lies his wife, Andromeda, and to the north-west is the Chair of his mother-in-law, Cassiopeia.

And now if your neck is not too stiff take another look at the Pleiads. How many do you see—five, six, seven or more? With the naked eye I mean just now. Some can see only five, nearly every one can see six, many can see seven or eight. There are eight in the cluster brighter than sixth magnitude, and all these would be seen by an average eye were it not that the faintest two are close to brighter ones and so have the shine taken out of them. But when the seeing is very good, even an average eye can catch all the eight. And eyes of more than average keenness see more. I know persons who say they see ten. Almost every astronomy book will tell you that eleven are often seen, and that that is the number usually seen by not a few persons. Heis says that is the number he sees. Miss Airy, daughter of the late Astronomer Royal, is said to have seen twelve, and to have correctly mapped their positions. Kelper said that Moestlin saw fourteen, and Webb says that Denning and Carrington see the same number. Von Littrow says he has seen sixteen. How many Cagliostro and Baron Munchausen could see I don't know.

How many can be seen with a glass is, of course, quite a different matter. And here it may be as well to observe that while the cluster is perfectly isolated and has well-defined boundaries as seen by the eye, this is not the case as seen through a glass; and the better the glass the less is this the case. How many stars you can see with your glass within what you consider the limits of the cluster is a question which only you can answer. And even you will find it rather difficult to do so. The number you can *see* is one thing, the number you can *count* is another.

Here are some things that may give you some idea as to how many you may expect to see with your

glass. In his "Astronomy with an Opera Glass," G. P. Serviss gives a map of the Pleiads containing seventy-five stars and says, "All these may be seen with the most powerful field glass." Young, in his "General Astronomy," gives a map containing eighty, and says, "A mere opera glass shows nearly one hundred." Newcomb, in his "Popular Astronomy," gives a map containing sixty, and says that is how the cluster is seen "through a small telescope." These statements are rather indefinite and apparently not exactly consistent. The following are more definite: Down to magnitude 9.2 Bessel gives fifty-three stars in the cluster, and Dr. Elkin, of Yale, gives sixty-nine. Flammarion gives a map containing 120 down to magnitude 11. Wolff has mapped 499 down to magnitude 14. Dr. Pritchard, of Oxford, says "more than 625 have been seen." The Henry Brothers, of Paris, have photographed many that have never been seen and that may never be seen.

How many you may see depends chiefly on the size of your object glass. To see Elkin's sixty-nine a very good one-inch glass may suffice, but even a 1½ may not. For an eleventh magnitude star nothing less than 2½ inches will do, and some 3½ inch glasses will do no more. To reach the fourteenth magnitude at least ten inches of aperture is needed.

In the map which accompanies this article only the eleven brightest stars of the cluster are shown—the eleven that Heis sees with his naked eye. The map shows them as we see them when they are on the meridian. The positions of the stars relative to each other and relative to the surrounding stars are always the same; but relative to *up* and *down* and *right* and *left* their positions on the map are strictly true only when they are on the meridian.

The one at the top of the map and the one at the bottom have no names so far as I know. The other nine have. Of the two at the left, the lower and brighter one is Atlas, the upper Pleione. Next to the right and the brightest of the lot is Alcyone. To the right and below this is Merope. These two form a quadrilateral with two others above and to the right. The one diagonally opposite Alcyone is Electra, the one opposite Merope is Maia. Above Electra is Celaeno, above that Taygete. The triangle above Maia and Taygete is completed by Asterope or Sterope.

The six generally seen are Alcyone of the third magnitude, Electra and Atlas of the fourth, and Merope, Maia and Taygete of the fifth. If you can see seven the seventh will be either Pleione or Celaeno, both of magnitude 5½. To my eye Pleione is easier than Celaeno. Of the remaining three, Sterope is to me the least easy.

In a small glass the cluster is very beautiful, well worth looking at long and often. One of its prettiest features is the string of small stars running down from Alcyone. It is useful too, containing some good test objects. Sterope is double, and if your glass does not show both stars it is not a very good one. Alcyone has several small companions close on its northwest side. If your glass shows one of these distinctly it is not a bad one; if it shows three it is (if a field or marine glass) a very excellent one.

There are several other things some little notice of which I had hoped to squeeze into this article — the different names given to the cluster and its stars, their meanings, and the probable reasons for their being given; the ancient myths and modern fictions connected with it; the use that was made of it by the ancient farmers and sailors; the evidence it supplies for or against some modern astronomical theories; the drift of its principal stars through space; how the moon behaves towards it, &c.—but the article is already long enough and these matters must stand over.

By the way, if any of you know of any names applied to the cluster or its members other than those used above — and other than the Seven Stars, the Seven Sisters, the Atlantides, Vergiliæ, Kimah (?) La Poussinière, Die Glucke, Ajalkuch (Micmac), Isilimela (Zulu)—I wish you would send them to me along with anything you know as to their meaning and as to where and by whom they are or were used.

C.

Dr. Hall on the German Schools.

Dr. Hall, in writing from Berlin to the *Weekly Monitor*, thus sums up his first impressions of the German Schools:

Here one may see the principles of Fröbel and Pestallozzi developed on the native soil. I have visited already the kindergarten, germinde school, gymnasium and seminaries. The teacher is a government official, and continues his work until he is rendered unfit either by sickness or old age. He must take a liberal course of study before he enters the profession, and then he ranks with the other learned professions They appear to be satisfied with their work. There is none of that unrest and friction which is too often noticeable amongst our teachers. The work done in the schools is superior. The Germans have a power in their educational work that America—so far as we can judge—does not possess. Possibly at some future time I shall try to define it.

Some of the points that have impressed me are the following:

1. The general good health of the teacher and pupils.
2. The especial care that is paid to the correct use of language in all school exercises.
3. The cultivation of politeness and good manners is an important feature in school work
4. Music, drawing, and proper physical exercises has each a new meaning and value.
5. The pupil is developed fully. There is no partial or one-sidedness in education.

FERNDALE NOTES.

Ox Bot-Fly or Gad-Fly.—Magnified.

In our January number of 1888, in *Friday's School No. VIII.*, is a lesson on the Bot-fly, Gad fly or "Warbles" of the Ox. From the November number of *Insect Life*, published by the United States Department of Agriculture, we note the following estimates of damage done by the fly. Referring to the investigations recently undertaken by the *Farmer's Review* of Chicago, *Insect Life* says:

A host of letters from farmers and stockmen were published, which as far as they related to the habits and natural history of the fly, were, as a rule, pretty badly mixed, and added little if anything to that already known. Reports were also received from professors of agriculture, entomologists, and veterinarians, which give, as did also those of farmers and stock raisers, valuable data concerning its abundance in various States, the loss in value to hides, effect on quantity and quality of beef and milk, and also the effect of the attacks on the animals themselves.

From the reports received the approximate percentage of grubby cattle and the average loss on grubby hides for the principal stock-raising States of the Mississippi Valley have been estimated as follows (August 7, 1889):

Illinois.—Seventy-three per cent of the cattle marketed in the grubby season are infected with grubs. The average loss on a grubby hide is one-third.

Iowa.—Seventy-one per cent of the cattle in the majority of counties are grubby in the season specified. Loss on grubby hides one-third.

Indiana.—Forty-eight per cent of the cattle grubby. Loss on hides one-third.

Wisconsin.—Thirty-three per cent of cattle grubby. Loss on hides one-third.

Ohio.—Fifty six per cent of cattle grubby. Loss on hides one-third.

Missouri.—Fifty seven per cent of cattle grubby. Loss on hides one-third.

Kansas.—Sixty per cent of cattle grubby. Loss on hides one-third.

Kentucky.—Fifty-seven per cent of cattle grubby. Loss on hides one-third.

In *M*[illegible] and *D*[illegible] grubs are practically unknown among cattle.

In *N*[illegible] they are not very bad where found; twelve counties report an average of forty per cent. The rest heard from are free of the pest. Grubby hides are reduced one-third of their value.

In *M*[illegible] per cent of the cattle are infested with grubs in the southern and middle counties. In the northern counties they are unknown or very scarce. Grubby hides sell for one-third less than sound ones.

The amount of this loss can be better appreciated perhaps by reproducing in condensed form the approximate estimate of the loss on the hides of cattle received at the Union Stock yards of Chicago during the grubby season, which includes the months from January to June. Using the reports by States above given as a basis it is estimated that fifty per cent of the cattle received are grubby. The average value of a hide is put at $[illegible], and while from the report referred to one-third value is the usual deduction for grubby hides, in this estimate, but $1 is deducted, or less than one-third.

The number of cattle received in 1889 for the six months indicated was 1,[illegible],026, giving a loss on the fifty per cent of grubby animals of $[illegible]. When to this is added the loss from depreciated value and lessened quantity of the beef, the amount for each infested animal is put at $5, indicating a total loss on these animals from the attack of the fly of $[illegible].

(For the life history, and description of form, habits and work of this insect see EDUCATIONAL REVIEW, Vol. I., No. 8, January, 1888.)

[illegible]

Educational and Industrial Drawing.

A primary free-hand manual, with four drawing-books to go with it, by Langdon S. Thompson, A. M., has been recently published by D. C. Heath & Co., Boston. The manual is wonderfully clever and original and is divided into two parts, viz: the introduction and the analysis of the four free-hand books which accompany it. Chapter I. deals ably with *The Study of Form: Acquiring Ideas of Form: Expressing Ideas of Form: Summary*; and ends with the pertinent question: *Is drawing for all?* We give the answer: "Since all must live in space and deal with it constantly, and since through the eye, the hand and the mind, all are put in communication with space, *Drawing*, the universal representative of the space-arts, is adapted to the wants and necessities of all; and the ability to learn to draw will be found to be as general as the faculty for learning any other art or subject." "Can everyone become a great artist? No! Likewise, if it is asked, can everyone become a great orator, a poet, or an author, the answer is still, No! But every ordinary person can learn to talk, to read and to write; and these are the means by which the orator, the poet and the

author express themselves. So, also, is drawing a language used to express thought: but he who has no artistic thought or emotion to express cannot use his language for that purpose, although acquainted with it. When all are taught to read and to write, it is only expected that one in ten thousand, or more, will be a poet or an orator. Why ask for a greater proportion of artists when all are taught modelling or drawing?"

Chapter II. deals with *The Means, or the Materials and Implements.* These observations are so careful and complete that they will be of special value to the young teacher who wishes to do good work in drawing but does not know how to set about it.

Chapter III., "*The thing to be done*": 1, "To instruct and develop the mind and the taste"; 2, "To present motives for action: that is, conform the instruction to the nature of the mind, or, in other words, to make it interesting." In order to develop and instruct we must first "make a wise selection of subjects," and secondly, "use the best methods of teaching." In short, the aim should be in a general course of drawing in the common schools to lead the pupil to receive and appropriate as his own "the greatest possible number of distinct ideas with the least amount of merely manual labor: remembering also that the trinity in practical art is the mind, the eye and the hand,—the eye to perceive, the mind to conceive, and the hand to execute or express." Whilst this Manual and accompanying books may be taken up advantageously whether or no the pupil has done anything in clay-modelling, Mr. Thompson pleads warmly, and, we think, unanswerably, that children first have an opportunity to express their ideas of form in solid matter, such as clay, paraffine, etc., to be followed by cutting out and folding of stiff cardboard so as to form different geometrical solids capable of this method of treatment. The actual contact of the hand with plastic material, which ensures the fullest exercise of the muscular sense, lies at the foundation of all industrial and fine arts and cannot be neglected without serious loss. Clay-modelling lends itself to feeble and unskilled hands, and while it was, probably, the first medium through which man made his earliest essays in art, a Michael Angelo or Thorwalsden gratefully accept it as an aid in giving form and shape to their noblest conceptions. Any teacher who will study the "Manual Training," Manuals Nos. 1 and 2, and this Primary Freehand Manual, will gain a very clear and distinct idea of the place which drawing should occupy in our common school course: what we may reasonably expect to accomplish by it, when instead of teaching it by mere imitation we make it the vital expression of the thoughts and feelings of the child. *The ready expression of thought by a few simple lines* is the point aimed at by your author, and his use of kindergarten sticks, to illustrate the attitudes and movements of the human figure, is as amusing as it is effective. He gives Hogarth's famous diagram representing a soldier, with his bayoneted gun on his shoulder, going into an alehouse, followed closely by his dog, the whole represented by three lines. We will take at random a few things to be done and some questions to be answered. "Draw a man walking fast. Draw another man walking still faster. Draw them walking towards the right and again walking towards the left. Less than twelve lines with a small circle for the head does this. Draw a right angle in eight different positions. Draw an isosceles triangle with one right angle. In Lesson XLIV. point out and count the wave-lines and the different kinds of angles. Compare two specified lessons as to beauty." A careful examination of this Manual proves that a pupil of ordinary intelligence, who had gone through the course here laid down, might reasonably be expected to answer the questions and do the work required fairly well. Such a pupil would then be well prepared for more specialized work, and in any case would be vastly better prepared for practical every-day work than he would have been without it. Some English authorities to whom the book has been shewn give it unqualified praise, which is valuable coming from those who fully recognize the value of drawing, not only as the *a, b, c* of Manual Training, but as a power in quickening and developing the intellectual and æsthetic faculties. When our teachers reach this point of appreciation and prepare themselves by study of improved methods and of the philosophical principles that underlie those methods, the whole position will be carried so far as our common schools are concerned. If drawing and allied subjects are soundly taught there for a decade or two, fine art and the useful arts will have a fair chance, for they will rest on a solid foundation. Meanwhile we recommend the study of this course by a successful teacher, who is at once original and practical, to all those who should take an intelligent interest in the subject.

C.

THE vexed question of French schools in Ontario appears to be on the way to an intelligent solution. A Teachers' Institute has been established for the counties of Prescott and Russell, at the first meeting of which, last week, nearly all the teachers, French and English, were present, and a system of bi-lingual instruction for the schools exemplified and adopted. There is no lack of harmony among the people themselves as to the desirability of the children being educated in both languages.—*L'Evangeline.*

For the Review

Notes for Teaching Music by the Tonic Sol-fa Notation.

THIRD PAPER

The following is the substance of a paper by Dr. A. E. Winship on "Music in Schools":

We teach singing for character, for enjoyment, for the home.

That which singing may accomplish for man is every way as important to the man and to the world as that which is accomplished by arithmetic, geography, language or drawing. It is not as important as reading, which really counts for as much as all the other branches.

Singing is closely related to health, to choices, to intellectual activity,—consequently it is vital to the character. A man's success in life depends largely upon his courage, peace of mind, freshness, hopefulness, and elasticity. Singing is helpful in all these directions.

We must get more out of singing than a knowledge of the scale or ability to sing a song. Music teaching in schools must do for the child in thought, sympathy and choice all that it is capable of accomplishing. Thinking and singing ought to be companions.

The enthusiasm for intellectual activity in the school room dates from the time that singing in the public schools was so enthusiastically introduced.

Singing should be taught almost wholly for its effects aside from ability to sing. Singing cannot be well taught that does not, while making intelligent singers, benefit the whole physical being through attitude, breathing, and vocal elasticity; that does not [illegible] hought more keen, that does not give greater power of abstract conception; that doe not make choices more correct, the moral perceptions more accurate, the disposition more uniform.

Singing is to be taught the whole child. His entire being, mentally, physically, industrially, morally, is to be vibrant with health, elasticity, energy and cheerfulness. Like most branches it needs to be taught from the lowest grade to the highest. It is needed for patriotism, morality, health, for lightening discipline, making school attendance more regular, school management easier, study more interesting, recitation more spirited.

What the wings are to the bird, the blossom to the plant, the juice to the fruit, the eye to the face, fervency to the voice, singing is to the school.

Continue the breathing exercises followed by singing a long sustained tone about F or G to the vocal sound ai after taking in a full breath. Be careful that all keep the teeth well opened, also that the vocalized stream of air strikes the palate near the root of the upper teeth. Let the teacher pass along the lines and listen to each pupil to ascertain that he is singing in tune. If not help the pupil to raise or lower his voice to the right pitch. Where the pupil still fails, ask him to listen whilst the others sing. Sing again to ai, but in the same breath change to ah, and be careful that the sound keeps forward and does not go back as it is apt to do. These exercises are to secure pure and good tone.

Still drill the class well on the notes of the Doh chord. If the class have difficulty in taking m in ascending from d then remind them of the calm, peaceful character of that note, and sing d s m d, dwelling on the m, and then again try d m s m d. The class may also fail to sing m coming from upper d, which we call onedoh, and write thus d', then come away from modulator, impress on the minds of the class the character of m, and go back and point d'm, and the class will most probably sing the note correctly.

Accent and Time.—In last lesson we spoke of 2-pulse measure, where each second beat has the strong accent, and the other pulse has the weak accent. Sometimes the strong accent is on every third beat. Let the teacher sing to one tone | La la la | La la la | La la la | and ask the pupils to tell where the strong accent falls; then sing the syllables in the same way. Then sing a succession of ds in the same way. Ask the pupils to write the notes to show the accent:

| d:d:d | d:d:d | d:d:d |

Then get the pupils to sing each note of the chord the same way. Then d to first measure; m to second, s to third, and d' to a fourth.

In the same way treat an exercise beginning with the third beat of the measure:

[illegible]d | d:d:d | d:d:d | d:d |

Tell the class that if we have one pulse of a measure at the beginning of the exercise we require what is necessary to complete the measure at the end of the exercise.

The time name for a note, one pulse or beat is taa, and if the note is continued a second beat aa, thus:

| d : d | d : — |
taa taa taa-aa.

The exercises on time and tune will be made more interesting if one section sing the one note d, giving the accent distinctly, while the other sings the exercise, then changing parts:

| d:d | s:s | m: - | s:s | d:m | s: — | s:m | s:s | d: —‖
| d:d | d:d' | d: — | d:d | d:d | d: — | d:d | d:d | d: —‖

In each lesson remember to give ear exercises.

A.

On Calculus Dodging and other Educational Sins.*

By Prof. J G MacGregor, D. Sc.

Ladies and Gentlemen:—You are aware that we have recently been reorganising the classes in the department of Physics in this college, and that we now offer students courses of instruction in three stages of advancement. We have first an elementary class in Physics generally, in which we take a rapid survey of the whole subject, treating Dynamics only to the extent to which it is necessary as a foundation for the other sections of the subject. The members of this class are assumed to be familiar with the elements of Geometry (six books of Euclid) and of Algebra, but to have no knowledge of Trigonometry. We have next intermediate classes in Dynamics and in General Physics, the course of study extending in the case of the latter over two years. In these classes a knowledge of Trigonometry is assumed, but not of Analytical Geometry or of the Differential and Integral Calculus. Nevertheless in the endeavour to give as extended a knowledge of the subject as possible, the methods of the Calculus are frequently employed, though its symbolism is not introduced. We have finally the advanced classes in Mathematical and in Experimental Physics, the work of the former involving a knowledge of Analytical Geometry and of the Calculus, that of the latter consisting in the study of original memoirs and standard treatises, and in practical laboratory work. It is this organisation of classes which I wish to discuss with you to-day before entering upon the work of the session.

And first let me say that of course I admit that in a fully developed educational system the elementary class certainly should not find a place in the university. It is provided in our college only because our schools are not yet sufficiently far advanced to take it off our hands. And I wish to vindicate for it a position, not in the college course, but in our educational system somewhere. At present, if anywhere, it must be in the college. Ultimately, and let us hope soon, it may be transferred to the high school. Let me say also that just as certainly the advanced classes ought to find a place among university courses of instruction. There will be no difference of opinion on that point. But there is difference of opinion as to whether, either in school or in college, there ought to be classes such as those I have referred to as elementary and intermediate.

In organising our classes in the manner described, I have been influenced very greatly by strong faith in the educational as well as the practical value of a study of Physics. It may be, perhaps, that as a teacher of Physics I am inclined unduly to ·nify my office. But certainly, while I admit other subjects to be more efficient as means of training special faculties, I hold Physics to be, next to Literature, the best of all subjects of study as a means of general education. You are aware that it is the most highly developed of the physical sciences, that it is the best example we have of the combination of the inductive and deductive methods of reasoning, and that it embraces generalisations of all orders of generality and hypotheses of all degrees of probability. It therefore seems to me to provide, in the modes of reasoning which it calls into play, the closest analogue to the reasonings which we require to apply to our every day life. That being so, it would appear to be desirable that not only all our university students, but also all our youth, should as far as possible enjoy the advantage of a study of this subject before entering upon their life-work.

There is one difficulty in the way of the realisation of this ideal, however, and that is, that the peculiar benefit of the study of Physics is not derived unless the student already possesses a certain amount of mathematical knowledge. And hence the question arises as to the stages of mathematical advancement at which the subject of Physics may, with educational advantage, be taken up. On the one hand we have the fact that the more mathematical power the student possesses the greater will be the fruitfulness of his study of this subject, and on the other the fact that most persons enter upon their life-work with a comparatively small amount of mathematical knowledge, and that only the privileged few attain to any extensive mathematical power.

In settling this question I have naturally been guided by the circumstances in which we find ourselves. The arrangements of our school and college curricula make it comparatively easy for any one to obtain a knowledge of the six books of Euclid and of the elements of Algebra. I have therefore thought it desirable that an elementary class should be provided taking this amount of mathematical knowledge as the basis of its work. The great majority of those who go farther in mathematical study get at least a working knowledge of Trigonometry and of Geometrical Conics, but stop short of Analytical Geometry and of the Calculus. This class includes many men who, without any greater mathematical equipment, will enter the various engineering professions, and who, therefore, from a practical point of view, ought to be able to obtain as extensive a knowledge as possible, especially of Dynamics, but also of the other branches of Physics. I have therefore made

*An Address delivered at the opening of the Physical Classes of Dalhousie College at the beginning of the present session

Geometry, Algebra and Trigonometry the basis of the work of our intermediate classes.

This arrangement of classes, however, is not justified by the mere fact of its being desirable that men in both the above stages of mathematical study should have the advantage of a study of Physics. It must further be shewn that with the mathematical equipment assumed the work of our classes can be adequately accomplished. That it can, seems to be the opinion of a large body of teachers. For there are many text-books available for both classes, which are quite suitable in scope and in the amount of Mathematics assumed. And these books have not only been written by men who presumably believed in them, but shew by their extensive sale that they meet a felt want. This opinion, however, is not universally held; and the immediate occasion of this address is the publication (in *Nature*, vol. XL., p. 126) of a paper on "The vices of our scientific education," in which the opposite opinion is maintained. Its author, Prof. G. M. Minchin, is so deservedly eminent as a teacher in the department of Mathematical Physics, that the severe strictures which he makes on some portions of the work which I have sketched out for our classes here, have led me to reconsider the whole matter, and lead me now to bring before you the reasons why, notwithstanding his criticism, the maintenance of the present organisation of our classes seems to me to be justified.

Prof. Minchin's criticism of the work which we propose to do in our intermediate classes has reference to that part, in which we employ the methods of the Calculus without using its symbols and without requiring students to have previously obtained a knowledge of that branch of mathematics. "It may perhaps be best described," he says, "as Calculus dodging. For some curious reason, which I have never discovered, it has been generally assumed that a student can possess a very extensive knowledge of the results and principles of Dynamics,—of the composition and resolution of forces and couples in three dimensions, of the principle of work and energy, of the nature and properties of tubes of force, potential, etc.,—without any knowledge of the Differential or Integral Calculus. This is surely a piece of self-deception." If so, there can be no justification for a considerable portion of the work of our intermediate classes; and it is necessary therefore to enquire into the validity of this criticism.

But let me note first that the Calculus dodgers are a most respectable body of men. The most artful dodger of them all is Clerk Maxwell, whose book on the Theory of Heat, just because he obtains in it important thermodynam results, usually established by the aid of the Calculus, in such a way that readers who have no knowledge of the Calculus can follow him, has obtained a wide popularity and is very extensively used. In Electricity, Cumming dodges, more laboriously it is true, but still to good purpose. In Optics Glazebrook takes the same course, and to men of small mathematical equipment throws a flood of light on a region that was cloudy and dark before. In Dynamics, Clifford was a dodger of great power; and even Thomson and Tait do not disdain to employ the process when they can do so with elegance and grace, though they despise the laborious dodging which involves the use of unwieldy formulæ. May we not rank even Newton himself as a dodger though he had no Calculus to dodge? At any rate all those teachers who in these latter days encourage their pupils to study Newton, must be held to be guilty of aiding and abetting in the practice of this educational sin. And, indeed, we may increase the number of our allies to an almost unlimited extent by noting that whosoever establishes, without formal integration, the familiar laws of the motion of uniformly accelerated bodies, must be considered to be one of the noble army of dodgers.

We cannot settle a question of this kind, however, by authority. Prof. Minchin's hand may be against every man, but it may, nevertheless, have grasped the truth. Hence we must look into this charge of self-deception. Prof. Minchin merely makes the charge. He does not shew where the deception of self comes in. But I think one or two considerations will shew it to be unfounded. For what after all is it that the dodger does? He finds himself under the necessity of treating certain special variable quantities, without being able to make use of the knowledge which mathematicians have acquired of variable quantities generally, because his pupils do not possess it. Hence he treats the special quantity, if he can hit upon no better plan, and if the process is not altogether too cumbrous, in the same way as the mathematician has treated the general variable, and thus attains the same result as if he had applied to the special case the general results of the Calculus. There can thus be no more self-deception in dodging the Calculus than in obtaining the same result by applying it, provided always the dodging is properly done. It may, of course, be bungled; and I think it must be admitted that the dodging is more liable to be bungled than the applying, as it is a much more difficult process. But this should lead us rather to look carefully into each particular instance of the method than to indulge in general condemnation.

The next point in Prof. Minchin's indictment against Calculus dodging must to a large extent be

admitted. "Special devices," he says, "exhibited 'for this occasion only,' confer no independent power on the student." Doubtless the dodger cannot in general expect to make his pupils dodgers also. For he is able to dodge chiefly by virtue of his knowledge of the Calculus, ignorance of which on the part of the pupil makes the dodging necessary. And thus little independent power is evoked in the pupil by the study of this portion of the teacher's work. The result of the teaching is that the pupil is satisfied of the accuracy of a result which in the opinion of the teacher is worth the trouble of the dodging process. Thus it is by many regarded as worth this trouble to establish "the nature and properties of tubes of force, potential, etc.," not in the hope that the student may be able to establish independently any co-ordinate theorems, but because the properties referred to if once established may be very widely applied. For a different reason it is worth this trouble to determine the attraction of a uniform material spherical shell on an external particle. The student will find the law of its attraction assumed in elementary books on Electricity and Astronomy, and it is a great satisfaction to him to have been convinced of its accuracy, even though the method by which it was proved to him may not have been one which he could apply to other similar problems. While therefore we must admit that in general dodging does not tend to foster independent power, we claim for it other advantages which seem to justify its use.

When, however, Prof. Minchin says that "the processes of differentiation and of elementary integration are not difficult of acquirement, and it seems to me they ought to be studied before such an extensive inroad is attempted into Dynamics," and that "if more time were spent in teaching the mathematical principles on which quantitative Physics depends, there would be less need for such methods, and in the long run the student of Physics would be a gainer," I find myself able to agree with him. Calculus dodging seems to me to be in many cases justifiable; but its application would be in all such cases preferable. We would draw different conclusions, however, from this common opinion. He would postpone the serious study of Physics not only until Geometry, Algebra and Trigonometry have been studied in as great detail as at present, but also until the elements of the Differential and Integral Calculus have been studied. I would, on the other hand, venture to suggest to mathematical teachers, that they should take into consideration the introduction of the elements of the Calculus at an earlier stage of our mathematical courses. The former change would have the unfortunate effect of restricting the study of Physics to the few whose mathematical tastes lead them to devote a great deal of time to that subject. The latter would have the advantage of enabling the many, who undergo a shorter course of mathematical training, to acquire facility in the use of an instrument, which would render it possible for them to enter with advantage upon departments of Physics, to which the only entrance at present is through the dodger's gate.

In selecting branches of Mathematics as subjects of instruction in school and college classes, it should be borne in mind that this subject is studied, not only as an admirable species of mental gymnastic, but also as an indispensable instrument for pursuing study in other branches. And neither of these objects should determine what the course of instruction is to be to the exclusion of the other. Considering what important fields are opened up to the student by even a slight knowledge of the Calculus, it may rightly be introduced into elementary mathematical courses, even if its introduction should somewhat impair their gymnastic efficiency. I am not by any means sure that the details of Algebra, Geometry and Trigonometry, which might thereby be crowded out, would be more valuable educationally than the new matter which would be introduced. But there can be no doubt that the change would result in an enormous increase in the practical value of the elementary mathematical course. And the reconstruction of these courses on the most practical lines consistent with sufficient educational benefit, demands, I venture to think, more consideration from mathematical teachers than it has hitherto received.

Meantime, since there is a large body of men who must study Physics and who know nothing of the Calculus, the only course open to teachers is to dodge the Calculus to the best of their ability.

On the work prescribed for our elementary class, the study of Dynamics and of other departments of Physics, without the aid of Trigonometry, Prof. Minchin makes some very severe strictures. The immediate object of his criticism is the matriculation examination of the University of London, which requires of candidates a considerable knowledge of Dynamics, while at the same time requiring in Mathematics only four books of Euclid and no Trigonometry. In our elementary class we assume familiarity with six books of Euclid; and therefore some of Prof. Minchin's strictures do not apply to us. All those based on the lack of knowledge of Trigonometry, however, apply directly and hence I quote them. In assisting a young relative to prepare for the London examination, he "found it," he says, "quite impossible to impart anything that could

with propriety be called a knowledge of Mechanics without the aid of Trigonometry. In the Composition and Resolution of Forces a few questions made specially to order, which usually depended on the facts that the sine and cosine of 45° are equal, and that the sine of 30° is ½—although, of course, the mention of a sine or cosine was inadmissible—exhausted the field; and the same restrictions were imposed on the treatment of Moments, so that I was obliged to abandon the task and to insist on a small knowledge of Trigonometry and the Sixth Book. In such a cramped and stunted knowledge there is nothing of spontaneity, nothing of power, but much of danger." It will be noticed that this criticism applies only to Dynamics. But as the study of other departments of Physics is based on that of Dynamics, the whole work of our class is shewn to be faulty, if this criticism is valid. Let us see then what it is worth. The only definite statement made is that in the discussion of the composition and resolution of forces, and in the treatment of moments, the range of illustrative exercises is so narrowed by the lack of Trigonometry that no spontaneity and no power can be developed in the student. Now (1) the great stress which Prof. Minchin lays on the sections of Dynamics to which he refers, seems to me to be an instance of the scrappiness of treatment, of which he justly complains as characterising most elementary dynamical text-books. For there are other sections of the subject admirably adapted to develop spontaneity and power, which do not involve either the composition and resolution of forces or the treatment of moments. It is true that in the older scrappy books these sections are very inadequately treated, but in more recent and more systematic books their treatment is as thorough as their importance demands. And for the sake of these portions alone Dynamics would seem to me to be quite worthy of study from an educational point of view. Even therefore if the above criticism were valid, and problems involving composition and resolution of forces incapable of adequate treatment without Trigonometry, the study of Dynamics without the aid of Trigonometry might still be vindicated, though certainly not according to the syllabus of the London University matriculation examination.

But (2) the number of available problems illustrative of the composition and resolution of forces and of the treatment of moments, though certainly narrowed by the lack of Trigonometry, is, I think, not narrowed to nearly so great an extent as Prof. Minchin imagines. The teacher is certainly not restricted for illustrations to cases in which the forces are inclined at angles whose trigonometrical ratios have simple values. For example, problems on the action of forces on bodies supported on inclined planes are available, provided the plane in each case is specified, as is frequently done in Engineering, by giving two of the three sides of the right-angled triangle by which it is conventionally represented. Such problems as the determination of the tensions in two strings, by which a heavy body is suspended from given points, are also available. And so also (to take a case involving moments) are such problems as the determination of the position of equilibrium of a beam resting on a horizontal rail with one end pressing against a vertical wall. Scores of such problems might be quoted, no more "specially made to order" than if they were couched in trigonometrical terms, and quite independent of the simplicity of the trigonometrical ratios for particular angles. The only problems which, so far as I can see, would not be available, are complex ones, the geometrical treatment of which would be practically too cumbrous.

Let it be noted also that the dynamical difficulties which are involved in the solution of problems are the same whether Trigonometry be employed in their solution or not. Hence the same spontaneity in grappling with dynamical difficulties, and the same power of overcoming them, are evoked in the student who solves them by geometrical methods as in him who is able to apply Trigonometry. Unless, therefore, Prof. Minchin is ready to maintain that spontaneity and power are the result of solving problems of the very complex kind only, his criticism falls to the ground. Such a position, however, would be quite untenable; for the simpler problems may certainly be made to present a sufficient array of difficulties to render skill and resource necessary for their solution. And, moreover, in at least a great many of the problems from which a student ignorant of Trigonometry is excluded, the main difficulty to be overcome is a mathematical one, and the chief power evoked by their solution is facility in dealing with trigonometrical formulæ. But Prof. Minchin himself, in the paper under consideration, protests, with as much force as justice, against making Physics a kind of disguised Mathematics. He cannot, therefore, regard it as an objection to any proposed mode of treating this subject, that it is inferior to another mode in the development of trigonometrical power.

So far as my experience goes, thoroughly accurate dynamical notions may be conveyed to students who know no Trigonometry, and quite sufficient power of dealing with the effects of the exertion of forces on bodies may be acquired by them, to serve as the basis for a valuable course of study in general Physics. They will, of course, find that in the application of their knowledge in special cases, they are continually

hampered for lack of mathematical knowledge. But this experience will serve as a stimulus to them in their mathematical studies, giving the interest of practical value to what might otherwise appear to be a mere species of mental gymnastic.

I have now shewn you, at somewhat wearisome length, why it is that Prof. Minchin's criticisms on the kind of work which we propose to do in our more elementary classes, seem to me to be without foundation, and why, therefore, notwithstanding his criticisms, I intend to maintain the present organisation of classes in our Physical Department. To you I must trust to give the system a thorough trial. And I think I can promise you, that if you devote to the subject a fair share of your time and energy, you will not find yourselves at the end of your course, so lacking either in spontaneity or in power as Prof. Minchin would have us believe, although you may have indulged somewhat freely in Calculus dodging and other educational sins.

In its issue for December 28th, the *Scientific American* says of the influenza now epidemic in Europe: The disease is not dangerous, except sometimes to children or the aged, while the former often show a decided exemption. * * The disease is undoubtedly due to some micro-organism which floats in the air, and which infects the human system, but is generally killed in so doing. For influenza is but slightly if at all contagious."

Die steel should contain from eight to one per cent of carbon and no manganese, water tempered to a straw color. Professor Robertson-Austen says such a die will strike 40,000 coins without fracture or deformation. If it contained one per cent more it would not strike 100 without cracking. If it contained two per cent less it would be hopelessly distorted and its engraved surface destroyed.

AN ARAB SAYING.

Remember, three things come not back:
The arrow sent upon its track—
It will not swerve, it will not stay
Its speed; it flies to wound or slay.

The spoken word, so soon forgot
By thee; but it has perished not:
In other hearts 'tis living still,
And doing work for good or ill.

And the lost opportunity,
That cometh back no more to thee,
In vain thou weepest, in vain dost yearn,
Those three will nevermore return.

Constantine E. Brooks, in the Century.

Literature, the Sunshine of a Busy Life.

(Concluded).

But, as you know, when a nation comes to reckon up the great names in its literature, it is not the historian or the philosopher who is put in the foremost place, but the poet. And the reason of this is plain. You want higher and rarer gifts to make a poet than to make a respectable writer in any other department of literature. Poetry has been defined as the breath and finer essence of all knowledge, and George Eliot, I think it is in Middlemarch, speaks of the poetic gift as showing itself "when knowledge passes into feeling, and feeling again is given back as a new instrument of knowledge. A man may train himself by diligent cultivation of very ordinary qualities to be a meritorious novelist, or historian, or write a grammar or a physics; but he cannot train himself to be a poet. That name is reserved by universal consent for the man who, in addition to whatever acquired knowledge he has, possesses also "The vision and the faculty divine;" that gift of imagination, that innate perception of the reality which lies beneath the surface of things, which we call genius. The very word "poet" implies creative power, and this is far beyond the power to remember, to reflect, and to know, for all these are powers which might be communicated by education or acquired by continuous effort And hence in all ages the greatest and most original minds have expressed themselves in poetry, and the men of whom their countrymen have been proudest have been the poets.

Consider for a moment how many and varied have been the forms in which the poetic instinct has at times manifested itself. You could not say beforehand what subjects were or were not susceptible of poetic treatment; because all subjects —even those which at first sight appear to us most prosaic, admit of being touched with emotion and illuminated with the hues which a glowing imagination and a deep spiritual insight and sympathy can cast upon them. And when this finer touch and sympathy and insight are present, you have poetry. When they are absent you may have plenty of excellent verse and faultless rhyme; but you have no poetry. The subject matters little. The treatment of it matters much. For example, if we are to define lyric poetry, we should say that its fitting topics were love, war, the beauty and the glory of the visible world, or any subject which arouses strong emotion. And we might illustrate this by the rolling verse of Milton, as he exults in the thought of approaching Christmas:

Ring out, ye crystal spheres,
Once bless our human ears,
If ye have power to touch our senses so.
And let your silver chime
Move in melodious time,
And let the bass of heaven's deep organ blow.
And with your nine fold harmony
Make up full concert to the angelic symphony.

Or take the expression of rapt enthusiasm and delight with which Shelley watched the sky-lark, as he sang:

Teach us, sprite or bird,
What sweet thoughts are thine
I have never heard.
Praise of love or wine
That panted forth a flood of rapture so divine,
Better than all measures
Of delightful sound,
Better than all treasures
That in books are found.
Thy skill to poet were thou scorner of the ground,
Teach me half the gladness
That thy brain must know
Such harmonious madness,
From thy lips would flow,
The world should listen then, as I am listening now.

There is a kind of inspiration to be caught from the sound of such music, which may well account for the charm which the odes and songs of Milton, of Dryden, of Burns and Shelley have for all readers. And we might be disposed to think that lyric poetry ought to confine itself to such subjects, were it not that Wordsworth and Coleridge and Gray have shown us how possible it is that very different subjects may become proper material for lyric poetry, in the hands of a master.

We should have thought that the old Platonic doctrine of a pre-existent life and of the relation of knowledge to reminiscence was better fitted for a philosophic treatise than for a lyric poem, yet in Wordsworth's noble ode on Intimations of Immortality, a poem in which it has been said with some truth that the poetic power of this century reached its high water mark, you may see this subject so suffused with beauty and with strong emotion that you feel yourself transported above the region of speculative philosophy into the serener atmosphere inhabited only by the seer, the prophet, the inspired poet. So it would by most critics seem almost an axiom that ethics, the whole theory of human duty and obligation and obedience to law, are fitting topics for treatises on morals and not for odes and poems. Yet hear a stanza from Wordsworth's Ode to Duty:

"Stern law-giver, yet thou dost wear
The God-head's most benignant grace;
Nor know we anything so fair
As is the smile upon thy face.
Flowers laugh before thee in their beds,
And fragrances thy footing treads;
Thou dost preserve the stars from wrong,
And the most ancient Heavens, through thee are fresh and strong."

Who does not recognize here the power there is in poetic genius to irradiate the province of the moralist and the preacher, and to give a new charm to the truths they have to teach?

In like manner we should none of us at first sight suppose that polemical controversy or natural theology was a fitting subject for poetic treatment, yet Dryden, as you know, put the whole of the argument for and against the Church of Rome and the Reformation into verse, which at the time when it was published attracted more attention than any other form of argument would have drawn to it, and which for ingenuity and strength and command of language is still read and admired. There is a place in literature for didactic poetry, for although the enforcement of truth is not the poet's first business yet it is quite within his province so to touch his subject with tender feeling, with graceful fancies, as to present truth in a new light. Pope, as you know, undertook to expound in the Essay on Man that purely natural theology which Bolingbroke and the deistic philosophers of that day had made famous.

It cannot be said that Pope added much strength to the philosophic argument, but his poem is read though Bolingbroke and Shaftesbury and Warburton are well nigh neglected, and the reason will be plain to you when I read even four lines of that famous composition:

"All nature is but art unknown to thee,
All chance, direction which thou canst not see,
All discord, harmony not understood,
All partial evil, universal good."

From the point of view of philosophy these may be mere platitudes, but the felicitous choice and collection of words and the musical rhythm give an additional charm to whatever of truth there is in the philosophy of Bolingbroke, and a place for that philosophy in the history of literature, such as mere speculative discussion would never have secured for it.

But one of the highest forms which poetic inspiration has assumed has been the production of *epic* poems. Addison following generally in the lines once traced by Aristotle has laid down the conditions that ought to be fulfilled by a great epic. They are

(1) That it concerns itself with action (that is to say not primarily with sentiment or reflection).

(2) That it should be one action (that is to say the attention of readers should not be distracted by many incidents, but the story should have unity and coherence as a whole).

(3) That the action should be a great action, that is that the theme should not relate to ephemeral incidents, but to those of permanent interest, and have in it something of the heroic and the sublime.

And in the whole history of literature, ancient and modern, there are but four or five poems which have fulfilled these conditions. Each of the great phases of the world's intellectual history has found its representation in an immortal epic. Homer's two great poems, the Iliad and the Odyssey, represent the earliest legends of the heroic age, and give to you with amazing force and vividness the manners, the beliefs, the conceptions of life which characterized the Greeks of the pre-historic age. Virgil's Æneid was written in the Augustan age, the period of the highest prosperity and luxury of Rome, and while in its subject it dealt with the ancestry of Romulus, and those traditions of which Rome was proudest in regard to the origin of their city and its policy, in its style it reproduces the tastes and the modes of thought of the age in which it was written.

Dante's great poem, the "Divina Comedia," takes for its subject one of the grandest of all conceptions. The description of the unseen world in its three aspects—Paradiso, the Inferno and the Purgatorio. I suppose it is because pictures of possible bliss and enjoyment are monotonous, while pictures of suffering and distress give ample scope and variety to an active fancy, that the Inferno is read more than the Paradiso, and is generally regarded as the highest effort of the poet's genius. But at any rate the poem stands first as the permanent embodiment of the belief of Catholic Christendom as it appeared to a cultivated Florentine in the thirteenth century.

Finally, there are Milton's two great epics, "Paradise Lost" and "Paradise Regained," which have for their theme a subject of the highest interest to humanity, which represent the convictions and the ideas dominant in Puritan England more than two centuries ago, and which for sustained sublimity, noble feeling, ripe knowledge, and imaginative power, deserve at least to rank with the great epics of former ages. Indeed there is no exaggeration in Dryden's famous epigram on Milton, as compared with Homer and Virgil:

Three poets in three distant ages born,
Greece, Italy and England did adorn.
The first in loftiness of thought surpassed,
The next in majesty, in both the last.
The force of nature could no further go,
To make a third she joined the other two.

Does it seem to you that the large thoughts and far reaching speculations of the epic poetry are out of harmony with the pressing duties and cares of an active professional life? I hope not. Dr. Johnson once wisely said: "Whatever makes the past, the distant or the future predominate in our minds over the present, exalts us in the ranks of thinking beings." I think he might have added, "makes us understand the present better." The way to know our own place in the

world is to think sometimes of the nature and destiny of the world itself. And the man who does not now and then nurture his mind on great thoughts, or thoughts that wander through eternity, and that concern the history and destiny of the race to which he belongs, is never able to see his own daily work in its true perspective, or to perform it with wisdom and success.

In the poetry of every nation there is some peculiarity in its metrical structure, which makes it address itself not to the understanding only but to the ear and to the sense of harmony. In English poetry there is the regular occurrence of similar accents; and after that the occurrence at intervals of similar terminal sounds which we call rhymes.

In Greek and Roman poetry there is the regular recurrence according to a recognized law of long and short syllables, and in lyric and dramatic poetry of strophe and antistrophe. Our earliest Gothic forefathers, in their rude versification, used to a great extent the artifice by which similar sounds recurred at the beginning of words; and alliterative verse, although modern ears are hardly attuned to it, probably fell as musically on the ear of a Norseman or a Saxon thane as rhymes fall on a modern ear.

The characteristic of the Hebrew poetry is the recurrence not of similar sounds, accents or syllables, but of similar ideas. Hence the duplicate character of the versification of the Old Testament.

The heavens declare the glory of God, and the firmament showeth his handiwork.
Day unto day uttereth speech, and night unto night showeth knowledge.
He maketh me to lie down in green pastures.
He leadeth me beside the still waters.
Thy righteousness is like the great mountains.
Thy judgments are a great deep.

As you read sentence after sentence like this in the Psalms, in the books of Job and of the prophets, you cannot help feeling how well this peculiar structure of verse lends itself to the expression of lofty thought and strong emotion; how much it has helped to deepen in the minds of those who heard it a sense of the majesty of the Divine works and of the spirit of devotion and of worship.

I have not spoken yet of that form of poetry which we call the drama. To this form of literary art some of the highest minds in all ages have been attracted, and if you consider it well you will see that intellectual gifts of a very special order are needed to make a great dramatist. Other writers stand apart from the subjects they treat; discuss them *ab extra*, and explain to you the light in which they view them.

The great dramatist on the other hand sinks his individuality altogether, projects himself into the circumstances and the character of the person he represents, so that he speaks through them and in their names only. In the early days of Greek literature the drama was a great religious institution, a great moral teacher. The actors were often priests, and the object of the representations were not to portray the scenes of actual familiar life, but to exhibit the lives of heroes and demigods, and the great passions which those lives illustrated. The whole conduct of the stage and the actors on it were highly artificial. There were only two or three actors; they spoke not in familiar dialogue, but in a tone of impassioned declamation; there was no change of scene, no interval of time; it was the function of the chorus to comment on the actors, to express sympathy with the sufferings and the contests of the actors, and to impress on the audience the moral significance which passed before them. The play, however, was no more like real life than a modern opera. Except in an allegorical and highly artificial way it was not a representation of life at all, but it sought to set the Athenian people thinking about the origin of good and evil, the conflict between them, the virtue of heroism and the relation in which man stood to fate and to the Gods.

The modern drama has, as you well know, a more direct aim, and seeks to illustrate various phases of actual human life. The greatest name in our literature -the greatest name in all literature—is that of one who, except in a few sonnets, never reveals himself at all, and tells you nothing about his own feelings, purposes or opinions. He represents to you kings, clowns, clergy, statesmen, knights and fair ladies; and he puts into the mouth of each language so appropriate that you cannot tell which of these interests and pleases him most, or to which of their characters his own was most nearly akin. You can stand aside and criticise his characters, but he never criticises or admires, he simply creates the men and the women themselves and leaves them to impress you as they will. He shows no more indignation for Shylock, no more loathing for Iago, no more scorn for King John than those worthies felt for themselves. By an effort of constructive imagination which is the nearest approach in literature to the miraculous, he has been able to place his own mind so completely into the attitude of that of his characters that you lose sight of him altogether and see nothing but the actors on the stage, their thoughts and the doings of their life. Shakspere, as you know, was not a traveler. All his life he oscillated between Warwickshire and London, yet to judge from his writings he is as much at home in a palace in Verona as in the Boar's Head in Eastcheap. He had, so far as we know, little or no intercourse with foreigners. Yet in Othello, and Romeo and Juliet, you have vividly described the fierce passions which betray the Southern nature, and of which he in England could have had no experience. And the same marvelous gift which enabled him to realize distance in place and circumstance also seems to have given him an insight into the feelings and thoughts of another time. In his Roman plays he has caught the austere virtue, the peculiar superstitions, the high sense of honor and patriotism that characterized the best ages of Rome; and this was a very different moral world from that which surrounded him. Note, too, that the time of Elizabeth was not a speculative or doubting age. It was an age of healthy, robust, perhaps rather coarse prosperity. He, as a busy stage manager, a jovial companion, could hardly have met with a character like Hamlet. Hamlet is essentially a nineteenth century character, moody, self-conscious, anxiously peering into the grounds of his own belief, and into the growth of his own character, "letting I dare not wait upon I would" and far more characteristic of the age which has produced "In Memoriam" than of the age which produced "The Merry Wives of Windsor."

In later days we have had many among our novelists, only three, as I think, which have exhibited, though in a more limited degree, similar power of vividly realizing the life and thoughts of a past age. Sir Walter Scott's Ivanhoe, Thackeray's Esmond, George Eliot's Romola, are the most remarkable examples of this power. There is hardly an anachronism in any one of these great books.

As I glance thus hurriedly at a few, though only a few, of the more prominent aspects of English literature, those who hear me are probably impressed with its wealth and variety, and with the vast store of experience which it comprehends. But the next thought, I hope, in the minds, especially of the

younger members of this association is that they would like to share at least something of the great inheritance and to acquaint themselves with a portion of it. And no one can settle for you what portion of it that should be. That must be determined by each student for himself in view of his own special tastes and idiosyncrasies. You have heard a good deal of public discussions as to what a young man should read, what are the best hundred books. There has been a pamphlet largely circulated in America containing a number of suggestions by eminent persons on this topic. Mr Harrison has advised you to choose only the great authors. Mr Balfour at Edinburgh has vindicated the usefulness of desultory reading. For both contentions there is much to be said. But after observing students all my life, I am, I confess, much impressed with this truth. That, provided you exclude from your reading that which is positively bad and pernicious, anything is good for you that you honestly enjoy. That which we read with sympathy and delight is far more likely to do us good, and germinate in the mind and to be a real help to our future development, than that which we read under the pressure of authority, or by the advice of friends or with a view to get a certificate or to pass an examination. So my counsel would be: Choose that department of literature out of which you think you can get most refreshment and enjoyment and cultivate it, even though you know it might not be the best for others who have different aptitudes and tastes from your own. We have not all the same appetites, we do not all desire intellectual nourishment from the same food, and this world would be a far less interesting world than it is if we did. But this general counsel to follow mainly in the choice of your reading your own instincts needs to be qualified by one or two considerations.

Whatever subject you find yourself attracted to, find out who are the greatest men who have written about it and put yourself in direct communication with them through their works. It is a good rule in study as it is in society, "Always keep company with your betters. Don't go to the second rate men if you can find access to the first. We in this age are subject to special temptations in this respect. Our periodical literature is so abundant and on the whole so good that we are tempted to give our whole time to it. We read essays and criticisms about great writers, instead of going to the great writers themselves. Then we accept second hand judgments of famous books and men instead of forming our own opinions about them. Now the river of Time has borne on its bosom many names and reputations which, after a short time, have sunk to the bottom in everlasting oblivion, while a few others have, by virtue of their intrinsic worth and nobleness, floated down through the ages, and are still on the surface. There is, of course, a strong presumption that books and authors, which have survived this test, are better worth your study than the mass of modern books which have yet to undergo the ordeals of centuries, and many of which will certainly be submerged ere long. And it is well to remember also that, so long as all your private reading is easy and pleasant, you are probably not doing justice to your own faculties and are giving your best power too little exercise. You know how rapidly the eye glances over the columns of a newspaper, or the pages of a novel. There is no need for effort. Whatever stimulus your thoughts receive is slight and transitory. And if you try immediately to take up a book demanding a real effort of thought, say Butler's Analogy or Mill's Political Economy, you find the same amount of attention will not suffice. Your eye passes over the page with the same rapidity, and you find that you have gained no idea whatever. You have to go back and wind up your powers of concentration and intelligence to a very different pitch, and read the page again in a very different way before you can make anything of it. So whatever your programme of reading is, take care that it includes some one book at least which is hard, which challenges your best powers and demands a real effort of thought. An unused faculty soon becomes an unusable faculty, and he who allows his mind to drift, so to speak, occupying itself merely with what comes casually in its way, and is easy to understand, is allowing his power of fixed earnest attention to be wholly enfeebled, and will find when the occasion comes for a really serious mental effort that he is less and less able to make it.

It is a familiar truism that the mind is enriched and strengthened not by the quantity we have read and learned, but by the extent to which what we read becomes the material for thought. Bacon said that "Reading maketh a man full," but unless reading is followed up by thinking the full man is very little the better for being full and finds that his food has done nothing to increase his health and strength. Now, if a book which takes you two or three days to read is worth reading at all it is worth at least half an hour's reflection afterward.

If you let the whole contents of a book pass at once from your thoughts your reading has done little for you. It is in the subsequent reflection in putting to yourself the question, Have I comprehended that author's meaning? Do I agree with his conclusions? If not, why not?" that the whole value of the book so far as it is a help to your mental development consists. The practice of writing down something about a book which has interested you—not a summary merely, not a number of extracts, but an epitome of the facts which have struck you most, and perhaps a criticism of its argument, is a very valuable one, because it forces you to turn over the whole subject in your mind again to ruminate upon it, and so to make what is in it a part of your permanent possession for life. It is from this point of view that I feel your Chautauqua reading circles to be of special value. They will, I hope, encourage each of their members when he has read a new book, say of poetry, history or philosophy—to write a paper or to give an account of its contents, and if possible to associate himself with those who have read it to discuss its merits. In this way you will not only provide every member with a new motive for reading but will also give to your own studies a coherence and a permanence which else might in the midst of the many intellectual distractions of a busy life be wholly wanting.

It may be that among those who hear me some are disposed to say I do not find myself particularly drawn towards any form of literature. I like work, I like society, but I do not care for poetry, nor for the products of what is called literary genius. To them I would only say, Rouse yourself, and try to care. In the long run the fullness, the richness, the happiness, and certainly the usefulness of a life depend on the number of interesting and worthy things which we do care about, and in which we take an honest interest. Your profession has claims, your family and friends have claims, but the highest claims of all are the claims of yourself for mental cultivation, for strength, for solace, for the means of true and honorable development. "Is not the life more than meat?" and there is not a truth in science, not a fact in history, not a

sweet and graceful image in poetry which may not contribute to the strength of the inner life, and help to make you fitted for any duties, however mechanical or laborious, which may fall to your share. And the more mechanical and laborious the daily life is—the more prosaic and uninspiring the conditions under which our ordinary work is done—the more need there is that in our leisure we should resort to the company of the great and the wise, whose thoughts have enriched the world and made a nobler life possible for all their successors. As we look along the shelves of the great library and read the names of the famous writers we recognize in them the names not only of the world's greatest benefactors, but of personal friends, into the circle of whose intimate acquaintance we are permitted to enter. In that serene companionship the dullest life may be cheered, the meanest life may become ennobled. To them, as we claim our heritage in their thoughts and their works, we may say, as our eminent English poet, lately deceased, said of those from whom he had learned the most:

Servants of God, or sons,
Shall I not call you, because
Not as servants you knew
Your Father's most innermost mind,
His, who unwillingly sees
One of His little ones lost.
Yours is the praise, if mankind
Hath not as yet, in its march,
Fainted, and fallen, and died,
Then in the hour of need
Of your fainting dispirited race,
Ye like angels appear,
Radiant with ardour divine:
Beacons of hope you appear!
Languor is not in your heart,
Weakness is not in your word,
Weariness not on your brow.
Ye alight in our van. At your voice
Panic, despair flee away.
You move through the ranks, recall
The stragglers, refresh the outworn,
Praise, re-inspire the brave,
Order, courage, return,
Eyes re kindling, and prayers
Follow your steps as you go.
Ye fill up the gaps in our files,
Strengthen the wavering line,
'Stablish, continue our march
On to the bound of the waste,
On to the City of God."

An expert and experienced official in an insane asylum said to us, a little time since, that these institutions are filled with people who have given up to their feelings, and that no one is quite safe from an insane asylum who allows himself to give up to his feelings. The importance of this fact is altogether too little appreciated, especially by teachers. We are always talking about the negative virtues of discipline, but we rarely speak of the positive virtues. We discipline the schools to keep the children from mischief, to maintain good order, to have things quiet, to enable the children to study. We say, and say rightly, that there cannot be a good scholar without good discipline. We do not, however, emphasize as we should the fact that the discipline of the school, when rightly done, is as vital to the future good of the child as the lessons he learns. Discipline of the right kind is as good mental training as arithmetic. It is not of the right kind unless it requires intellectual effort, mental conquests. The teacher has a wider responsibility, a weightier disciplinary duty, than she suspects. The pupils are not only to be controlled, but they must be taught to control themselves, absolutely, honestly, completely.—*Journal of Education.*

Very Rev. Edwin Gilpin, D. D.

The subject of this sketch was born in Aylesford, N. S., on the 10th of June, 1821. Descended from a long line of illustrious ancestors, among whom was Bernard Gilpin, the "Apostle of the north," he is himself a typical English gentleman.

He was educated at Kings College, Windsor, at which institution he graduated in arts in 1847, and in divinity in 1853. In due course he proceeded to the degree of D. D., which was conferred upon him by his Alma Mater in 1863. In 1850 he was appointed to the head mastership of the Halifax grammar school, the only public institution for secondary education in the city. For a period of twenty-seven years he filled with unqualified satisfaction this important position, and during that time had under his instruction many lads who have since been prominent in the political, professional and commercial affairs of our city and country. In 1877 the Halifax grammar school was, by legislative enactment, merged into the Halifax high school, and Dr. Gilpin was appointed its first principal and classical master. When the high school became the county academy he continued at its head until his resignation in November last.

Dr. Gilpin has thus been before the public as an educationist for forty years. He was a born teacher and an ardent lover of boys. Very early in his career as a teacher, he read the life of the celebrated Dr. Arnold, of Rugby, and became thoroughly imbued with the principles which guided that prince among teachers. He made it a rule, as did his illustrious model, to trust his boys until they proved themselves unworthy of confidence. In the administration of discipline he invariably appealed to a boy's sense of honor, and thus cultivated a spirit of chivalrous man-

liness among his pupils. He had no truck with tell tales, and if a boy had not pluck enough to acknowledge a misdemeanour, he had no fear of being betrayed by his fellows.

As a teacher of classics, Dr. Gilpin has occupied the front rank, and his pupils have always taken a high position at college. When he began teaching, the rudiments of Latin were taught from the Eton grammar and Valpy's Delectus, but when occasion demanded it he had no hesitation in abandoning the use of these time-honored text-books, familiar, we may almost say endeared, to him by long association, and adopting others more in accordance with the progressive spirit of the age. By nature and habit strictly conservative, he yet availed himself of whatever he found valuable in modern methods of teaching.

As principal of the academy, where he had a staff of five colleagues, he was simply *primus inter pares*. He was scrupulous to a fault it may be, about interfering in any way in the affairs of the departments under the control of the several teachers, preferring rather that each teacher should be absolute in his own department. When a case of discipline was referred to him by any teacher the whole faculty was consulted. This course of action very much strengthened the hands of every teacher, as the pupils were made to feel that the faculty acted as a unit, and that an offence committed against one teacher was regarded as an offence against the whole staff. His delicate consideration of the views and feelings of his colleagues on all occasions won for him their entire confidence and unbounded esteem. They regarded him as a father and a friend rather than as a superior officer. His kindly and paternal bearing towards the pupils rendered him the object of their reverence and love.

In the performance of all his duties as a teacher, Dr. Gilpin was remarkable for his punctuality, regularity and strict adherence to system. He was not only never absent from duty, except through unavoidable necessity, but he was habitually at his post many minutes before the hour of assembling the school. When the hour arrived everything proceeded like clock-work, without delay or loss of time.

Perhaps no better testimony can be given to the doctor's ability and success as a teacher than the statement publicly made by Mr. MacKay, his successor in the principalship, to the effect that he had sought the doctor's advice in the management of the school and that he intended to follow it as closely as he could; moreover, that he had never met two hundred pupils more remarkable for the observance of good order than those he had found on assuming the headmastership of the Halifax academy.

Notwithstanding the arduous duties devolving upon him as a teacher, Dr. Gilpin has rendered admirable service to the Church of which he is a distinguished clergyman—service which she has not been slow to recognize. For many years it was his custom to drive several miles into the country on Saturday in order to minister to a vacant parish on Sunday and return home in the evening to be ready for school next morning. Of late years he has been unremitting in his attention to the spiritual wants of the inmates of the Victoria Hospital and of the Poors' Asylum. As an alumnus and governor of King's college, he has ever been loyal to his alma mater, and has taken a prominent part in the counsels which have placed that institution in its present very promising condition. In 1864 he was appointed Canon of the cathedral church of St. Luke's, and in 1874 was made Archdeacon of Nova Scotia. In 1880 he resigned the Archdeaconate in order to accept the higher dignity of Dean of Nova Scotia. During the vacancy in the bishopric, occasioned by the decease of Bishop Binney, Dr. Gilpin was put in nomination by a strong party, and received a large majority of the votes of the clergy who knew his worth, but on account of his very pronounced views as a high churchman, the lay brethren withheld their support and he was not elected.

As a man, as a teacher, and as an ecclesiastic, the subject of this sketch has made his mark in the history of our province, and we trust that he still may be long spared to enjoy the leisure to which forty years of active service have justly entitled him.

Robert Browning.

Robert Browning is dead! Little that can be said will add to the significance of these four words in the case of a man to whom has come a revelation of the divine spirit, for nearly fifty-five years, has been heralding his message, sometimes in dark sentences, and sometimes in words as clear and piercing as the arrows of the sun, to people of English speech. It was in 1826 that Browning cast his first volume of poetry down before a public that had become accustomed to meet with the pretty fancies and poetical prettinesses of the "Keepsakes" and the "Annuals." His last book appeared on the day before his death, and it was but a short time to hear that it had been well received by the public, before he "faced his Maker." In the long interval he had wrestled with and overcome criticism and applause by sheer strength of genius. The world may not be able to probe the depths of his message, or, even, be prompt and unanimous in assigning him a place among the foremost poets of his age. But it has been compelled to recognize

that his meaning is always worth the labor of seeking for it, and that in him was to be found one of the keenest and subtlest intellects and one of the most strongly marked personalities among those who have written verse. The world has lost in him what can never be restored. The courage, the vigour, and the vividness of his genius place him among the first ranks of men. Nothing either of daring or of vitality perished or decayed with age. His latest poems are as instinct with the fire and color of life, and breathe the same pure elevation of soul, and self-reliant fearlessness and hope that were displayed in his earliest book; and where there is change, it is in depth and clearness and grasp of his art. Singular to say, the genius of his contemporary, the other great poet of the Victorian era, also put forth late blossoms almost on the same day in which Browning's latest volume appeared, and on the very day of Browning's death. He sings as sweetly as ever; and there are lines that, with an alteration, might have been written for his brother bard

All his leaves
Fallen at length,
Look he stands,
Trunk and bough,
Naked strength.

With the sap of life and love still breaking forth greenly in him there was in the end more than "naked strength," in the spirit of Robert Browning. He was an oak with the airy and musical spirit of Ariel "pegged in its knotted vitals." His own lines express him best. His first published poem opens:

I am made up of an intensest life

The last lines of his latest message to his fellow-men ran:

"Strive and strive?" cry "Speed, fight on, fare ever
There as here."

These words are the Alpha and the Omega of the man, and the burden of his fifty years' singing. Though in some manner a citizen of the world and a student of those springs of emotion that lie beyond nationality, and though Italy, where he died, was the land of his intellectual love, he was in the fibre of his character an Englishman among Englishmen, proud of the country that was honored by giving him birth. No one can say what he owed to the kindred poetic soul that was knit with his in such intimate union, though in a dedicatory line, or a lyric here and there, he has half withdrawn the veil from the inner sanctuary of his heart to reveal what he lost in his wife. If, as he hoped, he is still "faring forward there," may we not think of Robert and Elizabeth Barrett Browning as again united?—*Exchange*.

The Educational Institute of New Brunswick.

The Executive Committee, at a meeting held in Fredericton on the 2nd inst., reached the following decisions regarding the next meeting of the Institute:

PLACE—Moncton, provided satisfactory arrangements can be made; otherwise, St. John.

TIME—Thursday, 26th June, and two following days,—opening at 2 p. m. (standard) on Thursday, and closing about noon on Saturday. It is understood that the Saturday will be taken as a substitute day for Monday, the 30th.

BUSINESS AND SUBJECTS OF PAPERS—*Thursday Afternoon*—Routine business, including election of Executive Committee for the following year, and reception of reports of committees on revision of the constitution, superannuation of teachers, etc.

Thursday Evening—Public meeting. Platform speeches; address on Scientific Temperance Instruction.

Friday Morning—(1) Paper on "Professional Progress." (2) Paper on "English in Advanced and High Schools." Discussion to follow.

Friday Afternoon—Excursion by rail, probably to Point du Chene.

Friday Evening—Paper on "Patriotism—How can it be developed in Common Schools?" Discussion.

Saturday Morning—[Meeting of the Alumni and Alumnæ Society of the Provincial Normal School.] Paper on "A scheme for promoting pupils in graded schools where there is no local superintendent. Should advancement be determined wholly by written examinations?" Discussion.

N. B.—Travelling arrangements as usual.

HERBERT C. CREED, *Secretary*.

EDUCATIONAL NEWS.

The special committee appointed to complete arrangements for the Summer School of Science met in Halifax during the Christmas vacation. The School meets at Parrsboro from July 21st to August 2nd. The programme will shortly be announced.

The executive of the Educational Association of Nova Scotia have decided to meet in Halifax next year on the 29th, 30th and 31st December. This arrangement will leave the summer vacation unbroken except by the Summer School of Science.

During the Christmas vacation a large committee, consisting of the executive of the Educational Association of Nova Scotia and representative educationists selected from all quarters of the province by Dr. Allison, Superintendent of Education, discussed with

much fullness and energy a number of educational reforms mooted from time to time at conventions and in the press. As the committee represented as nearly as possible every element interested in our educational system it was not surprising to learn that the discussions were interesting and sometimes vigorous. Yet there was not a single vote taken until the committee came to an unanimous finding. Such unanimity from such a committee means that the government will probably with as little delay as possible give effect to the proposed changes, which we understand are virtually as follows:

1st. The syllabus for the examination of teachers shall be assimilated to the course of study for the High Schools.

2nd. Grade D to correspond as far as practicable to first year work, Grade C to second, and Grade B to third year work in the High School course.

3rd. That the Council of Public Instruction grant certificates of graduation to those completing satisfactorily the High School course.

4th. That an adequate guarantee of professional knowledge and skill should be required of every candidate for license to teach in Nova Scotia.

The work of revising the course of study was referred to several sub-committees.

The work of co-ordinating the whole constructing course of study for miscellaneous and village schools, and model time tables was referred to a larger committee representing the sub-committees.

PERSONAL.

Mr. J. D. Seaman has been appointed principal of the Upper Prince street school, Charlottetown, in place of Miss Barr, resigned.

Reverdy Steeves, late principal of the Hillsboro (N. B.) Superior School has gone to South America on a trip.

We are glad to learn that Inspector Lay is improving although still confined to his bed, we are sorry to say.

T. C. Allen & Co., of Halifax, is about to publish a text-book of athletics and calisthenics for the use of our public schools. The author is the well known Sergeant-Major Bailey of the Imperial forces at Halifax.

F. M. Cowperthwaite, B. A., of the Bathurst Superior School, has removed to New Westminster, B. C.

Dr. Allison, Superintendent of Education for Nova Scotia, was presented with a valuable gold and ebony cane by the Nova Scotia Educational Committee at the closing of their Christmas vacation sessions.

Miss Bessie Narraway, A. B., of St. John, N. B., has resigned her position as preceptress of the St. John's, Nfld., Methodist College, which she has held for the past three years. In an address to Miss Narraway the College Board testified to her excellent services and their regret at losing so valuable an auxiliary.

Alex. Robinson, B. A., (Dal.) of Campbellton, N. B., has received an appointment to the principalship of the Vancouver High School, British Columbia —another bond between the Pacific and Atlantic provinces of our wide Dominion.

Cornelius Campbell, of Millcove, P. E. I., who is a student of Propaganda, Rome, has carried off the degree of Doctor of Philosophy. Mr. Campbell is a nephew of Archbishop O'Brien, and is to study for the priesthood of the archdiocese.

Stanley Bruce, son of Capt. J. K. Bruce, of Shelburne, succeeds Mr. Mackintosh as principal of the Lunenburg academy.

AMONG THE COLLEGES.

The Halifax Academy has enrolled about two hundred students. The course is divided into six classes, "A" adapted to those preparing for academic diplomas and advanced university matriculation, "B" for those preparing for ordinary matriculation in colleges and for candidates for Grade B or "first-class" teacher's diplomas, "C" for those preparing for C or second-class license, medical and law matriculation; "D" for those preparing for D or third-class teacher's license, preliminary civil service examinations, etc.; "E" and "F" leading up to higher classes and preparations for ordinary clerkships. It is free to all residents within the city and county of Halifax who pass the entrance examination, or to licensed teachers without examination.

PUBLICATIONS.

We have to thank Mr. M. Chamberlain, the Assistant Secretary of Harvard University, for a catalogue of that institution for 1889-90.

We acknowledge the receipt of a beautifully printed calendar and cards from L. S. Foster, 35 Pine street, New York—a fine mercantile stationery establishment with printing, lithographing and blank books; also handsome calendars for 1890 from Barnes & Co., St. John; Rhodes Curry & Co., of Amherst, and Daniel & Robertson, St. John. From the bookstore of E. Dentu, Avenue de l'Opera, Paris, comes a finely illustrated catalogue of French works, of great variety, and very cheap.

BOOK REVIEWS.

McMillan's Almanac, 1890, is filled with valuable information that no one can afford to be without.

Visible Speech and Vocal Physiology, by Alexander Melville Bell, 12mo., pp. 59 (N. D. C. Hodges, 47 Lafayette Place, New York; London, Trubner & Co.) An ingenious and valuable invention. A new thing. Every modification of muscle tension which controls speech articulation is indicated by elementary signs which can be readily compounded. Given one of these hieroglyphics, the trained visible speech reader puts the indicated muscles in motion and forth comes the speech represented by it. These signs of vocal elements must be a valuable invention for the physiological vocalist, the scientific orthoepist Provincial dialects, peculiar accents or the sounds and words of any language, can be expressed in concise mathematico-hieroglyphic formulæ; and conversely can be read out of them.

Shakespeare's Twelfth Night; London, MacMillan & Co., and New York. This is another of that excellent series of English classics published by MacMillan. The notes are excellent without being cumbrous or overloaded with details, and the volume is handy and clearly printed

Enunciation and Articulation. A practical manual for teachers and schools, by Ella M. Boyce; 12mo., pp. vi. + 88. (Ginn & Co., Boston, 1889) Miss Boyce is superintendent of the schools of Bradford, Pennsylvania. This simple book of exercises could be made useful in the hands of a skilful teacher.

Natural History Object Lessons; a manual for teachers D. C. Heath & Co., Boston; mailing price $1.35. The object of this is to supply information from which the teacher may, with the least effort, prepare systematic courses of interesting and instructive lessons on natural history for elementary schools, and also to provide a sufficient number of specimen lessons to serve as guides in the preparation and construction of other lessons.

Papers on School Issues of the Day, Nos I -III. Price 25c, 15c., 10c. Published by C. W. Bardeen, Syracuse, N Y. This is a series of the more important papers read before the National Educational Association in July last. No. I treats of Denominational Schools; No. II, of the Educational Value of Manual Training, and No. III, of Art Education the True Industrial Education. Nos. II and III. are from the pen of Wm T Harris, the new Commissioner of Education for the United States.

Educational Monographs, Nos. 12 and 13. These monographs, published under the auspices of the N Y. college for the training of teachers, are doing a good work in placing before teachers a series of papers on educational questions by some of the foremost school workers of the day. No. 12 treats of "Graphic Methods in Teaching," and No 13, for January, 1890, of "Manual Training in the Public Schools." Both are valuable and practical essays The series is published at 9 University Place, New York City, and is issued bi-monthly at $1.00 a year.

Modern Language Series. Messrs. D. C. Heath & Co. have recently published in their modern language series, Victor Hugo's "Bug Jargal," edited by Prof. Boielle, of Dulwich college; and Holberg's "Niels Klim's Wallfahrt in die Unterwelt," edited by E. H. Babbit, Professor of German in Harvard.

RECEIVED.

Lindner's Empirical Psychology—DeGarmo (D. C. Heath & Co)

AMONG OUR EXCHANGES.

The *Popular Science Monthly* for January gives evidence of increased attention to live topics of the day. "Public Schools as affecting Crime and Vice" is the subject of an essay by Benjamin Reece, who brings figures to show that as illiteracy has been diminished crime has actually increased, and concludes that some effective teaching of morality should be included in our system of education. In a "Harvest from the Ocean," Prof. C. M. Strahan tells how certain important substances are derived from sea weed....The January *St Nicholas* fully sustains the promise that it was to be virtually a second Christmas number. A story "Tracked by a Panther" is contributed by Prof. Roberts. ....The January *Century* has a frontispiece portrait and sketch of Prof. Jas. Bryce, the author of "The American Commonwealth." A curious and valuable paper is that by Prof. Edward S. Holden, of the Lick Observatory, telling of a recent discovery of his concerning "The Real Shape of the Spiral Nebulæ."....The *Scientific American* begins a new volume with January. It is not easy to estimate the educational value of a paper like this coming into the household every week. See advertisement in another column for what it promises for another year, and these promises it will certainly keep....The *Youth's Companion* double Christmas number, was a charming souvenir and interesting to readers of all ages....The students of St. Martins, N. B., Seminary issue a very attractive initial number of a monthly journal to be known as the *Seminary Bema*. ....The Moncton *Times* recently celebrated its twenty-first year of vigorous growth by the issue of a magnificent special edition, which is a history of Moncton's industries and progress....*Garden and Forest* began its third volume on January 1st. It is growing in interest and value. It treats not only of the science of gardening but of all subjects interesting to horticulturists and lovers of nature....The *Bookmart* for December publishes among other interesting matter a hitherto unpublished essay by De Quincey on "Novels."....The *Herald of Health*, New York, contains many valuable suggestions how to preserve the health of mind and body....The *American Geologist* for November contains the following among interesting original articles: "Mathematical Theories of the Earth," by R. S. Woodward; "Geology in the High Schools," by Victor Clifton Alderson; "The Photographic Survey of a State," by Moritz Fischer; "Chemical Origin of Iron Ores," by Winchell, and "Review of Recent Geological Literature." ...The *American Naturalist* is still tardy in coming out of the publisher's hands It gives an admirable summary of natural history news....The *Microscope*, as edited by Dr. Stokes, is better than ever....*Science* comes weekly with its budget of fresh contemporary scientific news and discussions....*L'Enseignement Primaire*, of Quebec, enters on its eleventh year with more vigor than ever.

INTERCOLONIAL RAILWAY.

1889-1890.
WINTER ARRANGEMENT.

ON and after Monday, 30th December, 1889, the trains of this Railway will run daily (Sunday excepted) as follows:

Trains will Leave St. John.

Day Express for Halifax and Campbellton,	7 30
Accommodation for Point du Chene,	11 10
Fast Express for Halifax,	13 30
Express for Sussex,	16 30
Fast Express for Quebec and Montreal,	17 00

A Parlor Car runs each way daily on Express Trains leaving Halifax at 7.15 o'clock and St. John at 7.30 o'clock. Passengers from St. John for Quebec and Montreal leave St. John at 17.00 and take Sleeping Car at Moncton.

The train leaving St. John for Montreal on Saturday at 17.00, will run to destination on Sunday.

Trains will Arrive at St. John.

Express from Sussex,	8 30
Fast Express from Montreal and Quebec,	11 10
Fast Express from Halifax,	15 50
Day Express from Halifax and Campbellton,	19 25
Express from Halifax, Pictou and Mulgrave,	23 30

The trains of the INTERCOLONIAL RAILWAY to and from Montreal are lighted by electricity and heated by steam from the locomotive.

All Trains are run by Eastern Standard Time.

D. POTTINGER,
Chief Superintendent.

Railway Office,
Moncton, N. B., 25th Dec., 1889.